Child, Family, & Community Indicators Book

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Prepared by:

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INTRODUCTION

Evaluation of First 5 California Programs and Strategies

Improving the lives of California's young children and their families is the ultimate goal of First 5 California (Proposition 10). To support more effective funding decisions, program planning, and policies, the California Children & Families Commission (CCFC) is developing an outcome-based accountability system (also called results-based accountability) which tracks progress in the areas of maternal and child health, child development, family functioning, and systems change.[2] Several key papers have summarized how results-based accountability (RBA) can strengthen the efforts of state and local efforts.[4,13] In May 2002, CCFC contracted with SRI International to design evaluation activities to support RBA and continuous improvement efforts at both the state and local levels. This book is an effort to more clearly define and support decisions about which specific outcomes, performance measures, and other factors to include in the statewide RBA framework.

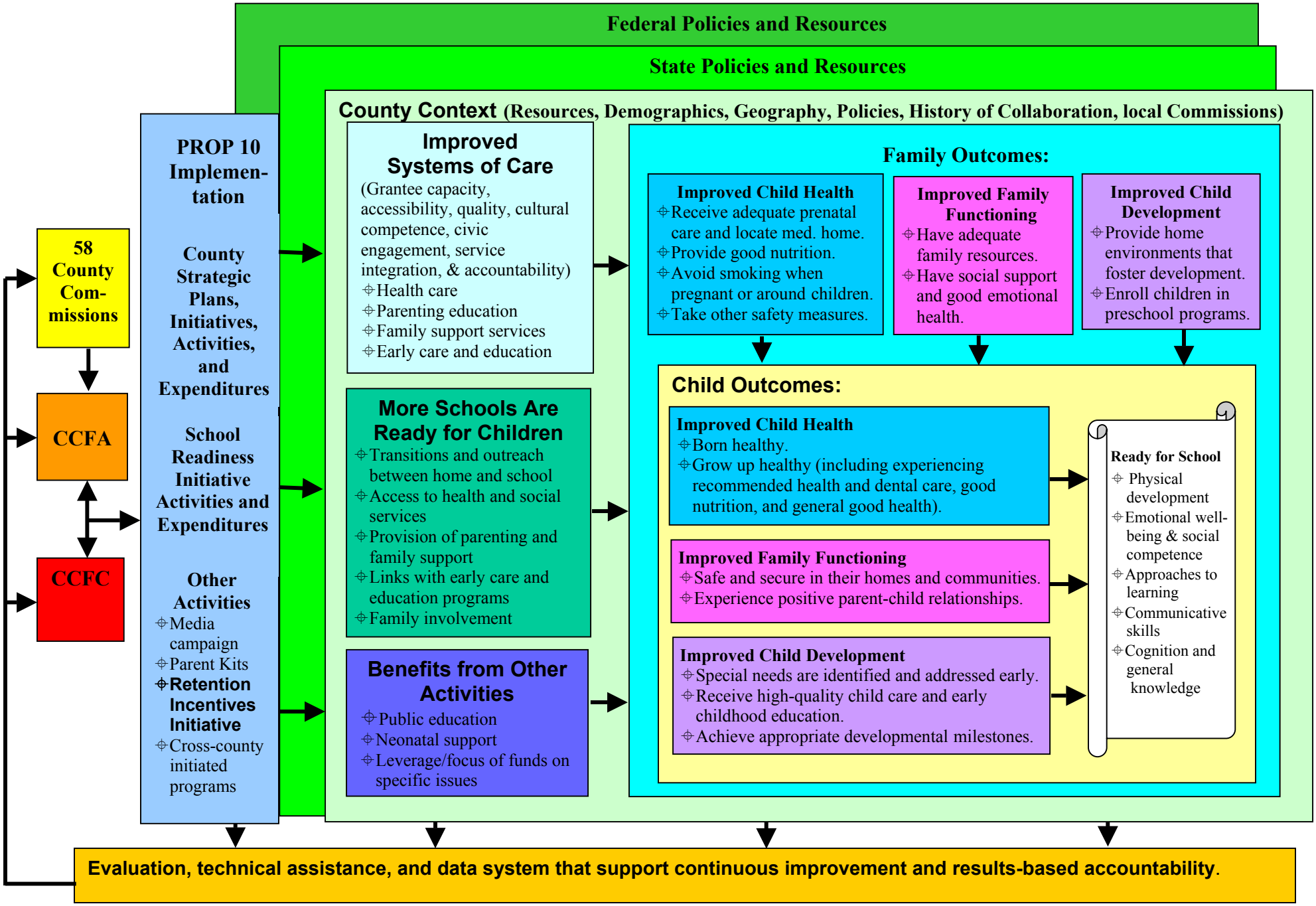
The use of indicators to track the well-being of children and families is widespread.[1,3,5,6,8,10,12,14,15] For example, in 2000, more than 90 individual efforts used indicators to collect essential information about the well-being of the nation's children, youth, and families.[9] A review of several of the commonly used indicators of child well-being was published in 1997.[7] SRI International and Child Trends have summarized some of the information available in the growing literature about the definition and usefulness of indicators to inform discussions and decisions about which indicators to use when tracking the progress towards the desired results of First 5 California funded programs.

What Can Indicators Do

An *indicator* is a measure, for which data are available, that indicates, or moves with, a condition that we are interested in monitoring, such as the well-being of children and their families.

Proposition 10 County and State Commissions could use the indicators in this book to monitor the progress being made towards their desired results (serve as *monitoring tools*). This information can inform policies, funding decisions, and program refinement, and increase public awareness and support. Exhibit 1 presents a conceptual framework of what types of information will need to be collected to monitor First 5 California funded activities and their desired outcomes for children, families, and communities (Exhibit 1).

Exhibit 1: CONCEPTUAL FRAMEWORK FOR FIRST 5 CALIFORNIA EVALUATION



What Can't Indicators Do

Use of these indicators will not allow for *casual attributions*. In other words, changes seen in the indicators will not allow for statements such as "First 5 California programs or strategies single-handedly caused improved outcomes for children and families at the program or community levels." Rather, the use of key indicators will allow for statements such as "Positive changes are occurring in the areas being targeted by First 5 California investments and activities. Children are healthier, better supported by their families, experience more activities that support positive child development, and have the skills they need to be successful when they enter Kindergarten." These indicators will not capture the unique experiences of individuals. Although indicators can suggest group and community differences in the areas of services and outcomes, they tend to oversimplify the experiences of individuals. This occurs because individuals are part of multiple groups (e.g., ethnic, language, age, socioeconomic, gender, and religious) and live in communities that differ in terms of population density, size, safety, and other factors, but large evaluations and studies aggregate data by groups and communities. To capture the stories of individuals, qualitative data collection methods, such as case studies, are more appropriate.

How the Provisional Indicators Were Chosen

As part of SRI International's proposal for the statewide evaluation and data collection for First 5 California-funded programs, SRI, UCLA's Center for Healthier Children and Families (CHCFC), Corporation for Standards and Outcomes (CS&O), and Child Trends staff compiled a provisional set of indicators that could be used to track progress on outcomes, program performance, and structural factors that may influence a County Commission's success in achieving desired results (Exhibit 2).[2] The proposed indicators were selected by using (1) our knowledge of the outcomes and indicators County Commissions are using currently (reflecting SRI's site visits and survey of County Commissions and CS&O's and CHCFC's direct work with County Commissions), (2) our familiarity with national efforts to define outcomes and indicators for children and families (e.g., Healthy People 2010 and the Health Plan Employer Data Information Set (HEDIS), and National Committee for Quality Assurance (3) reviews by CHCFC and Child Trends of county indicator scorecards, and (4) consideration of the following criteria:

- **Importance.** How important is the indicator as a component or determinant of child and family well-being?
- **Validity and reliability.** Does the indicator measure what it is supposed to measure?
- **Sensitivity to change.** Is the indicator sensitive enough to pick up and respond to the impact of interventions?
- **Availability and quality of data.** Are data readily and consistently available over time to track changes in the indicator?
- **Meaningfulness.** Can the public and policy-makers easily understand what the indicator means and its implications for child and family well-being?

Choosing Indicators for the Statewide Evaluation and for Local Use

A subset of the provisional indicators will need to be selected for the statewide evaluation. We decided to provide a very comprehensive list of provisional indicators so that the refinement process would involve narrowing down a large set of indicators rather than expanding on a limited set, which might suggest a potentially infinite number of additional candidates. The provisional set of indicators also needs to be refined so that it reflects the input of the individual County Commissions and CCFC. The process for identifying indicators will be transparent and criteria driven; that is, the processes and criteria being used to select indicators and the results of those processes will be communicated clearly so that County Commissions understand the rationale and history of the decisions being made. County Commissions will also have the opportunity to give their input through regional meetings, on-line surveys, and individual contact with the evaluation team. County Commissions will be asked to complete a brief survey to rate each of the proposed indicators on their importance, local use, and feasibility.

This document provides background information for all of the provisional indicators listed in Exhibit 2. Child Trends and SRI International staff conducted reviews of the research literature about each indicator. In summarizing our findings on each indicator, we provide a definition of the indicator, an explanation of why it is important, information about existing uses of the indicator, potential data sources, other key issues and concerns, and citations for all references used. Staff from the Center for Health Literacy and Communication Technologies provided SRI and Child Trends with additional research findings and considerations related to using these indicators with people from diverse groups. In the summaries, we cite several research studies and examples of other indicator efforts, but these summaries are not exhaustive. We hope that this information will provide a base of knowledge for the County Commissions and others who are considering which indicators to use. In addition, the Commissions will want to consider the importance of the indicator relative to county initiatives and programs, and the feasibility of collecting data, if needed, at the county level.

Results of the regional meetings and the indicator survey will be used to prioritize the indicators, identify potential barriers to collecting data on them, develop a plan for phasing in use of the indicators across the state, and identify needs for technical assistance or tools to facilitate data collection. The results of the regional meetings and surveys will be presented to the Evaluation Committee and posted on the evaluation Web site in the fall of 2002.

How the Indicators Are Organized

The provisional set of indicators presented in Exhibit 2 is organized into the four First 5 California result areas: improved child health, improved child development, improved family functioning, and improved service systems. Within each result area, indicators are clustered by outcomes (e.g., children are born healthy) from the 2000-2001 County Commission Annual Report form. Performance measures and structural

factors that are likely to affect the success of First 5 California-funded programs also are listed. Exhibit 2 specifies three types of indicators:

- **Core** indicators are those that could be collected by all counties,
- **Elective** indicators are those that could be collected for County Commissions that are focusing on a specific area, and
- ***Stretch*** indicators (shown in italics) are those that would be valuable in assessing some Commissions' activities but that need further development and pilot testing and therefore should not be used to hold programs or County Commissions accountable.

Finally, the list contains some county-level (population-based) indicators that come from extant county or state databases (marked with a "C"). These population-based indicators will enable monitoring of conditions among young children and their families over time in each county. Changes in these conditions may or may not be influenced by programs funded by First 5 California, since not all young children and their families will be enrolled in programs funded by California, and other factors besides programs influence these conditions. To reduce data collection burden on County Commissions, SRI and AIR will collect most of the county-level data and make them available to County Commissions and CCFC through PEDS. The list also contains some individual-level indicators that will need to be collected directly from participants in First 5 California-funded programs (marked with a "P"). These indicators monitor participants in a program or the program itself, and do not generalize to the population of the county as a whole.

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Child Health			
Core Indicators	**A. Children are born healthy.** 1. Infant survival rate (C) 2. Number and percentage of births at low birth weight (C) 3. Number and percentage of births at very low birth weight (C) 4. Number and percentage of preterm births (less than 37 weeks gestation) (C) 5. Number and percentage of women who had a positive screen for alcohol or drugs during delivery (C)	**Expectant mothers have adequate prenatal care and preparation.** 6. Number and percentage of live births in which mothers received late or no prenatal care (C) 7. Number and percentage of women who have taken a prenatal birth preparation class (P)	8. Availability of prenatal services (ratio of providers to births) (C)
	B. Children receive preventive and ongoing regular health care. 1. Number and percentage of children aged 19 to 35 months who receive the vaccines (P) 2. Number and percentage of children who receive recommended well-baby and child checkups by age 2 (P) 3. Number and percentage of children with a regular medical home (P)	4. Number and percentage of families served by home visitation programs that focus on postpartum and neonatal health (P) 5. Number and percentage of children who have health insurance (P) 6. Number and percentage of children participate in fully operational population-based immunization registries (C)	7. Availability of pediatric health services (ratio of providers to children under age 5) (C)
	C. Children are in healthy and safe environments. 1. Number and rate of emergency room visits by children with nonfatal unintentional injuries(C) 2. Number and percentage of children whose parents rate them as in very good or excellent health (P) 3. Number and percentage of children 0 to 5 with blood lead levels greater than 10 micrograms of lead per deciliter (C)	4. Number and percent of new parents taking parenting skill classes focused on basic care and child safety (P)	

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Child Health (Continued)			
Elective Indicators	**D. Children are healthy and well nourished.** 1. Number and percentage of women who are breastfeeding at time of hospital discharge/6-week follow-up (P) 2. Number and percentage of children 0 to 5 years of age who are in the expected range of weight for their height and age (C)	3. Number and percentage of women who participate in breastfeeding support programs (P) 4. Number and percentage of qualified families receiving WIC (C) 5. Number and percentage of qualified families receiving Food Stamps (C)	
Elective Indicators	**E. Children have good oral health.** 1. Number and percentage of children ages 3 and older who receive annual dental exams (P) 2. Number and percentage of children with no dental caries at age 5 (P) 3. Number and percentage of children at age 5 with untreated dental problems (P)	4. Number and percentage of children who have dental insurance (P)	5. Availability of dental services (ratio of providers to population) (C)
	F. Children are free of smoking-related illnesses. 1. Number and percentage of children who live in households where no adults smoke (P) 2. Number and percentage of women who did not smoke during pregnancy (P) 3. Number and percentage of children 0 to 5 years of age who have asthma (C)	4. Number and percentage of adults who participate in smoking-cessation programs and who live with children 0 to 5 (P)	5. Availability of smoking-cessation programs for pregnant women, their partners, and parents of young children (ratio programs to adults in the community) (C)

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Child Development			
Core Indicators	**G. Children have access to high-quality early care and education.** 1. Number of licensed center-child care spaces per 100 children (C) 2. Number of licensed family child-care slots per 100 children (C) 3. Number of Head Start slots per 100 low-income children (C) 4. Number and percentage of licensed center child-care spaces for children with special needs (C) 5. Number and percentage of children with special needs enrolled in Head Start (C) 6. Number and percentage of ECE/child-care workers who are credentialed (C) 7. Staff-to-child ratio in center-based facilities for children under age 2 (C) 8. Staff-to-child ratio in center-based facilities for children ages 2 to 5 (C) 9. Number of accredited centers per 100 children (C) 10. Number and percentage of parents who are satisfied with the ECE/child care for their children ages 0 to 5 (excluding those in kindergarten) (P)	**ECE/child care providers have increased supports and educational opportunities.** 11. Number of applications for child-care center licenses submitted and approved (C) 12. Number of people participating in classes, training, or field work to obtain their credential (C) 13. Number of child-care centers in the process of obtaining accreditation (C) 14. Number and percentage of ECE/child-care providers who have participated in continuing education (P) 15. Retention or turnover rate of child-care workers, by level of worker (C)	16. Median pay for child-care workers (C) 17. Number of calls received by Child Care Resource and Referral agencies (CCRRs) in each county, by type of caller (i.e., parents, child-care providers)(C)

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Child Development (Continued)			
Elective Indicators	**H. Children participate in early childhood education programs.** 1. Number and percentage of children who have ever attended a nursery school, pre-kindergarten, or Head Start program by the time of kindergarten entry (P) 2. Percentage of children with special needs who participate in early childhood care and education programs (C)		
	I. Children receive early screening and intervention for developmental delays and other special needs. 1. Number and percentage of primary care providers who use developmental screenings on all children by age 3 (P) 2. Number and percentage of children identified as having special needs by the time of kindergarten entry (P) 3. Number and percentage of children identified with disabilities who are referred to developmental services by kindergarten entry (P)	4. Number and percentage of early childhood care and education providers who receive training and/or technical support for caring for children with special needs (P) 5. Number and percentage of primary care or early education who use developmental screenings for all children under age 3 (P)	
	J. Children live in home environments supportive of optimal cognitive development. 1. Number and percentage of families who report reading or telling stories regularly to their children, 3 to 5 years of age (P or C) 2. Number and variety of reading materials in a child's home (P) 3. Amount of educational television child watches per weekday (P) 4. Amount of educational television child watches per weekend day (P) 5. Amount of noneducational television child watches per week day 6. Amount of noneducational television child watches per weekend day	7. Number and percentage of parents taking parenting skill classes focused on supporting child development (P)	8. Number of family literacy programs in the community and number of spaces available in the family literacy programs in the community (C)

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Child Development (Continued)			
	K. Children enter kindergarten "ready for school." 1. Number and percentage of children entering kindergarten ready for school as determined by assessments completed by teachers and parents that indicate the child is ready in the areas of cognitive, social, emotional, language, approaches to learning, and health/physical development (P)	2. Number and percentage of children who participate in school-linked transition/school readiness immersion programs (P)	
	Outcomes	**Performance Measures**	**Structural Measures**
Results Area: Improved Family Functioning			
Core Indicators	**L. Children are safe from intentional injuries in their homes and communities.** 1. Number and percentage of children with substantiated or confirmed (open) cases of child abuse (C) 2. Number and percentage of child maltreatment in which there is a recurrence within a 6-month period (C) 3. Number and percentage of children who have ever witnessed domestic violence (P)	**Parents receive increased parent support services.** 4. Number and percentage of parents in the county participating in parenting education classes and/or other educational opportunities focused on discipline (P) 5. Number and percentage of families in the county served by home visitation programs focused on family support and basic-needs assistance (P) 6. Average number of home visits focused on family support and basic needs assistance made to each family (P) 7. Number and percentage of home visitors with the required level of home-visitation program training (P) 8. Number of calls received by hot lines per population over a year and number of calls received by warm lines per population over a year (C) 9. Number and percentage of families in the county served by family-resource centers concerning family support (P)	10. Ratio of children 0 to 5 years of age to adults in neighborhood (C) 11. Number of family-support programs or slots in each county (C) 12. Violent crime rates (C)
	M. Fewer teenagers have babies, and more parenting teenagers delay subsequent pregnancies. 1. Number and rate of births to young teenage mothers (C) 2. Number and percentage of teenage births within 24 months of a previous birth (P)	3. Percentage of adolescents who have never engaged in sexual intercourse before age 18 years (C) 4. Number and percentage of sexually active adolescents reporting regular use of birth control (C)	

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Performance Measures	Structural Measures
Results Area: Improved Family Functioning (Concluded)			
Elective Indicators	**N. Families are self-sufficient.** 1. Number and percentage of children living in poverty (C) 2. Number and percentage of parents reporting food security (i.e., no hunger, as opposed to moderate or severe hunger) (P) 3. Number and percentage of children who move more than once in a year (P)	**Families participate in opportunities to improve their economic status and access to basic needs.** 4. Number and percentage of families who receive enhanced case management services to meet their basic needs (P) 4.1 Number and percentage of families who receive support services through family resource centers (C) 5. Number and percentage of qualified families receiving Temporary Assistance for Needy Families (TANF/CalWorks) (P) 6. Percentage of parents participating in education, training, ESOL, literacy, and/or Graduate Equivalency Diploma (GED) programs (P)	7. Median household income (C) 8. Unemployment rate (C) 9. Housing costs above 30 percent or 50 percent of average household income (C) 10. Percentage of teenagers who are mothers, under age 18 (C) 11. Percentage of mothers who are unmarried (C)
	O. Parents provide nurturing and positive emotional support to their children. 1. Number and percentage rated by self-response survey as demonstrating adequate parenting skills (P) 2. Mothers' perceptions of their social support and density of social ties (P) 3. Number and percentage of children living with parents with a history of mental problems (or current mental health problem) (P)	4. Number and percentage of mothers screened for and referred for depression (C) 5. Number and percentage of parents actually receiving treatment for depression or other mental health problems (C) 6. Number and percentage of parents actually receiving treatment for alcoholism or substance abuse (C) 7. Number and percentage of people who are aware of any support services available in their community (P)	8. Number and percentage of parents who report a sense of belonging to the neighborhood/community (P) 9. Percent of parents who are afraid to let their children play outside because of concern about crime or the children's safety (P)
	P. Children remain with their families. 1. Number and percentage of children under age 5 who have lived in foster care within the past year (C) 2. Number and percentage of children under age 5 in foster care who are placed in a permanent home (C)]		

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Structural Measures
	Results Area: Improved Service Systems	
Core Indicators	**Funded-Program Grantee Reports of Involvement in the Following System Reforms:** **Q. Increased accessibility of services/activities** 1. Increased number of providers 2. Increased number of service locations 3. Increased percentage of eligible population 4. Expanded eligibility services (e.g., removal of financial barriers by raising eligibility to 2 or 3 times poverty level) 5. Providing co-located services (e.g., multiple agencies providing services at a shared location) 6. Providing services in conveniently located places (e.g., schools) 7. Providing mobile services (e.g., mobile van) 8. Providing home-based services 9. Providing transportation to services 10. Providing activities or services at reduced prices or free of charge 11. Expanding service hours or making scheduling flexible 12. Increasing outreach and public awareness of services 13. Providing services for special-needs population(s) 14. Providing services for underserved population(s) **R. Improved service delivery** 1. Providing training and technical assistance to program staff to improve quality of services 2. Increased family focus of services (e.g., addressing the needs of multiple family members) 3. Improved facilities 4. Increased attention to prevention-focused services/activities 5. Parent/participant reports of satisfaction with content, quality, and family centeredness of services delivered 6. Increased percentage of programs which meet standards for high program quality (e.g., increased percentage of child care programs are accredited; score high on standardized measures of quality such as the ECERS) **S. Increased cultural competence** 1. Cultural diversity training for providers 2. The provision of training and technical assistance to improve knowledge, attitudes, and skills of service providers to increase their capacity to work with children with disabilities and other special needs 3. Service providers who are culturally and linguistically reflective of the community 4. The provision of print, audiovisual, and electronic materials that are culturally and linguistically appropriate for communities being served and written at appropriate literacy levels 5. The availability of adapted and specialized services and supports for children with special needs and their families 6. Data collected and reported by ethnicity, language, age, gender, geographic areas, special needs populations, or other significant subgroups	• History of collaboration among service agencies, schools, and early childhood programs • Gaps in services requiring the addition of new providers/ agencies

Exhibit 2
PROVISIONAL INDICATORS

	Outcomes	Structural Measures
Results Area: Improved Service Systems		
	T. Increased service integration 1. Providing comprehensive services (combination of health, educational, social, or emotional support services) 2. Having written agreements (MOUs) with other agencies to facilitate referrals, data sharing, or service coordination 3. Joint planning and decision-making among multiple agencies 4. Participating in service teams composed of providers from multiple agencies and disciplines 5. Increasing number of providers with interdisciplinary training 6. Seeking joint funding and/or pooling resources with other agencies 7. Using a centralized registry or database across agencies to share information on program participants 8. Advocating for policy change in collaboration with other agencies 9. Reduction in amount of time for families between the initial referral and receipt of services **U. Increased accountability for results** 1. Using a shared accountability system across agencies (e.g., using some common measures to assess results and examining findings jointly) 2. Developing new data collection tools 3. Conducting research on effective practices/integrated systems 4. Using data to inform program refinements and future program funding **V. Increased civic engagement of program participants** 1. Increasing public input (e.g., surveys, community hearings) 2. Providing policy and advocacy training to program participants 3. Increasing civic participation on policy boards 4. Increasing volunteer support of agencies/services 5. Increasing civic participation in formal and informal community associations 6. Increasing family use of peer support groups **W. Increased Sustainability of First 5-funded Programs** 1. Program has a fundraising plan for current year and at least one year into the future 2. Increase in total funding for program 3. Percentage of First 5 funds versus funds from other sources 4. Percentage of funds from long-term sources, such as local tax levies	

Exhibit 2
PROVISIONAL INDICATORS

Elective Indicators	**X. School Readiness Service System Improvements** 1. Number and of elementary schools with formal linkages to preschools, Head Start and Early Head Start programs, child care centers, home visiting programs, and community resources 2. Number and percentage of preschools with formal linkages to public and private elementary schools, child care centers, home visiting programs, and community resources.	

Diverse Groups and the Use of Indicators

The proposed indicators may not work as well or provide consistent data across cultural, economic, and other diverse groups. Groups have different histories, sociopolitical influences and relationships, forms of government and economic resources and agendas. These and numerous others factors make groups dissimilar on many contextual levels.[11] For example, indicators may under count some issues, especially for immigrants who may be less likely to report problems or crimes (e.g., domestic abuse) due to their own legal status and language barriers. Also, new immigrants without documentation may be less likely to access certain education, health, basic needs, and mental health services due to mistrust of the system or fears of being reported to government agencies or due to language barriers. Performance measures (e.g., participation rates) for programs that promote values and practices about parenting and health care that differ from those of the parents participating in those programs may be seen as inappropriate. Finally, differences in language and socialization practices between children and their teachers can affect teacher ratings of children's readiness for school.

Similarly, the proposed indicators may change over time for different reasons for specific groups. For example, birth weight can increase for good reasons like better nutrition and prenatal care or for bad reasons such as increases in maternal diabetes. Therefore, it is important not only to notice differential changes on indicators between groups, but different reasons for changes even when both groups are moving in the same direction.

To help compensate for the possibility of data quality issues with groups of diverse background, we make the following recommendations:

1. Recognize that past experiences, values, and beliefs shape the way people experience particular situations. Therefore, people with diverse backgrounds may interpret the same services, activities, and questions very differently. Providing opportunities to clarify the meaning of questions may be necessary.

2. Recognize that data quality problems may exist, and that the data may not accurately represent groups from diverse backgrounds. Whenever possible, develop other methods of confirming findings, such as interviews, conducted by cultural peers with diverse community representatives.

3. Make sure self-report questionnaires and surveys are culturally and linguistically appropriate and adapted for the literacy level of the audience. Translations should be done by native speakers/writers of each language and proofread by trained proofreaders. Questions should be culturally appropriate (i.e., make sense and be sensitive to cultural values) and asked in a culturally appropriate way (e.g., with privacy, addressing the correct family member).

4. As with services and programs, evaluation activities must be convenient (e.g., sensitive to how long activities take and address families' need, offer child care and food if done in person).

5. Be aware of some families' reluctance to share personal information due to concerns about safety or legal concerns, cultural values, and immigration status. Always give people the option to not share information if they are uncomfortable doing so. However, always record general information on who is opting out of evaluation activities to identify whether certain groups of people are underrepresented in the evaluation data.

Glossary of Terms

The defining of results, outcomes, and indicators involves developing common terminology. The following definitions describe some of the terms that are used in the discussion about defining results and indicators:

- ***Results-based accountability*** involves knowing what you want to achieve, measuring how well you are achieving it, and using that information to make adjustments for higher success rates. The goal is for systems to be driven by outcome data.

- ***Results*** (also referred to as goals) are bottom-line conditions of well-being for children, youth, families, or communities. For example, the Proposition 10 legislation specifies these results: children enter school in good health, ready and able to learn, and emotionally well developed.

- An ***indicator*** is a measure, for which data are available, that indicates, or moves with, a condition that we are interested in monitoring, such as the well-being of children and their families. Indicators measure specific aspects of results to be achieved, and as they move up and down, they reflect whether conditions are moving in the desired direction. Using indicators for a specific result helps us to know how we could recognize this condition, and whether we are making progress.

- An ***outcome*** is something that follows as a result or consequence. For example, when this term is applied to program performance, it refers to measures of how well a program is meeting its mission for its client population.

- ***Performance measures*** refer to how well a particular program or agency is working for its clients.

- ***Structural measures*** refer to conditions (e.g., availability of resources) that can affect the likelihood of being able to provide planned activities or achieve one's outcomes.

- ***Causal attribution*** refers to the ability to assert that a particular program or event was responsible for bringing about a specific a change.

- ***Monitoring tool*** refers to a way to track changes in the status of an indicator of well-being but does not tell you why that change occurred.

An Opportunity To Learn, Share, and Garner Support

First 5 California presents a historic opportunity to demonstrate to the public and others that making strategic investments into the infrastructure and services that support the development of its youngest citizens can pay off.[4] In addition, it is a unique opportunity to learn what types of investments seem to add the most value (be associated with greater improvement in well-being) for specific communities and groups. Also, it is an opportunity to improve existing strategies and programs through documenting their performance and results and using that information to refine practices and policies. Finally, it is an opportunity to set an agenda for child and family well-being by publicly monitoring the status of key conditions and community supports for children and families.

The information presented in this book can support Proposition 10 Commissions and others in selecting indicators that can inform their accountability efforts, continuous improvement of strategies and programs, and funding and policy decisions. The next step is to reach consensus on a subset of these indicators that everyone can rally around as well as learn from.

Sources

[1] Annie E. Casey Foundation. (2002). *KIDS COUNT Data Book 2002*. Baltimore, MD: Author.

[2] California children and families comission. (2000). *Results to be achieved*. Los Angeles, CA.

[3] Federal Interagency Forum on Child and Family Statistics. (1999). *America's children: Key national indicators of well-being, 1999*. Washington, DC: Author.

[4] Friedman, M. (2000). *Results accountability for Proposition 10 commissions: A planning guide for improving the well-being of young children and their families*. N. Halfon, E. Shulman, M. Shannon, and M. Hochstein (Eds.) Los Angeles, CA: UCLA Center for Healthier Children, Families and Communities.

[5] Gardner, S. (1994). *Community report cards: Making kids count*. Fullerton, CA: Center for Collaboration on Children, California State University at Fullerton.

[6] Haltry, H. P. (1999). *Performance measurement: Getting results*. Washington, DC: The Urban Institute.

[7] Hauser, R. M., Brown, B. V., & Prosser, W. (Eds.). (1997). *Indicators of childrne's well-being*. New York: Russell Sage Foundation.

[8] Institute of Medicine. (1997). *Improving health in the community: A role for performance monitoring*. Washington, DC: National Academy Press.

[9] Littman, M. (2000). Mapping youth resources from a youth perspective. *The child indicator: The child, youth, and family indicator newsletter, 2*(1), 3.

[10] McCroskey, J. (1999). *Getting to results: Data-driven decision-making for children, youth, families, and communities. A what works policy brief*. Sacramento, CA: The Foundation Consortium.

[11] Santiago-Rivera, A., Arredondo, P., & Gallardo-Cooper, M. (2002). *Counseling Latinos and la familia: A practical guide*. Thousand Oaks, Ca: Sage Publications.

[12] Schorr, L. (1995). *Tha case for shifting to results-based accountability*. Washington, DC: Center for the Study of Social Policy.

[13] Sutherland, C., McCroskey, J., & Halfon, N. (2001). The challenges of measuring the impact of Proposition 10. In N. Halfon, E. Shulman, & M. Hochstein (Eds.), *Building community systems for young children*. Los Angeles: UCLA Center for Healthier Children, Families and Communities.

[14] Wald, M., & Kirst, M. (Eds.). (1989). *The conditions of children in California*. PACE: University of California at Berkeley.

[15] Young, N., Gardner, S., & Coley, S. (1994). Getting to outcomes in integrated service delivery models. In N. Young, S. Gardner, L. Schorr, & C. Bruner (Eds.), *Making a difference: Moving to outcome-based accountability for comprehensive service reforms*. Des Moines, IA: National Center for Service Integration.

A. Children are born healthy.

1. Infant survival rate (C)

Category: Outcome measure

What is the definition of this indicator?

Infant survival rate is the complement of infant mortality rate, which is the number of infants who die between birth and their first birthday, per 1000, live births. For example, if the infant mortality rate were 20 per 1,000, the infant survival rate would be 980 per 1,000.

Why is this indicator important?

Infant mortality rate is an extremely important indicator of the health of communities. Findings about the children who do not survive attest to the importance of infant survival rates as key indicators of child well-being and the health of a community. In 1999, infant mortality rates in the United States were higher for children whose mothers began prenatal care late or had none at all, those who did not complete high school, those who were unmarried, those who smoked during pregnancy, and those who were teenagers.[4]

Infant survival rate can be improved through focused interventions. The World Health Organization (WHO) has increased infant survival rate by:
(a) identifying and implementing strategies to promote and improve home and community practices that lead to gains in neonatal health and survival, (b) making improvements in health facilities that cater to infants and young children, and (c) developing tools to assist countries in promoting improved neonatal care and healthy growth and development of infants and children within communities and health facilities.[11] Based on the success of the WHO, the Health Resources and Services Administration (HRSA) of the U.S. Public Health Service established the Healthy Start initiative to reduce infant mortality by 50 percent over 5 years.[8]

Children living in poverty are more likely to die in their first year of life. Children living in poverty are more likely to die from chronic conditions such as respiratory disorders and asthma[2,9,10] and from cancers, congenital anomalies, and heart disease.[5-7,9] They also have increased mortality rates due to acute conditions or events, such as pneumonia or influenza.[1,3] Infant survival rate is considered to be one of the best indicators of overall socioeconomic development of a community, given its association with gross national product per capita, family income, family size, mother's education, and nutrition.[5]

Infant survival rate is closely related to healthy birth outcomes. (See A2, A3, A4.) Infants born prematurely and/or with low birth weight are also more likely to die during infancy than their full-term and normal-birth-weight counterparts.[4]

Who else currently uses this indicator?

This indicator is currently being used by the World Health Organization (WHO), the United Nations, the Centers for Disease Control and Prevention, the U.S. Department of Health and Human Services, and the National Center for Health Statistics. Many states use infant mortality rates as an important indicator of child health.

What are the possible sources of data for this indicator?

This indicator can be compiled from birth records and death certificates. Data from birth records and death certificates are available from the Division of Vital Statistics, a branch of the National Center for Health Statistics at the Centers for Disease Control and Prevention (CDC). Birth records and death certificates also can be obtained by contacting local or state health departments.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Infant survival rate has clear relevance to policy-making for healthy children and can be accurately measured. Infant survival rate also is a good predictor of differences in availability, utilization, and quality of health care, particularly perinatal care.

- Sensitivity to change:

It may take a long time to detect changes in this indicator. Multiyear initiatives that have tried to reduce infant mortality by strengthening communities and their ability to address the medical, behavioral, social services, and cultural needs of women and their infants have found that it is difficult to produce decreases in infant mortality over a 5-year period.[9] This finding suggests that this indicator needs to be monitored long-term in tracking progress in the infant health domain within communities.

- Cultural issues:

Data clearly indicate that there is wide variation in infant mortality rates by the race of the mother, with the rates being highest for infants of black mothers, compared with all other racial groups.[4] This trend holds in the case of neonatal mortality rates as well as postneonatal mortality rates.

- Other:

Infant mortality rate is also collected by the age of the infant. Neonatal mortality rate is the number of deaths of infants under 28 days of age, per 1,000 live births. Postneonatal mortality rate is the number of deaths of children that occur between 28 days and 365 days after birth, per 1,000 live births.[4]

Sources

[1] Carey, V., Vimpani, G. & Taylor, R. (1993). Childhood injury mortality in New South Wales: geographical and socio-economic variations. *Journal of Pediatric Child Health, 29*, 136-140.

[2] Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin, 128*(2), 295-329.

[3] Keeling, J. W., Golding, J. & Millier, H. K. G. R. (1985). Non-natural deaths in two health districts. *Archives of Disease in Childhood, 60*, 525-529.

[4] Mathews, T. J., MacDorman, M. F., & Menacker, F. (2002). Infant mortality statistics from the 1999 period linked birth/infant death data set. In *National vital statistics reports* (Vol. 50). Hyattsville, MD: National Center for Health Statistics.

[5] Nelson, M. D. (1992). Socioeconomic status and childhood mortality in North Carolina. *American Journal of Public Health, 82*, 1131-1133.

[6] Petridou, E., Kosmidis, H., Haidas, S., Tong, D., Revinthi, K. & Flytzani, V. (1994). Survival from childhood leukemia depending on socioeconomic status in Athens. *Oncology, 51*, 391-395.

[7] Pharoah, P. O. D., & Alberman, E. D. (1990). Annual statistical review. *Archives of Disease in Childhood, 65*, 147-151.

[8] *Proven and promising programs: Healthy Start*. Retrieved June 20, 2002, from http://www.promisingpractices.net/program.asp?programid=118&benchmarkid=51

[9] Vagero, D., & Ostberg, V. (1989). Mortality among children and young persons in Sweden in relation to childhood socioeconomic group. *Journal of Epidemiology and Community Health, 43*, 280-284.

[10] Weiss, K. B., Gergen, P. J., & Wagener, D. K. (1993). Breathing better or wheezing worse? The changing epidemiology of asthma morbidity and mortality. *Annual Review of Public Health, 14*, 491-513.

[11] World Health Organization, & UNICEF. (1999). *Management of childhood illness in developing countries: Rationale for an integrated strategy* (Rev. 1). Geneva: Author.

A. Children are born healthy.

2. Number and percentage of births at low birth weight (C)

3. Number and percentage of births at very low birth weight (C)

Category: Outcome measure

What is the definition of this indicator?

The number of births at low birth weight refers to children who are born during a given time period weighing less than 2,500 grams, or 5 pounds, 8 ounces.[7] The number of births at very low birth weight refers to children who are born during a given time period weighing less than 1,500 grams, or 3 pounds, 5 ounces.[7] The percentages of births at low and very low birth weight are calculated by dividing the numbers of low- and very-low-birth-weight children born during a given time period by the number of live births during that period.

Why is this indicator important?

Low birth weight is the key determinant of neonatal death[7] and a risk factor for a variety of health and developmental problems. In particular, children born at low birth weight are at greater risk of experiencing developmental delays, congenital anomalies, hearing and vision problems, cerebral palsy, and other developmental disabilities.[5,13,19] The risks are even greater for very low birth weight infants, including serious medical conditions and extended stays in neonatal intensive care facilities.[3,4,12,14,15,24]

Low birth weight is associated with early problems in school and the need for special education services. A study of children ages 4 to 17 who were born at low birth weight found that these youth were more likely to be enrolled in special education classes, to repeat a grade, or to fail school than children who were born at a normal birth weight.[18]

Low birth weight is more common among the children of mothers who smoke during pregnancy than among those who do not.[7] This suggests that reducing the number of expectant mothers who smoke may have an effect on reducing low-weight births.

The number of babies born with low birth weights has grown over the last 10 years. In the United States, the large majority of children are born at a normal weight. However, in 2000, 7.6 percent of all babies were born weighing less than 5.5 pounds.[8] This represents an increase from 1990, when only 7 percent of all babies were born weighing less than 5.5 pounds.[11] It is important to note that this increase may represent multiple factors, including the increasing number of twin, triplet, and higher-order multiple births[16,28,29] and improvements in the medical care of babies born preterm.

Who else currently uses these indicators?

Many national efforts, states, and communities have been using these indicators to monitor children's health and, more recently, the school readiness of their children. These indicators are being tracked by several national efforts, including: *America's Children: Key National Indicators of Well-Being 2002*; Child Health USA 2001[17]; the Child Trends DataBank; KIDS COUNT and Child Trends in *The Right Start: City Trends, The Right Start for America's Newborns: A Decade of City and State Trends,* and *KIDS COUNT Data Book*[2]; the Sustainable Measures Indicators Database; the U.S. Department of Health and Human Services in *Trends in the Well-Being of America's Children & Youth 2001*[27], Vital Statistics (Department of Health and Human Services, CDC)[30], and *Zero Population Growth: Kid Friendly Cities Report Card*. In addition, Healthy People 2010 tracks this indicator.[26] Low and very low birth weight are also included as measures by the National Education Goals Panel in *Special Early Childhood Report.*[20]

Several states (including California,[6] Minnesota, New York, Rhode Island, and South Carolina) have included these indicators in their plans to track school readiness.

What are the possible sources of data for these indicators?

The National Vital Statistics System is the best source for these indicators. Birth certificate information is entered into the National Vital Statistics System, which is maintained by the National Center for Health Statistics. State or local health departments can gather this information from birth certificates. Parent surveys and interviews also can be used to collect data for these indicators.

Public use data files and survey items can be found online. For example, the 1993 National Household Education Survey (NHES) School Readiness Interview collected data on very low birth weight.[22] The 1995 NHES Early Childhood Program Participation Survey collected data on low birth weight.[21] The National Longitudinal Study of Adolescent Health (Add Health) surveys parents on their child's birth weight.[23] In addition, the Early Childhood Longitudinal Study, Kindergarten Survey (ECLS-K) includes questions on low birth weight and very low birth weight in the Fall Parent Interview.[9] The National Health Interview Survey collected data on birth weight in a parent interview.[1]

Information for the state of California is collected and maintained in "Natality Data" by Vital Statistics, Department of Health and Human Services, Centers for Disease Control and Prevention.[30] State-based data are also tracked by the California Department of Health Services in the Birth Statistical Master File.

Are there any key issues or concerns about the use of these indicators?

- Reliability/Validity:

There is strong confidence in the accuracy and reliability of weight recorded on birth certificates because of well-established data recording and reporting procedures.[25] Conversely, there may be some issues with the reliability of parental recall of birth weight.

- Sensitivity to change:

Low-birth-weight rates in the United States. have remained fairly stable over the past several decades, so the expected changes over time may be minimal.[10] It may take a long time to detect important changes in low-birth-weight rates.

- Cultural issues:

Low birth weight is especially an issue for black, non-Hispanic children. In 1998, 13 percent of black, non-Hispanic infants were born at low birth weight, compared with 7 percent of white, non-Hispanic and 6 percent of Hispanic infants.[8,20] This pattern suggests that it is critical to gather race/ethnicity-specific rates of low birth weight in monitoring communities over time.

- Other:

Focusing on percentage of low-birth-weight births in a community may obscure other communitywide health problems that data about the entire distribution of birth weights would illuminate (e.g., infants with above typical birth weights who are born to mothers with diabetes).

Sources

[1] 2000 National Health Interview Survey, Question CHS.010. http://www.cdc.gov/nchs/nhis.htm

[2] Annie E. Casey Foundation. (2002). *KIDS COUNT data book, 2002: State profiles of child well-being*. Baltimore, MD: Author.

[3] Botting, N., Powls, A., Cooke, R. W. I., & Marlow, N. (1998). Cognitive and educational outcome of very-low-birthweight children in early adolescence. *Developmental Medicine and Child Neurology, 40*, 652-660.

[4] Bregman, J. (1998). Developmental outcome in very low birthweight infants. *Pediatric Clinics of North America, 45*, 673-690.

[5] Breslau, N., Chilcoat, H., DelDotto, J., Andreski, P., & Brown, G. (1996). Low birth weight and neurocognitive status at six years of age. *Biological Psychiatry, 40*, 389-397.

[6] California Department of Health Services. (2002). *Birth Statistical Master File - CD Rom*. Retrieved July 22, 2002, from http://www.dhs.ca.gov/hisp/chs/OHIR/Catalog/CatalogWord/VitalStatistics

[7] Chandra, A. (1995). Health aspects of pregnancy and childbirth: United States, 1982-88. *Vital and Health Statistics, 23*(18).

[8] Child Trends, & KIDS COUNT. (2000). *The Right Start city trends: Conditions of babies and their families in America's largest cities (1990-1998)*. Baltimore, MD: Annie E. Casey Foundation.

[9] Early Childhood Longitudinal Study- Kindergarten Survey (Fall Parent Interview), Questions CHQ.010 and CHQ.015. http://nces.ed.gov/ecls/pdf/fallkind/interview.pdf

[10] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington, DC: Author.

[11] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[12] Hack, M., Flannery, D., Schluchter, M., Cartar, L., Borawski, E., & Klein, N. (2002). Outcomes in young adulthood for very-low-birth-weight infants. *The New England Journal of Medicine, 346*, 149-157.

[13] Hack, M., Klein, N., & Taylor, H. G. (1995). Long-term developmental outcomes of low birth weight infants. *Future Child, 5*, 176-196.

[14] Hack, M., Wilson-Costello, D., Friedman, H., Taylor, G., Schluchter, M., & Fanaroff, A. (2000). Neurodevelopment and predictors of outcomes of children with birth weights of less than 1000 g: 1992-1995. *Archives of Pediatric and Adolescent Medicine, 154*, 725-731.

[15] Koller, H., Lawson, K., Rose, S. A., Wallace, I., & McCarton, C. (1997). Patterns of cognitive development in very low birth weight children during the first six years of life. *Pediatrics, 99*, 383-389.

[16] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2002). *Births: Final data for 2000*. Hyattsville, MD: National Center for Health Statistics.

[17] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[18] McCormick, M., Gortmaker, S. L., & Sobol, A. M. (1990). Very low birthweight children: Behavior problems and school failure in a national sample. *Journal of Pediatrics, 117*(5), 687-693.

[19] Msall, M. E., Buck, G. M., Rogers, B. T., & Catanzaro, N. L. (1992). Kindergarten readiness after extreme prematurity. *American Journal of Diseases of Children, 146*, 1371-1375.

[20] National Education Goals Panel. (1997). *Special early childhood report*. Washington, DC: Author.

[21] National Household Education Survey Program Participation Survey, Question M1. http://nces.ed.gov/nhes/

[22] National Household Education Survey School Readiness Interview, Question R102. http://nces.ed.gov/nhes/

[23] National Longitudinal Study of Adolescent Health (Add Health) Parent Questionnaire, Question C19. http://www.cpc.unc.edu/projects/addhealth/codebk1.html

[24] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[25] Piper, J. M., Mitchel, E. F., Snowden, M., Hall, C., Adams, M., & Taylor, P. (1993). Validation of 1989 Tennessee birth certificates using maternal and newborn hospital records. *American Journal of Epidemiology, 137*(7), 758-768.

[26] U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (Conference edition, in two volumes). Washington, DC: Author.

[27] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth, 2001*. Washington, DC: Author.

[28] Ventura, S. J., Martin, J. A., Curtin, S. C., Mathews, T. J., & Park, M. M. (2000). Births: Final data for 1998. *National Vital Statistics Reports, 48*(3).

[29] Ventura, S. J., Martin, J. A., Curtin, S. C., Menacker, F., & Hamilton, B. E. (2001). Births: Final data for 1999. *National Vital Statistics Reports, 49*(1).

[30] Vital Statistics: Department of Health and Human Services. (2002). *Natality data, public-use data files*. Retrieved July 23, 2002, from http://www.cdc.gov/nchs/products/elec_prods/subject/natality.htm#liststate

A. Children are born healthy.

4. Number and percentage of preterm births (less than 37 weeks gestation)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of infants born early, defined as having a gestational age of less than 37 completed weeks (expected gestation is 40 weeks). The percentage of preterm births is calculated by dividing the number of infants born with a gestational age of less than 37 completed weeks by the total number of live births during a given time period.[26]

Why is this indicator important?

Preterm babies are at a heightened risk of dying or requiring neonatal intensive medical care after birth. The infant mortality rate for very preterm infants (infants with gestational ages of under 32 weeks) is nearly 68 times the rate for infants born at full term (37-41 weeks of gestation), while that for moderately preterm infants (32-36 weeks of gestation) is more than three times the rate for full-term births.[19] Being born preterm is also associated with being born at low birth weight (less than 2,500 grams, or 5.5 pounds) which places a child at risk for health and developmental problems (see indicators A1, A2, A3). Both factors place children at greater risk of experiencing developmental delays, congenital anomalies, hearing and vision problems, cerebral palsy, and other developmental disabilities.[6,14,20] The risks are even greater for very premature infants, including serious medical conditions and extended stays in neonatal intensive care facilities.[4,5,13,15,17,21]

Preterm infants who survive are more likely to be impaired neurologically and experience greater problems with school later in life.[12] Many preterm children score significantly lower than full-term children on gross motor scales during their first three years. This may be a result of delayed physical and neurological development, as well as neurological damage due to complications of pregnancy or delivery.[10,24] Longitudinal studies and literature reviews about the long-term development of preterm infants in the areas of cognition, motor skills, behavior, and language indicate that preterm children are at risk for numerous problems and developmental delays.[3] For instance, longitudinal research has found higher than expected percentages among preterm children for learning disabilities, attention deficit disorder (ADD), language impairments, mild neurological impairments, and general school concerns by grade 5.[9]

The percentage of births born preterm in the United States has risen steadily over the last two decades. The percentage of preterm births rose from 9.4 percent in 1981 and 10.6 percent in 1990 to 11.8 percent in 2000.[18]

A preterm birth is a strong indicator of lack of access to high-quality prenatal care and of poor maternal health.[7,8,22] Preterm births are associated with lack of access to high-quality preconception and prenatal health services for women of child-bearing age.[7] They also are associated with maternal health issues, such as smoking, diabetes, and drug use[16,25] (see indicators A5 and F4).

Who else currently uses this indicator?

This indicator is currently used by the U.S. Department of Health and Human Services, the National Center for Health Statistics, and the Centers for Disease Control and Prevention.

What are the possible sources of data for this indicator?

The National Vital Statistics System is the best source for this indicator. Birth certificate information is entered into the National Vital Statistics System, which is maintained by the National Center for Health Statistics. State or local health departments can gather this information from birth certificates. Parent surveys and interviews also can be used to collect data for this indicator.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Several methods are used to estimate gestational age, including maternal report based on the date of conception or based on the date the last menstrual period began, ultrasound during pregnancy, and clinical assessments of the infant based on neurological, physical, and motor signs assessed at or shortly after birth. The precision and comparability of the estimates obtained may vary according to the method used. All methods used to estimate gestational age are subject to margins of error but are considered to be reliable. Maternal report is subject to error since it relies on the accuracy of the mother's memory of the date of conception (or the date the last menstrual period began). Ultrasound measurements are also subject to margins of error and cannot be relied on for 100 percent accuracy.[11] After the infant is born, it is possible to develop clinical estimates of fetal age: there are several scales to assess an infant's stage of physical development. The infant also is weighed and measured, and those numbers are compared with average-growth charts. Even with these measurement issues, population estimates for fetal age are sufficiently accurate.

- Sensitivity to change:

The percentage of preterm births rose 9 percent from 1989-90to 1998 and 23 percent from 1981 to 1998.[26]

- Cultural issues:

There exists a strong association between preterm delivery and race. Black infants are nearly twice as likely as white infants in the United States to be born

before 37 weeks of gestation. There also is evidence that in more severe grades of preterm birth, the difference between blacks and whites is even greater.[26] It has been suggested that this difference may reflect variation in factors such as household income, education, and availability of health care services.[2]

In California, preterm births have increased from 9.8% (1990) to 10.1% (1997.) The rates among white-non-Hispanics and Hispanic/Latinos have increased, while the rates for black non-Hispanics and others have decreased.[1]

- Other:

The increased use of more accurate techniques for dating the duration of pregnancy, particularly prenatal ultrasound, may have played some role in the rise of preterm delivery statistics in the United States. In addition, in 1981, the National Center for Health Statistics adopted a different method for allocating gestational age to birth certificates with uncertain gestational ages. This method is likely to have increased the proportion of infants classified as preterm.[23]

Sources

[1] Annie E. Casey Foundation. (2002). *Kids Count, Right Start Online, Profile of California (2002)*. Retrieved July 25, 2002, from www.aecf.org

[2] Annie E. Casey Foundation. (2002). *The right start for America's newborns: A decade of city and state trends (1990-1999)*. Retrieved June 20, 2002, from http://www.aecf.org/kidscount/rightstart2002/

[3] Bacharach, V. R., & Baumeister, A. A. (1998). Direct and indirect effects of maternal intelligence, maternal age, income, and home environment on intelligence of preterm, low-birth-weight children. *Journal of Applied Developmental Psychology, 19*(3), 361-375.

[4] Botting, N., Powls, A., Cooke, R. W. I., & Marlow, N. (1998). Cognitive and educational outcome of very-low-birthweight children in early adolescence. *Developmental Medicine and Child Neurology, 40*, 652-660.

[5] Bregman, J. (1998). Developmental outcome in very low birthweight infants. *Pediatric Clinics of North America, 45*, 673-690.

[6] Breslau, N., Chilcoat, H., DelDotto, J., Andreski, P., & Brown, G. (1996). Low birth weight and neurocognitive status at six years of age. *Biological Psychiatry, 40*, 389-397.

[7] Centers for Disease Control and Prevention. (1999). Healthier mothers and babies. *Morbidity and Mortality Weekly Report, 48*(38), 849-857.

[8] Centers for Disease Control and Prevention. (2000). Early entry into prenatal care. *Morbidity and Mortality Weekly Report, 49*(18), 393-398.

[9] Cherkes-Julkowski, M. (1998). Learning disability, attention-deficit disorder, and language impairment as outcomes of prematurity: A longitudinal descriptive study. *Journal of Learning Disabilities, 31*(3), 294-306.

[10] Cutler, R., Heimer, C. B., Wortis, H., & Freedman, A. M. (1965). The effects of prenatal and neonatal complications on the development of premature children at two-and-one-half years of age. *Journal of Genetic Psychology, 107*, 261-276.

[11] Durham, J. (2002). *Calculating due dates and the impact of mistaken estimates of gestational age*. Retrieved June 23, 2002, from http://transitiontoparenthood.com/ttp/birthed/duedatespaper.htm

[12] Goldenberg, R. L., & Rouse, D. J. (1998). Prevention of premature birth. *New England Journal of Medicine, 339*(5), 313-320.

[13] Hack, M., Flannery, D., Schluchter, M., Cartar, L., Borawski, E., & Klein, N. (2002). Outcomes in young adulthood for very-low-birth-weight infants. *New England Journal of Medicine, 346*, 149-157.

[14] Hack, M., Klein, N., & Taylor, H. G. (1995). Long-term developmental outcomes of low birth weight infants. *Future Child, 5*, 176-196.

[15] Hack, M., Wilson-Costello, D., Friedman, H., Taylor, G., Schluchter, M., & Fanaroff, A. (2000). Neurodevelopment and predictors of outcomes of children with birth weights of less than 1000 g: 1992-1995. *Archives of Pediatric and Adolescent Medicine, 154*, 725-731.

[16] Hare, J. W. (1985). Pregnancy and diabetes. In A. Marble, L. P. Krall, R. F. Bradley, A. R. Christlieb & J. S. Soeldner (Eds.), *Joslin's diabetes mellitus* (pp. 698-711). Philadelphia, PA: Lea and Febiger.

[17] Koller, H., Lawson, K., Rose, S. A., Wallace, I., & McCarton, C. (1997). Patterns of cognitive development in very low birth weight children during the first six years of life. *Pediatrics, 99*, 383-389.

[18] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2002). *Births: Final data for 2000*. Hyattsville, MD: National Center for Health Statistics.

[19] Mathews, T. J., MacDorman, M. F., & Menacker, F. (2002). Infant mortality statistics from the 1999 period linked birth/infant death data set. In *National vital statistics reports* (Vol. 50). Hyattsville, MD: National Center for Health Statistics.

[20] Msall, M. E., Buck, G. M., Rogers, B. T., & Catanzaro, N. L. (1992). Kindergarten readiness after extreme prematurity. *American Journal of Diseases of Children, 146*, 1371-1375.

[21] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[22] Pagnini, D. L., & Reichman, N. E. (2000). Psychosocial factors and the timing of prenatal care among women in New Jersey's HealthStart program. *Family Planning Perspectives, 32*(2), 56-64.

[23] Paneth, N. S. (1995). The problem of low birth weight. *The Future of Children, 5*(1), 19-34.

[24] Samson, J. F., & de Groot, L. (2001). Study of a group of extremely preterm infants (25-27 weeks): How do they function at 1 year of age? *Journal of Child Neurology, 16*(11), 832-837.

[25] Schwartz, J. (1994). Low-level lead exposure and children's IQ: A meta-analysis and search for a threshold. *Environmental Resources, 65*, 42-55.

[26] Ventura, S. J., Martin, J. A., Curtin, S. C., Mathews, T. J., & Park, M. M. (2000). Births: Final data for 1998. *National Vital Statistics Reports, 48*(3).

A. Children are born healthy.

5. Number and percentage of women who had a positive screen for alcohol or drugs during delivery (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of women who have tested positively during delivery on a clinical screening tool for alcohol or drugs. Substance abuse can be detected by a number of clinical methods. These include blood tests, urine toxicology screens, self-report questionnaires, and educated guessing based on clinical experience.[8] The percentage is calculated by dividing the number of women with a positive drug screen test at delivery by the total number of women delivering a baby during a given time period.

Why is this indicator important?

Use of alcohol or drugs during pregnancy is negatively associated with child developmental and behavioral outcomes. Prenatal alcohol exposure can place the fetus at risk for a variety of negative outcomes such as smaller heads, deformed facial features, abnormal joints and limbs, poor coordination, problems with learning and short memory.[12] In addition children with fetal alcohol syndrome experience behavioral problems, mental health problems, inappropriate sexual behavior, trouble with the law, alcohol and drug problems, and difficulty caring for themselves and their children.[14] The severity and extent of the risk from prenatal alcohol exposure are difficult to predict because of the differences in dose and timing of alcohol use, individual vulnerability of both the mother and fetus, and a host of other factors.[13] Infants prenatally exposed to illicit drugs such as cocaine and heroin run the risk of being preterm and having low birth weight, may have smaller head circumferences, may be more irritable and fussy, and may exhibit delays in mental skills in toddlerhood as compared with children not exposed prenatally to such drugs.[15] Women who abuse amphetamines during pregnancy are likely to suffer from loss of appetite and may not supply enough nutrients to support the physical development of the fetus. In addition, the use of LSD by pregnant women may lead to birth defects in the baby.[3]

The use of alcohol and other drugs during pregnancy needs to be reduced. Recent national estimates from 1996 report that 5.5 percent of all pregnant women use an illicit drug during pregnancy.[9] Another national survey in 2000 found that 12 percent of women reported drinking alcohol and 4 percent were binge drinkers during pregnancy.[15]

The presence of alcohol or drug use may suggest the potential of ongoing drug use after delivery that could have negative effects on the child. Recent research indicates that developmental and behavioral outcomes once thought to be specific to drug exposure are also associated with other factors, such as the quality of the child's environment.[11] Children prenatally exposed to drugs and raised in homes with ongoing parental drug use are more likely to display problems in cognitive development when compared with prenatal-drug-exposed children raised in drug-free environments.[4,5] Maternal drug use also is associated with higher parenting stress[6] and poorer parenting attitudes,[1,17] which have been linked to poorer outcomes for children (see indicator O1).

Who else currently uses this indicator?

This indicator is currently being used by the Maternal and Child Health Bureau (U.S. Department of Health and Human Services) and National Institute on Drug Abuse (U.S. Department of Health and Human Services).

In addition, the Drug Abuse Warning Network (DAWN) is a nationally representative survey of hospitals with emergency departments conducted annually by the federal Substance Abuse and Mental Health Services Administration (SAMHSA).[10] The survey is designed to capture information about emergency department visits that are induced by or related to the use of an illegal drug or the nonmedical use of a legal drug.

What are the possible sources of data for this indicator?

These data can be derived from blood tests, urine toxicology screens, and self-report questionnaires that are administered to women after pregnancy by their health care providers. However, the reliability of this information has been questionable, as discussed below.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The ways in which this indicator is measured involve the use of clinical tools such as blood tests, urine toxicology screens, educated guessing based on clinical experience, and self-report measures.[8] However, blood tests may detect organ damage or malfunction but only identify those patients with long-term use. Early-stage substance-abusing women are rarely identified by this method.[8] Urine toxicologies are able to identify only fairly recent use of a substance (for example, cocaine may be detected for no more than 36 hours after use) and provide no information about frequency or length of use. Urine, blood, and breath tests are all unreliable indicators of alcohol use, since alcohol is metabolized quickly and is unlikely to be detected by testing body fluids.[2] Also, differences in who receives toxicology tests may produce biased or unreliable information. For example, providers may be more likely to screen or report on low-income mothers than higher-income mothers. Educated guessing based on clinical

experience may identify some users but is very reliant on the practitioner's attitudes and experiences.[1] Self-report questionnaires rely on the respondent's accuracy, which may be unreliable given the potential negative consequences (e.g., arrest or loss of guardianship) of admitting the use of illicit drugs. Therefore, there does not appear to be a reliable way to collect this information.

A more reliable indicator may be the number and percentage of babies who need to be treated for complications due to maternal alcohol and other drug use.

- Cultural issues:

Racial/ethnic differences do exist in the use of illicit drugs and alcohol during pregnancy, according to NIDA's (National Institute on Drug Abuse) National Pregnancy and Health Survey.[7] Overall, a higher percentage of black women than of white women are reported as using illicit drugs, while a higher percentage of white women are reported as using alcohol and cigarettes relative to other ethnic groups.[7] Native Americans are three times as likely as all races combined to use alcohol during pregnancy, and one and a half times as likely to use tobacco.[16] Therefore, it is important to disaggregate data by ethnic and economic groups, when possible.

Sources

[1] Ammerman, R., Kolko, D., Kirisci, L., Blackson, T., & Dawes, M. (1999). Child abuse potential in parents with histories of substance use disorder. *Child Abuse and Neglect, 23*, 1225-1238.

[2] Christmas, J., Knisley, J., Dawson, K., Dinsmoor, M., Weber, S., & Schnoll, S. (1992). Comparison of questionnaire screening and urine toxicology for detection of pregnancy complicated by substance abuse. *Obstetrics and Gynecology, 80*, 750-754.

[3] *Drugs and pregnancy: Alcohol, tobacco and other drugs.* Retrieved July 18, 2002, from http://www.medem.com/MedLB/article_detaillb.cfm?article_ID=ZZZN0X8997C&sub_cat=3

[4] Griffith, D., Azuma, S., & Chasnoff, I. (1994). Three-year outcome of children exposed prenatally to drugs. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 20-27.

[5] Hawley, T., Halle, T., Drasin, R., & Thomas, N. (1995). Children of addicted mothers: Effects of the 'crack epidemic' on the caregiving environment and the development of preschoolers. *American Journal of Orthopsychiatry, 65*, 364-379.

[6] Kelley, S. (1998). Stress and coping behaviors of substance-abusing mothers. *Journal of the Society of Pediatric Nurses, 3*(3), 103-110.

[7] Mathias, R. (1995). NIDA Survey provides first national data on drug use during pregnancy. *NIDA Notes, 10*(1), 6-7.

[8] Morse, B., Gehshan, S., & Hutchins, E. (1997). *Screening for substance abuse during pregnancy: Improving care, improving health*. Arlington, VA: National Center for Education in Maternal and Child Health.

[9] National Institute on Drug Abuse. (1996). *National pregnancy and health survey: Drug use among women delivering live births: 1992.* Rockville, MD: U.S. Department of Health and Human Services.

[10] Office of National Drug Control Policy. (2001). *Factsheet: Key findings from the 2000 DAWN report*. Retrieved July 19, 2002, from http://www.whitehousedrugpolicy.gov/news/dawn2000%5Ffactsheet.html

[11] Schuler, M. E., Nair, P., & Black, M. M. (2002). Ongoing maternal drug use, parenting attitudes, and a home intervention: Effects on mother-child interaction at 18 months. *Journal of Developmental and Behavioral Pediatrics, 23*(2), 87-94.

[12] Stratton, K., Howe, C., & Battaglia, F. (Eds.). (1996). *Fetal alcohol syndrome: Diagnosis, epidemiology, prevention, and treatment*. Washington, DC: National Academy Press.

[13] Streissguth, A. P. (1983). Alcohol and pregnancy: An overview and an update. *Substance & Alcohol Actions/Misuse, 4*(2-3), 149-173.

[14] Streissguth, A. P., & Kanter, J. (Eds.). (1997). *The challenge of fetal alcohol syndrome*. Seattle, WA: University of Washington.

[15] Substance Abuse and Mental Health Services Administration. (2001). *Summary of findings from the National Household Survey on Drug Abuse*. Rockville, MD: Office of Applied Studies, NHSDA Series H-13, DHHS Publication No. (SMA) 01-3549.

[16] Walters, K. L., & Simoni, J. M. (2002). Reconceptualizing native women's health: An 'indigenist' stress-coping model. *American Journal of Public Health, 92*(4), 520.

[17] Williams-Petersen, M., Myers, B., Degen, H., Knisley, J., Elswick, R., & Schnoll, S. (1994). Drug-using and non-using women: Potential for child abuse, child-rearing attitudes, social support, and affection for expected baby. *International Journal of Addiction, 29*, 1631-1643.

A. Children are born healthy.

6. Number and percentage of live births in which mothers received late or no prenatal care (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of live births in which mothers reported receiving prenatal care only in the third trimester of their pregnancy, or reported receiving no prenatal care. The percentage of live births in which mothers received late or no prenatal care is calculated by dividing the number of live births in which mothers received late or no prenatal care by the total number of live births during a given time period.

Why is this indicator important?

Mothers who receive late or no prenatal care are more likely to have babies with health problems. Appropriate prenatal care can address inadequate nutrition, smoking, anemia, and diabetes, all of which can affect pregnancy outcomes. Getting late or no prenatal care is associated with a greater likelihood of having babies who are born at low birth weights, who are stillborn, or who die in the first year of life.[12]

Physical health promotes academic development in children. Recently, this indicator has begun to be used to monitor school readiness.[8] Healthy children are more able to engage in the learning process.[7] Ill health and physical and developmental problems may lead to increased absenteeism, which can lead to problems adapting to school.[7]

Who else currently uses this indicator?

Many national, state, and community efforts use these indicators. This includes the Vital Statistics Data System of the National Center for Health Statistics of the Centers for Disease Control and Prevention[13] and the national studies *The Right Start: Conditions of Babies and Families.*[3,4,9] Other national efforts to track this indicator include *Child Health USA 2001*,[6] the Child Trends DataBank,[2] *Healthy People 2010*,[10] and *Trends in the Well-Being of America's Children and Youth*.[11]

California,[1] Rhode Island, and South Carolina are examples of states that collect data for this indicator.

What are the possible sources of data for this indicator?

Data can be collected from mothers. Communities can survey mothers about prenatal care at childbirth or when children enter kindergarten. Surveys should gather data from all mothers or from a representative sample.

Data may be available on birth certificates. The National Center for Health Statistics and *The Right Start* collected the data from birth certificates. The Vital Statistics Division of the Department of Health and Human Services has data available on live births and on the adequacy of care (Kessner Index), including the month that pregnancy care began and the number of months of care.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The quality of data reported by mothers regarding the receipt and timing of prenatal care is problematic. Concerned about maternal reports of prenatal care, the National Center for Health Statistics withdrew it as an indicator to monitor healthy birth outcomes over time.

- Cultural issues:

Whereas only 2.3 percent of non-Hispanic white women and 3.3 percent of Asian/Pacific Islander women receive late or no prenatal care, rates are much higher for Hispanic women (6.3 percent), non-Hispanic black women (6.7 percent), and American Indian and Alaska Native women (8.6 percent). Furthermore, there is substantial variation in the prenatal care received by subgroups of women within both the Hispanic and Asian or Pacific Islander categories. Among Hispanics, the percentage of women receiving late or no prenatal care ranges from 1.4 percent for mothers of Cuban origin to 6.9 percent for mothers of Mexican origin. Similarly, among Asian or Pacific Islander women, the percentage receiving late or no prenatal care ranges from 1.8 percent for mothers of Japanese origin to 4.2 percent for mothers of Hawaiian and part Hawaiian origin.[5]

Data on prenatal care should be disaggregated by ethnic group, when possible.

Sources

[1] California Department of Health Services. (2002). *Birth Statistical Master File - CD Rom*. Retrieved July 22, 2002, from http://www.dhs.ca.gov/hisp/chs/OHIR/Catalog/CatalogWord/VitalStatistics

[2] Child Trends. (2002). *Child Trends Databank Indicator: Late or no prenatal care*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[3] Child Trends, & KIDS COUNT. (2000). *The Right Start city trends: Conditions of babies and their families in America's largest cities (1990-1998)*. Baltimore, MD: Annie E. Casey Foundation.

[4] Child Trends, & KIDS COUNT. (2000). *The Right Start state trends: Conditions of babies and their families across the nation (1990-1998)*. Baltimore, MD: Annie E. Casey Foundation.

[5] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2002). *Births: Final data for 2000*. Hyattsville, MD: National Center for Health Statistics.

[6] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[7] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[8] *National Education Goals Panel Interactive Data Center*. (2002). Retrieved July 25, 2002, from www.negp.gov/datasystemlinks.html

[9] The Right Start: Conditions of Babies and Families Across the Nation and in America's Largest Cities, http://www.aecf.org/kidscount/rightstart2/docs/rightstart.htm

[10] U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (Conference edition, in two volumes). Washington, DC: Author.

[11] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth, 2001*. Washington, DC: Author.

[12] U.S. Public Health Service (Expert Panel on the Content of Prenatal Care). (1989). *Caring for our future: The content of prenatal care*. Washington, DC: U.S. Department of Health and Human Services.

[13] Vital Statistics: Department of Health and Human Services. (2002). *Natality data, public-use data files*. Retrieved July 23, 2002, from http://www.cdc.gov/nchs/products/elec_prods/subject/natality.htm#liststate

A. Expectant mothers have adequate prenatal care and preparation

7. Number and percentage of women who have taken a prenatal birth preparation class (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number and percentage of pregnant women who have attended a prenatal birth preparation class as part of their prenatal care. Prenatal childbirth education classes are designed to teach the expectant mother how to cope effectively with the childbirth experience through active participation, informed decision-making, and noninvasive pain management skills.[5] The percentage of women who have taken a prenatal birth preparation class can be calculated by dividing the number of pregnant women who have taken such class by the total number of women who give birth (live and stillborn) in the same period (e.g., a year).

Why is this indicator important?

Prenatal birth preparation classes are associated with positive health outcomes in women and infants. Research indicates that women who participate in prenatal birth preparation tend to experience more optimal birth outcomes.[4] Evaluations of adolescent prenatal education programs also have shown that participants in such programs are less likely to have low-birth-weight infants than nonparticipant controls.[6] Informational support in the form of prenatal classes is related to decreased maternal physical complications during labor and delivery and to improved physical and mental health postpartum.[2] Studies also have shown that interventions with prenatal-class teachers are successful at increasing the use of educational materials on issues such as preterm labor (PTL) in pregnant women.[8] Furthermore, exposure to such education earlier in pregnancy is likely to be associated with positive health outcomes for both infants and mothers. For example, research has found that home-visiting programs that address birth preparation early in a woman's pregnancy appear to be more effective at supporting healthy outcomes for both infants and their mothers than programs that occur in the later part of pregnancy.[9,10]

Who else currently uses this indicator?

This indicator has been used as part of program evaluations, as mentioned above. Also, the Division of Science, Education and Analysis in the Maternal and Child Health Bureau (U.S. Department of Health and Human Services) is using it as part of its Maternal and Child Health Model Indicators.[1]

What are the possible sources of data for this indicator?

Parent self-report is a possible source of data for this indicator. New mothers could be surveyed about whether they attended a class or training or had a home visitor who provided them with information about birth preparation.

Programs are a possible source of data. Programs or agencies providing expectant mothers and their partners with education about birth preparation could be surveyed about the numbers of new parents they served. Most programs keep this information for administrative purposes.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Parent self-report may not be reliable. Parents may forget or not consider certain activities in which they participated to be educated about birth preparation. The accuracy of program administrative data will vary. Many programs do not keep unduplicated counts of parents, so the same parents may be counted more than once if they attended multiple classes.

- Other:

Research has shown that women who do not attend child birth preparation classes are more likely to be younger (age 25 or below); to be less educated, single, and of low-income backgrounds; and lack health insurance, compared with women who do attend such classes.[3]

Prenatal birth preparation class attendance is not the only predictor of infant and maternal health. Research on the social context of prenatal behavior indicates that maternal smoking, high blood pressure, family dysfunction, and low maternal education are found to significantly increase the risk of an adverse birth outcome.[7] Therefore, this indicator needs to be taken in context with other prenatal factors when making predictions on health outcomes.

Sources

[1] Cassady, C., Farel, A., Guild, P., Kennelly, J., Peoples-Sheps, M., Potrzebowski, P., et al. (1997). *Maternal and child health model indicators*. Retrieved August 1, 2002, from http://www.mchirc.net/HTML/MDSreport.htm

[2] Covington, C., Peoples-Sheps, M., Buescher, P., Bennett, T. A., & Paul, M. V. (1998). An evaluation of an adolescent prenatal education program. *American Journal of Health Behavior, 22*(5), 323-333.

[3] Gjerdingen, D. K., Froberg, D. G., & Fontaine, P. (1991). The effects of social support on women's health during pregnancy, labor and delivery, and the postpartum period. *Family Medicine, 23*, 370-375.

[4] Gray, S. W., & Wandersman, L. P. (1980). The methodology of home-based intervention studies. Problems and promising strategies. *Child Development, 51*, 993-1009.

[5] Halpern, R. (1984). Lack of effects for home-based early intervention? Some possible explanations. *American Journal of Orthopsychiatry, 54*(1), 33-42.

[6] Homan, R. K., & Korenbrot, C. C. (1998). Explaining variation in birth outcomes of Medicaid-eligible women with variation in the adequacy of prenatal support services. *Medical Care, 36*(2), 190-201.

[7] Koehn, M. L. (1993). The psychoeducational model of prepared childbirth education. *Clinical Issues in Perinatal and Women's Health Nursing, 4*(1), 66-71.

[8] Lumley, J., & Brown, S. (1993). Attenders and nonattenders at childbirth education classes in Australia: How do they and their births differ? *Birth, 20*, 123-130.

[9] Pevalin, D. J., Wade, T. J., Brannigan, A., & Sauve, R. (2001). Beyond biology: The social context of prenatal behavior and birth outcomes. *Soz Praventivmed, 46*(4), 233-239.

[10] Sprague, A., Stewart, P., Niday, P., Nimrod, C., & Walker, R. (2002). Community education on preterm birth. Does it change practice? *Canadian Family Physician, 48*, 727-734.

A. Children are born healthy.

8. Availability of prenatal services (ratio of providers to births) (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the number of prenatal service providers in a community per 100 births (both live and stillborn) in that community in the past year.

Why is this indicator important?

Having an adequate number of prenatal care providers will aid communities in ensuring that children are born healthy. Communities must provide access to prenatal care to achieve a high infant survival rate and to reduce low and very low birth weights and preterm births, which are associated with later health problems.[1-4,6,8-10,13,14] Prenatal service providers also can play a vital role in educating expectant mothers to eliminate behaviors, such as alcohol or drug use, that are associated with negative health outcomes.[5,7,12] (See indicators A1 to A7.) Collecting these data could help communities assess whether a shortage of prenatal service providers is an issue that might be addressed in their strategic plans.

Determining the number of prenatal service providers and the number of women to whom they can provide services could be included as part of the community resource mapping activities. Identifying these resources is essential to building the capacity of the community to meet the health needs of its children and families.[11]

Sources

[1] Botting, N., Powls, A., Cooke, R. W. I., & Marlow, N. (1998). Cognitive and educational outcome of very-low-birthweight children in early adolescence. *Developmental Medicine and Child Neurology, 40*, 652-660.

[2] Bregman, J. (1998). Developmental outcome in very low birthweight infants. *Pediatric Clinics of North America, 45*, 673-690.

[3] Breslau, N., Chilcoat, H., DelDotto, J., Andreski, P., & Brown, G. (1996). Low birth weight and neurocognitive status at six years of age. *Biological Psychiatry, 40*, 389-397.

[4] Centers for Disease Control and Prevention. (1999). Healthier mothers and babies. *Morbidity and Mortality Weekly Report, 48*(38), 849-857.

[5] Day, N. L., Richardson, G. A., Geva, D., & Robles, N. (1994). Alcohol, marijuana, and tobacco: Effects of prenatal exposure on offspring growth and morphology at age six. *Alcoholism: Clinical and Experimental Research, 18*(4), 786-794.

[6] Goldenberg, R. L., & Rouse, D. J. (1998). Prevention of premature birth. *New England Journal of Medicine, 339*(5), 313-320.

[7] Griffith, D., Azuma, S., & Chasnoff, I. (1994). Three-year outcome of children exposed prenatally to drugs. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 20-27.

[8] Hack, M., Flannery, D., Schluchter, M., Cartar, L., Borawski, E., & Klein, N. (2002). Outcomes in young adulthood for very-low-birth-weight infants. *New England Journal of Medicine, 346*, 149-157.

[9] Hack, M., Wilson-Costello, D., Friedman, H., Taylor, G., Schluchter, M., & Fanaroff, A. (2000). Neurodevelopment and predictors of outcomes of children with birth weights of less than 1000 g: 1992-1995. *Archives of Pediatric and Adolescent Medicine, 154*, 725-731.

[10] Koller, H., Lawson, K., Rose, S. A., Wallace, I., & McCarton, C. (1997). Patterns of cognitive development in very low birth weight children during the first six years of life. *Pediatrics, 99*, 383-389.

[11] Kretzmann, J., & McKnight, J. (1993). *Building community from the inside out: A path toward finding and mobilizing a community's assets*. Chicago: ACTA Publications.

[12] Morse, B., Gehshan, S., & Hutchins, E. (1997). *Screening for substance abuse during pregnancy: Improving care, improving health*. Arlington, VA: National Center for Education in Maternal and Child Health.

[13] Robison, D., & Gonzalez, L. S. (1999). Children born premature: a review of linguistic and behavioral outcomes. *Infant-Toddler Intervention, 9*(4), 373-390.

[14] World Health Organization, & UNICEF. (1999). *Management of childhood illness in developing countries: Rationale for an integrated strategy* (Rev. 1). Geneva: Author.

B. Children receive preventive and ongoing regular health care.

1. **Number and percentage of children ages 19 to 35 months who receive the recommended vaccines (P)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children ages 19 to 35 months who receive the following recommended vaccines: four or more doses of diphtheria/tetanus/acellular pertussis (DTaP) vaccine; three or more doses of the polio vaccine; one or more doses of the measles, mumps, and rubella (MMR) vaccine; three or more doses of the *Haemophilus influenzae* type b vaccine (Hib); and three or more doses of the hepatitis B vaccine (HepB).[19]

The percentage of children ages 19 to 35 months who receive the recommended vaccines is calculated by dividing the number of children who have received the recommended vaccines by the total number of 19- to 35-month-old children.

Why is this indicator important?

Vaccines prevent some of the diseases that can result in long-term severe developmental disability, sensory impairments, or death. Diseases that once spread quickly and killed thousands are now controlled by vaccines. Some of the diseases that are prevented by vaccines can result in long-term severe developmental disability or sensory impairments. Therefore, by preventing diseases, vaccines can prevent disabilities such as loss of hearing and sight due to measles and loss of muscle control due to polio.[21] Furthermore, such severe diseases in children may lead to financial and psychological burdens on families.[22]

Required immunizations result in higher school attendance and better physical health among children.[22] The ill health and the physical and developmental problems that could result from the diseases these vaccines seek to control all have important implications for children's engagement in school and academic programs.[16]

Immunizations are most effective when given early in life. Vaccines are given early in life because many vaccine-preventable diseases (VPDs) are more common and more deadly among infants and small children. Because children are highly susceptible to disease, the Centers for Disease Control and Prevention (CDC) recommends vaccinating children against most VPDs by the time they are 2 years old.[5]

Childhood immunization is an important step in maintaining high vaccination levels, which prevent outbreaks of some serious diseases.[6] An individual who is immune to a disease is also unable to pass it on to someone else. In this way, vaccination protects not only the child receiving the vaccine but also those in the child's community. For this reason, most schools require that children be fully immunized when enrolling.[18]

Who else currently uses this indicator?

Many national efforts have been using this indicator to monitor children's health. The number and percentage of children ages 19 to 35 months who have received recommended vaccines is included in *Healthy People 2000*[15] and in *Healthy People 2010*.[19] *Child Health USA 2001*[13] and the Child Trends Databank track this indicator,[7] as does *America's Children: Key National Indicators of Well-Being 2002*.[9] This indicator is also tracked over time by the Health Plan Employer Data and Information Set (HEDIS) of the National Committee for Quality Assurance.[10] Kids Count[1,2] also tracks this indicator, as well as the U.S. Department of Health and Human Services.[20] The National Outcome Work Groups also recommend this indicator.

Many states have been using this indicator to monitor children's health and, more recently, the school readiness of their children. Examples of some states that collect data for this indicator are Hawaii, Minnesota, Missouri, New York, Rhode Island, South Carolina, and Vermont. Specifically, Missouri, Rhode Island, and Vermont collect data on children who are immunized; New York collects data on children who are up-to-date on immunizations at school entry; and South Carolina collects data on children under age 2 seen in public health clinics who are not fully immunized.

What are the possible sources of data for this indicator?

Data can be collected directly from parents and health providers. Data for this indicator can be collected by surveying the parents of all entering kindergartners in a community (or a representative sample of parents of entering kindergartners) or by reviewing the parent's copy of immunization records. This indicator also can be gathered through administrative data, such as health care provider records and school health records.

Estimates collected through a household telephone survey for all states and selected local areas from the National Immunization Survey are available online.[17] The Missouri School Entry Assessment Project is one example of a state program that collects this information through parent/guardian response.[14] California-specific data are collected by the University of California, Los Angeles (UCLA), Center for Health Policy Research and can be found online in the California Health Interview Survey.[3] The National Center for Health Statistics also collects data for this indicator in the National Immunization Survey.

Some counties are developing immunization registries that will collect data from local pediatricians and others involved in immunizing children. The California Statewide Immunization Information System (SIIS) is a statewide system of integrated computerized immunization registries for regions and counties in the state of California.[4]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

If data are collected by parental survey (without access to a written immunization record), parents may respond with a social desirability bias, or they may not have accurate recall of the detailed information about the specific immunizations of their children.

- Sensitivity to change:

In one program, immunization rates increased from 56 percent to 89 percent during the 15-month evaluation period.[13] In addition, the Women, Infants, and Children Program has been shown to increase rates of immunizations.[11,12]

- Cultural issues:

In 2000, the proportion of children who had received the combined series of vaccines ranged from 69 percent among American Indian and Alaska Native children to 79 percent among non-Hispanic whites, with proportions of Hispanic (73 percent), Asian/Pacific Islander (75 percent), and non-Hispanic black (71 percent) children falling in between.[8] This suggests that it may be important to monitor rates of immunizations for specific racial/ethnic groups in monitoring communities over time.

- Other:

Immunization rates of children in the United States have risen steadily over the past decade and are currently at the highest level ever recorded. For example, whereas only 2 percent of children 19 to 35 months old were fully vaccinated against *Haemophilus influenzae* type b in 1991 (when the recommendations regarding this vaccine were published), 94 percent were vaccinated in 1999. Similarly, the percentage of children vaccinated against polio increased from 53 percent in 1991 to 90 percent in 1999.[15]

The proportion of children receiving recommended vaccinations varies by poverty status. Children in families with incomes below the poverty level are less likely to get the combined series of vaccines than are those in families with incomes at or above the poverty level (71 percent versus 78 percent in 2000).[8]

Sources

[1] Annie E. Casey Foundation. (2000). *KIDS COUNT data book, 2000: State profiles of child well-being*. Baltimore, MD: Author.

[2] Annie E. Casey Foundation. (2002). *KIDS COUNT data book, 2002: State profiles of child well-being*. Baltimore, MD: Author.

[3] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/

[4] California Statewide Immunization Information System, http://www.ca-siis.org

[5] Centers for Disease Control and Prevention. (2002). *Are your child's vaccinations up to date?* Retrieved July 1, 2002, from http://www.cdc.gov/nip/recs/child-schedule.htm

[6] Centers for Disease Control and Prevention: National Immunization Program. (August 2, 2001). *Parents guide to childhood immunization*. Retrieved August 9, 2002, from http://www.cdc.gov/nip/publications/Parents-Guide/default.htm

[7] Child Trends. (2002). *Child Trends Databank Indicator: Immunization*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[8] Eberhardt, M., Ingram, D., Makuc, D., Pamuk, E., Freid, V., Harper, S., et al. (2001). *Urban and rural health chartbook: Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics.

[9] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[10] Health Plan Employer Data and Information Set, http://www.ncqa.org/Programs/HEDIS/

[11] Hoekstra, E. J., LeBaron, C. W., Megaloeconomou, Y., Guerrero, H., Byers, C., Johnson-Partlow, T., et al. (1998). Impact of a large-scale immunization initiative in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). *Journal of the American Medical Association, 280*(13), 1143-1147.

[12] Ku, L., Besharov, D. J., & Germanis, P. (1999). Debating WIC/Reply. *Public Interest, 135*, 108-117.

[13] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[14] Missouri School Entry Assessment Project: Parent/Guardian Survey, Question 7. http://www.dese.state.mo.us/divimprove/fedprog/earlychild/seap.pdf

[15] National Center for Health Statistics. (2001). *Healthy People 2000 final review*. Hyattsville, MD: Public Health Service, National Center for Health Statistics.

[16] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[17] National Immunization Survey, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5030a1.htm

[18] National Network for Immunization Information. (2000). *Communicating with parents about immunization: Common questions about school immunization laws*. Retrieved August 1, 2002, from http://www.immunizationinfo.org/PDFs/4_COMMON_FULL.pdf

[19] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health and objectives for improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[20] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth, 2001*. Washington, DC: Author.

[21] Web MD. (2002). *Should you hesitate to vaccinate?* Retrieved July 17, 2002, from http://my.webmd.com/content/article/3609.168

[22] Zaslow, M., Calkins, J., Halle, T., Zaff, J., & Margie, N. (2000). *Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies*. Washington, DC: Child Trends.

B. Children receive preventive and ongoing regular health care.

2. Number and percentage of children who receive well-baby and child checkups by age 2 (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children who have received at least four non-illness-related medical health examinations before to age 1, and at least three examinations between the first and second birthdays. The percentage of children can be calculated by dividing the number of children who have received at least the requisite number of well-baby and well-child checkups by age 2 by the total number of children 0 to 2 years of age. This definition is based on the American Academy of Pediatrics periodicity guidelines for well-baby and well-child examinations.

Why is this indicator important?

Well-baby and well-child visits have been shown to promote child health by reducing the incidence of illnesses and general health problems.[1,9] Well-baby checkups are often the vehicle for the provision of specific preventive measures: immunizations; lead, anemia, and tuberculosis screenings; dental and nutritional assessments and referrals; and health education and guidance for parents.[8] Because they are preventive in nature, well-baby exams reduce health care costs by reducing the need for treatment of avoidable illnesses.[11]

The standards established by Medicaid state that each checkup should involve a health history; a physical examination; an assessment of development, nutrition, dental status, and immunizations; vision and hearing screenings; blood work; and anticipatory guidance.[8]

Who else currently uses this indicator?

Data for this indicator have been collected as part of several California and national studies of child health. Several California counties in the Community Partnerships for Healthy Children initiative have used a similar indicator for children receiving services through Medi-Cal. The Hawaii Healthy Start evaluation used "adequate number of well-child visits" as a health indicator. It was defined as "four or more visits the first year of life and three or more visits in the second year of life." This was assessed through a parent interview question, and analysis was limited to mothers who were able to recall the number of visits.[2] The Nurse Home Visitation program collected data on the number of well-child visits during the child's first 2 years of life through a review of children's medical records.[7] These are just a few examples of states and programs that collect information on this indicator.

What are the possible sources of data for this indicator?

Parent surveys, medical records, and public databases are all sources for these data. This indicator could be measured with a questionnaire item or by review of children's medical records. In California, data for well-child checkups for children receiving services through the Child Health and Disability Prevention Program are collected as part of the CA-MMIS medical data system.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Research indicates that findings differ for different methods of data collection. For example, one study using administrative records found that 30 percent of Medicaid-eligible children received well-child exams, but when a medical record review served as the basis of measurement, 40 percent of the children were found to have received such care.[9] Other studies have identified the reliability of research tools as an obstacle to research in this area.[6,10]

One validity issue addressed by some studies is the question of the thoroughness of the examination. There is some evidence that not all the Medicaid-required components are included in each exam provided through Medicaid.[5,8]

- Sensitivity to change:

A measure of well-child checkups using the recording of a health history and an unclothed physical examination as the definition of a completed well-child exam was sensitive to statewide changes in the number of children receiving well-child care through Medicaid in Oklahoma.[6] A measure of the percentage of eligible children under age 8 who received well-child care through California's Child Health and Disability Prevention program in several communities was also found to be sensitive to change in the level of service reception in an evaluation of the Community Partnerships for Healthy Children initiative.[3]

- Cultural issues:

National data for children age 4 and under indicate that there are disparities between racial and ethnic groups in attending well-child checkups. Four percent of white non-Hispanic children did not see a physician for a well-child checkup in the preceding year, compared with 7.1 percent for black non-Hispanic children and 8.2 percent for Hispanic children.[4]

- Feasibility/burden:

If this indicator is targeted only to the Medi-Cal/CHDP population and the number of children and visits (and/or mean number of visits) is used as the indicator, the burden for data collection would be minimal, since this information is currently collected and reported by the State of California.

Data collection through the use of a questionnaire item would be low burden, but may be unreliable. Direct examination of children's health records would pose the most significant burden.

Sources

[1] Clarridge, B. R., Larson, B. J., & Newman, K. M. (1993). Reaching the children of the uninsured and underinsured in two rural Wisconsin counties: Findings from a pilot project. *The Journal of Rural Health, 9*(1), 40-49.

[2] Duggan, A. K., McFarlane, E. C., Windham, A. M., Rohde, C. A., Salkever, D. S., Fuddy, L., et al. (1999). Evaluation of Hawaii's Healthy Start program. *The Future of Children, 9*(1), 66-90.

[3] Hebbeler, K., Cherner, S., Peterson, D., & White, R. (2002). *Evaluation of the Community Partnerships for Healthy Children initiative: Outcomes, indicators, and indicator data.* Menlo Park, CA: SRI International.

[4] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[5] Meisels, S. J., & Margolis, L. H. (1988). Is the early and periodic screening, diagnosis, and treatment program effective with developmentally disabled children? *Pediatrics, 81*(2), 262-271.

[6] Millar, J. S., Mitchell, L., McCauley, D., Winston, T., & Hays, C. (2001). Early and periodic screening, diagnosis, and treatment examination completion rates for Oklahoma Medicaid managed care: 1995-1998. *Journal of the Oklahoma State Medical Association, 94*(5), 151-154.

[7] Olds, D. L., Henderson, C. R., & Kitzman, H. J. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

[8] Richardson, L. A., Selby-Harrington, M. L., Krowchuk, H. V., Cross, A. W., & Williams, D. (1994). Comprehensiveness of well child checkups for children receiving Medicaid. *Journal of Pediatric Health Care, 8*(5), 212-220.

[9] Schneider, K. M., Wiblin, R. T., Downs, K. S., & O'Donnell, B. E. (2001). Methods for evaluating the provision of well child care. *The Joint Commission Journal on Quality Improvement, 27*(12), 673-682.

[10] Selby, M. L., Riportella-Muller, R., Sorenson, J. R., Quade, D., Sappenfield, M. M., Potter, H. B., et al. (1990). Public health nursing interventions to improve the use of a health service: Using a pilot study to guide research. *Public Health Nursing, 7*(1), 3-12.

[11] Selby-Harrington, M. L., & Riportella-Muller, R. (1993). Easing the burden on public health departments: A cost-effective method for public health nurses to increase private sector participation in EPSDT programs. *Public Health Nursing, 10*(2), 114-121.

B. Children receive preventive and ongoing regular health care

3. Number and percentage of children with a regular medical home (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children ages 0 to 5 who have a doctor or health care facility that they regularly go to for sick and preventive care.

The percentage of children with a regular medical home is calculated by dividing the number of children with a regular medical home by the total population of children ages 0 to 5.

Why is this indicator important?

Having a regular provider of medical care promotes children's receipt of appropriate care when needed and receipt of preventive care. Lack of access to or use of health care services for preventive care, such as immunizations, may foster delayed diagnosis of health problems, the development of preventable conditions, or the worsening of existing conditions.[3,5]

Physical health promotes academic and social development in children. Healthy children have a better ability to focus on experiences that are crucial to engaging in the learning process.[5] Ill health and physical and developmental problems may impede social development[1] and can lead to increased absenteeism, which in turn can lead to problems adapting to and succeeding in school.[5]

Who else currently uses this indicator?

Healthy People 2010 tracks the number of people who have a specific source of ongoing care.[9] In addition, this indicator is tracked in *America's Children: Key National Indicators of Well-Being 2002.*[4]

What are the possible sources of data for this indicator?

Data can be collected directly by surveying a representative sample of parents. Standard survey items from the National Health Interview Survey (NHIS)[6] and the National Household Education Survey (NHES) can be obtained online.[7]

The California Health Interview Survey also collects data on this indicator.[2] Data also may be available in children's school health records.

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

The lack of culturally sensitive medical care has been noted as a barrier to services for older youths, ages 13 to 18,[8] indicating that the data should be disaggregated by ethnic group, when possible.

- Other:

Children from families with low socioeconomic status are less likely to have regular contact with a physician, being instead more likely to seek care in emergency rooms.[3] Therefore, medical-home data should be disaggregated by economic level, when possible.

Sources

[1] Brown, B., Kinukawa, A., Michelsen, E., Moore, A., Moore, K. A., & Sugland, B. (1999). *A century of children's health and well-being* (No. 1999-13). Washington, DC: Child Trends.

[2] California Health Interview Survey, Question CD1. http://www.healthpolicy.ucla.edu/chis/news/

[3] Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin, 128*(2), 295-329.

[4] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[5] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[6] National Health Interview Survey, http://www.cdc.gov/nchs/nhis.htm

[7] National Household Education Survey Parent Interview, Question R109. http://nces.ed.gov/nhes/

[8] Sugland, B., Wilder, K., & Chandra, A. (2000). *Reducing developmental and cultural barriers to reproductive health services for diverse youth populations: Final analyses of concept mapping data* (No. 2002-04). Washington, DC: Child Trends.

[9] U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (Conference edition, in two volumes). Washington, DC: Author.

B. Children receive preventive and ongoing regular health care.

4. Number and percentage of families served by home visitation programs that focus on postpartum and neonatal health (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of families served by programs providing home visits during the postpartum or neonatal period. The percentage is calculated by dividing the number of families served by these programs by the total number of families with newborns.

Why is this indicator important?

Home visitation programs that focus on postpartum and neonatal health can lead to positive health outcomes in children. These programs help establish a regular source of medical care for children, so they can receive the required well-baby medical visits and immunizations and so their growth and development can be monitored early in life to identify problems in need of treatment.

Home visitation programs may be particularly effective health service delivery models for low-income families. The design of home visitation programs addresses barriers to the use of medical services that these families face, such as scheduling difficulties, lack of transportation, long waiting room times, and lack of personally responsive care.[7,8]

The savings that accrue from the provision of home visiting services to low-income families exceeds the cost of these programs.[4] These savings may be related to the ability of home visiting programs to address the multiple needs of low-income families in the areas of health, family support, and education, and to their focus on prevention.[3] These savings did not accrue from the provision of services to families at higher income levels.

Home visitation programs have been shown to produce positive outcomes for young children and their families. Because home visitation is a type of service delivery model only, the content and goals of individual programs may vary markedly.[2] Thus, home visitation programs also have been shown to affect smoking during pregnancy,[2] accidental injuries,[6] incidence of child abuse,[6,8] delay of subsequent pregnancies,[5] domestic violence,[1] and adequacy of parenting skills.[1,2] Home visitation programs also have the potential to affect other outcomes for children and families, such as those in the areas of child health, child development, and family functioning. Findings regarding this indicator may therefore figure prominently in cost-benefit analyses of these programs.

Who else currently uses this indicator?

National and multisite evaluations of home visiting programs have examined the number of families served, the intensity of service, and the content of service. They have examined these performance measures of home visiting programs relative to the outcomes they achieve.[3,5,6,8]

What are the possible sources of data for this indicator?

This indicator can be collected by individual programs that provide home visiting services and that track the number of families they serve.

Are there any key issues or concerns about the use of this indicator?

- Other:

As noted above, home visitation programs tend to be more effective when targeted to low-income families. There also seems to be differences in efficacy based on the specific community served (e.g., multisite programs show benefits in one location but not in another) and the age and ethnicity of the targeted group.[3,8] In terms of service delivery, the selection of personnel who reflect the community being served can improve the program content and delivery methods.[9]

Sources

[1] Duggan, A. K., McFarlane, E. C., Windham, A. M., Rohde, C. A., Salkever, D. S., Fuddy, L., et al. (1999). Evaluation of Hawaii's Healthy Start program. *The Future of Children, 9*(1), 66-90.

[2] Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations. Analysis and recommendations. *The Future of Children, 9*(1), 4-26.

[3] Gomby, D. S., Larsen, C. S., Lewitt, E. M., & Behrman, R. E. (1993). Home visiting: Analysis and recommendations. *The Future of Children, 3*(3), 6-22.

[4] Karoly, L. A., Greenwood, P., Everingham, S. S., Houbé, J., Kilburn, R., Rydell, C. P., et al. (1998). *Investing in children: What we know and don't know about the costs and benefits of early childhood interventions*. Santa Monica, CA: RAND.

[5] Kitzman, H., Olds, D. L., Henderson, C. R., Hanks, C., Cole, R., Tatelbaum, R., et al. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing: A randomized controlled trial. *Journal of the American Medical Association, 278*, 644-652.

[6] Olds, D. L., Henderson, C. R., & Kitzman, H. J. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

[7] Riportella-Muller, R., Selby-Harrington, M. L., Richardson, L. A., Donat, P. L., Luchok, K. J., & Quade, D. (1996). Barriers to the use of preventive health care services for children. *Public Health Reports, 111*(1), 71-77.

[8] Wagner, M. M., & Clayton, S. L. (1999). The Parents as Teachers program: Results from two demonstrations. *The Future of Children, 9*(1), 91-115.

[9] Wasik, B. (1993). Staffing issues for home visiting programs. *The Future of Children, 3*(3), 140-157.

B. Children receive preventive and ongoing regular health care

5. Number and percentage of children who have health insurance (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of children 0 to 5 years of age who have all or some portion of their health expenditures paid for by a private organization or public agency. Covered expenditures typically include hospitalization, health professional fees, laboratory tests, and prescriptions. The percentage of children who have health insurance is calculated by dividing the number of children 0 to 5 years of age who have health insurance by the total population of children 0 to 5 years of age.

Why is this indicator important?

Health insurance facilitates access to health care. It is difficult for most families in America today to pay all of their children's health care costs without insurance,[9] so the lack of affordable health insurance may prevent access to adequate health care.[10] Children not covered by health insurance are less likely than those with insurance to have a regular source of health care and are more likely to have gone without needed medical care. They also are less likely to have used prescription medicines.[6] Among children without health insurance, only 70.3 percent had a regular source of medical care in 2000, compared with 96.6 percent of children with private health insurance and 95.2 percent of children with public health insurance.[5]

Health care is important for promotion of health and prevention of disease. Lack of access to health care services such as immunizations and acute care services may foster the development of preventable conditions or the worsening of existing conditions.[10]

Physical health promotes academic development. Healthy children are able to focus on experiences that are crucial to engaging in the learning process.[10] Ill health and physical problems may lead to increased absenteeism and subsequent problems adapting to school.[10]

Health insurance coverage is not universal. Although most children are covered by health insurance, many are not. When coverages by private and government health insurance are combined, 88 percent of children were covered by health insurance in the year 2000.[15] A child's chance of being covered is related to his/her family's income, family structure, race and ethnicity, and citizenship. In 2000, 96 percent of children living in families with incomes of $75,000 or more were covered by health insurance. In contrast, only 80 percent of children in families with incomes of $25,000 or less were covered by health insurance.[15] Children in single-parent families also are less likely to have health

insurance. In 2000, 80 percent of children in single-father families and 86 percent of children in single-mother families had health insurance coverage, compared with 90 percent of children in married-couple families.[15]

Who else currently uses this indicator?

Many states and organizations use this indicator to monitor children's health. *Healthy People 2010* tracks the number of people who have health insurance.[16] This indicator is also tracked by *Child Health USA 2001,*[8] the Child Trends DataBank,[3] KIDS COUNT,[1] *America's Children: Key National Indicators of Well-Being 2002*,[5] and the U.S. Department of Health and Human Services.[17] This indicator is recommended by the National Outcome Work Groups.

Every state collects information on this indicator. Hawaii collects data on this indicator. Missouri collects data on children covered by health insurance other than Medicaid. North Carolina collects data on what type of health insurance children have, if any. Rhode Island collects data on the percentage of children under 6 who do not have health insurance. These are just a few examples of states that use this indicator.

What are the possible sources of data for this indicator?

State estimates of health insurance coverage for low-income children (below 200 percent of poverty) are available online,[13] as are state estimates of health care coverage by type of coverage.[7]

Data for the state of California and some of its counties are being collected through a statewide survey. The University of California, Los Angeles, Center for Health Policy Research collects these data in the California Health Interview Survey. The survey items for this indicator being used by the California Health Interview Survey are available online.[2]

Data can be collected from administrative records. This information can be gathered from administrative records such as school health records.

Parents can be surveyed to gather this information. Parents and/or caregivers can be asked whether children are covered by any public or private health insurance program.

Standard national survey items are available online. If data will be collected through parent surveys, those collecting the data should use standard items to support the comparability of data within California and with other states. National surveys that have included this indicator include the National Longitudinal Study of Adolescent Health (Add Health),[12] and the Current Population Survey (U.S. Census Bureau)[4] and the National Health Interview Survey.[11]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Changes in insurance enrollment vary with changes in the economy, government policies, and public program outreach efforts. From 1995 to 1998, the number of Medicaid enrollees receiving cash assistance from Aid to Families with Dependent Children (AFDC) or Temporary Assistance for Needy Families (TANF) decreased by about 6 million, while the number of Medicaid enrollees who received no cash assistance increased by about 4 million, resulting in an overall decrease in Medicaid enrollment from 42 million to 40 million in that time period.[18] Following welfare reform, many families who left welfare lost Medicaid coverage, not because they were no longer eligible but because they were unaware that their eligibility continued.[18] The drop in Medicaid enrollment also has been attributed to several other factors: a rise in the prevalence of employer-sponsored health insurance among low-wage workers; a decrease in the number of families applying for assistance due to mounting obstacles to obtaining benefits; and a decrease in the number of immigrant enrollees, since those entering the United States after August 22, 1996, were barred from receiving Medicaid.[18]

Children who lost Medicaid coverage as their parents moved from welfare to work were more likely to obtain private insurance than to become uninsured. In 1998, 38 percent of children living below 200 percent of the federal poverty level were covered by either employer-sponsored or nongroup private insurance, while 26 percent remained uninsured.[18]

The State Children's Health Insurance Program (SCHIP) is part of a national effort to increase the amount of health insurance coverage for children. SCHIP has increased the number of insured children within the program from 3.3 million in 2000 to 4.6 million in 2001, an increase of 38 percent. This increase has been typical for SCHIP since its creation in 1998. California's increase of more than 200,000 insured children between 2000 and 2001 was the second largest increase among all participating states.[14]

- Cultural issues:

Rates of insurance coverage vary by race and Hispanic origin. In 2000, only 75 percent of Hispanic children had health insurance coverage, compared with 86 percent of Asian, 87 percent of black, and 93 percent of white non-Hispanic children.[15] Also, U.S. citizens, whether native born or naturalized, are more likely than noncitizens to have health insurance coverage. Among U.S. citizens in 2000, 89 percent of native-born citizens and 88 percent of naturalized citizens had health insurance, whereas only 61 percent of noncitizens had insurance.[15] When possible, data should be disaggregated by ethnic group.

- Other:

Private and government health care coverage should be analyzed separately. Private health insurance covered 71 percent of all children in 2000. Private health insurance coverage is most common among white non-Hispanic children (82 percent), children in married-couple families (79 percent), and children in families with incomes of $75,000 and over (94 percent). Private health insurance is least common among Hispanic children (45 percent), black children (55 percent), children in single-mother families (49 percent), and noncitizens (42 percent).[15]

While government health insurance covered 23 percent of all children in 2000, it is most common among black children (35 percent), Hispanic children (33 percent), children in single-mother families (44 percent), and children in families with incomes less than $25,000 (55 percent).[15] Further, although Medicaid covers only about 20 percent of the entire population of children, it covers 58 percent of poor children. Among poor children, Medicaid coverage is highest for black children (67 percent) and substantially lower for white non-Hispanics (53 percent), Hispanics (56 percent), and Asians or Pacific Islanders (56 percent).[15]

Sources

[1] Annie E. Casey Foundation. (2002). *KIDS COUNT data book, 2002: State profiles of child well-being*. Baltimore, MD: Author.

[2] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/

[3] Child Trends. (2002). *Child Trends Databank Indicator: Health care coverage*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[4] Current Population Survey, http://ferret.bls.census.gov/macro/032001/health/h08_000.htm

[5] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[6] Hadley, J. (May 2002). Chapter 6: Insurance, medical care use, and birth, child, and maternal health outcomes. In *Sicker and poorer: The consequences of being uninsured* (pp. 53-71). Menlo Park, CA: Kaiser Commission on Medicaid and the Uninsured.

[7] Kaiser Family Foundation's State Health Facts Online, http://www.statehealthfacts.kff.org/cgi-bin/healthfacts.cgi

[8] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[9] National Commission on Children. (1991). *Beyond rhetoric: A new American agenda for children and families*. Washington, DC: Author.

[10] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[11] National Health Interview Survey, http://www.cdc.gov/nchs/data/series/sr_10/sr10_203.pdf

[12] National Longitudinal Study of Adolescent Health (Add Health) Parent Questionnaire, Questions C21 and C22. http://www.cpc.unc.edu/projects/addhealth/codebk1.html

[13] State instruments of health insurance coverage for low-income children, http://www.census.gov/hhes/hlthins/lowinckid.html

[14] The State Children's Health Insurance Program. (2002). *The State Children's Health Insurance Program annual enrollment report. Federal fiscal year 2001: October 1, 2000 - September 30, 2001*. Retrieved July 26, 2002, from http://cms.hhs.gov/schip/schip01.pdf

[15] U.S. Bureau of the Census. (2001). *Current Population Survey, March supplement*. Retrieved April 3, 2002, from http://ferret.bls.census.gov/macro/032001/health/h08_000.htm and http://www.census.gov/hhes/hlthins/hlthin00/dtable11.html

[16] U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (Conference edition, in two volumes). Washington, DC: Author.

[17] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth, 2001*. Washington, DC: Author.

[18] Weil, A., & Holahan, J. F. (2002). Health insurance, welfare, and work. In A. Weil & K. Finegold (Eds.), *Welfare reform: The next act*. Washington, DC: The Urban Institute Press.

B. Children receive preventive and ongoing regular health care.

6. Number and percentage of children who participate in fully operational population-based immunization registries (C)

Category: Outcome measure

What is the definition of this indicator?

A population-based immunization registry is a confidential, computerized information system that attempts to collect vaccination data about all children within a specified geographic area.[3] This indicator monitors the number of children (0 to 5 and 5 and older) who participate in a fully operational population-based immunization registry in each geographic area. The percentage can be generated by dividing that number by the total number of children in that geographic area. Data for children under age 5 should be examined separately, if possible.

Why is this indicator important?

Immunization registries can help identify high-risk and under immunized populations. Registries provide a method of consolidating vaccination records of children from multiple providers.[2] Some registries collect demographic data on ethnicity, making it possible to identify whether certain groups of children in a community are under immunized.

Registries also can generate reminder and recall vaccination notices for children, keeping them up-to-date on their vaccination schedules. Since disease levels are lower today, parents and providers overestimate coverage, which may lead to complacency and under immunization.[2]

Children who are immunized are protected against common childhood diseases that can potentially cause disability in brain development and the learning process.[4] Immunized children also are less likely to be sick, leading to fewer school absences. Fewer school absences are related to higher academic performance. [4] (See indicator B1.)

What are the possible sources of data for this indicator?

The data from this indicator can be obtained from county records. Children are entered into a population-based immunization registry at birth, or the provider can initiate a record at the time of a child's first immunization.

Many counties with immunization registries are part of a statewide system. The California Statewide Immunization Information System (SIIS) is a statewide system of integrated computerized immunization registries for regions and counties in the state of California.[1]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Not all counties have population-based immunization registries. Also, there is not a consistent method among the state, public health agencies, and healthcare providers for assessing accurately the immunization status of children. Providers generally overestimate the number of fully immunized children, and parents are often unsure of their child's immunization status.

Sources

[1] California Statewide Immunization Information System, http://www.ca-siis.org

[2] National Immunization Program. (2001). *Frequently asked questions about immunization registries*. Retrieved July 25, 2002, from http://www.cdc.gov/nip/registry/faq-gen.htm

[3] National Immunization Program. (2002). *What are immunization registries?* Retrieved July 25, 2002, from http://www.cdc.gov/nip/registry/ir.htm

[4] Olivia, G., & McCandless, R. R. (2001). *Health indicators for California's children and youth*. San Francisco, CA: Department of Family and Community Medicine, University of California, San Francisco.

B. Children receive preventive and ongoing regular health care.

7. Availability of pediatric health services (ratio of providers to children under age 5) (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the number of pediatric health service providers per 100 children under age 5 in the community.

Why is this indicator important?

Having an adequate number of pediatric health service providers for children birth to age 5 will aid communities in ensuring that children receive preventive and ongoing regular health care. Regular pediatric health care, such as well-baby and well-child visits, promote child health by reducing the incidence of illnesses and general health problems.[3,4] Also, pediatric health service providers can help ensure that young children are properly vaccinated, reducing the risk of long-term developmental disabilities, sensory impairments, and death from disease.[1] (See indicators B1 to B3.) Collecting these data could help communities to assess whether a shortage of pediatric care providers is an issue that might be addressed in their strategic plans.

What are the possible sources of data for this indicator?

Determining the availability of pediatric health service providers to children birth to age 5 could be included as part of the community resource mapping activities. Identifying these resources is essential to building the capacity of the community to meet the health needs of its children and families.[2]

Sources

[1] Centers for Disease Control and Prevention. (2002). *Are your child's vaccinations up to date?* Retrieved July 1, 2002, from http://www.cdc.gov/nip/recs/child-schedule.htm

[2] Kretzmann, J., & McKnight, J. (1993). *Building community from the inside out: A path toward finding and mobilizing a community's assets*. Chicago: ACTA Publications.

[3] Olds, D. L., Henderson, C. R., & Kitzman, H. J. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

[4] Schneider, K. M., Wiblin, R. T., Downs, K. S., & O'Donnell, B. E. (2001). Methods for evaluating the provision of well child care. *The Joint Commission Journal on Quality Improvement, 27*(12), 673-682.

C. Children are in healthy and safe environments.

1. **Number and rate of emergency room visits by children with nonfatal unintentional injuries(C)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of emergency room visits by children 0 to 5 years of age who sustain nonfatal injuries. The rate of emergency room visits per 100 children 0 to 5 years of age with nonfatal unintentional injuries is calculated by dividing the number of emergency room visits by children with nonfatal unintentional injuries by the total population of children 0 to 5 years of age in a given time period.

Why is this indicator important?

Unintentional injuries are the leading cause of death for children and youth ages 1 to 19.[3,5,11]

Unintentional injuries are widespread but preventable. In the year 2000, 6.9 million emergency room visits were made by children ages 14 and under as the result of unintentional injuries. However, it is estimated that up to 90 percent of unintentional injuries can be prevented.[9]

Unintentional injuries can have negative effects on a child's development. Such injuries may cause impairments in cognitive and behavioral development and motor functioning, resulting in a lower quality of life for the child.[4] In contrast, children with ill health or physical or developmental problems resulting from unintentional injuries may be absent from school more often, leading to problems adapting to school.[6]

Who else currently uses this indicator?

National efforts and states use this indicator to monitor children's health.
The National SAFE KIDS Campaign collects data on this indicator, including data on common causes of injury. *Healthy People 2010* tracks the number of people (of all ages) who have emergency room visits caused by injuries.[10] The National Center for Health Statistics also tracks this indicator in the National Hospital Ambulatory Medical Care Survey.[7]

Hawaii collects data on this indicator. Rhode Island collects data on the child injury hospitalization rate for children 0 to 5 years of age. South Carolina collects data on the number of emergency room visits that are classified as injuries for children 0 to 5 years of age. Several other states also collect these data.

What are the possible sources of data for this indicator?

Data also can be collected from national- and state-level efforts. The National SAFE KIDS Campaign gathers data on this indicator, which can be accessed online.[8] The University of California, Los Angeles, Center for Health Policy Research also tracks this indicator with the California Health Interview Survey.[1]

Community-level data are available online. Data on unintentional injuries are available from the California Office of Statewide Health and Planning and Development, Patient Discharge Dataset. Data are reported by year, age, and type of injury.[2]

Data can be collected directly from health providers or parents. Administrative records, such as emergency room records, provide data for this indicator. In addition, parent surveys and interviews can be used to gather this information.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Decreasing the number of preventable child accidents can decrease the number of visits to emergency rooms for unintentional injuries. For instance, the use of appropriate safety practices for bicycle riding, such as wearing a helmet, can substantially decrease the number of unintentional injuries related to bicycle use.

- Cultural issues:

Injury rates are disproportionately high among black and Native American children, who are also more likely than children of other races and ethnicities to receive care in emergency rooms instead of from a primary care doctor.[9] Children from diverse backgrounds may visit the emergency room more frequently than others, because of lack of health insurance and/or because they may commonly use the emergency room doctor as their child's primary care doctor.[12] When possible, data should be disaggregated by racial and ethnic groups.

- Other:

At almost all ages, boys have a higher rate of injury than girls.[9]

In children age 7 and younger, growing up in a family of lower socioeconomic status is associated with higher rates of unintentional injury; this association, however, is less significant in adolescence. Researchers note that differences in the relationship between injury rates and socioeconomic status across age groups may reflect changes in the common causes of injury as children age.[3] Young children may be injured more often by incidents such as fires, which are more likely among children in families with low socioeconomic status. Older children, however, are more often injured in automobile accidents, which

predominantly affect children from families with higher socioeconomic status, who are more likely to own cars.[3]

Sources

[1] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/

[2] California Office of Statewide Health and Planning and Development, Patient Discharge Dataset, http://www.dhs.ca.gov/cdic/epic/html/injury_data.html

[3] Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin, 128*(2), 295-329.

[4] Deal, L. W., Gomby, D. S., Zippiroli, L., & Behrman, R. E. (2000). Unintentional injuries in childhood: Analysis and recommendations. *The Future of Children, 10*, 4-22.

[5] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington, DC: Author.

[6] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[7] National Hospital Ambulatory Medical Care Survey, http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm

[8] National SAFE KIDS Campaign, http://www.safekids.org/tier2_rl.cfm?folder_id=540

[9] National SAFE KIDS Campaign. (2002). *Injury facts: Childhood injury*. Retrieved June 20, 2002, from http://www.safekids.org/tier2_rl.cfm?folder_id=540

[10] U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (Conference edition, in two volumes). Washington, DC: Author.

[11] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2000). *Trends in the well-being of America's children & youth, 2000*. Washington, DC: Author.

[12] Zarcadoolas, C., Ahern, D., & Blanco, M., et al,. (September 1999). *How to evaluate information from providers: Tools for mainstream population*: DHHS/AHCPR -SBIR, contract 290-97-0002.

C. Children are in healthy and safe environments.

2. Number and percentage of children whose parents rate them to be in very good or excellent health (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number and percentage of children whose parents report them to be in very good or excellent health. The percentage is calculated by dividing the total number of children ages 0 to 5 whose parents report them to be in very good or excellent health by the total number of children ages 0 to 5.

Why is this indicator important?

Parental ratings of a child's health are closely associated with a child's observed health. In particular, children reported by their parents to be in fair to poor health tend to have significant health problems that limit their daily activities and require a significant amount of medical attention.[6,8,15] Approximately 80 percent of parents in the United States report that their children are in very good or excellent health.[4,13]

Poor health in children can lead to negative consequences in school. The National Education Goals Panel has identified children's physical well-being and health as one of the five dimensions that contribute to school readiness.[9] Whereas healthy children have a better ability to focus in school and engage in the learning process,[9] ill health and physical and developmental problems may lead to increased absenteeism and problems adapting to school.[9] Even health problems that occur at a young age may translate into problems during the school years. For example, ear infections suffered during infancy can undermine language development,[12] in turn which can adversely affect school readiness. Also, poor dental care may lead to tooth loss or dental caries, which may in turn cause impaired speech development, inability to concentrate, and absences from school.[11] Furthermore, children with a health condition that limits their activities may face special challenges in terms of self-perception and may require special accommodations in the classroom.[9] This may be especially important for children with chronic health problems.[4]

Who else currently uses this indicator?

Many national efforts use this indicator to monitor children's health and school readiness. The overall health rating indicator is tracked over time in *America's Children: Key National Indicators of Well-Being* and in the U.S. Department of Health and Human Services' report *Trends in the Well-Being of America's Children and Youth*.[14] Additionally, the National Health Interview Survey (NHIS)[10] and the National Household Education Survey, Parent Interview (NHES) collected data on this indicator.[1,2]

What are the possible sources of data for this indicator?

Data can be collected directly from adult caregivers. Communities can survey a representative sample of parents or other caregivers. Surveys should be conducted with the most knowledgeable adult caregiver of the child. Standard survey items are available online.[1,2,10]

Comparative national and historical data can be obtained from several sources. The Federal Interagency Forum on Child and Family Statistics includes this indicator in its national child well-being monitoring report, *America's Children: Key National Indicators of Well-Being*.[4] The U.S. Department of Health and Human Services uses this indicator in its publication *Trends in the Well-Being of America's Children and Youth.*[13] Both reports are available online. Data specific to California are tracked by the UCLA Center for Health Policy Research and can be found online in the California Health Interview Survey.[3] The following studies and surveys also use this indicator and can provide nationally representative samples for comparison: the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K); the National Evaluation of Welfare-to-Work Strategies (NEWWS); the National Health Interview Survey (NHIS); and the 1993 and 1995 National Household Education Survey, Parent Interviews.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Working parents may be better able to recall and report child health issues because they typically need to make alternative child care arrangements and may not be able to attend work when their child is ill. One study found that working mothers in a welfare-to-work program were less likely than nonworking mothers in the control group to rate their children, ages 5 to 7, as in very good or excellent health. The researchers noted that these findings might indeed reflect differences in the health of children of mothers in the two groups, but might also reflect a heightened salience of health issues for the working mothers whose employment was affected by their child's illness.[7]

It may be important to consider these data in conjunction with other related data. The National Education Goals Panel recommends that children's "physical well-being and health" be assessed, along with four other dimensions, when considering the school readiness of children.[9] The physical well-being and health dimension would include adequate physical/bodily growth (see indicator D2), motor development (see indicator K1), and freedom from disease and illness.

- Cultural issues:

The percentage of parents who report that their children are in excellent or very good health varies by race and ethnicity. In 2000, only 74 percent of black

parents reported that children ages 5 or younger were in very good or excellent health, compared with 86 percent of white parents.[5] When possible, data should be disaggregated by racial and ethnic groups.

- Other:

The percentage of parents who report that their children are in excellent or very good health varies by family income. In families below the poverty threshold, 68 percent of parents reported that their children ages 5 or younger were in very good or excellent health, compared with 85 percent of families above the poverty threshold.[13] When possible, data should also be disaggregated by economic level.

This indicator should be collected within specific age groupings. We suggest 0 to 5 years old to facilitate comparisons with available national data.

Sources

[1] 1993 National Household Education Survey Parent Interview, Question R106. http://nces.ed.gov/nhes/

[2] 1995 National Household Education Survey Parent Interview, Question M2. http://nces.ed.gov/nhes/

[3] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/

[4] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington, DC: Author.

[5] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[6] Krause, N. M., & Jay, G. M. (1994). What do global self-rated health items measure? *Medical Care, 32*(9), 930-942.

[7] McGroder, S., Zaslow, M., Moore, K. A., & LeMenestrel, S. M. (2000). *National evaluation of welfare-to-work strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes Study*. Washington, DC: U.S. Department of Health and Human Services, U.S. Department of Education.

[8] Montgomery, L. E., Kiely, J. L., & Pappas, G. (1996). The effects of poverty, race, and family structure on U.S. children's health: Data from the NHIS, 1978 through 1980 and 1989 through 1991. *American Journal of Public Health, 86*(10), 1401-1405.

[9] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[10] National Health Interview Survey, http://www.cdc.gov/nchs/nhis.htm

[11] Platt, L. J., & Cabezas, M. C. (2000). *Early childhood dental caries*. Los Angeles, CA: UCLA Center for Healthier Children, Families and Communities.

[12] Rvachew, S., Slawinski, E. B., Williams, M., & Green, C. L. (1999). The impact of early onset otitis media on babbling and early language development. *Journal of the Acoustical Society of America, 105*(1), 467-475.

[13] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2000). *Trends in the well-being of America's children & youth, 2000*. Washington, DC: Author.

[14] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth, 2001*. Washington, DC: Author.

[15] Zill, M. (1990). *Child health and school readiness: Background paper on a national education goal*. Washington, DC: Child Trends.

C. Children are in healthy and safe environments.

3. Number and percentage of children 0 to 5 with blood levels greater than 10 micrograms of lead per deciliter (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children 0 to 5 screened for lead who have blood lead levels greater than 10 micrograms per deciliter. The total number of children screened would provide the denominator for determining the percentage of children with elevated blood levels. Ten parts per deciliter was established as a toxic threshold for lead exposure in 1990.[5]

Why is this indicator important?

Elevated blood lead levels in the early years are associated with intellectual impairments, attention and behavioral problems, and lower achievement in school.[7,9,11] An increase in blood lead levels from 10 to 20 parts per deciliter is associated with an average drop of 2 to 3 points on intelligence measures,[9] and an increase from 10 to 30 parts is related to a drop of 4.4 to 5.3 points.[4] Blood lead levels account for about 2 percent of the total variation in children's measured intelligence.[6] Attention deficits, mild learning problems, hyperactivity, and aggressive behavior also have been related to elevated blood lead levels.[11]

It is especially important to monitor lead exposure between ages 0 and 5. The long-term effects of lead exposure are the greatest during this period because of the negative effects of lead on neurological development.[10] At the same time, blood lead levels peak during this same critical period because of the hand-to-mouth activities characteristic of this age group.[8]

Early detection and intervention may prevent long-term irreparable neurological damage and related learning and behavior problems. Because of the plasticity of the human brain, a reduction in blood lead to below threshold levels during this time of brain growth and development may allow a return to normal functioning.[2]

Children living in poverty are especially at risk for exposure to harmful levels of lead. They have higher blood lead levels than do other children because of the higher lead levels in their environment, and they are also more likely to experience adverse effects because of the interaction of lead exposure with other variables, such as overall health and nutrition.[8]

Who else currently uses this indicator?

Some states that collect data on this indicator are Connecticut, Massachusetts, New Hampshire, and Rhode Island.

Also, the federal Department of Health and Human Services collects these data. Reducing the number of children with elevated blood lead levels was one of the environmental health objectives of *Healthy People 2000*, and eliminating elevated blood lead levels in children is an objective of *Healthy People 2010*.

What are the possible sources of data for this indicator?

Data on this indicator are collected by the National Health and Nutrition Examination Survey (NHANES), the Centers for Disease Control and Prevention, and the National Center for Health Statistics (NCHS). *Healthy People 2000* and *Healthy People 2010* have used these sources to publish annual reports on this indicator.[12]

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

A disproportionately large number of black children have blood levels higher than the 10 parts per deciliter standard.[3] Therefore, to understand such differences, data on this indicator should be disaggregated by ethnic group.

- Other:

Testing is sensitive to fairly small differences in lead levels. Numerous studies have involved tracking the behavioral, developmental, and cognitive effects of changes in blood lead levels.[1]

Sources

[1] Bellinger, D., Leviton, A., & Sloman, J. (1990). Antecedents and correlates of improved cognitive performance in children exposed to low levels of lead. *Environmental Health Perspectives, 89*, 5-11.

[2] Chugani, H. T., Muller, R. A., & Chugani, D. C. (1996). Functional brain reorganization in children. *Brain Development, 18*, 347-356.

[3] Crooks, D. (1995). American children at risk: Poverty and its consequences for children's health, growth, and school achievement. *Yearbook of Physical Anthropology, 38*, 57-86.

[4] McMichael, A. J., Baghurst, P. A., Wigg, N. R., Vimpani, G. V., Roberson, E. F., & Roberts, R. J. (1988). Port Pirie cohort study: Environmental exposure of lead and children's abilities at the age of four years. *New England Journal of Medicine, 319*, 468-475.

[5] Needleman, H. L. (1990). The future challenge of lead toxicity. *Environmental Health Perspectives, 89*, 85-89.

[6] Needleman, H. L., & Gatsonsis, C. A. (1990). Low-level lead exposure and the IQ of children: A meta-analysis of modern studies. *Journal of the American Medical Association, 263*, 673-678.

[7] Needleman, H. L., Schell, A., Bellinger, D., Leviton, A., & Allred, E. (1990). The long term effects of low doses of lead in childhood: An 11-year follow-up report. *New England Journal of Medicine, 322*, 83-88.

[8] Ruff, H. A. (1999). Population-based data and the development of individual children: The case of low to moderate lead levels and intelligence. *Developmental and Behavioral Pediatrics, 20*(1), 42-49.

[9] Silva, P. A., Hughes, P., & Williams, S. (1988). Blood lead, intelligence, reading attainment and behavior in eleven year old children in Dunedin, New Zealand. *Journal of Child Psychology and Psychiatry, 29*, 43-52.

[10] Stein, J., Schettler, T., Wallinga, D., & Valenti, M. (2002). In harm's way: Toxic threats to child development. *Developmental and Behavioral Pediatrics, 43*(1), 13-22.

[11] Thomson, G. O., Raab, G. M., & Hepburn, W. S. (1996). Blood-lead levels and children's behavior: Results from the Edinburgh lead study. *Journal of Child Psychology and Psychiatry, 30*(50), 515-528.

[12] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

C. Children are in healthy and safe environments.

4. Number and percentage of new parents taking parenting skill classes focused on basic care and child safety (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number and percentage of new parents that are specifically taking parenting skill classes with a focus on basic child care and safety. The number of parents taking such a class can be calculated by totaling all new parents taking parenting skill classes focused on basic care and child safety. The percentage is calculated by dividing the total number of new parents taking parenting skill classes focused on basic care and safety by the total number of new parents during a given time period. The term "new parents" refers to parents who are expecting or have had (by birth or adoption) a child in the past year.

Why is this indicator important?

Lack of information regarding child safety by parents is a significant predictor of whether children are in healthy and safe environments. Research shows that one of the most important predictors of controllable home hazards (e.g., child access to medicines and cleaning solutions, small items that may cause choking, cords that can cause strangulation, and pools or baths without adult supervision) are informational deficits on the part of parents.[4]

Educating parents regarding child safety does help in promoting safety in children. Research has shown that educational programs for parents on the use of seat belts and child safety seats are associated with safer rides.[1] In-home parent safety training also has been found to be effective in diverse home settings at reducing hazards, such as moving dangerous chemicals out of the reach of children and installing safety appliances to cabinets, stoves, stairs, and doors.[2,7] Parents also respond well to programs that promote prevention of sexual abuse for preschool children.[10]

Parental perceptions of risk affect how they model behaviors to children. Research shows that parental risk perceptions determine their road-safety modeling behavior.[3,5,6] Parents who understand the risk of crossing a road unsafely are more likely to model safe pedestrian behavior. Similarly, parents who understand the importance of wearing seat belts are more likely to model that behavior to their children.

Who else currently uses this indicator?

This indicator has been used as part of program evaluations, as mentioned above. The National SAFE KIDS Campaign collects data, monitors progress, and highlights others' research on behavior-changing strategies associated with increasing child safety.[8]

What are the possible sources of data for this indicator?

Parent self-report can be a possible source of data for this indicator. New parents could be asked whether they attended a class or training or had a home visitor who provided them with information about basic care and safety.

Programs or agencies providing classes for new parents about basic care and safety could be surveyed about the numbers of new parents they served. Most programs keep this information for administrative purposes.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Parent self-report may not be reliable. Parents may forget or not consider certain activities in which they participated to be educated about basic care and safety for children. The accuracy of program administrative data will vary. Many programs do not keep unduplicated counts of parents, so the same parents may be counted more than once if they attended multiple classes.

- Cultural issues:

Research indicates that inner-city school children, with high proportions of black and Hispanic students from low-income families, report lower rates of parental safety behaviors, such as seat belt use, and are less often told by parents to use their seat belts.[9] This indicator should be collected by racial/ethnic and socioeconomic groups to determine the efficacy of parenting skill classes on issues like child safety across these groups.

Sources

[1] Alvarez, J. (1993). The effectiveness of legislation, education, and loaners for child safety in automobiles. *Journal of Community Psychology, 21*(4), 280-284.

[2] Culp, A., Culp, R. E., Blankemeyer, M., & Passmark, L. (1998). Parent Education Home Visitation Program: Adolescent and nonadolescent mother comparison after six months of intervention. *Infant Mental Health Journal, 19*(2), 111-123.

[3] DiLillo, D., & Tremblay, G. (2001). Maternal and child reports of behavioral compensation in response to safety equipment usage. *Journal of Pediatric Psychology, 26*(3), 175-184.

[4] Greaves, P., Glik, D. C., Kronenfeld. J. J., & Jackson, K. (1994). Determinants of controllable in-home child safety hazards. *Health Education Research, 9*(3), 307-315.

[5] Kronenfeld, J. J., Glik, D., & Jackson, K. (1991). Home fire safety and related behaviors among parents of preschoolers. *Children's Environments Quarterly, 8*(3-4), 31-40.

[6] Lam, L. T. (2001). Parental risk perceptions of childhood pedestrian road safety. *Journal of Safety Research, 32*(4), 465-478.

[7] Metchikian, K. L., Mink, J. M., Bigelow, K. M., Lutzker, J. R., & Doctor, R. M. (1999). Reducing home safety hazards in the homes of parents reported for neglect. *Child & Family Behavior Therapy, 21*(3), 23-34.

[8] National SAFE KIDS Campaign, http://www.safekids.org/tier2_rl.cfm?folder_id=184

[9] Shin, D., Hong, L., & Waldron, I. (1999). Possible causes of socioeconomic and ethnic differences in seat belt use among high school students. *Accident Analysis & Prevention, 31*(5), 485-496.

[10] Wilson, C. G., & Golub, S. (1993). Sexual abuse prevention programs for preschool children: What do parents prefer? *Psychological Reports, 73*(3), 812-814.

D. Children are healthy and well nourished.

1. Number and percentage of women who are breastfeeding at time of hospital discharge/6-week follow-up (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of women who breastfeed their infants, defined as "exclusive use of human milk or the use of human milk with a supplemental bottle of formula or cow's milk," at discharge and 6 weeks following delivery.[7] The percentage of women who are breastfeeding is calculated by dividing the number of women who are breastfeeding at each of these time points by the total number of women who have given birth.

Why is this indicator important?

Extensive research documents the health benefits of breastfeeding for infants and their mothers.[1] There is strong evidence that breastfeeding or human milk feeding decreases the incidence and/or severity of a wide range of diseases in infants (e.g., diarrhea, lower respiratory infection, and otitis media [middle ear infection]). There also is some evidence for protective effects for other conditions, such as sudden infant death syndrome, insulin-dependent diabetes mellitus, and allergic diseases. There also is evidence that there may be health benefits for mothers who breastfeed their children (e.g., decreased postpartum bleeding, improved postpartum bone remineralization, and decreased risk of some types of cancer).

Breastfeeding may be related positively to children's cognitive development.[6,11] In a review of 40 studies on the relationship between breastfeeding and cognitive development/intelligence, 68 percent of the studies found that breastfeeding had a positive relationship with intelligence (although the quality of many of the studies was not optimal).[3] Another review concluded that "after adjustment for appropriate key cofactors, breast-feeding was associated with significantly higher scores for cognitive development than was formula feeding."[2] It should be noted that mothers who decide to breastfeed their infants may also have the tendency to provide a more cognitively stimulating home environment, which would enhance the child's cognitive development. While the data on the relationship between breastfeeding and cognitive development are not conclusive, it does appear that breastfeeding has a significant potential to have a positive impact on early development.

Breastfeeding also may have positive effects on mother-infant social-emotional bonding.[4] Some support has been found for the proposition that breastfeeding may promote more positive mother-infant interactions.[4] For instance, some studies show that mothers with longer durations of breastfeeding have higher rates of interaction with their infants and are more likely to describe

their infants' temperaments as "easy," and to describe themselves as more flexible in their caregiving than do mothers who stop breastfeeding shortly after the child's birth.[10] It is also possible, however, that mothers who have more positive mother-infant interactions are more likely to continue breastfeeding. Other studies comparing breastfed and bottle-fed infants (many with small samples) show more positive touching by the breastfeeding mothers, but more fussiness in the infants.[5]

Breastfeeding provides significant social and economic benefits.[1] Since breastfed infants have significantly lower rates of various illnesses, their parents would miss less work and have more time for attending to siblings and other family responsibilities. Breastfeeding also may provide an economic benefit to families in that they do not need to purchase infant formula.

Who else currently uses this indicator?

The percentage of mothers still breastfeeding when their infants are 6 months old is included in *Healthy People 2000* and *Healthy People 2010* (Department of Health and Human Services). [7,9]

This indicator is currently used in the National Survey of Family Growth (NSFG), sponsored by U.S. Department of Health and Human Services; the Centers for Disease Control and Prevention (CDC); and the National Center for Health Statistics (NCHS). The NSFG survey can be found online.[8] This indicator also is consistently collected on women receiving services from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), as well as through the national Ross Mothers' Survey (RMS), which has been conducted by Abbot Laboratories since 1955.

What are the possible sources of data for this indicator?

Data can be collected directly from parents. Data for this indicator can be compiled by surveying mothers about their breastfeeding practices at their hospital discharge, at the baby's six week follow-up, or later contacts with the mother.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Breastfeeding rates have fluctuated over the last 50 years but may take a long time to show changes. Breastfeeding rates fell sharply between 1946 and 1956 and continued to decline until 1967, when only 25 percent of American infants were breastfed.[12] Rates have seen a steady increase since 1989.

- Cultural issues:

Breastfeeding rates differ by racial/ethnic groups. For example, whereas 67 percent of all mothers in the United States (69 percent of Hispanic and 62 percent of American Indian/Alaska Native mothers) breastfed their infants in the early postpartum period in 1999, 50 percent of African-American mothers did so.[7] However, it should be noted that rates for all three ethnic groups have increased in the past decade. Therefore it is important to examine these data by ethnic, cultural, and income-level groups, when possible.[7]

- Other:

Low-income mothers also were less likely to breastfeed, with 49 percent breastfeeding in the early postpartum period. [7]

Sources

[1] American Academy of Pediatrics Work Group on Breastfeeding. (1997). Policy statement: Breastfeeding and the use of human milk (RE9729). *Pediatrics, 100*, 1035-1039.

[2] Anderson, J. W., Johnstone, B.M., & Remely, D.T. (1999). Breast-feeding and cognitive development: A meta-analysis. *American Journal of Clinical Nutrition, 70*, 525-535.

[3] Jain, A., Concat, J., & Leventhal, J. M. (2002). How good is the evidence linking breastfeeding and intelligence? *Pediatrics, 109*, 1044-1053.

[4] Klaus, M. (1998). Mother and infant: Early emotional ties. *Pediatrics, 102*, 1144-1146.

[5] Kuzela, A. L., Stifter, C. A., & Worobey, J. (1990). Breastfeeding and mother-infant interactions. *Journal of Reproductive and Infant Psychology, 8*, 185-194.

[6] Morrow-Tlucak, M., Haude, R. H., & Ernhart, C. B. (1988). Breastfeeding and cognitive development in the first 2 years of life. *Social Science Medicine, 26*, 635-639.

[7] National Center for Health Statistics. (2001). *Healthy People 2000: Final review*. Retrieved August 9, 2002, from http://www.cdc.gov/nchs/products/pubs/pubd/hp2k/review/highlightshp2000.htm

[8] National Survey of Family Growth, ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NSFG/

[9] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[10] Vandiver, T. A. (1997). Relationship of mothers' perceptions and behaviors to the duration of breastfeeding. *Psychological Reports, 80*, 1375-1384.

[11] Wang, Y. S., & Wu, S. Y. (1996). The effect of exclusive breastfeeding on development and incidence of infection in infants. *Journal of Human Lactation, 26*, 27-30.

[12] Weimer, J. P. (2001). *The economic benefits of breastfeeding: A review and analysis. Food Assistance and Nutrition Research Report No. 13.* Retrieved 2002, August 9, from http://ers.usda.gov/publications/fanrr13/fanrr13.pdf

D. Children are healthy and well nourished.

2. Number and percentage of children 0 to 5 years of age who are in the expected range of weight for their height and age (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to children who are between the 5th and 95th percentiles of weight for their height and age. Growth charts showing the expected height and weight ranges for children of all ages are available from the Centers for Disease Control and Prevention and can be found online.[2] The percentage of children 0 to 5 years of age who are in the expected range of weight for their height and age is calculated by dividing the number of children 0 to 5 years of age who are in the expected range of weight for their height and age by the total population of children 0 to 5 years of age.

Why is this indicator important?

Childhood obesity has nearly tripled in the past three decades. Childhood obesity has become increasingly problematic in recent years, with the percentage of children ages 6 to 11 who are overweight almost tripling between 1963 (5.0 percent in 1963-1965) and 1994 (13.6 percent in 1988-1994).[15]

Obesity is associated with many negative health consequences. Obesity can be caused by many factors, including genetics, metabolism, and behavior. There is no single cutoff above which obesity becomes associated with health risks. Instead, the prevalence of health risks increases as an individual's weight increases.[14] Children who are overweight are at an increased risk of developing type 2 diabetes, cardiovascular problems, orthopedic abnormalities, gout, arthritis, and skin problems. In addition, being overweight has been linked to the premature onset of puberty.[6] Therefore, maintenance of a healthy weight is an important factor in improving child health.

A child who is underweight also may suffer many negative health consequences. A child may be underweight because of chronic illness, severe malnutrition, or a severe impairment in the early caregiver-infant relationship.[3] Impairment in the caregiver-child relationship may be caused by abuse or neglect of the child. It also may be related to prenatal factors, such as inadequate maternal weight gain during pregnancy[3,14] or excessive maternal exposure to environmental noise during pregnancy.[11]

Being overweight also is likely to negatively affect children's social and psychological development. Children who are obese may experience psychological stress due to being treated differently by peers. These factors may lead to difficulties in adapting to the school environment.[9] In addition, growth

problems may be linked with chronic health problems that may hinder school attendance.[9]

Who else currently uses this indicator?

Many national efforts have been using this indicator to monitor children's health and, more recently, the school readiness of children. The U.S. Department of Health and Human Services collects data on this indicator at a national level. This information can be found in *Healthy People 2010* and is available online.[7]

What are the possible sources of data for this indicator?

Data can be collected from records or by direct assessment. Parents may not be able to provide accurate answers on their child's height and weight, but communities can use health records to gather this information. Administrative data, such as health care provider records and school health records, often contain such information. In addition, a community could directly assess children on their height and weight and use standard growth charts to assess whether the children are in the expected weight range for their height and age.

Standard survey items are available online. The National Health and Nutrition Examination Survey (NHANES) of the National Center for Health Statistics at the Centers for Disease Control and Prevention collects data relating to this indicator. This survey can be found online.[10] The Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), collected information on the height and weight of children using direct assessment by a trained assessor. These data can be ordered online.[4] The National Outcome Work Groups also recommend this indicator.

The California Health Interview Survey also has questions asking for the height, weight, and age of children.[1] These numbers can be compared with standard growth charts to assess whether children are in the expected weight range for their height and age.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

For children who are underweight, weight gain may be accomplished by a number of means. Treatment methods are usually successful in terms of the child's gaining weight, (although the underlying cause of the child's low weight must be determined and corrected as well).[8]

Research has shown that programs designed to educate children about proper nutrition are more effective for preschool-age children than for school-age children.[14] Through the combination of a properly balanced diet and physical

activity, obese children can achieve weight loss while maintaining healthy growth.[14]

- Cultural issues:

Some racial and ethnic subgroup differences exist among children ages 6 to 11 who are overweight. Among non-Hispanic blacks, girls (17.1 percent) are about five percentage points more likely to be overweight than boys (12.3 percent). In contrast, for both Mexicans[1] and non-Hispanic whites, boys show slightly higher rates of obesity (17.7 percent for Mexicans and 10.9 percent for non-Hispanic whites) than girls (15.3 percent for Mexicans and 9.8 percent for non-Hispanic whites). In the same age group, there also are differences according to race and ethnicity. Among girls, non-Hispanic whites (9.8 percent) are the least likely to be overweight and non-Hispanic blacks (17.1 percent) the most likely, with Mexican girls (15.3 percent) falling in between. Among boys, Mexicans (17.7 percent) are the most likely to be overweight. Non-Hispanic white boys (10.9 percent) are the least likely to be overweight.[5] In addition, nationally, Native American children have a disproportionately greater likelihood of being overweight.[12]

In California, disproportionate numbers of African-American, Hispanic/Latino, and Asian children are likely to be overweight or at risk for being overweight.[13]

In the first year of life, the prevalence of children who are underweight is much higher for low-income black children (15 percent) than for low-income non-Hispanic white (10 percent), low-income Asian or Pacific Islander (9 percent), or low-income Hispanic (7 percent) children.[14]

- Other:

Among children ages 6 to 11, boys (11.8 percent) and girls (11.0 percent) are almost equally likely to be overweight.

[1] "Mexican" refers to a subset of the Hispanic population.

Sources

[1] California Health Interview Survey, Question CA3-CA5. http://www.healthpolicy.ucla.edu/chis/news/

[2] Centers for Disease Control and Prevention Growth Charts, http://www.cdc.gov/growthcharts/

[3] Dawson, P. (1992). Should the field of early child and family intervention address failure to thrive? *Zero to Three, 12*(5), 20-24.

[4] Early Childhood Longitudinal Study- Kindergarten Class of 1998-99, http://nces.ed.gov/ecls/kindergarten/data.asp

[5] Eberhardt, M., Ingram, D., Makuc, D., Pamuk, E., Freid, V., Harper, S., et al. (2001). *Urban and rural health chartbook: Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics.

[6] Gidding, S., Leibel, R., Daniels, S., Rosenbaum, M., Van Horn, L., & Marx, G. (1996). Understanding obesity in youth: A statement for healthcare professionals from the Committee on Atheroschlerosis and Hypertension in the Young of the Council on Cardiovascular Disease in the Young and the Nutrition Committee, American Heart Association. *Circulation, 94*(12), 3383-3387.

[7] Healthy People 2010, http://www.health.gov/healthypeople/publications/

[8] KidsHealth for Parents. (2001). *Failure to thrive*. Retrieved July 15, 2002, from www.childrenshealth.org

[9] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[10] National Health and Nutrition Examination Survey, Questions WHQ.010, WHQ.020, and WHQ.080. http://www.cdc.gov/nchs/nhanes.htm

[11] Passchier-Vermeer, W. (2000). *Noise and health of children*. Leiden, Netherlands: Netherlands Organization for Applied Scientific Research.

[12] Saltmarsh, N. R., & Kohn, C. (2001). Native American children aware of weight status, trying to change it. *Obesity, Fitness, & Wellness Week*, 7-8.

[13] The California Endowment. (1999). *The California Children's Healthy Eating and Excercises Practices Survey (CalCHEEPS)*. Retrieved August 8, 2002, from http://csmp.ucop.edu/cpehp/downloads/calcheeps.pdf

[14] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health and objectives for improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[15] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2000). *Trends in the well-being of America's children & youth, 2000*. Washington, DC: Author.

D. Children are healthy and well nourished.

3. Number and percentage of women who participate in breastfeeding support programs (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of women who take part in any type of breastfeeding support program or activity during a given time period. The percentage of women who participate in breastfeeding support programs is calculated by dividing the number of women who participate in such programs during a given time period by the total number of women who had live births during that period.

Why is this indicator important?

Although extensive research shows that breastfeeding has significant benefits to infants, mothers, and society at large, breastfeeding rates remain moderately low.[1,13] In the United States, breastfeeding rates fall far below the Healthy People 2010 goals of at least 75 percent of women initiating breastfeeding and at least 50 percent breastfeeding until their infants are 6 months old.[9] (See indicator D1 for benefits of breastfeeding for infants and mothers.)

Participation in activities that support breastfeeding can increase rates and duration of breastfeeding. One study found that the more WIC breastfeeding support activities mothers participated in, the longer they breastfed their infants.[3] Another study found that women who received advice on breastfeeding prenatally and those who received breastfeeding assistance postpartum were more likely to breastfeed.[4] In addition, peer counseling increased rates of breastfeeding among WIC participants, particularly when coupled with support from lactation specialists and consultants.[5]

Physicians can have a significant impact on a woman's choice of whether or not to breastfeed but often are lacking information on why and how to support breastfeeding.[6] Studies have found that physicians' support of breastfeeding mothers can improve breastfeeding rates among American women of all social and ethnic backgrounds.[7] However, a survey of pediatricians' knowledge and attitudes toward breastfeeding found that "pediatricians have significant educational needs in the area of breastfeeding management."[10] Giving physicians such information and making them aware of breastfeeding support programs in their areas can help them support women in making well-informed choices about feeding their infants.

Programs that promote and encourage breastfeeding are international. One step taken to promote breastfeeding worldwide is the Baby Friendly Hospital

Initiative, an international program of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). WHO/UNICEF have identified *Ten Steps to Successful Breastfeeding* that hospitals and birthing centers can take to increase breastfeeding rates of new mothers. Hospitals and birth centers that follow these steps are recognized by the Initiative as "baby friendly hospitals." Currently, 33 U.S. hospitals have received the "baby friendly" designation, 6 of which are in California.[2]

Who else currently uses this indicator?

This indicator is currently used in several small-scale studies.

What are the possible sources of data for this indicator?

This indicator can be compiled by surveying a sample of mothers and asking them whether they received support services concerning breastfeeding. Another option would be to ask a sample of breastfeeding support programs to report on the number of mothers they serve during a given time period.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

This performance measure may be difficult to collect reliably for an entire community. It may be easier to see whether specific programs/hospitals are able to provide breastfeeding support services to larger numbers of mothers. An alternative indicator could be the number of breastfeeding support programs in a community divided by the number of live births during a given time period.

- Sensitivity to change:

With the recent national emphasis placed on the importance of breastfeeding, it is likely that more and more support programs will be available to and accessed by mothers.

- Cultural issues:

Outreach to and participation in breastfeeding support programs are likely to differ by ethnic and cultural groups and by income level. Southeast Asian mothers have the lowest rate of breastfeeding among mothers of all ethnic groups in California. Thirty-six percent of Southeast Asian mothers breastfeed in the hospital, and they supplement with artificial baby milk, whereas 80 percent of Latino women prefer breastfeeding their babies.[8,11,12] To understand who has access to and who uses these support services, data should be disaggregated, when possible.

- Feasibility/burden:

Who receives breastfeeding support services through agencies/hospitals is probably already being monitored. Gaining access to and compiling this information across numerous agencies could present a burden.

Sources

[1] American Academy of Pediatrics Work Group on Breastfeeding. (1997). Policy statement: Breastfeeding and the use of human milk (RE9729). *Pediatrics, 100*, 1035-1039.

[2] *The Baby Friendly Hospital Initiative- USA*. Retrieved August 9, 2002, from http://www.babyfriendly.us/

[3] Baydar, N., McCann, M., Williams, R., Vesper, E., & McKinney, P. (1997). *WIC infant feeding practices study: Summary of findings*. Retrieved August 9, 2002, from http://www.fns.usda.gov/oane/menu/published/wic/files/infant/ifps.htm

[4] Deshpande, A. D., & Gazmararian, J. A. (2000). Breast-feeding education and support: Association with the decision to breast-feed. *Effective Clinical Practice, 3*, 116-122.

[5] Grummer-Strawn, L. M., Rice, S. P., Dugas, K., Clark, L. D., & Benton-Davis, S. (1997). An evaluation of breastfeeding promotion through peer counseling in Mississippi WIC clinics. *Maternal and Child Health Journal, 1*, 35-42.

[6] Kistin, N., Benton, D., Rao, S., & Sullivan, M. (1990). Breast-feeding rates among black urban low-income women: Effect of prenatal education. *Pediatrics, 86*, 741-746.

[7] Lu, M., Lange, L., Slusser, W., Hamilton, J., & Halfon, N. (2001). Provider encouragement of breastfeeding: Evidence from a national survey. *Obstetrics and Gynecology, 97*, 290-295.

[8] Lytel, L., Dixon, L., Cunningham-Sabo, L., Evans, M., Gittelsohn, J., Hurley, J., et al. (2002). Dietary intakes of Native American children: Findings from the Pathways feasibility study. *Journal of the American Dietetic Association, 102*, 555.

[9] National Center for Health Statistics. (2001). *Healthy People 2000: Final review*. Retrieved August 9, 2002, from http://www.cdc.gov/nchs/products/pubs/pubd/hp2k/review/highlightshp2000.htm

[10] Schanler, R. J., O'Connor, K. G., & Lawrence, R. A. (1999). Pediatricians' practices and attitudes regarding breastfeeding promotion. *Pediatrics, 103*, E35.

[11] Story, M., Strauss, K., Zephier, E., & Broussard, B. (1998). Nutritional concerns in American Indian and Alaska Native children: Transitions and future directions. *Journal of the American Dietetic Association, 98*, 170.

[12] The California Endowment.*The California Children's Healthy Eating and Exercise Practices Survey*. Retrieved July 28, 2002, from http://csmp.ucop.edu/cpehp/downloads/calcheeps.pdf

[13] U.S. Department of Health and Human Services Office on Women's Health. (2000). *HHS blueprint for action on breastfeeding*. Retrieved August 9, 2002, from http://www.4woman.gov/Breastfeeding/bluprntbk2.pdf

D. Children are healthy and well nourished.

4. Number and percentage of qualified families receiving WIC (C)

Category: Performance measure

What is the definition of this indicator?

The indicator refers to the number of families who have met the criteria for and are currently receiving assistance through the Special Supplemental Nutrition Program for Women, Infants, and Children, otherwise known as WIC. The percentage of qualified families receiving WIC is calculated by dividing the number of qualified families receiving WIC services by the total number of families eligible for WIC services in the same geographical area. Data for families with children under age 5 should be examined separately from data for other families, if possible.

Why is this indicator important?

WIC provides children with the nourishment needed for good health and physical growth. The WIC program "provides free, nutritious, supplemental foods, nutrition education, and health care referrals to low-income, pregnant, postpartum, and breast-feeding women, and to low-income infants and children under the age of 5 who are judged at nutritional risk by professionals."[6] Children who are well nourished typically have better health and physical growth (see indicators D2, N2).

Participation in WIC increases the chance that poor children will be healthy and well nourished during the critical early years of growth and development. Studies have shown that participation in WIC results in significant benefits to women and children. For example, prenatal participation in WIC has improved birth outcomes (e.g., increased birth weights, decreased number of small-for-gestational-age deliveries, and decreased infant mortality).[1-3,5,7,9] The program has been shown to decrease the prevalence of iron deficiency anemia in infants and children and to increase the intake of certain key nutrients in children between 1 and 4 years of age (e.g., iron and zinc).[4,8] WIC use has resulted in improved rates of childhood immunization and of having a regular source of health care.[9] Participation in WIC also has been associated with improved cognitive development. For example, children who received WIC benefits were found to have better vocabularies and better digit memory than comparable children who were not participating in WIC.[9]

Who else currently uses this indicator?

The U.S. Department of Agriculture (USDA), the government body that oversees the WIC program, currently uses this indicator.

What are the possible sources of data for this indicator?

WIC state agencies are required to report biennially on the characteristics of the WIC program and its participants under their jurisdiction.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Estimating how many families and children qualify for WIC will not be completely accurate. However, such estimates can be produced consistently across years, allowing for relative comparisons of program use over time.

- Sensitivity to change:

Participation in WIC has fluctuated over the past few years. Participation increased steadily from the program's inception in 1972 until 1998. The number of WIC participants decreased in 1998, 1999, and 2000. Participation increased in 2001 but is still lower than in 1997.[10]

- Cultural issues:

Over the past decade, the racial/ethnic composition of WIC participants has changed. Although people who are white non-Hispanic still make up the largest percentage of WIC participants, the percentage of people of Hispanic descent using WIC services has increased (in 1988, people of Hispanic descent made up 21 percent of the WIC caseload; in 1998, this group made up 32 percent of the caseload).[11,12] During this period, the percentages of white non-Hispanic and black non-Hispanic WIC participants decreased.[11]

Sources

[1] Ahluwalia, I. B., Hogan, V. K., Grummer-Strawn, L., Colville, W. R., & Peterson, A. (1998). The effect of WIC participation on small-for-gestational-age births: Michigan, 1992. *American Journal of Public Health, 88*, 1374-1377.

[2] Brown, H. L., Watkins, K., & Hiett, A. K. (1996). The impact of the Women, Infants and Children Food Supplement Program on birth outcome. *American Journal of Obstetrics and Gynecology, 174*, 1279-1283.

[3] Devaney, B., Bilheimer, L., & Schore, J. (1992). Medicaid costs and birth outcomes: The effects of prenatal WIC participation and the use of prenatal care. *Journal of Policy Analysis and Management, 11*, 573-592.

[4] Devaney, B. L., Ellwood, M. R., & Love, J. M. (1997). Programs that mitigate the effects of poverty on children. *The Future of Children, 7*, 88-112.

[5] Kowaleski-Jones, L., & Duncan, G. J. (2002). Effects of participation in the WIC program on birthweight: Evidence from the National Longitudinal Survey of Youth. Special Supplemental Nutrition Program for Women, Infants, and Children. *American Journal of Public Health, 92*, 799-804.

[6] Kramer-LeBlanc, C. S., Mardis, A., Gerrior, S., & Gaston, N. (1999). *Review of the nutritional status of WIC participants: Final report*. Washington, DC: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

[7] Moss, N., & Carver, K. (1998). The effect of WIC and Medicaid on infant mortality in the United States. *American Journal of Public Health, 88*, 1354-1361.

[8] Rose, D., Habicht, J. P., & Devaney, B. (1998). Household participation in the Food Stamp and WIC programs increases the nutrient intakes of preschool children. *Journal of Nutrition, 128*, 548-555.

[9] Rush, D., Sloan, N. L., Leighton, J., Alvir, J. M., Horvitz, D. G., Seaver, W. B., et al. (1988). The National WIC Evaluation: Evaluation of the Special Supplemental Food Program for Women, Infants, and Children. V. Longitudinal study of pregnant women. *American Journal of Clinical Nutrition, 48*, 439-483.

[10] U.S. Department of Agriculture. Retrieved July 25, 2002, from http://www.fns.usda.gov/pd/wisummary.htm

[11] U.S. Department of Agriculture. (2000). *WIC participant and program characteristics 1998* (No. WIC-00-PC). Alexandria, VA: Author, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation.

[12] U.S. Department of Agriculture. (2001). *National survey of WIC participants: 2001 final report*. Alexandria, VA: Author, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation.

D. Children are healthy and well nourished.

5. Number and percentage of qualified families receiving Food Stamps (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of families who have met the criteria for and are currently receiving assistance from the U.S. Department of Agriculture's (USDA) Food Stamp Program. The percentage of qualified families receiving Food Stamps is calculated by dividing the number of qualified families receiving Food Stamps by the total number of families eligible for Food Stamps in the same geographic area. Data for families with children under age 5 should be examined separately from data for other families, if possible.

Why is this indicator important?

The Food Stamp Program (FSP) helps to ensure that children are well nourished. The FSP provides low-income families and individuals benefits (in the form of paper coupons or electronic debit cards) that can be used to buy eligible food. The FSP is the largest of the domestic food and nutrition programs administered by the USDA's Food and Nutrition Service; the program served more than 17 million people a month in fiscal year 2000.[7] That same year, slightly more than half of all FSP participants were children. Children who are well nourished are more likely to have good health and physical growth (see indicators D2, N2).

Studies have shown that participation in the FSP results in significant benefits to children. Food Stamp use has been found to increase the levels of some nutrients (e.g., iron, zinc, and folate) in preschoolers.[5,6] The effect of the FSP on iron levels is especially important, given the prevalence of iron deficiency anemia among our nation's poor children. Participation in the FSP has been associated with significant increases in household food expenditures.[3,4] It has also been found that each Food Stamp dollar received significantly improves diet quality.[1]

Who else currently uses this indicator?

The U.S. Department of Agriculture (USDA) tracks FSP participation rates.

What are the possible sources of data for this indicator?

The number of people participating in the FSP in each state is available from the USDA. National estimates of the number of people eligible to receive Food Stamps are also collected. Data on this indicator also could be collected by surveying households regarding their eligibility for and use of Food Stamps.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Participation data for FSP are consistently documented and updated.

- Sensitivity to change:

FSP participation rates are affected by many factors, such as the economy, welfare reform, and legislative changes.[2] Participation rates in the program fell every year between 1994 and 1999 and rose slightly in 2000.[2]

- Cultural issues:

People who are white non-Hispanic make up the largest group of FSP participants, followed by people who are black non-Hispanic and people who are Hispanic (race/ethnicity data on heads of households).[2] Given group differences, data on FSP participation should be disaggregated by racial/ethnic groups, when possible.

Sources

[1] Basiotis, P. P., Kramer-LeBlanc, C., & Kennedy, E. T. (1998). Maintaining food and nutrition security: the role of the Food Stamp Program and WIC. *Family Economics and Nutrition Review, 11*(4).

[2] Cunnyngham, K. (2002). *Trends in Food Stamp Program participation rates: 1994 to 2000*. Retrieved July 25, 2002, from http://www.fns.usda.gov/oane/MENU/Published/FSP/Participation.htm

[3] Fraker, T. M. (1990). *The effects of Food Stamps on food consumption: A review of the literature*. Washington, DC: Mathematica Policy Research.

[4] Kennedy, E. (1999). Public policy in nutrition: The U.S. nutrition safety net --- past, present, and future. *Food Policy, 24*, 325-333, 343-347.

[5] Perez-Escamilla, R., Ferris, A. M., Drake, L., Haldeman, L., Peranick, J., Campbell, M., et al. (2000). Food Stamps are associated with food security and dietary intake of inner-city preschoolers from Hartford, Connecticut. *Journal of Nutrition, 130*, 2711-2717.

[6] Rose, D., Habicht, J. P., & Devaney, B. (1998). Household participation in the Food Stamp and WIC programs increases the nutrient intakes of preschool children. *Journal of Nutrition, 128*, 548-555.

[7] U.S. Department of Agriculture. (2001). *Characteristics of Food Stamp households: Fiscal year 2000* (No. FSP-01-CHAR). Alexandria, VA: Author, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation.

E. Children have good oral health.

1. **Number and percentage of children ages 3 or older who receive annual dental exams (P)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children ages 3 years old or older who have visited a dentist within the past year. The percentage is calculated by dividing the number of children ages 3 years old or older who visited a dentist in the past year by the total number of children ages 3 years old or older.

Why is this indicator important?

Annual dental exams provide preventive care and facilitate early diagnosis and treatment of oral problems.[4] Preventive care often includes the application of sealants, which prevent cavities in pits and fissures of the teeth that brushing and fluoride may not prevent effectively.[11,15] In combination with the practice of good dental health behaviors, the use of professional preventive care can reduce the risk of dental caries (or decay) and its consequences (see indicator E2).

Dental problems are widespread among youth. Dental decay is one of the most common diseases among youth in the United States. More than three-quarters of adolescents have at least one cavity or filling by age 17,[15] and about one-fifth of all adolescents have one or more untreated caries, lesions, or active tooth infections.[6]

Poor dental health can contribute to other health problems and difficulties in school. Untreated dental caries can be very painful and can interfere with diet, nutrition, and sleep.[1,15] In addition, chronic dental problems in children can adversely affect self-image, concentration, school attendance, and school performance.[13]

Who else currently uses this indicator?

Many national and state efforts use this indicator to monitor children's school readiness. This indicator is collected by the National Center for Health Statistics. *Child Health USA 2001* also tracks this indicator.[7] In addition, the National Outcome Work Groups recommend this indicator.

Rhode Island is an example of a state that monitors this indicator as part of its child health initiative.

What are the possible sources of data for this indicator?

Data for the state of California and most of its counties are being collected through a statewide survey. The University of California, Los Angeles (UCLA) Center for Health Policy Research collects data on the frequency of children's dental visits in California Health Interview Survey.[2]

Data can be collected directly from parents. Data on this indicator can be collected by surveying all (or a representative sample) of parents of children in the target age group and population.

Standard national survey items are available online. If data will be collected through parent surveys, those collecting the data should use standard items to maintain the comparability of data within California and with other states. National surveys that have used this indicator include the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K)[3]; the National Health Education Survey[10]; the National Health and Nutrition Examination Survey (1999-2001 Sample Person Questionnaire, Oral Health Questionnaire)[8]; and the National Health Interview Survey (NHIS).[9]

Data from the national surveys mentioned above are available online and can be used to benchmark progress on this indicator. Online data also are available from the National Center for Health Statistics in *Health, United States, 2001*.[5]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

According to the U.S. Department of Health and Human Services, use of dental care services can be increased by removing barriers to care such as high costs, lack of insurance, and lack of knowledge about preventive dental care.[14] School-based dental health programs can lead to increases in the number of children receiving annual dental exams by providing oral health education and improving access to treatment services.[12]

- Cultural issues:

It is important to provide services and outreach in the languages of the community and to consider the cultural backgrounds of community residents. In 1999, 77 percent of white non-Hispanic children ages 2 to 17 had visited a dentist in the past year, compared with 68 percent of black non-Hispanic and only 59 percent of Hispanic children.[4] Immigrant families, in particular, may not be familiar with preventive dental care or with the dental health care system.[12] When possible, data should be disaggregated by ethnic group.

- Other:

In 1999, almost 80 percent of nonpoor children ages 2 to 17 had visited a dentist in the past year, compared with only about 58 percent of poor children and 62

percent of near-poor children.[4] When possible, data should be disaggregated by economic level.

Sources

[1] Albandar, J. M., Buischi, Y. A. P., & Axelsson, P. (1995). Caries lesions and dental restorations as predisposing factors in the progression of periodontal diseases in adolescents. A 3-year longitudinal study. *Journal of Periodontology, 66*, 249-254.

[2] California Health Interview Survey, Question CC5. http://www.healthpolicy.ucla.edu/chis/news/

[3] Early Childhood Longitudinal Study- Kindergarten Cohort (Spring Parent Interview), Question CHQ.100. http://nces.ed.gov/ecls/pdf/fallkind/interview.pdf

[4] Eberhardt, M., Ingram, D., Makuc, D., Pamuk, E., Freid, V., Harper, S., et al. (2001). *Urban and rural health chartbook: Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics.

[5] Health, United States, 2001, http://www.cdc.gov/nchs/products/pubs/pubd/hus/hus.htm

[6] MacKay, A. P., Fingerhut, L. A., & Duran, C. R. (2000). *Health, United States, 2000, with adolescent health chartbook*. Hyattsville, MD: National Center for Health Statistics.

[7] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[8] National Health and Nutrition Examination Survey Sample Person Questionnaire, Oral Health Questionnaire, Questions OHQ.030 through OHQ.070. http://www.cdc.gov/nchs/about/major/nhanes/nhanes99-01.htm

[9] National Health Interview Survey, http://www.cdc.gov/nchs/data/series/sr_10/sr10_203.pdf

[10] National Household Education Survey School Readiness Questionnaire, Questions PT3 and PT4. http://nces.ed.gov/nhes/Main/quex.asp

[11] Nowjack-Raymer, R. E., Drury, T. F., & Selwitz, R. H. (1996). Association of sealant presence and untreated decay in U.S. children. *Journal of Dental Research, 75*(187).

[12] Rhode Island KIDS COUNT. (2000). *School-based dental services*. Providence, RI: Author.

[13] Rhode Island KIDS COUNT. (2001). *Factbook*. Providence, RI: Author.

[14] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health and objectives for improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[15] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General. Executive summary*. Rockville, MD: Author, National Institute of Dental and Craniofacial Research, National Institutes of Health.

E. Children have good oral health.

2. Number and percentage of children with no dental caries at age 5 (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator measures the number and percentage of children who do not have dental caries at the age of 5. Dental caries, also referred to as dental decay or dental cavities, refer to a disease that results in demineralization and ultimately cavitation of the tooth surface if not controlled or remineralized.[5] The percentage of children with no caries can be calculated by dividing the number of 5-year-old children with no dental caries by the total number of children age 5.

Why is this indicator important?

Dental caries can have significant medical and health consequences. If left untreated, dental caries can lead to severe toothaches, oral abscess, destruction of bone, and spread of infection via the bloodstream.[6] Dental caries also may affect a child's eating habits and nutritional intake (see indicator N2), potentially influencing growth and early childhood development and school readiness. In addition, the pain and infection caused by dental caries can lead to problems in eating, speaking, and attending to learning.[9] Children with dental caries tend to have severe dental pain and may experience more school absenteeism, thus affecting their performance in school.[8]

Dental caries are one of the most common chronic diseases in children. Dental caries are a chronic disease of childhood occurring nearly five to eight times more frequently than asthma, the second most common chronic disease in children.[6] Nationally, 1 out of every 15 children suffer severe dental disease.[9]

Dental care is the most unmet health care need of children.[3] Recent data show an increase in the percentage of children who have untreated cavities and a decrease in the percentage of children who visit a dentist before kindergarten.[7]

Dental caries are a preventable disease. Research confirms that regular dental checkups and cleanings, fluoride and other treatments, and classes on oral hygiene can significantly reduce the incidence of dental caries.[6] The earliest opportunity for intervention occurs during prenatal counseling, when the mother can be given information about diet, oral hygiene practices, appropriate uses of fluoride, and the transmission of bacteria from parents to child.[1] Other opportunities include informing families during dental visits about the benefits of early routine dental care, encouraging the use of fluoridated water, and also educating families about the benefits of dental sealants.[5]

Establishing good oral health at an early age sets the stage for good oral health at later stages. Early childhood caries (ECC) tend to affect the primary

teeth of infants and young children between the ages of 1 and 6.[1] Early childhood caries dramatically increase a child's risk for future dental caries.[4]

Who else currently uses this indicator?

Currently, no national organizations or states track this indicator.

What are the possible sources of data for this indicator?

Data can be collected directly from parents. This indicator can be obtained by parent/caregiver report at kindergarten entry or through the child's dental provider records.

Data also can be collected through direct examination of the child at age 5.

This indicator is being used in a number of health surveys with dental data, including the Basic Screening Survey (BSS) (developed by the Association of State and Territorial Dental Directors with technical assistance from the Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention) and the National Health and Nutrition Examination Survey III (NHANES III) (Centers for Disease Control and Prevention).

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Changes in this indicator have been successfully tracked by *Healthy People 2000* and other national studies.

- Cultural issues:

Dental caries are more common among children from low-income families and certain ethnic groups. In the United States, 25 percent of children and adolescents, typically those from minority groups and those from families with low incomes, experience 80 percent of all dental decay occurring in permanent teeth.[2] Children whose parents and caregivers have less than a high school education and those whose parents and caregivers are Hispanic, American Indian, or Alaska Native appear to be at a significantly higher risk for developing early childhood caries.[10] Furthermore, children and adolescents from families with low incomes experience a significant percentage of dental decay occurring in permanent teeth.[8] It is important to disaggregate data by these groups, when possible.

Sources

[1] Ismail, A. I., & Sohn, W. A. (1999). A systematic review of clinical diagnostic criteria of early childhood caries. *Journal of Public Health Dentistry, 59*(3), 171-191.

[2] Kaste, L. M., Selwitz, R. H., Oldakowski, R. J., Brunelle, J. A., Winn, D. M., & Brown, L. J. (1996). Coronal caries in the primary and permanent dentition of children and adolescents 1-17 years of age: United States: 1988-1991. *Journal of Dental Research, 75*, 631-641.

[3] Mouradian, W. E. (2001). The face of a child: Children's oral health and dental education. *Journal of Dental Education, 65*(9), 821-831.

[4] O'Sullivan, D. M., & Tinanoff, N. (1993). Maxillary anterior caries associated with increased risk in other primary teeth. *Journal of Dental Research, 72*(12), 1577-1580.

[5] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[6] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General*. Rockville, MD: Author, National Institutes of Health, National Institute of Dental and Craniofacial Research.

[7] U.S. Department of Health and Human Services, & National Center for Health Statistics. (1997). *Healthy People 2000 review 1997*. Hyattsville, MD: Authors.

[8] U.S. General Accounting Office. (2000). *Oral health: Dental disease is a chronic problem among low-income populations*. Washington, DC: Author.

[9] Vargas, C. M., Crall, J. J., & Schneider, D. A. (1998). Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. *Journal of the American Dental Association, 129*(9), 1229-1238.

[10] White, B. A., Weintraub, J. A., & Caplan, D. J. (1993). Toward improving the oral health of Americans: An overview of oral health status, resources, and care delivery. *Public Health Reports, 108*, 657-872.

E. Children have good oral health.

3. Number and percentage of children at age 5 with untreated dental problems (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children who are 5 years old and who have untreated dental problems. Dental problems, such as dental decay or dental cavities, require treatment to prevent more serious health problems (see indicator E2). The percentage can be calculated by dividing the number of children age 5 who have been screened and who have untreated dental problems by the total number of children age 5.

Why is this indicator important?

Untreated dental problems can have significant medical and health consequences in children. About 25 percent of all children have untreated caries in their permanent teeth.[7] Nationally, 1 out of every 15 children suffer severe dental disease that can be debilitating.[8] For example, if left untreated, dental caries can lead to severe toothaches, oral abscess, destruction of bone, and spread of infection via the bloodstream.[5] In addition, the pain and infection caused by dental caries can lead to problems in eating, speaking, and attending to learning.[7] (See indicator E2.)

Dental care is the most unmet health care need of children.[3] In the United States, 25 percent of children and adolescents, typically those from minority groups and those from families with low incomes, experience 80 percent of all dental decay occurring in permanent teeth.[2] Additionally, oral health indicators, such as those used in *Healthy People 2000*, show an increase in the percentage of children who have untreated cavities and a decrease in the percentage of children who visit a dentist before kindergarten.[6]

Untreated dental disease is a chronic problem among low-income populations. Nearly 1 in 3 children in the lowest income groups (annual incomes below $10,000) have at least one decayed untreated tooth, compared with 1 in 10 preschool children in higher income groups ($35,000 or higher).[7] Furthermore, homeless children are more likely to have never visited a dentist.[7] It is therefore not surprising that low-income children suffer more restricted-activity days, such as missing school, than do higher-income children as a result of untreated dental problems.[7]

Many opportunities for primary prevention of dental problems exist. The earliest opportunity for intervention occurs during prenatal counseling, when the mother can be given information about diet, oral hygiene practices, appropriate uses of fluorides, and the transmission of bacteria from parents to child.[1] Other

opportunities include reinforcing the benefits of early routine dental care, encouraging the use of fluoridated water, and educating families about the benefits of dental sealants during dental visits.[4]

Who else currently uses this indicator?

This indicator is being used in a number of health surveys with dental data, including the Basic Screening Survey (BSS) (developed by the Association of State and Territorial Dental Directors with technical assistance from the Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention) and the National Health and Nutrition Examination Survey III (NHANES III) (Centers for Disease Control and Prevention).

What are the possible sources of data for this indicator?

This indicator can be obtained by parent/caregiver report at kindergarten entry or through the child's dental provider records.

In addition, this indicator could be collected through direct examination of the child at age 5.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The most reliable source would be a dental screening of children entering kindergarten.

- Sensitivity to change:

Changes in this indicator have been successfully tracked by *Healthy People 2000* and other national studies.[4,6]

- Cultural issues:

There are differences in the percentage of children who experience dental problems between various cultural, ethnic, and income groups. For instance, nearly 70 percent of Native American preschoolers have untreated tooth decay, compared with 11 percent of white children.[7] Therefore, it is important to disaggregate data by these groups, when possible.

- Feasibility/Burden:

NHANES is unique in that oral health data are collected by interview, physical examination, and laboratory analyses. Similarly, the Basic Screening Survey also relies on recorded observations of gross dental or oral lesions by dentists, in accordance with state law. Therefore, the conduct and cost of using a physical examination for this indicator are quite burdensome.

Sources

[1] Ismail, A. I., & Sohn, W. A. (1999). A systematic review of clinical diagnostic criteria of early childhood caries. *Journal of Public Health Dentistry, 59*(3), 171-191.

[2] Kaste, L. M., Selwitz, R. H., Oldakowski, R. J., Brunelle, J. A., Winn, D. M., & Brown, L. J. (1996). Coronal caries in the primary and permanent dentition of children and adolescents 1-17 years of age: United States: 1988-1991. *Journal of Dental Research, 75*, 631-641.

[3] Mouradian, W. E. (2001). The face of a child: Children's oral health and dental education. *Journal of Dental Education, 65*(9), 821-831.

[4] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[5] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General - executive summary*. Rockville, MD: Author, National Institute of Dental and Craniofacial Research, National Institutes of Health.

[6] U.S. Department of Health and Human Services, & National Center for Health Statistics. (1997). *Healthy People 2000 review 1997*. Hyattsville, MD: Authors.

[7] U.S. General Accounting Office. (2000). *Oral health: Dental disease is a chronic problem among low-income populations*. Washington, DC: Author.

[8] Vargas, C. M., Crall, J. J., & Schneider, D. A. (1998). Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. *Journal of the American Dental Association, 129*(9), 1229-1238.

E. Children have good oral health.

4. Number and percentage of children who have dental insurance (P)

Category: Performance measure

What is the definition of this indicator?

This indicator measures the number and percentage of children who are enrolled in private or federally funded dental insurance programs. The number of children (0 to 5 years old) who have dental insurance is calculated by totaling the number of children who are covered by private or federally funded dental insurance programs. The percentage of children (0 to 5 years old) who have dental insurance is calculated by dividing the number of children (0 to 5 years old) with dental insurance by the total number of children (0 to 5 years old).

Why is this indicator important?

The availability of dental insurance increases both utilization of dental services and oral health.[3] Children with dental insurance are more likely to get annual dental exams, have fewer dental caries, and have fewer untreated dental problems, all of which make them less likely to be absent from school (see indicators E1, E2, E3).

Many children in the United States have no dental health insurance. As of 1998, more than 11 million children in the United States were estimated to have no form of this insurance, a problem that has significant consequences for children's oral health.[8]

Some children have less access to and make less use of dental services. Children from minority groups, low-income children, children in families without insurance, and children with special needs receive fewer preventive and other dental services than their counterparts in the general population.[5] In addition, children from low-income families are less likely to make preventive dental visits than children in higher income groups.[11] Not surprisingly, more of these children also experience oral disease, and they have it to the greatest extent.[5]

Paradoxically, low-income children have the highest rates of dental insurance coverage, primarily through Medicaid and SCHIP, yet, these children have the fewest overall dental visits.[2,10] Medicaid dental coverage seems to have had a lesser effect on the likelihood of a child's having a dental visit than private coverage.[2,10] The poor oral health and relatively low use of dental care among low-income children despite health insurance coverage suggests that barriers other than access to insurance coverage contribute to oral health problems faced by this population.[9]

The lack of use of Medicaid dental coverage is not fully understood, but it does suggest the need for improving the design of Medicaid dental programs.[6] For

instance, educating parents on the advantages of preventive dental care for their children and on the dental coverage provided by Medicaid and SCHIP may increase the use of these benefits. It also has been reported that oral health services account for only about half a percent of Medicaid spending, which suggests a need for investing more money in such programs.[4] With these findings in mind, programs such as Pipeline, Profession and Practice: Community-Based Dental Education have been funded by The Robert Wood Johnson Foundation (RWJF). These community-based clinical programs are designed to increase access to dental care for underserved populations and increase recruitment and retention of low-income and underrepresented minority students as dental professionals.[7]

Who else currently uses this indicator?

This indicator is currently being used in the Medical Expenditures Panel Survey (Agency for Healthcare Research and Quality), the National Health Interview Survey (Centers for Disease Control and Prevention), and the Synopses of State and Territorial Dental Public Health Programs.

Currently, no other national organizations or states track this indicator.

What are the possible sources of data for this indicator?

Data can be collected directly from parents. This indicator is typically obtained from self-report by parents/caregivers or from tracking numbers of children covered through public dental health insurance programs.

This indicator also can be obtained through survey results. California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey.[1]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Self-reports from parents may not be able to distinguish reliably between different types of dental insurance but can give a fairly accurate picture of how many have some dental insurance.

- Sensitivity to change:

Changes in this indicator have been successfully tracked by national surveys.

- Cultural issues:

As noted above, there are differences in the percentage of children who are covered by dental health insurance between various income groups. Therefore, it is important to disaggregate data by these groups, when possible.

Sources

[1] California Health Interview Survey, Question CC7A. http://www.healthpolicy.ucla.edu/chis/news/

[2] Edelstein, B. L. (2002). Disparities in oral health and access to care: Findings of national surveys. *Ambulatory Pediatrics, 2*, 141-147.

[3] Eklund, S. A. (2001). The impact of insurance on oral health. *Journal of the American College of Dentistry, 68*(2), 8-11.

[4] Ingargiolia, P. (2000). *Understanding the dental delivery system and how it differs from the medical system*. Retrieved June 27, 2002, from http://www.kindsmiles.org/Paper4.pdf

[5] Kaste, L. M., Selwitz, R. H., Oldakowski, R. J., Brunelle, J. A., Winn, D. M., & Brown, L. J. (1996). Coronal caries in the primary and permanent dentition of children and adolescents 1-17 years of age: United States: 1988-1991. *Journal of Dental Research, 75*, 631-641.

[6] Manski, R. J., Edelstein, B. L., & Moeller, J. F. (2001). The impact of insurance coverage on children's dental visits and expenditures, 1996. *Journal of the American Dental Association, 132*(8), 1137-1145.

[7] *Pipeline, profession and practice: Community-based dental education*. Retrieved June 27, 2002, from http://dentalpipeline.columbia.edu/

[8] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General*. Rockville, MD: Author, National Institutes of Health, National Institute of Dental and Craniofacial Research.

[9] U.S. General Accounting Office. (2000). *Oral health: Dental disease is a chronic problem among low-income populations*. Washington, DC: Author.

[10] Waldman, H. B., Perlman, S. P., & Swerdloff, M. (2000). Use of pediatric dental services in the 1990s: Some continuing difficulties. *ASDC Journal of Dentistry for Children, 67*(1), 59-63.

[11] Watson, M. R., Manski, R. J., & Macek, M. D. (2001). The impact of income on children's and adolescents' preventive dental visits. *Journal of the American Dental Association, 132*(11), 1580-1587.

E. Children have good oral health.

5. Availability of dental services (ratio of providers to population) (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the number of dental service providers who treat children in the community per 100 children, ages 3 to 5, living in the community.

Why is this indicator important?

Having an adequate number of dental providers for children ages 3 to 5 will aid communities in ensuring that children have good oral health. Oral problems in young children, if untreated, can contribute to other health issues and difficulty in school.[4,6] Annual dental exams provide preventive care and facilitate early diagnosis and treatment of such problems.[1] Dental caries, one of the most common chronic diseases in children, are preventable with regular dental checkups and cleaning.[3,5,7] (See indicators E1, E2, E3.) Collecting these data could help communities to assess whether a shortage of dental care providers is an issue that might be addressed in their strategic plans.

What are the possible sources of data for this indicator?

Determining the availability of dental providers to children ages 3 to 5 could be included as part of the community resource mapping activities. Identifying these resources is essential to building the capacity of the community to meet the health needs of its children and families.[2]

Sources

[1] Eberhardt, M. S., Ingram, D. D., & Makuc, D. M. (2001). *Urban and rural health chartbook: Health, United States, 2001*. Hyattsville, MD: National Center for Health Statistics.

[2] Kretzmann, J., & McKnight, J. (1993). *Building community from the inside out: A path toward finding and mobilizing a community's assets*. Chicago: ACTA Publications.

[3] Mouradian, W. E. (2001). The face of a child: Children's oral health and dental education. *Journal of Dental Education, 65*(9), 821-831.

[4] Rhode Island KIDS COUNT. (2001). *Factbook*. Providence, RI: Author.

[5] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General*. Rockville, MD: Author, National Institutes of Health, National Institute of Dental and Craniofacial Research.

[6] U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General. Executive summary*. Rockville, MD: Author, National Institute of Dental and Craniofacial Research, National Institutes of Health.

[7] Vargas, C. M., Crall, J. J., & Schneider, D. A. (1998). Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. *Journal of the American Dental Association, 129*(9), 1229-1238.

F. Children are free of smoking-related illnesses.

1. Number and percentage of children who live in households where no adults smoke (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children ages 0 to 5 who live in households where no adults smoke. The percentage is calculated by dividing the number of children who live in households where no adults smoke by the total population of children ages 0 to 5.

Why is this indicator important?

Inhalation of secondhand smoke is linked to health problems. Twelve percent of children in California under age 18 live in a household where at least one adult smokes.[3] Inhalation of secondhand smoke (also referred to as environmental tobacco smoke) increases children's risk of developing pneumonia, bronchitis, and other lung diseases, and also puts children at an increased risk of asthma attacks and ear infections.[4,7] Secondhand smoke is particularly harmful to young children and to children with asthma.[1] Among children under 18 months of age, secondhand smoke is responsible for between 150,000 and 300,000 lower respiratory tract infections, resulting in 7,500 to 15,000 hospitalizations, each year.[1,7]

Children who watch adults smoke are more likely to smoke themselves. Children and adolescents who live in families with smokers are more likely to develop the habit themselves, further increasing their chances of developing serious health problems, such as heart disease, chronic lung disease, and cancer of the lungs, larynx, mouth, esophagus, pharynx, and bladder.[11,12]

Who else currently uses this indicator?

The U.S. Department of Health and Human Services reports a similar indicator: the percentage of children ages 6 and under who live in a house where someone smokes inside the house at least four days a week. These data are available through the Healthy People 2010 initiative and can be found online.[8] The Child Trends DataBank tracks parental smoking.[7]

The Centers for Disease Control and Prevention collect state-level estimates of children's exposure to secondhand smoke. These data can be found in *State-Specific Prevalence of Cigarette Smoking Among Adults and Children's and Adolescents' Exposure to Environmental Tobacco Smoke, United States, 1996,* available online.[3]

The State Tobacco Activities Tracking and Evaluation (STATE) System of the Centers for Disease Control and Prevention also includes recent state-level

estimates of tobacco use and is available online.[2] However, STATE does not track children's exposure to cigarette smoke.

What are the possible sources of data for this indicator?

Data can be collected by surveying a representative sample of parents in the target population.

The National Longitudinal Study of Adolescent Health (Add Health) surveys parents about the number of smokers in the household.[10] Add Health data can be broken down into four regions (northeast, south, midwest, and west).

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

In 2000, 27 percent of white non-Hispanic parents reported being current smokers, compared with 23 percent of black non-Hispanic parents, 18 percent of Hispanic parents, and 19 percent of parents from other racial backgrounds.[6]

Among pregnant women, 20 percent of American Indian and Alaska Native women reported smoking, followed by 16 percent of white non-Hispanic women, 9 percent of black non-Hispanic women, 4 percent of Hispanic women, and 3 percent of Asian or Pacific Islander women.[5,9] When possible, data should be disaggregated by ethnic group.

Sources

[1] American Lung Association. (2000). *Fact sheet: Secondhand smoke*, from http://www.lungusa.org/tobacco/secondhand_factsheet99.html

[2] Centers for Disease Control and Prevention, http://www2.cdc.gov/nccdphp/osh/state/index.htm

[3] Centers for Disease Control and Prevention. (1997). State-specific prevalence of cigarette smoking among adults, and children's and adolescent's exposure to environmental tobacco smoke - United States, 1996. *Morbidity and Mortality Weekly Report, 46*(44), 1038-1042 (available at www.cdc.gov/mmwr/PDF/wk/mm4644.pdf).

[4] Centers for Disease Control and Prevention. (2001). *Secondhand smoke and children*. Retrieved July 8, 2002, from http://www.cdc.gov/communication/tips/shsmoke.htm

[5] Child Trends. (2002). *Child Trends Databank Indicator: Mothers who smoke while pregnant*. Retrieved June 20, 2002, from www.childtrendsdatabank.org

[6] Child Trends. (2002). *Child Trends Databank Indicator: Parental smoking*. Retrieved June 20, 2002, from www.childtrendsdatabank.org

[7] Environmental Protection Agency. (1993). *Fact sheet: Respiratory health effects of passive smoking*. Retrieved July 8, 2002, from http://www.epa.gov/iaq/pubs/etsfs.html

[8] Healthy People 2010, http://www.health.gov/healthypeople/publications/

[9] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2002). *Births: Final data for 2000*. Hyattsville, MD: National Center for Health Statistics.

[10] National Longitudinal Study of Adolescent Health (Add Health) Parent Questionnaire, Question A63. http://www.cpc.unc.edu/projects/addhealth/codebk1.html

[11] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health and objectives for improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[12] U.S. Department of Health and Human Services. (2000). *Reducing tobacco use: A report of the Surgeon General - executive summary*. Atlanta, Georgia: Author, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

F. Children are free of smoking-related illnesses.

2. Number and percentage of women who did not smoke during pregnancy (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the "number of women having live births reporting abstaining from cigarette smoking during pregnancy" (the definition used by Healthy People 2010 from National Vital Statistics data).[15] The percentage is calculated by dividing the number of women who did not smoke during pregnancy by the total number of women giving birth (live and stillborn).

Why is this indicator important?

There are well-documented health risks associated with smoking. In addition to an increased risk of lung cancer, heart disease, and respiratory illnesses, for instance, women who smoke also have higher rates of reproductive problems, such as delayed conception, infertility, and ectopic pregnancy.[2]

Prenatal exposure to tobacco is associated with several negative impacts. Cigarette smoking during pregnancy has been shown to increase the risk of mortality and morbidity in infants.[2] Prenatal exposure to cigarette smoke causes an increased risk of spontaneous abortion, stillbirth, neonatal death (within 28 days of birth), and sudden infant death syndrome (SIDS).[2,3,11] Prenatal exposure to tobacco also increases the risk of small-for-gestational-age birth, preterm delivery, and decreased birth weight, all of which are associated with a host of other health and developmental problems (see indicators A2, A3, A4).[2,3,10] The association between cigarette smoking and decreased birth weight is a robust finding across many independent studies, several of which are cited in a major report by the Surgeon General.[2] For many of the conditions listed above, the risk increases with the number of cigarettes smoked daily.[2]

Evidence suggests that prenatal exposure to cigarette smoke may also affect children's cognitive and language abilities. For example, in a short-term study, toddlers (median age of 19 months) whose mothers smoked during pregnancy had lower scores on a well-standardized infant developmental assessment (Bayley Scale) than toddlers whose mothers did not smoke.[12] Another study found that at 1, 2, and 3 years of age, there were persistent effects of prenatal exposure to cigarettes, such as lower cognition and language scores.[7] Other long-term studies have found that children with prenatal cigarette exposure perform more poorly than their nonexposed peers on tests of intelligence, verbal learning, and memory at ages 4 to 7 years and even at 10 years.[4,8] Prenatal cigarette exposure also may be associated with lower reading scores at ages 9 to 12 years.[6]

Studies have shown that women smokers who stop smoking when they become pregnant can improve the health and birth outcomes of their infants. In one population-based prospective study, the mean birth weight and rate of perinatal morbidity of the infants of mothers who quit smoking during pregnancy were similar to those of nonsmokers.[1] This finding highlights the critical importance of targeting smoking cessation programs to pregnant women and women of childbearing age (see indicator D4).

Who else currently uses this indicator?

National efforts have used this indicator to monitor children's health and, more recently, the school readiness of children. Increasing the percentage of women who abstain from cigarette smoking while they are pregnant is one of the health indicators of Healthy People 2010.

What are the possible sources of data for this indicator?

Data can be collected from records or directly from mothers. Data on smoking during pregnancy are recorded on birth certificates (1989 revision). For most states, these data are provided to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program. Unfortunately, California does not provide data to this program.[2] Data on this indicator also could be compiled by surveying mothers about their tobacco use during pregnancy or at the hospital after the delivery of their baby.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The reliability of self-reporting of cigarette smoking during pregnancy may be called into question, since studies have shown that some pregnant women conceal their smoking from clinicians.[5,9] Accurate assessment of smoking may require objective measures, such as testing the cotinine (a byproduct of nicotine) levels in the mother's blood or urine.

Women who smoke cigarettes may have an increased likelihood of also using alcohol and/or illicit drugs, which makes it difficult to determine the precise effects of prenatal cigarette exposure on their children's birth and developmental outcomes (see indicator A5).[16]

- Sensitivity to change:

The rate of smoking during pregnancy declined steadily over the past decade.[2] In 1989, the mothers of 19.5 percent of live births reported smoking during pregnancy. In 1998, only 12.9 percent reported doing so.

- Cultural issues:

Rates of smoking during pregnancy are consistently higher among white mothers than among black and Hispanic mothers.[14] For instance, data from the National Pregnancy and Health Survey, conducted in 1992-1993, indicate that while 24.4 percent of white women reported they had smoked cigarettes during their pregnancies, only 19.8 percent of black women and 5.8 percent of Hispanic women reported having done so.[14] It has been shown that the rates of smoking during the 12 months prior to delivery are similar for American Indian and white women.[13]

Sources

[1] Ahlsten, G., Cnattingius, S., & Lindmark, G. (1993). Cessation of smoking during pregnancy improves fetal growth and reduces infant morbidity in the neonatal period. A population-based prospective study. *Acta Paediatrica, 82*, 177-181.

[2] Centers for Disease Control and Prevention. (2001). *Women and smoking: A report of the Surgeon General - 2001*, from http://www.cdc.gov/tobacco/sgr_forwomen.htm

[3] Charlton, A. (1994). Children and passive smoking: A review. *Journal of Family Practice, 38*, 267-277.

[4] Cornelius, M. D., Ryan, C. M., Day, N. L., Goldschmidt, L., & Willford, J. A. (2001). Prenatal tobacco effects on neuropsychological outcomes among preadolescents. *Journal of Developmental and Behavioral Pediatrics, 22*, 217-225.

[5] Ford, R. P., Tappin, D. M., Schluter, P. J., & Wild, C. J. (1997). Smoking during pregnancy: How reliable are maternal self reports in New Zealand? *Journal of Epidemiology and Community Health, 51*, 246-251.

[6] Freid, P. A., Watkinson, B., & Siegel, L. S. (1997). Reading and language in 9- to 12-year olds prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology, 19*, 171-183.

[7] Fried, P. A. (1989). Cigarettes and marijuana: Are there measurable long-term neurobehavioral teratogenic effects? *Neurotoxicology, 10*(3), 577-583.

[8] Frydman, M. (1996). The smoking addiction of pregnant women and the consequences on their offspring's intellectual development. *Journal of Environmental Pathology, Toxicology and Oncology, 22*, 217-225.

[9] Kendrick, J. S., Zahniser, S. C., Miller, N., Salas, N., Stine, J., Gargiullo, P. M., et al. (1995). Integrating smoking cessation into routine public prenatal care: The Smoking Cessation in Pregnancy project. *American Journal of Public Health, 85*, 217-222.

[10] Mitchell, E. A., Thompson, J. M., Robinson, E., Wild, C. J., Becroft, D. M., Clark, P. M., et al. (2002). Smoking, nicotine and tar and risk of small for gestational age babies. *Acta Paediatrica, 91*, 323-328.

[11] Pollack, H. A. (2001). Sudden Infant Death Syndrome, maternal smoking during pregnancy, and the cost-effectiveness of smoking cessation intervention. *American Journal of Public Health, 91*, 432-436.

[12] Richardson, G. A., Day, N. L., & Goldschmidt, L. (1995). Prenatal alcohol, marijuana, and tobacco use: Infant mental and motor development. *Neurotoxicology and Teratology, 17*, 479-487.

[13] Sugarman, J. R., Brenneman, G., LaRoque, W., Warren, C. W., & Goldberg, H. I. (1994). The urban American Indian over-sample in the 1988 National Maternal and Infant Health Survey. *Public Health Reports, 109*, 243-250.

[14] U.S. Department of Health and Human Services. (1996). *National pregnancy and health survey. Drug use among women delivering livebirths: 1992*. Rockville, MD: Author, National Institutes of Health, National Institute on Drug Abuse. NIH Publication No. 96-3819.

[15] U.S. Department of Health and Human Services. (2000). *Tracking healthy people 2010*, from http://www.cdc.gov/nchs/hphome.htm

[16] Wagner, F. A., & Anthony, J. C. (2002). Into the world of illegal drug use: Exposure opportunity and other mechanisms linking the use of alcohol, tobacco, marijuana, and cocaine. *American Journal of Epidemiology, 155*, 918-925.

F. Children are free of smoking-related illness.

3. Number and percentage of children 0 to 5 years of age who have asthma (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children 0 to 5 years of age who have ever been diagnosed by a doctor or other health professional as having asthma or who have had an episode of asthma or an asthma attack within the past 12 months. The percentage is calculated by dividing the number of children 0 to 5 years of age who have asthma by the total population of children 0 to 5 years of age.

Why is this indicator important?

Asthma is the most common chronic illness affecting children.[2] In 2001, 9.6 percent of children ages 0 to 17 suffered from asthma in California.[21] In 2000, 5.5 percent, or almost 5 million, of children in America suffered from asthma,[5,9] including about 5 percent of children under age 5.[11] Furthermore, between 1980 and 1994, the prevalence of asthma increased by 160 percent in children under age 4.[5,19] Although most cases of childhood asthma are mild or moderate, with symptoms such as coughing, chest tightness, shortness of breath, and wheezing,[1,19] asthma can cause serious and sometimes life-threatening health risks when it is not controlled.[3]

Asthma can have negative effects on school performance. Asthma is a leading cause of hospitalization for children under age 15 and leads to 10 million days of missed school each year.[13] In addition, this condition can negatively affect children's performance in school because of visits to doctors during school hours, lack of concentration while at school because of nighttime attacks, and decreased attentiveness or involvement at school because of the side effects of some medications.[4,14,19]

Children's asthma also affects parents. Children who suffer from asthma may cause their parents to miss work,[10] and childhood asthma has been linked to reduced parental employment among single parents.[17] Furthermore, increased severity of children's asthma is associated with increased emotional stress for parents.[16]

Although many elements can trigger an asthma attack, most problems can be avoided if the disease is managed properly. Episodes of asthma can be caused by "attack triggers" like cigarette smoke; allergens such as pollen, mold, animal dander, feathers, dust, food, and cockroaches; respiratory infections and colds; and exposure to cold air or sudden temperature change.[3] Vigorous exercise can also trigger asthma attacks, but if asthma is properly controlled,

most children who suffer from the disease can fully participate in physical activities.[2]

Who else currently uses this indicator?

This indicator is measured and tracked over time in several national sources, including: *America's Children: Key National Indicators of Well-Being 2001*; the Child Trends DataBank: Asthma[9]; the Sustainable Measures Indicators Database[18]; and *Trends in the Well-Being of America's Children and Youth*.[20]

New York and Rhode Island are examples of two states that collect data on the asthma hospitalization rate for children.

What are the possible sources of data for this indicator?

Communities that wish to gather this indicator can examine administrative records such as health care provider records and school health records, which often contain such information. In addition, parent surveys and interviews can be used to gather this information.

Data on this indicator are collected in the 1997-2001 National Health Interview Surveys (NHIS), which can be found online.[15]

The number and percentage of children 0 to 5 years of age who have asthma are included in the 2001 California Health Interview Survey, conducted by the University of California, Los Angeles (UCLA) Center for Health Policy Research. This information can be found online.[7]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Asthma can be controlled with proper treatment and medication.[5] Treatment is most successful when children have regular health care and can afford treatment.[6] Proper treatment of asthma requires limiting exposure to factors that cause asthma episodes, properly using medication to control the disease, monitoring the disease using objective measures of lung function, and educating asthma patients so that they can participate in their own care.[19] Also, according to a study conducted in Sweden in 2001, children exposed to environmental tobacco smoke (see indicator F1) are more likely to develop asthma than children who are not so exposed (7.6 percent of exposed children versus 5.9 percent of never-exposed children develop asthma).[12] This suggests that reducing the number of children who are regularly exposed to environmental tobacco smoke may also reduce cases of asthma.

- Cultural issues:

In 1995, blacks of all ages were more than twice as likely to die of asthma than whites.[5] In the same year, blacks were also 3.5 times more likely to visit emergency rooms for treatment for asthma-related conditions than whites.[5] Black non-Hispanic children have the highest prevalence of asthma (7.8 percent in 2000), compared with white non-Hispanic children (5.4 percent in 2000), Hispanic children (4.2 percent in 2000), and children of other races (5.6 percent in 2000).[9]

In research conducted by UCLA, investigators indicated that American Indians and Alaska natives manifested the highest rates of asthma in California, with a ratio of one in four children (27.8%); the rate for African Americans was 18.4%; Latinos/Hispanics, 15.1%; and Asians, 13.1%. At the time of the study there were no significant findings for Native Hawaiians and other Pacific Islanders, because their sample was not representative enough.[6]

- Other:

Among all children under age 18, asthma is more common among boys than it is among girls. In 2000, 6.6 percent of males had asthma, compared with 4.4 percent of females.[9]

Children living in families with incomes below the poverty line are more likely to suffer from asthma than are children from higher-income families.[9,11] In 2000, 7.2 percent of children living below the poverty line had asthma, compared with 5.4 percent of children living at or above the poverty line.[9]

Before 1997, NHIS collected data on this indicator by asking respondents to identify anyone in the house who had had asthma within the past 12 months. The question was changed in 1997, however, and split into two parts. Respondents are now asked whether or not a doctor or health professional has ever told them that their child has asthma, and also whether or not their child had an episode of asthma or an asthma attack within the past 12 months. The new wording is more specific, measuring only children who have been diagnosed by a physician, and results in lower reported rates of asthma prevalence.[8] This difference in wording must be accounted for when comparing pre-1997 with post-1997 data.

Sources

[1] American Academy of Allergy Asthma and Immunology. (2002). *Tips to remember: Childhood asthma*. Retrieved July 9, 2002, from http://www.aaaai.org/patients/publicedmat/tips/childhoodasthma.stm

[2] American Lung Association. (2002). *Asthma in children fact sheet*. Retrieved July 9, 2002, from http://www.lungusa.org/asthma/ascpedfac99.html

[3] American Lung Association. (2002). *Childhood asthma: An overview*. Retrieved July 9, 2002, from http://www.lungusa.org/asthma/ascchildhoo.html

[4] Asthma and Schools. (2002). *Why schools should be concerned about asthma*. Retrieved July 9, 2002, from http://www.asthmaandschools.org/essentials/2-why.htm

[5] Brown, B., Kinukawa, A., Michelsen, E., Moore, A., Moore, K. A., & Sugland, B. (1999). *A century of children's health and well-being* (No. 1999-13). Washington, DC: Child Trends.

[6] Brown, E. R., Meng, Y. Y., Babey, S. H., & Malcolm, E. (2002). *Asthma in California in 2001: High rates affect most population groups*. Retrieved August 8, 2002, from the UCLA Center for Health Policy Research's www.222.healthpolicy.ucla.edu

[7] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[8] Centers for Disease Control and Prevention. (2000). Measuring childhood asthma prevalence before and after the 1997 Redesign of the National Health Interview Survey - United States. *Morbidity and Mortality Weekly Report, 49*(40), 908-911.

[9] Child Trends. (2002). *Child Trends Databank Indicator: Asthma*. Retrieved July 9, 2002, from www.childtrendsdatabank.org

[10] Diette, G. B., Markson, L., Skinner, E. A., Nguyen, T. T. H., Algatt-Bergstrom, P., & Wu, A. W. (2000). Nocturnal asthma in children affects school attendance, school performance, and parents' work attendance. *Archives of Pediatrics and Adolescent Medicine, 154*(9), 923-928.

[11] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington, DC: Author.

[12] Larsson, M. L., Frisk, M., Hallstrom, J., Kiviloog, J., & Lundback, B. (2001). Environmental tobacco smoke exposure during childhood is associated with increased prevalence of asthma in adults. *Chest, 120*, 711-717.

[13] National Center for Environmental Health of the Centers for Disease Control and Prevention. (2002). *Asthma's impact on children and adolescents*. Retrieved July 9, 2002, from http://www.cdc.gov/nceh/airpollution/asthma/children.htm

[14] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[15] National Health Interview Survey, Questions CHS.080, CHS.090, and CHS.100. http://www.cdc.gov/nchs/nhis.htm

[16] Reichenberg, K., & Broberg, A. G. (2001). The Paediatric Asthma Caregiver's Quality of Life Questionnaire in Swedish parents. *Acta Paediatrica, 90*(1), 45-50.

[17] Smith, L. A., Hatcher, J. L., & Wertheimer, R. (2002). The association of childhood asthma with parental employment and welfare receipt. *Journal of American Medical Women's Association, 57*(1), 11-15.

[18] Sustainable Measures' Indicator Database, http://www.sustainablemeasures.com

[19] U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and improving health and objectives for improving health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

[20] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2000). *Trends in the well-being of America's children & youth, 2000*. Washington, DC: Author.

[21] UCLA Center for Health Policy Research. (2002). *California Health Interview Survey Fact Sheet*. Los Angeles, CA: University of California.

F. Children are free of smoking-related illnesses.

4. Number and percentage of adults who participate in smoking-cessation programs and who live with children 0 to 5 (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of adults who participate in smoking-cessation programs in a given period (e.g., a year) and who live with children ages 0 to 5. The percentage is calculated by dividing this number by the total number of adults who smoke and who live with children ages 0 to 5.

Why is this indicator important?

Exposure to the secondhand smoke of adult smokers is related to numerous health problems in children.[2,8] Forty-three percent of children from age 2 months to 11 years old live in a home with at least one smoker, making them likely to be exposed to secondhand smoke.[2,8] Children who breathe secondhand smoke are more likely to suffer from pneumonia, bronchitis, and other lung diseases, as well as have more asthma attacks and ear infections.[2,8] Prenatal exposure to tobacco is associated with decreased birth weight,[3] and infant death through sudden infant death syndrome, stillbirth, and spontaneous abortion.[3,4,15] Prenatal exposure to cigarette smoke may also affect children's cognitive and language abilities.[6,10,11] Women who stop smoking when they become pregnant can improve the health and birth outcomes of their infants, compared with women who continue to smoke during pregnancy.[1] (See indicators F1 through F4.)

Increased participation in smoking cessation programs may result in fewer children being exposed to secondhand smoke. Participation in a smoking-cessation program is associated with successfully quitting smoking.[7,18] Twenty-three percent of adults who participate in smoking-cessation programs succeed in quitting.[9] Moreover, individuals who are heavier smokers and who have made several unsuccessful individual attempts at quitting may benefit especially from participation in a cessation program.[9,18]

Cessation programs may also be particularly effective for persons living with young children. Expectant parents and parents of young children tend to be more motivated to quit and more successful at quitting because they are concerned about the potential health risks to their children (e.g., asthma and setting a bad example).[5,12,16]

When both parents smoke, programs should take this into account. Programs that focus on both parents, rather than just the mother, appear to be more effective. Smoking-cessation programs in which expectant fathers participated along with expectant mothers resulted in more pregnant women

quitting smoking than programs in which only the pregnant women participated.[12,13]

Who else currently uses this indicator?

The use of this indicator by others is unknown. However, several evaluations and studies have documented who uses smoking-cessation programs.[16,18]

What are the possible sources of data for this indicator?

Smoking-cessation programs are the best source of data. This indicator is meant to provide information on whether smoking-cessation programs are serving the number and types of families they intend to serve. Most smoking-cessation programs track information on their participants to report to funding agencies, health insurance companies, and/or health management organizations. Standard information collected includes the number of participants they serve and demographic information such as ethnicity, age, and gender. Whether participants have children under the age of 5 is not typically collected and would therefore need to be added to routine intake information.

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

White smokers smoke more cigarettes and have more health-related problems than do members of other groups.[17] Hispanics smokers smoke fewer cigarettes per day than do non-Hispanic smokers and are more likely to report being ready to quit.[14] Black smokers have expressed the greatest desire to quit.[17] Hispanic and Asian smokers are more likely to want to quit so that they will not expose their children to second-hand smoke.[17]

Disaggregating data by ethnicity could provide information on the extent smoking-cessation programs are serving various groups within a given community. This may suggest the need to develop or expand programs to meet the needs of various groups.

Sources

[1] Ahlsten, G., Cnattingius, S., & Lindmark, G. (1993). Cessation of smoking during pregnancy improves fetal growth and reduces infant mortality in the neonatal period. A population-based prospective study. *Acta Paediatricia, 82*, 177-181.

[2] Centers for Disease Control and Prevention. (2001). *Secondhand smoke and children*. Retrieved July 8, 2002, from http://www.cdc.gov/communication/tips/shsmoke.htm

[3] Centers for Disease Control and Prevention. (2001). *Women and smoking: A report of the Surgeon General - 2001*, from http://www.cdc.gov/tobacco/sgr_forwomen.htm

[4] Charlton, A. (1994). Children and passive smoking: A review. *Journal of Family Practice, 38*, 267-277.

[5] Clark, M. A., Rakowski, W., Kviz, F. J., & Hogan, J. W. (1997). Age and stage of readiness for smoking cessation. *Journal of Gerontology and Psychological Science, 52*(4), 212-221.

[6] Cornelius, M. D., Ryan, C. M., Day, N. L., Goldschmidt, L., & Wilford, J. A. (2001). Prenatal tobacco effects on neuropsychological outcomes among preadolescents. *Journal of Developmental and Behavioral Pediatrics, 22*, 217-225.

[7] Duncan, C. L., Cummings, S. R., Hudes, E. S., Zahnd, E., & Coates, T. J. (1992). Quitting smoking: Reasons for quitting and predictors of cessation among medical patients. *Journal of General International Medicine, 7*(4), 398-404.

[8] Environmental Protection Agency. (1993). *Fact sheet: Respiratory health effects of passive smoking*. Retrieved July 8, 2002, from http://www.epa.gov/iaq/pubs/etsfs.html

[9] Fiore, M. C., et al. (1990). Methods used to quit smoking in the United States: Do cessation programs help? *Journal of the American Medical Association, 263*(20), 2795-2796.

[10] Freid, P. A., Watkinson, B., & Siegel, L. S. (1997). Reading and language in 9- to 12-year olds prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology, 19*, 171-183.

[11] Frydman, M. (1996). The smoking addiction of pregnant women and the consequences on their offspring's intellectual development. *Journal of Environmental Pathology, Toxicology and Oncology, 22*, 217-225.

[12] Halpern, M. T., & Warner, K. E. (1993). Motivations for smoking cessation: A comparison of successful quitters and failures. *Journal of Substance Abuse, 5*(3), 247-256.

[13] McBride, C. M., Curry, S. J., Grothaus, L. C., Nelson, J. C., Lando, H., & Pirie, P. L. (1998). Partner smoking status and pregnant smoker's perceptions of support for and likelihood of smoking cessation. *Health Psychology, 17*(1), 63-69.

[14] Palinkas, L. A., Pierce, J., Rosbrook, B. P., Pickwell, S., Johnson, M., & Bal, D. G. (1993). Cigarette smoking behavior and beliefs of Hispanics in California. *American Journal of Preventative Medicine, 9*(6), 331-337.

[15] Pollack, H. A. (2001). Sudden Infant Death Syndrome, maternal smoking during pregnancy, and the cost-effectiveness of smoking cessation in young adults. *Health Psychology, 15*(4), 261-268.

[16] Rose, J. S., Chassin, L., Presson, C. C., & Sherman, S. J. (1996). Prospective predictors of quit attempts and smoking cessation in young adults. *Health Psychology, 15*(4), 261-268.

[17] Vander, M. R., Cummings, S. R., & Coates, T. J. (1990). Ethnicity and smoking: Differences in white, black, Hispanic and Asian medical patients who smoke. *American Journal of Preventative Medicine, 6*(4), 194-199.

[18] Zhu, S., Melcer, T., Sun, J., Rosbrook, B. P., & Pierce, J. (2000). Smoking cessation with and without assistance: A population-based analysis. *American Journal of Preventative Medicine, 18*(4), 305-311.

F. Children are free of smoking-related illnesses.

5. Availability of smoking-cessation programs for pregnant women, their partners, and parents of young children (ratio of programs to adults in the community) (C)

Category: Structural measure

What is the definition of this indicator?

This indicator measures the availability of smoking-cessation programs in the community that serve pregnant women, their partners, and adults with children age 0 to 5 years. The indicator is the number of programs in a community per 1000 adults living in that community.

Why is this indicator important?

Having an adequate supply of smoking-cessation programs available to parents will aid communities in ensuring that children are living in smoke-free environments. In addition to well-documented health risks associated with smoking (e.g., increased risk of lung cancer, heart disease, respiratory illnesses), women who smoke have higher rates of reproductive problems than do women who do not smoke.[2] Prenatal exposure to tobacco is associated with decreased birth weight, and with infant death through sudden infant death syndrome, stillbirth, and spontaneous abortion.[2,3,8] Prenatal exposure to cigarette smoke may also affect children's cognitive and language abilities.[4-6] Women who stop smoking when they become pregnant can improve the health and birth outcomes of their infants.[1] (See indicators F1 through F4.) Collecting these data could help communities to assess whether a shortage of smoking-cessation programs is an issue that might be addressed in their strategic plans.

What are the possible sources of data for this indicator?

Determining the availability of smoking-cessation programs could be included as part of the community resource mapping activities. Identifying these resources is essential to building the capacity of the community to meet the health needs of its children and families.[7]

Sources

[1] Ahlsten, G., Cnattingius, S., & Lindmark, G. (1993). Cessation of smoking during pregnancy improves fetal growth and reduces infant morbidity in the neonatal period. A population-based prospective study. *Acta Paediatrica, 82*, 177-181.

[2] Centers for Disease Control and Prevention. (2001). *Women and smoking: A report of the Surgeon General - 2001*, from http://www.cdc.gov/tobacco/sgr_forwomen.htm

[3] Charlton, A. (1994). Children and passive smoking: A review. *Journal of Family Practice, 38*, 267-277.

[4] Cornelius, M. D., Ryan, C.M., Day, N.L., Goldschmidt, L., & Willford, J.A. (2001). Prenatal tobacco effects on neuropsychological outcomes among preadolescents. *Journal of Developmental and Behavioral Pediatrics, 22*, 217-225.

[5] Freid, P. A., Watkinson, B., & Siegel, L. S. (1997). Reading and language in 9- to 12-year olds prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology, 19*, 171-183.

[6] Frydman, M. (1996). The smoking addiction of pregnant women and the consequences on their offspring's intellectual development. *Journal of Environmental Pathology, Toxicology and Oncology, 22*, 217-225.

[7] Kretzmann, J., & McKnight, J. (1993). *Building community from the inside out: A path toward finding and mobilizing a community's assets*. Chicago: ACTA Publications.

[8] Pollack, H. A. (2001). Sudden Infant Death Syndrome, maternal smoking during pregnancy, and the cost-effectiveness of smoking cessation intervention. *American Journal of Public Health, 91*, 432-436.

G. Children have access to high-quality early care and education.

1. Number of licensed center child-care spaces per 100 children (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of spaces in licensed child care centers per 100 children 0 to 5 years of age (excluding those enrolled in kindergarten). Center-based care includes a range of nonhome-based care, including child care centers, nursery schools, preschools, prekindergartens, early interventions, center-based Head Start programs, and other licensed early childhood care and education programs serving this age group. This indicator involves creating a ratio of spaces in licensed centers in relation to the number of children 0 to 5 years of age (excluding those enrolled in kindergarten). The State of California defines "child-care center" as a facility other than a family day care home in which less than 24-hour per day nonmedical supervision is provided for children in a group setting.[3] This indicator does not include "family day care homes," which are defined as facilities providing "care, protection and supervision of children, in the caregiver's own home, for periods of less than 24 hours per day, while the parents or authorized representatives are away".[3]

Why is this indicator important?

Childcare outside the home is widespread. A majority of children ages 0 to 6 years of age (excluding those enrolled in kindergarten) are in some type of regular, nonparental child care. In 2001, 61 percent of children 0 to 6 years of age (excluding those enrolled in kindergarten) participated in some form of child care and 34 percent received care in a center-based program.[8]

The demand for child care is growing. Maternal employment rates are increasing, in part because of policies such as the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which requires mothers receiving welfare (including mothers of very young children) to fulfill work requirements. However, the availability of center-based child care varies locally, including within California.[9] With a growing majority of young children in child care, the number of spaces available becomes increasingly important. Use of center-based child care is also growing among mothers who are not in the labor force.[8]

High-quality child care can be associated with many positive outcomes. Although the quality of care and the child-caregiver relationship are most strongly associated with beneficial developmental outcomes (regardless of type of care), there is some evidence that participation in center-based care is associated with advances in cognitive development. One study found participation in center care to be associated with higher scores on measures of language development and

cognitive school readiness.[13,14] The association between participation in high-quality center-based care and cognitive development has also been found in a sample of children from families receiving welfare.[11]

Licensed care is not synonymous with quality care. This indicator measures the maximum capacity and potential availability of licensed child care centers. It does not measure quality or other aspects of licensed center-based care. (See indicators G7, G8, G9, G12, G13, G14, and G16 for quality-related indicators.) Minimum licensing requirements are aimed at the safety of children in child care. However, some studies have found violations, including safety hazards, in licensed child-care facilities. [15,17]

Who else currently uses this indicator?

Many national and state efforts use similar indicators. Iowa's Department of Human Services is an example of a state agency that collects information on the number of spaces in licensed or registered child-care facilities potentially available for children ages 0 to 13 years. In addition, Minnesota, Missouri, Rhode Island, and Vermont are examples of states that currently track child-care spaces. None of these states, however, differentiates between center care and family care.

State-based information related to this indicator is also tracked by the National Child Care Information Center. The California Child Care Resource & Referral Network also tracks data involving this indicator in the *2001 California Child Care Portfolio*.[1]

What are the possible sources of data for this indicator?

Child-care resource and referral agencies are a potential data source. The California Child Care Resource & Referral Network produces a report every 2 years with detailed information about child-care availability on the state and county levels.[2] In addition, the National Association of Child Care Resource and Referral Agencies has new data collection procedures and software for uniform collection of supply data nationally, although the system is still being implemented and tested.

Data can be collected directly from child care centers or records. Spaces in licensed center-based facilities for children 0 to 5 years of age (excluding those enrolled in kindergarten) could be collected annually from all licensed center-based child-care facilities.

The Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) and the National Household Education Survey (NHES) collect information concerning the number of children in child care, although they do not address the number of licensed child-care spaces available.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Information for this indicator is likely to be collected by the program, which will be subject to changes in funding. Changes in funding may cause fluctuations in space availability and the ability of centers to accurately report the number of spaces they have available at a certain point in time.

- Cultural issues:

The type of care chosen by families varies by the race and ethnicity of the family. In 1997, 30 percent of black families and 24 percent of white families used center care, compared with 10 percent of Hispanic families.[4,7] The largest discrepancies by race and ethnicity among ethnic groups appear in the care of infant and toddlers.

Some studies have found that the association of center-based care and cognitive development differ by the race and ethnicity of the child and socioeconomic status of the child's family. In two studies, center-based care was associated with greater gains in language development for children of color than for white children.[1,10] Findings about the relationships among the type of care, a child's cognitive development, and family socioeconomic status are more mixed, with one study finding no differences[6] and another finding that center-based care benefits the cognitive development of low-income children.[5]

For this indicator to be effective in identifying spaces for children of all cultures to receive high-quality early care and education, the licensing requirements should include demonstrated cross-cultural understanding a staff that includes a representative number of bilingual/bicultural providers.

According to the Child Care Law Center:

For low-income families eligible for subsidies who are not connected to the welfare system (those at 75 percent of state median income or $35,100 for a family of 3), state and federal funds currently available are far from sufficient. More than 280,000 eligible families are on waiting lists. Current budget proposals focus on the inequity between those low-income families connected to the welfare system and those who are not. However, in reality only families in the upper income brackets can afford to pay the full cost of quality child care.[16]

- Other:

This indicator may not completely reflect access to licensed center-based child care for certain groups, given that low-income families may be unable to afford the cost of more expensive child care centers.[12] Conversely, families with incomes at the middle and higher end of the economic distribution may not have access to high-quality child care that is geared toward at-risk populations, such

as Head Start and other early intervention programs. In addition, this indicator will not reflect local variations in demand.

To track this indicator over time, a specified time period should be included in this indicator.

Sources

[1] Burchinal, M. R., Ramey, S. L., Reid, M. K., & Jaccard, J. (1995). Early child care experiences and their association with family and child characteristics during middle childhood. *Early Childhood Research Quarterly, 10*, 33-61.

[2] The California Child Care Resource and Referral Network: The 2001 California Child Care Portfolio, http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=624

[3] California code of regulations, Title 22, Division 12, Chapter 1, Child care centers, Section 101152 (2001).

[4] Cappizano, D., Adams, G., Sonenstein, F. (2000). Child care arrangements for children under five: Variations across states. In *New Federalism: National Survey of America's Families (Series B, No. B-7)*. Washington, DC: The Urban Institute.

[5] Caughy, M. O., DiPietro, J., & Strobino, D. M. (1994). Daycare participation as a protective factor in the cognitive development of low-income children [Special issue: Children and poverty]. *Child Development, 65*, 457-471.

[6] Clarke-Stewart, K. A., Gruber, C. P., & Fitzgerald, L. M. (1994). *Children at home and in day care*. Hillsdale, NJ: Erlbaum.

[7] Ehrle, J., Tout, K., & Adams, G. (2000). Who's caring for our youngest children? Child care patterns for infants and toddlers. In *New Federalism: National Survey of America's Families Series*. Washington, DC: The Urban Institute.

[8] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[9] Fuller, B., Coonerty, C., Kipnis, F., & Choong, Y. (1997). *An unfair head start: California families face gaps in preschool and child care availability*. Berkeley, CA: Growing Up in Poverty Project.

[10] Helburn, S. W. (1995). *Cost, quality, and child outcomes in child care centers: Technical report*. Denver, CO: Department of Economics, Center for Research in Economic and Social Policy, University of Colorado.

[11] McGroder, S., Zaslow, M., Moore, K. A., & LeMenestrel, S. M. (2000). *National evaluation of welfare-to-work strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes Study*. Washington, DC: U. S. Department of Health and Human Services, U. S. Department of Education.

[12] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[13] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[14] NICHD Early Child Care Research Network. (in press). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal*.

[15] Office of the Inspector General. (1994). *Nationwide review of health and safety standards at child care facilities*. Washington, DC: U.S. Department of Health and Human Services.

[16] Strohl, N. (2002). *Recommendations on child care - California Working Families Policy Summit*. Retrieved July 30, 2002, from www.ccrwf.org

[17] U.S. Consumer Products Safety Commission. (1999). *Safety hazards in child care settings*. Washington, DC: Author.

G. Children have access to high-quality early care and education.

2. Number of licensed family child-care slots per 100 children (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children aged 0 to 5 (excluding those enrolled in kindergarten) who can be accommodated in state-licensed, family child-care homes. The State of California defines "family child-care home" as providing "care, protection and supervision of children, in the caregiver's own home, for periods of less than 24 hours per day, while the parents or authorized representatives are away."[4] This definition includes small and large family day-care homes, which are differentiated by the maximum number of children they can serve on the basis of their staffing numbers and the ages of the children.[4]

Although "family child care" can include a range of home-based care, for the purposes of this indicator it refers to paid care for multiple children from different families in the provider's home. This definition covers the type of home-based care that can be licensed in California. Other types of home-based child care that are license-exempt in California include in-home care, home-care providers, and relative care.[2,4] "In-home care" refers to situations in which a child is cared for by someone (e.g., relative, neighbor, nanny) in the child's own home. "Home care providers" provide child care in their homes, but only for their own children and children from one other family. In "relative care" a child is in "any arrangement for the receiving and care of children by a relative."[4]

Nor does family child care include child care centers, nursery schools, preschools, prekindergartens, early interventions, center-based Head Start programs, and other early childhood care and education programs serving this age group in nonhome-based facilities. A similar definition is used in child-care research.[12]

This indicator involves creating a ratio of available spaces in licensed family care homes per 100 children ages 0 to 5 (excluding those enrolled in kindergarten).

Why is this indicator important?

Child care outside the home is widespread. A majority of children aged 0 to 6 years (excluding those enrolled in kindergarten) are in some type of regular, nonparental child care.[6,10,11] In 2001, 61 percent of children aged 0 to 6 participated in some form of nonparental child care, and 39 percent received care in a home.[5,2]

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[2] As calculated here, care in a home includes care by a relative or nonrelative and is not necessarily in the provider's home.

Licensed care is not synonymous with quality care.[7] This indicator measures the maximum capacity and potential availability of licensed family-care homes. It does not measure quality or other aspects of licensed center-based care. (See indicators G7, G8, G9, G12, G13, G14, and G16 for quality-related indicators.) Minimum licensing requirements are aimed at the safety of children in child care.

However, licensed family child care tends to be higher in quality than nonlicensed family child care.[8,14] One study found that family child-care providers who were licensed were more likely to offer sensitive and responsive caregiving. In addition, being licensed was a better indicator of quality in this study than was having the appropriate child-caregiver ratio, group size, or age combination of children. The researchers concluded that "the single best indicator of quality in family child care is the provider's regulatory status."[8] Another study also found that family child-care providers who offered higher quality care were more likely to be licensed.[14]

High-quality child care is associated with many positive outcomes.[11-13] Although there is some evidence that participation in center-based care is associated with better cognitive development in children,[9,12,13,16] the National Institute of Child Health and Development (NICHD) Study of Early Child Care also found that children who had been in family-based care before age 3 performed better on cognitive and language measures than their peers in other types of care before age 3.[12]

Who else currently uses this indicator?

Many national and state efforts track similar indicators.

The Children's Foundation produces a report on licensed family child-care homes annually.[15] The California Child Care Resource & Referral Network tracks this indicator in the *2001 California Child Care Portfolio*.[1] Iowa's Department of Human Services is an example of a state department that collects information on the number of spaces in licensed or registered child-care facilities potentially available for children ages 0 to 13. In addition, Minnesota, Missouri, Rhode Island, and Vermont are examples of states that currently track child-care spaces. None of these states, however, differentiates between center care and family care.

What are the possible sources of data for this indicator?

California-specific data are available at the state and county levels. The number of slots in licensed family care homes is collected every 2 years by the California Child Care Resource & Referral Network.[3] The Network produces a report, the *California Child Care Portfolio*, that gives statewide and county-level information on family child-care slots.

Sources

[1] California Child Care Resource & Referral Network. (2001). *2001 California child care portfolio*. San Francisco, CA.

[2] California Child Care Resource & Referral Network. (2001). *Tips on finding child care that works best for your family*. Retrieved August 2, 2002, from http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=386

[3] California Child Care Resource & Referral Network: California child care portfolio, http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=368.

[4] California code of regulations, Title 22, Division 12, Chapter 3, Family child care homes, Section 102352 (f)(1)(a-b) (2001).

[5] Federal Interagency Forum on Child and Family Statistics. *America's children: Key national indicators of well-being, 2001. Table ED1.* Paper presented at the Federal Interagency Forum on Child and Family Statistics, Washington, D.C.

[6] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[7] Gallagher, J. J., Rooney, R., & Campbell, S. (1999). Child care licensing regulations and child care quality in four states. *Early Childhood Research Quarterly, 14*(3), 313-333.

[8] Kontos, S., Howes, C, Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York: Teachers College Press.

[9] McGroder, S., Zaslow, M., Moore, K. A., & LeMenestrel, S. M. (2000). *National evaluation of welfare-to-work strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes Study*. Washington, DC: U. S. Department of Health and Human Services, U. S. Department of Education.

[10] National Center for Education Statistics. (1996). *Statistics in brief: Child care and early education participations of infants, toddlers, and preschoolers* (No. NCES 95-824).

[11] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[12] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[13] NICHD Early Child Care Research Network. (in press). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal*.

[14] Pence, A. R., & Goelman, H. (1991). The relationship of regulation, training, and motivation to quality of care in family day care. *Child and Youth Care Forum, 20*(2), 83-101.

[15] The Children's Foundation. (2001). *2001 family child care licensing study*. Washington, DC: Author.

[16] Zaslow, M. J., Oldham, E., Moore, K. A., & Magenheim, E. (1998). Welfare families' use of early childhood care and education programs, and implications for their children's development. *Early Childhood Research Quarterly, 13*(4), 535-560.

G. Children have access to high-quality early care and education.
3. Number of Head Start slots per 100 low-income children (C)
Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the total number of children who can be accommodated by Head Start facilities for every 100 low-income children in the appropriate age range. The indicator should be calculated separately for two age ranges, 0 to 2 and 3 to 5 (excluding those enrolled in kindergarten). Early Head Start (which covers children ages 0 to 2) is currently expanding, and the number of slots in this age range may be substantially higher than for older preschool age children.

Why is this indicator important?

In general, Head Start programs provide good quality care. A study of the quality of Head Start and its impacts on children's development found that, on average, Head Start programs across the nation provide "good quality range on a frequently used measure of the quality of the child care environment."[6] Head Start scores in that study were higher than comparable scores of other types of child care in other large-scale studies. For example, another study found the quality of center care to be, on average, only minimal to good.[16]

High-quality child care is associated with positive developmental outcomes for children. Positive outcomes include language and general cognitive development,[2,5,13,15] and behavioral development.[9,10,14] Moreover, some studies have shown that poor children and children of color may benefit more in regard to language and cognitive outcomes compared with children from higher income families.[1,8] Thus, Head Start programs may be particularly important to the cognitive and behavioral development of the low-income children they target. Furthermore, low-income children are more likely to have health issues and developmental disabilities, and Head Start's comprehensive services can help identify and treat such problems.

Head Start programs have been shown to increase positive outcomes for participating children. One study found that the top 25 percent of children who attended Head Start classrooms had language and math scores within the nationally normative range. In addition, Head Start children also had significant growth in vocabulary comprehension and improved social skills over the course of the school year. However, they showed no gains in letter knowledge, book appreciation, and behavior problems.[17]

Who else currently uses this indicator?

To date, it does not appear that any other group is publicly reporting on this specific indicator.

What are the possible sources of data for this indicator?

Head Start Regional Offices have information on Head Start slots in individual programs, regions, states, counties, and localities. This information may need to be aggregated up to the county level. Data from the U.S. Census can be used to obtain the total number of children ages 0 to 2 and 3 to 5 (excluding those enrolled in kindergarten), or the number of children in these age ranges in low-income families, by county. Furthermore, information can be obtained from the California Head Start State Collaboration Office[4] (and the California Head Start Association).[3]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

This indicator could change if funding increases allow for more Head Start eligible children to be served. Ohio, for example, uses state funds to increase the proportion of Head Start eligible children in Head Start programs.

- Cultural issues:

Head Start serves a diverse population (29.8 percent Hispanic, 33.8 percent black, and 29.9 percent white).[11] Minority children appear to benefit more from high-quality child care[7,12] suggesting the particular importance of Head Start for these children. When possible, data should be disaggregated by racial and ethnic groups.

Sources

[1] Burchinal, M. R., Peisner-Feinberg, W., Bryant, D. M., & Clifford, R. (2000). Children's social and cognitive development and child-care quality: Testing for differential associations, gender, or ethnicity. *Applied Developmental Science, 4*(3), 149-165.

[2] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[3] California Head Start Association, http://www.ca-headstart.org/

[4] California Head Start State Collaboration Office, http://www.cde.ca.gov/cyfsbranch/chssco/

[5] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[6] Commissioner's Office of Research and Evaluation and the Head Start Bureau. (2000). *FACES Findings: New research on Head Start program quality and outcomes*. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families.

[7] Currie, J., & Thomas, D. (1996). *Does Head Start help Hispanic children?* Los Angeles, CA: University of California at Los Angeles.

[8] Dearing, E., McCartney, K., & Taylor, B. (2001). Change in family income-to-needs matters more for children with less. *Child Development, 72*(6), 1779-1793.

[9] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[10] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[11] Head Start Bureau. (2002). *Head Start statistical fact sheets for the year 2002*. Retrieved June 21, 2002, from http://www2.acf.dhhs.gov/programs/hsb/research

[12] Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F.-R. (1990). Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child Development, 61*(2), 495-507.

[13] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[14] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[15] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[16] Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2000). *The children of the Cost, Quality, and Outcomes Study go to school: Technical report*. Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

[17] Zill, N., Resnick, G., & Hubbel, R. H. (2000). *What children can know and can do at the end of head start and what it tells us about the program's performance*. Washington, DC: Head Start Bureau.

G. Children have access to high-quality early care and education.

4. Number and percentage of licensed center child-care spaces for children with special needs (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of child-care spaces in early childhood care and education facilities allocated for children with special needs (as defined by the Individuals with Disabilities Education Act, IDEA), who are ages 0 to 5 (excluding those enrolled in kindergarten).[5] The 13 special needs identified by IDEA are autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. Early childhood care and education programs include a wide array of nonhome-based care, such as child care centers, nursery schools, preschools, prekindergartens, early interventions, Head Start programs, and other center care programs serving this age group. The percentage is calculated by dividing the number of spaces for children with special needs by the number of total spaces.

Why is this indicator important?

Child care availability for children with special needs is problematic. In 1999, 61 percent of children under 4 were in regularly scheduled child care.[6,14] However, research has shown that children with special needs are less likely to be in child-care centers, begin child care at older ages, and are in child care fewer hours than children without special needs.[2,4,13,16] Often, child-care centers do not have vacancies, or they may not provide the types of arrangements that parents want or need.[7] These issues are amplified when trying to find child-care spaces for children with special needs. Families of children with special needs often struggle to find appropriate child care.[17]

Child care for children with special needs can lead to positive cognitive and developmental outcomes. Children with special needs participating in high-quality child care scored higher on measures of adaptive behavior and had more advanced motor skills than a comparison group who received home care.[2,3,11] Research has shown that child care benefits children with special needs in many of the ways it benefits other children.[8] High-quality child care provides a setting for developing peer interaction skills, bonds with adults, and language and other cognitive skills.[14] In addition, formal child-care settings are a child's initial encounter with a school-like environment.[14] Research has shown that high-quality child care can enhance cognitive, emotional, and social development.[10,14]

High-quality child care for children with special needs also benefits families.[8,9] Child care can give parents a break from the constant attention required to care for a child with special needs.[1]

Who else currently uses this indicator?

To date, no information specific to child-care spaces for children with special needs has been located.

National surveys have tracked the use of child care by children with special needs. The Early Childhood Longitudinal Study, Kindergarten Survey (ECLS-K) tracks parent reports of the number of children with special needs who used available child care, but does not examine the number of spaces available.

Several states collect data on child-care enrollment for children with special needs. For example, Missouri collects data on children enrolled in different types of child-care programs and New York collects data on the percentage of children who are enrolled in special education.

What are the possible sources of data for this indicator?

Data can be collected from licensed center care facilities on the number of slots available for children with special needs. This indicator can focus on licensed center care, on all licensed care, or even more broadly on all forms of early care and education, including Head Start and Pre K. Some early childhood programs are funded by sources (e.g., Head Start) that require a certain percentage of spaces to be set aside for children with special needs and consequently require programs to report on the populations they serve.[5]

Data can be obtained from state and federal records. Information on child-care facilities can be gathered from the Child Care Bureau, part of the U.S. Department of Health and Human Services. In addition, each state has a Child Care Licensing Office that keeps records on licensed child-care facilities. State Child Care Licensing Office contact information can be found online.[15]

Child-care resource and referral agencies also may have this data. The National Association of Child Care Resource and Referral agencies has developed a database that collects information on numbers and types of child-care slots. This database is being pilot-tested by several counties in California.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Although child-care spaces for children with special needs may be available, parents may not be able to access these services because of such factors as lack of transportation or problems in coordinating early interventions with child-

care services.[11,12] In addition, many children with special needs may participate in alternative care such as family or home-based care. Finally, reports on the number of child-care slots available for children with special needs may vary in accuracy, depending on child-care providers' understanding of what is involved in serving children with special needs

- Sensitivity to change:

Since the passage of the Americans with Disabilities Act of 1990, the number of child-care spaces available for children with special needs has increased.[7] The Act's requirement that group day-care centers cannot refuse admission because of disability has allowed greater access to child care for children with special needs. However, all child-care facilities may not have the equipment and training necessary to accommodate children with special needs appropriately.

- Cultural issues:

One important issue for defining quality child care is how well child care reflects and recognizes the ethnic and cultural diversity of California's families. (See indicator G1.)

- Other:

It may also be useful to track the percentage of centers with spaces for children with special needs as an indicator.

Sources

[1] Ambler, L. (1996). *Respite care: A gift of time. (NICHCY Briefing Paper, 1-8.)*. Washington, D.C.: The National Information Center for Children and Youth with Disabilities.

[2] Booth, C. L., & Kelly, J. F. (1998). Child care characteristics of infants with and without special needs: Comparisons and concerns. *Early Childhood Research Quarterly, 13*, 603-622.

[3] Booth, C. L., & Kelly, J. F. (1999). Child care and employment in relation to infants' disabilities and risk factors. *American Journal on Mental Retardation, 104*(2), 117-130.

[4] Brandon, P. D. (in press). Child care utilization among working mothers raising children with disabilities. *Journal of Family and Economic Issues*.

[5] Dodge, D. T., & Bickart, T. S. (1998). *From preschool for parents: What every parent needs to know about preschool*. Naperville, IL: Sourcebooks, Inc.

[6] Fein, G. G., & Clarke-Stewart, K. A. (1973). *Day care in context*. New York: John Wiley and Sons.

[7] Gormley, W. T. (1995). *Everybody's children: Child care as a public problem*. Washington, D.C.: The Brookings Institute.

[8] Guralnick, M. J. (1976). The value of integrating handicapped and non-handicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[9] Ispa, J. (1981). Social interactions among teachers, handicapped children, and nonhandicapped children in a mainstream preschool. *Journal of Applied Developmental Psychology, 1*, 231-250.

[10] Kagan, S. L., & Neuman, M. J. (1997). Defining and implementing school readiness: Challenges for families, early care and education, and schools. In R. P. Weissberg, T. P. Gullotta, R. L. Hampton, B. A. Ryan, & G. R. Adams (Eds.), *Healthy children 2010: Establishing preventive services* (pp. 61-96). Thousand Oaks, CA: Sage Publications.

[11] Kelly, J. F., & Booth, C. L. (1999). Child care for infants with special needs: Issues and applications. *Infants and Young Children, 12*(1), 26-33.

[12] Klein, N., & Sheehan, R. (1987). Staff development: A key issue in meeting the needs of young handicapped children in day care settings. *Topics in Early Childhood Special Education, 7*, 13-27.

[13] Landis, L. J. (1992). Marital employment, and childcare status of mothers with infants and toddlers with disabilities. *Topics in Early Childhood Special Education, 12*, 496-507.

[14] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[15] U.S. Department of Education, State Child Care Licensing Offices, http://www.ed.gov/Programs/bastmp/SCCLO.htm

[16] Warfield, M. E., & Hauser-Cram, P. (1996). Child care needs, arrangements, and satisfaction of mothers of children with developmental disabilities. *Mental Retardation, 34*, 294-302.

[17] Zigler, E. F., & Lang, M. E. (1991). *Child care choices: Balancing the needs of children, families, and society*. New York: Free Press.

G. Children have access to high-quality early care and education.

5. Number and percentage of children with special needs enrolled in Head Start (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the total number of children with special needs who are enrolled in Head Start. The percentage can be calculated by dividing the total number of children with special needs who are enrolled in Head Start by the total number of children with special needs. Head Start defines "disabled children" (also called "special needs children") as "children with mental retardation, hearing impairments including deafness, speech or language impairments, visual impairments including blindness, serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments or specific learning disabilities who, by reason thereof need special education and related services. The term 'children with disabilities' for children aged 3 to 5, inclusive, may, at a State's discretion, include children experiencing developmental delays, as defined by the State and as measured by appropriate diagnostic instruments and procedures, in one or more of the following areas: physical development, cognitive development, communication development, social or emotional development, or adaptive development; and who, by reason thereof, need special education and related services."[7]

Note: This indicator refers to Head Start, rather than Early Head Start programs, and thus focuses on children 3 to 5 years of age (excluding those enrolled in kindergarten).

Why is this indicator important?

In addition to benefiting children without special needs,[14,15] high-quality child care is associated with positive outcomes for children with special needs.[13] For instance, two-and-a-half-year-old children with special needs in high-quality care were found to have more advanced motor development and higher adaptive behavior scores than children staying at home with their mothers.[1,9] Studies have also found that higher quality care predicts better outcomes for the family as a whole, as well as for the child in care.[4,8] Intervention studies have found that short-term impacts on cognitive and social outcomes for children with special needs are most likely to occur when the interventions are structured and focused on the caregiver-child relationship, although this finding is moderated by the severity of the disability.[5,16]

Affordable quality child care is difficult to find for children with special needs. Many child-care providers are unable or unwilling to enroll these children in their programs, provide logistical support such as transportation or adaptations of physical facilities, or find appropriately trained teachers to meet the children's

needs.[2,9] A large percentage of mothers of infants with special needs (e.g., 45 percent in one multisite study) reported that they would have to forgo work to care for their children because they could not afford child care.[9] In addition, the cost of care for children with special needs was found to increase significantly as the severity of the child's disability increased.[17]

Low-income children, the population that Head Start was created to serve, are more likely than non-low-income children to have special needs.[12] Moreover, this pattern is especially pronounced when the child is of a minority ethnic group—the groups that comprise the majority of children in Head Start.[11] If those families who have the fewest resources to spend on care are the same families that are more likely to need the expensive care required for children with special needs, the provision of facilities and trained staff to serve disabled children's needs in a national program would be particularly important.

However, data regarding patterns of or quality of care used by special needs children are scarce.[13] The little information that is available suggests that children with special needs enter formal child care at older ages (if they attend at all) and are more likely to be in the care of a relative (including fathers) than nondisabled children.[1]

Who else currently uses this indicator?

The Head Start Bureau of the U.S. Department of Health and Human Services (DHHS) tracks the number of special needs students that attend Head Start programs nationwide. The *2002 Head Start Fact Sheet* reports that 13 percent of total Head Start enrollment consists of children defined as disabled under the definition provided by the Performance Standards (see above for the full definition).[6]

What are the possible sources of data for this indicator?

Program-, grantee-, or state-level information on the number of special needs children enrolled in Head Start is not currently available for public use. The data might be available on approval by Administration on Children Youth and Family (ACYF). If so, the data can probably be obtained from the Head Start regional offices. Individual states' agencies, as well, might be able to provide these data.

To determine the value of this indicator as originally worded, it is only necessary to calculate 10 percent of the total population of children in Head Start programs for the geographical area being examined.

However, the number of special needs children actually being served by Head Start might be below 10 percent (i.e., if special needs children account for less than 10 percent of the total population of the area being examined, or if the given program is not meeting the contracted Performance Standards) or above 10

percent (i.e., the program chooses to take more than the minimum 10 percent). An alternative indicator could be the number and percentage of slots actually filled by children with special needs.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The reliability of this indicator depends on the reliability with which young children with special needs are appropriately identified. The figure will be problematic if developmental testing fails to identify the actual number and percentage of children with special needs enrolled in a Head Start program.

Because Head Start sites are required to reserve at least 10 percent of their enrollment for children with special needs, the degree to which Head Start truly meets the needs of the community it serves depends on whether the enrolled Head Start population is in fact made up of 10 percent special needs children.

- Cultural issues:

Head Start serves a diverse population (29.77 percent Hispanic, 33.8 percent black, and 29.9 percent white).[6] The fact that children without special needs from minority families show some indication of responding particularly strongly to higher quality child care[3,10] suggests the potential importance of Head Start participation for children from minority families in general. Furthermore, minority group children are overrepresented among low-income children with special needs.[11]

Sources

[1] Booth, C. A., & Kelly, J. F. (1998). Child care characteristics of infants with and without special needs: Comparisons and concerns. *Early Childhood Research Quarterly, 13*, 603-622.

[2] Chang, A., & Teramoto, R. (1987). Children with special needs in private day care centers. *Child and Youth Care Quarterly, 16*, 60-67.

[3] Currie, J., & Thomas, D. (1996). *Does Head Start help Hispanic children?* Los Angeles, CA: University of California at Los Angeles.

[4] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[5] Guralnick, M. J. (1998). The effectiveness of early intervention for vulnerable children. *American Journal of Mental Retardation, 102*, 319-345.

[6] Head Start Bureau. (2002). *Head Start statistical fact sheets for the year 2002*. Retrieved June 21, 2002, from http://www2.acf.dhhs.gov/programs/hsb/research

[7] Head Start Performance Standards, 1304.3 (2).

[8] Ispa, J. (1981). Social interactions among teachers, handicapped children, and non-handicapped children in mainstream preschool. *Journal of Applied Developmental Psychology, 1*, 231--250.

[9] Kelly, J. F., & Booth, C. L. (1999). Child care for infants with special needs: Issues and applications. *Infants and Young Children, 12*(1), 26-33.

[10] Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F.-R. (1990). Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child Development, 61*(2), 495-507.

[11] McLoyd, V. C. (1990). The impact of economic hardship on black families and children. *Child Development, 61*(2), 311-346.

[12] McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.

[13] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[14] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[15] NICHD Early Child Care Research Network. (in press). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal*.

[16] Shonkoff, J. P., & Hauser-Cram, P. (1987). Early intervention for disabled infants and their families. *Pediatrics, 80*(650-658).

[17] Warfield, M. E., & Hauser-Cram, P. (1996). Child care needs, arrangement, and satisfaction of mothers of children with developmental disorders. *Mental Retardation, 24*, 294-302.

G. Children have access to high-quality early care and education.

6. Number and percentage of early childhood education (ECE)/child-care workers who are credentialed (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator can be defined as the number of early childhood educators or child-care workers in a given population who serve children 0 to 5 years of age (excluding those enrolled in kindergarten) who have been awarded a Child Development Associate (CDA) degree. To earn this nationally recognized certification, a high school diploma, 120 hours of training in either ECE or child development, 480 hours of work experience, and current employment in a licensed care facility are required. CDA concentrations are broken down by type of child care (i.e., center-based, for which candidates receive endorsements to work with infants and toddlers or preschool children; family child care; and home visitor [e.g., someone who works directly with the parent in the home]).[4]

To calculate the percentage, the number of ECE/child-care workers who are credentialed is divided by the total number of child-care workers who serve children 0 to 5 years of age (excluding those enrolled in kindergarten) in the population of interest.

Why is this indicator important?

The CDA certification requires a combination of course work and hands-on experience working with young children in a licensed facility. The training required for CDA certification teaches child-care providers about developmental theory and about the more practical aspects of working with children, such as child health and safety, parent/teacher relationships, and professionalism.

The CDA degree is aimed at providing the kind of background that supports the provision of higher quality child care. Research finds that more specialized education and training in child development is associated with more sensitive caregiving in both center-based and family care and with better developmental outcomes for children.[5-7,10,11] In the Florida Quality Improvement Study of center-based child care, children with CDA-credentialed teachers or with teachers with a Bachelor's degree plus ECE training (BA plus ECE) had better cognitive and social developmental outcomes than children who had teachers with a high school degree.[8] For instance, children with CDA-credentialed teachers initiated positive interactions with others more frequently and engaged in more complex peer play than children who had BA plus ECE teachers or than children who had teachers with a high school degree. CDA-credentialed teachers were also rated as more sensitive than teachers with high school degrees (but not teachers with BA plus ECE).[8]

Most states, including California, list CDA certification as part of their licensing requirements for teachers in child-care centers. However, states differ in whether they consider the CDA certification as sufficient training to qualify for a given teaching position (e.g., teacher's assistant, teacher, director). For instance, in California, those with CDA certification can be considered fully qualified teachers only after they have further experience working with children beyond the CDA credential, whereas in Alabama those with a CDA and no other education or experience can be a child-care director.[1,3,4]

Who else currently uses this indicator?

This indicator is monitored on both the national and state levels. The Council for Professional Recognition[4] currently tracks the number of CDA credentials that have been awarded. However, the Council's website lists only approximate numbers on a national level. It is possible that more detailed information could be obtained directly from the Council.

This indicator is tracked on the state level by the Department of Public Social Services.

Minnesota and Rhode Island are examples of states that have indicators that track the training of early childhood teachers.

What are the possible sources of data for this indicator?

Survey or interview data collected at the program level would be the most accurate way to collect information regarding staff members' credentials. In addition, having such data would make it possible to examine credentialing in relation to type of program.

The National Household Education Survey (NHES) also examines teacher training, although it does not address credentialing directly.[9]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Research findings indicate an association between caregiver training and both the provision of higher quality and better child outcomes. The research is limited, however, in the extent to which it focuses on the CDA in particular.

- Sensitivity to change:

It is possible that providing incentives for child-care providers to obtain credentials could increase the number of credentialed ECE/child-care workers. An example of an incentive program used by some states is the Teacher Education and Compensation Helps (T.E.A.C.H) Early Childhood Project, which was started by the Child Care Services Association in North Carolina.

T.E.A.C.H. uses public and private funds to provide scholarships to center-based and family-based child-care providers to complete ECE course work, including obtaining CDA credentials. When participants in T.E.A.C.H successfully complete the courses paid for by the scholarship, they receive a financial bonus (ranging from $100 to $700) or a raise (4 or 5 percent) and must remain in their current job for at least 6 months.[2]

Sources

[1] California Community Care Licensing Division. (August 2001). *Manual of policies and procedures: Child care center*: Department of Social Services, Health and Human Services Agency, State of California.

[2] Child Care Services Association. (2002). *The T.E.A.C.H. Early Childhood® Project*. Retrieved July 26, 2002, from http://www.childcareservices.org/TEACH/T.E.A.C.H.%20Project.htm#Top%20of%20TEACH%20page

[3] Council for Professional Recognition. (2002). *CDA in state child care licensing regulations*. Retrieved June, 25, 2002, from http://www.cdacouncil.org/index.htm

[4] Council for Professional Recognition. (2002). *What is a child development associate credential?* Retrieved June, 25, 2002, from http://www.cdacouncil.org/index.htm

[5] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[6] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[7] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[8] Howes, C. (1997). Children's experiences in center-based care as a function of teacher background and adult:child ratio. *Merrill-Palmer Quarterly, 43*(3), 404-425.

[9] National Household Education Survey (NHES), Question E24. http://nces.ed.gov/nhes/

[10] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[11] Whitebook, M., Howes, C., & Phillips, D. (1990). *Who cares? Child care teachers and the quality of care in America (Final report: National child care staffing study)*. Oakland, CA: Child Care Employee Project.

G. Children have access to high-quality early care and education.

7. Staff-to-child ratio in center-based facilities for children under age 2

8. Staff-to-child ratio in center-based facilities for children ages 2 to 5

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of child-care providers in a classroom or group compared to the number of children in the classroom or group.

Different ratios are recommended, depending on the age of the child, with lower ratios recommended for younger children. In California, licensed child-care center classrooms for children under 2 years of age are required to have, at a minimum, 1 adult for every 4 children. Toddler classrooms (for children aged 18 to 30 months) in preschool programs need one teacher or an aide supervised by a teacher for every 6 children, with no more than 12 children in a group. Licensed child-care center classrooms for children ages 2.5 to 5 years are required to have, at a minimum, 1 teacher for every 12 children. However, if a classroom has both a teacher and a teacher's aide, the ratio increases to 1 adult for every 15 children; in other words, a single teacher can have 12 students, but a teacher with a teacher's aide can have 30 students. Child development programs funded by the California Department of Education under Title 5 are required to have 1 adult (i.e., teacher, teacher's assistant, or parent volunteer) for every 3 infants (birth to 18 months old), with at least 1 teacher for every 18 infants; 1 adult for every 4 toddlers (18 to 36 months old), with at least 1 teacher for every 16 toddlers; and 1 adult for every 8 preschoolers (ages 36 months to kindergarten enrollment), with at least 1 teacher for every 24 preschoolers.[3]

Why is this indicator important?

Staff-to-child ratios are consistently one of the more sensitive indicators of quality care across care settings. In fact, even minor changes in staff ratios and group sizes can affect the quality of care that young children receive.[8] The ratio of child-care providers to children is considered a "structural" characteristic of child care that is indirectly related to child outcomes through its influence on the "process" characteristics of child care (such as the providers' interactions with the children). Studies have found that when the ratio of staff to children is lower (i.e., fewer children per provider), providers are better able to give sensitive and stimulating care, and children appear less apathetic and distressed.[10] Using measures of overall quality (e.g., Infant/Toddler Environment Rating Scale [ITERS] and Early Childhood Environment Rating Scale [ECERS]), higher quality care has been found to occur in child-care settings with lower staff-to-child ratios.[10]

Ultimately, the quality of child care is important because it is related to children's social and cognitive development. High-quality care is generally

characterized by attentive and responsive child-care providers who provide cognitive and verbal stimulation for children and watch over their physical health and safety. That level of care is related to better cognitive and social developmental outcomes in children from infancy to school entry, regardless of the type of child care.[8] For instance, in the Cost, Quality, and Child Outcomes Study, children who attended high-quality child care centers showed better language, math, and general cognitive skills, and better peer relationships through second grade than did children in poor-quality care.[9]

The ratio appears to be an important aspect of quality child care for both younger and older children. For example, a study of children 14 months to 4.5 years old found that staff-to-child ratios were related to the quality of caregiving children received, and that children who received better quality caregiving were more likely to be emotionally secure with their teachers and more competent with their peers.[6] The ratios related to better quality caregiving in this study were 1 provider for 4 or fewer toddlers (25 to 36 month olds) and 1 provider for 9 or fewer preschoolers (37 to 54 month olds).[6]

Although lower staff-to-child ratios appear to benefit cognitive and social development, health and safety outcomes have been less widely examined, and findings to date are mixed.[4]

Who else currently uses this indicator?

The National Child Care Information Center tracks this indicator on both the national and state levels through its Information Management System Database.

Michigan is an example of a state that collects data on this indicator.

What are the possible sources of data for this indicator?

This information can be collected by surveying center directors for the number of children and the number of providers per class. In large counties, a random sample of centers could be conducted.

The National Association for the Education of Young Children (NAEYC) uses this indicator as part of its criteria for accreditation.

This information has also been collected by national surveys, including the National Child-Care Survey[5] and the National Household Education Survey.[1,2]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Direct observation in child-care center classrooms finds variation over the course of a day as children come and go, and also across days with variation in

attendance. “Reported ratio” is an average across such variations. Although less precise than observation, reported ratio is a widely accepted measure.

- Sensitivity to change:

Because minimum ratios are determined by state licensing requirements, it is likely that those requirements have affected the staff-to-child ratios for child-care center classrooms.

- Other:

It is important to remember that different ratios are recommended for different age groups. The requirements for licensed child-care center classrooms in California are listed above. The National Association for the Education of Young Children (NAEYC) recommends that for children 24 to 30 months old there be 1 adult for every 6 children, with no more than 12 children in a group. For children 30 to 36 months old, NAEYC recommends 1 provider for every 7 children, with no more than 14 children in a group. For 3-, 4-, and 5-year olds, NAEYC recommends 1 provider for every 10 children, with no more than 20 children in a group.[7] Thus, California’s requirements are less strict (i.e., more children per adult) than those recommended by the NAEYC.

Sources

[1] 1995 National Household Education Survey, Early Childhood Program Participation Questionnaire, Questions F20, F21, G27, and G28. http://nces.ed.gov/nhes/pdf/quex/early/95_ecpp.pdf

[2] 1999 National Household Education Survey, Parent Interview, School Readiness Questionnaire, Questions PH8, PH9, PI10, and PI11. http://www.nces.ed.gov/nhes/pdf/quex/sr/99parent.pdf

[3] California Community Care Licensing Division. (August 2001). *Manual of policies and procedures: Child care center*: Department of Social Services, Health and Human Services Agency, State of California.

[4] Currie, J., & Hotz, V. J. (November 2001). *Accidents will happen? Unintentional childhood injuries and the effects of child care regulations (JCPR Working Paper 268)*. Chicago, IL: Joint Center for Poverty Research.

[5] Hofferth, S. L., Brayfield, A., Deich, S., & Holcomb, P. (1991). *National Child Care Survey, 1990: A National Association for the Education of Young Children study*. Washington, DC: The Urban Institute Press.

[6] Howes, C., Phillips, D. A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based care. *Child Development, 63*(2), 449-460.

[7] National Association for the Education of Young Children. (1998). *Accreditation criteria & procedures of the National Association for the Education of Young Children--1998 edition*. Washington, DC: Author.

[8] National Research Council and Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[9] Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2000). *The children of the Cost, Quality, and Outcomes Study go to school: Technical report*. Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

[10] Vandell, D. L., & Wolfe, B. (2000). *Child care quality: Does it matter and does it need to be improved?* Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services.

G. Children have access to high-quality early care and education.

9. Number of accredited centers per 100 children (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of child-care centers that have voluntarily met high-quality child-care guidelines, in comparison with the total population of children ages 0 to 5 (excluding those enrolled in kindergarten). To calculate this indicator, the number of accredited centers for the population in question is divided by the total number of children ages 0 to 5 (excluding those enrolled in kindergarten).

Although organizations like the American Public Health Association (APHA) and the American Academy of Pediatrics (AAP) have compiled performance standards for child care, the term "accreditation" is usually linked to the standards of the National Association for the Education of Young Children (NAEYC).[15] The NAEYC, which currently has the largest membership of all the organizations that accredit child-care centers,[9] examines those centers for "developmentally appropriate" practices as determined by empirical research. Well-specified criteria focus on such aspects of the care setting as teacher/child and teacher/family interactions, curriculum, staff qualifications and professional development, administration, staffing, health and safety, nutrition, and the method the center uses to carry out ongoing evaluation. As of June 1, 2002, California had 573 accredited child-care centers.[15]

Note: The information provided here focuses on NAEYC accreditation because the NAEYC is the most well-known of the accrediting organizations. However, other accrediting institutions could be included in the measurement of this indicator, including the National Early Childhood Program Accreditation (NECPA), the Council on Accreditation of Services for Children and Families (COA), and the National Accreditation Commission for Early Care and Education Programs (NACECEP).[9]

Why is this indicator important?

The aspects of quality child care that the NAEYC accreditation process assesses are based on developmental theory and empirical evidence. Because NAEYC accreditation criteria are based in research, they closely match the aspects of child care that have been shown to predict better language skills and cognitive development,[1,2,12,21] as well as behavioral and emotional adjustment in children.[4,5,13] For example, research has found that more specialized training in child development for caregivers is associated with more sensitive caregiving in both center and family child care, and that more sensitive care is related to better child outcomes.[5,6,10,19] NAEYC accreditation requires that teachers of young children have at least a Baccalaureate Degree in early

childhood education/child development and 3 years of full-time teaching experience with young children. Moreover, a person with a graduate degree in either early childhood education or child development must oversee educational aspects of the center as center director, education coordinator, or curriculum specialist. As another example, lower child:caregiver ratios have consistently been found to predict more sensitive and stimulating caregiving behavior and higher quality care.[1,7,19,25] The specifications for child-caregiver ratios that are included in the requirements for NAEYC accreditation differ depending on the age of the child; the younger the children, the fewer each caregiver should care for.

Although NAEYC-accredited centers are more likely to provide high-quality care than non-NAEYC-accredited centers, NAEYC accreditation does not guarantee that children receive the best possible care.[3,26] Accreditation by NAEYC involves meeting goals for specific aspects of child-care quality that are substantially above those set by state licensing standards, which aim only to establish a floor of quality. However, a study of child-care centers in Northern California found that, although NAEYC-accredited centers were much more likely to provide high-quality care than non-NAEYC-accredited centers, almost 40 percent of NAEYC-accredited centers offered only mediocre quality care.[26]

Because accredited centers are more likely to provide high-quality care, an increased number of accredited centers would provide greater opportunities for children to develop in more ideal conditions. In addition, NAEYC guidelines generally exceed the minimum requirements dictated by state licensing standards.

Who else currently uses this indicator?

National efforts are tracking this indicator. The Children's Foundation[24] tracks the number of accredited child-care centers annually. The NAEYC also continually tracks the number of, and contact information for, accredited child-care centers.[16] The National Child Care Information Center tracks this indicator on both the national and state levels through its Information Management System Database.

Several states track the number of accredited centers in their state. Delaware, Missouri, New York, and Rhode Island are among the states that are tracking this indicator.

What are the possible sources of data for this indicator?

Information about NAEYC-accredited centers can be easily obtained from the NAEYC. The number of accredited centers within a state and their contact information are available on the NAEYC website.[16] County- or city-level information can be calculated by using the NAEYC Accredited Program Search

web page, which produces lists with contact information for accredited centers by city, state, or zipcode.[14] Although it would be much more costly and time-consuming, a potentially more accurate way to collect this information would be to contact each program individually to assess accreditation status. (See the Reliability/Validity section for more information.)

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Basing this indicator solely on programs seeking NAEYC accreditation will not capture all those centers that are seeking accreditation, because there are other accrediting institutions. However, NAEYC is the largest accrediting organization (i.e., from 1985 to 1995, NAEYC accredited an average of 380 centers per year, whereas NECPA accredited an average of 15 centers per year from 1992 to 1995[17]); thus using only NAEYC accreditation to estimate this indicator will be fairly accurate. It is also important to note that the information on the NAEYC website is not always current, and that the NAEYC accreditation process can take a long time because of a shortage of personnel trained to evaluate and validate centers that have completed their self-studies.

Part of the NAEYC accreditation process involves self-assessment, but final decisions for accreditation are based on assessments by NAEYC trained reviewers. After the initial approval, the center must submit an annual report to the NAEYC and undergo reaccreditation every 3 years. As with any judgment or rating of quality, questions about the reliability of the measurement can be raised. To date, NAEYC appears not to have reported reliability data for measurement of its accreditation criteria. However, NAEYC is reviewing the accreditation system to improve its "credibility, reliability, and accountability."[8]

- Sensitivity to change:

Providing incentives for centers to become accredited is likely to influence this indicator. Arizona, Connecticut, and Minnesota already have accreditation incentive programs. Such programs offer higher reimbursement rates for accredited child care, quality enhancement grants and incentives for centers to attain and maintain accreditation, direct payments to accredited child-care providers, and/or funding priority for accredited providers.[22] At least one study has found that offering higher reimbursement rates for accredited centers increased the number of accreditation applications.[9]

Providing training and technical assistance to help centers that are working toward accreditation can increase the number of accredited centers.[3] A study of centers in Northern California found that child-care centers that received intensive support during the accreditation process were more than twice as likely to become accredited than centers that received moderate support, and 10 times as likely to become accredited than centers receiving limited support.[26] Intensive support included "on-site technical assistance from an early childhood

professional, custom-designed training for staff and directors, funds to cover release time for staff participating in training, and an ongoing facilitated support group for directors."[26]

- Feasibility/burden:

If other accrediting organizations are included in this indicator, data collection will be more complicated and time-consuming, because accessing data from some accrediting organizations is more difficult than accessing it from NAEYC.

- Other:

There is a marked disparity between socioeconomic status and the use and availability of quality care.[11,20] The supply of center-based and other care arrangements in low-income neighborhoods is low.[18,23] Accredited centers' greater expense makes them less affordable for low-income families. In addition, a large percentage of low-income working mothers work nonday shifts, which also limits the child-care options available to them.

Sources

[1] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[2] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[3] Cost Quality and Research Study Team. (1995). *Cost, quality, and child outcomes in child care centers: Public report*. Denver, CO: Economics Department, University of Colorado at Denver.

[4] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[5] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[6] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[7] Galinsky, E. C., Howes, S., & Shinn, M. (1994). *The study of children in family care and relative care*. New York: Families and Work Institute.

[8] Goffin, S. G. (2002). *Recommendations for the next era of NAEYC's accreditation system from the National Commission on Accreditation Reinvention*. Retrieved July 29, 2002, from http://www.naeyc.org/accreditation/recommend.pdf

[9] Gormley, W. T., & Lucas, J. K. (August 2000). *Money, accreditation, and child care center quality (Working paper)*. New York: Foundation for Child Development.

[10] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[11] Howes, C., & Olenick, M. (1986). Family and child care influences on toddler compliance. *Child Development, 57*, 202-216.

[12] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[13] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[14] NAEYC Accredited Program Search, http://www.naeyc.org/accreditation/center_search.asp

[15] National Association for the Education of Young Children. (2002). *NAEYC accreditation*. Retrieved June 22, 2002, from http://www.naeyc.org/accreditation/default.asp

[16] National Association for the Education of Young Children. (2002). *Summary of accredited programs and programs pursuing accreditation*. Retrieved June 22, 2002, from http://www.naeyc.org/accreditation/center_summary.htm

[17] National Child Care Information Center. (1995). Accreditation provides benchmarks for quality. *Child Care Bulletin, June(3)*.

[18] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and

Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[19] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[20] NICHD Early Child Care Research Network. (1997). Poverty and patterns in child care. In J. Brooks-Gunn, & G. J. Duncan (Eds.), *Consequences of Growing Up Poor*. New York: Russell Sage.

[21] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[22] Philadelphia Citizens for Children and Youth. (Spring 2002). *Issue brief: Quality standards as a strategy*. Philadelphia, PA.

[23] Queralt, M., & Witte, A. D. (1998). Influences of neighborhood supply of child care in Massachusettes. *Social Service Review, 72*(1), 17-47.

[24] The Children's Foundation. (2002). *2002 child care licensing study*. Washington, DC: Author.

[25] Whitebook, M., Howes, C., & Phillips, D. (1990). *Who cares? Child care teachers and the quality of care in America (Final report: National child care staffing study)*. Oakland, CA: Child Care Employee Project.

[26] Whitebook, M., Sakai, L., & Howes, C. (1997). *NAEYC accreditation as a strategy for improving child care quality: An assessment by the National Center for the Early Childhood Work Force*. Washington, DC: National Center for Early Childhood Work Force.

G. Children have access to high-quality early care and education.

10. Number and percentage of parents who are satisfied with the early childhood education (ECE)/child care for their children ages 0 to 5 (excluding those in kindergarten) (P)

Category: Outcome measure

What is the definition of this indicator?

Parent satisfaction with ECE/child care can be measured globally (i.e., satisfaction with their overall child-care arrangement) or specifically (i.e., satisfaction with different aspects of care such as staff-child ratios, staff turnover, child-caregiver interaction/relationship, perception of social support provided to the parent by the care arrangement, and facility safety).

Although most previous research has measured parental satisfaction globally, the reliability of this kind of measure has been questioned. (See the Reliability/Validity and Sensitivity to Change sections below for more information.)

Why is this indicator important?

The relationship between parental satisfaction with care and children's access to high-quality care is not clear.[9] The literature on parental satisfaction with child care is not extensive, and that research that has been done tends to be descriptive or to examine what predicts parents' satisfaction with their child-care arrangements.[2,9] Without a clear link between parental satisfaction and quality of care, it is difficult to know whether this indicator will provide valuable information.

Although most parents report being satisfied with their child-care arrangements, the response varies with their socioeconomic status.[1,2,4,5,9] A national survey found that in 1990, 96 percent of parents were either "very satisfied" or "satisfied" with their current child-care arrangement, 3 percent were "not completely satisfied," and only 1 percent was "dissatisfied." Low-income parents tend to be less satisfied with their child-care arrangements than nonlow-income parents.[6,10]

Who else currently uses this indicator?

To date, no national organizations or states track this indicator.

What are the possible sources of data for this indicator?

Data can be collected directly from parents. Parents can be surveyed over the telephone or in their homes. Most national surveys and empirical research measure parental satisfaction globally by asking parents to report if they are

"very satisfied," "somewhat satisfied," "somewhat dissatisfied," or "very dissatisfied" with their child-care arrangement.[2]

Data and standard survey items are available from national sources. The National Child Care Survey, 1990,[5] the National Longitudinal Survey of Youth 1979 (NLSY79), Round 19 Child Questionnaire, Child CAPI Supplement,[8] and the School Readiness Parent Interview Survey of the National Household Education Survey 1999[7] include questions about parental satisfaction with child care.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Parents who report satisfaction are not necessarily content, and some would prefer to change their arrangement.[2,4,5] For example, 26 percent of parents in the National Child Care Survey said they would prefer a different kind of care if their options were limitless.[5] Another study found that although 95 percent of parents reported being satisfied, 53 percent would have chosen another arrangement if other affordable, high-quality options had been available.[4] Low-income parents, in particular, are more likely to want to change their child-care arrangements even though they report being satisfied. However, low-income families are also less likely to have a range of options from which to choose.[2,6,9]

In addition, parent satisfaction is not necessarily a reliable measure of child-care "quality." In contrast to the consistent finding that parents are satisfied with their child-care arrangements, research has found that most child care is of only adequate or fair quality.[11] Parents do not necessarily use information that would help them determine the quality of an arrangement when they are making decisions about child care.[1]

Methodological problems with global assessments of parental satisfaction make it unclear whether or not the degree of satisfaction is a reliable measure.[9] Some have argued that parents may be unwilling to admit that they are dissatisfied with their child-care arrangements.[5] In addition, parents who do not have or cannot afford other options may overemphasize the good aspects and underemphasize the bad aspects of their child-care arrangements, concluding that they are satisfied even though their conclusion might be different if they had other options.[9] In particular, single-item measures of parental satisfaction have been found to have low reliability.[3,9]

It is also possible that high satisfaction ratings are due to a self-selection process; if parents are really dissatisfied with their child-care arrangement, they will remove their child from that care.[9]

- Sensitivity to change:

Levels of satisfaction are so high that it will be difficult to perceive change over time. For this reason, it would be useful to question parents using a multi-item scale and/or to ask them whether they would like to change child-care arrangements.

Sources

[1] Bogat, G. A., & Gensheimer, L. K. (1986). Discrepancies between the attitudes and actions of parents choosing day care. *Child Care Quarterly, 15*(3), 159-169.

[2] Britner, P. A., & Phillips, D. A. (1995). Predictors of parent and provider satisfaction with child day care dimensions: A comparison of center-based and family child day care. *Child Welfare, 74*(6), 1135-1168.

[3] Canada, K. (1983). *Assessing parents' satisfaction with their children's day care centers*. Paper presented at the biennial meeting of the Society for Research in Child Development, Detroit, MI.

[4] Galinsky, E. (1989). A parent/teacher study: Interesting results. *Young Children, 45*(1), 2-3.

[5] Hofferth, S. L., Brayfield, A., Deich, S., & Holcomb, P. (1991). *National Child Care Survey, 1990: A National Association for the Education of Young Children study*. Washington, DC: The Urban Institute Press.

[6] Kisker, E. E., & Silverberg, M. (1991). Child care utilization by disadvantaged teenage mothers. *Journal of Social Issues, 47*(2), 159-177.

[7] National Household Education Survey 1999 (NHES:99), Parent Interview, School Readiness Questionnaire, Question PK1. http://www.nces.ed.gov/nhes/pdf/quex/sr/99parent.pdf

[8] National Longitudinal Survey of Youth, 1979 Cohort (NLSY79), 2000 Child Supplement, Questions BKGN-15 and BKGN-16. http://www.bls.gov/nls/y79chyaquex/r19/y79childcapi00.pdf

[9] Shpancer, N. (1998). Caregiver-parent relationships in daycare: A review and re-examination of the data and their implications. *Early Education and Development, 9*(3), 239-259.

[10] Sonenstein, F. L., & Wolf, D. A. (1991). Satisfaction with child care: Perspectives of welfare mothers. *Journal of Social Issues, 47*(2), 15-31.

[11] Vandell, D. L., & Wolfe, B. (2000). *Child care quality: Does it matter and does it need to be improved?* Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services.

G. Children have access to high-quality early care and education.

11. Number of applications for child care center licenses submitted and approved (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the total number of child-care centers that have submitted an application to their state's individual child-care licensing procedures and have been approved to receive a state license to provide child care. Note that states vary widely in their requirements for licensure, and licensing contains many components, ranging from aspects of teacher/director training, medical services provided to the children, hours of operation, and the physical requirements of the facilities. Furthermore, enforcement of licensing varies from state to state.

Why is this indicator important?

Licensing child care provides a minimum level of quality. Although licensing does not ensure high-quality care,[16,19] it does certify that child-care centers meet minimum standards of health, safety, and program design.

Although licensing is not intended to ensure high-quality care, research on the quality of child care has examined some components of licensing, such as teacher training and child-caregiver ratios, and has found that those components are associated with better quality care.[14,15] Research has found that more specialized training in child development, which is often part of states' licensing requirements for teachers in child care centers, is associated with more sensitive caregiving in both center and family care.[4,5,7,14] Research also indicates that formal training is associated with better quality care, whereas experience limited to working with children, but without formal training, is not necessarily related to better quality care. [4,6,9,20] Similarly, child: caregiver ratios are usually regulated by state licensing of child care centers. Research has found that better ratios (i.e., fewer children per adult) consistently predict more sensitive caregiving behavior.[1,8,12,14]

Ultimately, the quality of care is important because it affects children. Participation in higher quality child care is associated with better language and general cognitive skills,[1,2,10,15] as well as with better social development.[3,4,11] If licensing requirements provide a floor of quality that supports child development, an increased number of licensed facilities would provide greater opportunities for children to develop in safe and appropriate child-care settings.

Who else currently uses this indicator?

California (through the California Department of Social Services) and New York collect data on this indicator.

In addition, the National Child Care Information Center of the U.S. Department of Health and Human Services' Administration for Youth and Families (ACF) tracks the number of currently licensed child care centers for each state.

What are the possible sources of data for this indicator?

Data for this indicator are best collected at the state level by contacting each state's child-care licensing body.[13] Because licensing is state regulated, each state should be tracking the number of child-care centers currently in the process of obtaining licenses. A comprehensive list of contact information indicating the state office responsible for this information is available from the National Resource Center for Health and Safety in Child Care.[13] For California, the California Department of Social Services tracks child care center licensing. Applicants wishing to be licensed in California undergo an application process which includes orientation in licensure requirements and submission of appropriate paperwork.[17] Licensing information, including information on pending licenses, is available through the California Department of Social Services and is available by county.[18]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

This indicator will not capture all centers preparing for licensure because it will exclude those centers that are planning to apply for licensure but have not begun the formal application process.

- Other

In addition to tracking the number of approved licenses for child care, tracking the number of pending applications for licenses also provides useful information about progress on this indicator.

Sources

[1] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[2] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[3] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[4] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[5] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[6] Galinsky, E. C., Howes, S., & Shinn, M. (1994). *The study of children in family care and relative care*. New York: Families and Work Institute.

[7] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[8] Howes, C., and Matheson, C.C. (1992). Children's relationships with caregivers: Mothers and child care teachers. *Child Development, 63*, 859-866.

[9] Kagan, S. L., & Newton, J. W. (1989). Public policy report: For-profit and non-profit child care: Similarities and differences. *Young Children, 45*(1), 4-10.

[10] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[11] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[12] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[13] National Resource Center for Health and Safety in Child Care. (2002). *Individual states' child care licensure regulations*. Retrieved June 21, 2002, from http://nrc.uchsc.edu/states.html

[14] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[15] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[16] Office of the Inspector General. (1994). *Nationwide review of health and safety standards at child care facilities*. Washington, DC: U.S. Department of Health and Human Services.

[17] State of California Office of Regulations Development. (2002, Jul 19). *On-line California Code of Regulations, Title 22*. Retrieved Jul 29, 2002, from http://www.dss.cahwnet.gov/ord/CCRTitle22_241.htm

[18] State of California Research and Development Division. (2002). *LIC 181 - Licensing of Facilities for Children Monthly Statistical Report*. Retrieved Jul 29, 2002, from http://www.dss.cahwnet.gov/research/LIC181-Lic_419.htm

[19] U.S. Consumer Products Safety Commission. (1999). *Safety hazards in child care settings*. Washington, DC: Author.

[20] Whitebook, M., Howes, C., & Phillips, D. (1989). Who cares? Child care teachers and the quality of care in America. In *Final report: National child care staffing study*. Oakland, CA: Child Care Employee Project.

G. Children have access to high-quality early care and education.

12. Number of people participating in classes, training, or field work to obtain their credential (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of individuals taking classes or performing field work to obtain a Child Development Associate (CDA) degree. This nationally recognized certification requires a high school diploma, 120 hours of training in either early childhood education or child development, 480 hours of field work (i.e., working with children directly in a formal care situation), and current employment in a licensed-care facility. CDA concentrations are broken down by care type (i.e., Center-based, for which candidates receive endorsements to work with infants and toddlers or preschool children; Family Child Care; and Home Visitor).[3] The credential is not awarded without these criteria, and the applicant must take a written examination, as well as be interviewed by a CDA representative.

Why is this indicator important?

The CDA degree represents specialized training in child development within the context of early childhood education. The degree requires training in developmental theory, as well as in more practical aspects such as child health and safety, parent/ teacher relationships, and professionalism. CDA certification ideally leads to higher quality child care.

Many studies show that more specialized training in child development leads to more sensitive caregiving in both center and family care.[6-8,11] Many child-care studies consider teacher training when assessing child-care quality.[11,12]

High-quality child care is associated with many positive outcomes. High-quality child care has been shown to improve children's language and general cognition,[1,2,9,12] as well as various behavioral aspects.[4,6,10] If credentialing promotes higher quality child care, an increased number of credentialed teachers/caregivers would provide more opportunities for children to experience these benefits.

This indicator can be used to assess the future supply of, and demand for, trained care givers. State and local communities that know how many people are seeking a CDA degree have a better understanding of the demand for this type of education and might have an indication of how many qualified teachers are "in the pipeline."

Who else currently uses this indicator?

State and national efforts track a similar indicator: the level of training of child-care providers. Connecticut, Michigan, Minnesota, and Rhode Island are all examples of states that track the level of training maintained by early childhood educators, although the wording of the tracking indicators differs slightly. The National Household Education Survey (NHES) also tracks the level of training of child-care providers. These are examples of how "training" is tracked generally, but are not equivalent to the number of people currently "taking classes."

The Council for Professional Recognition[3] tracks a similar indicator: the number of CDA credentials that have been awarded. The Council for Professional Recognition is cited by by both the National Center for Child Care Information Center of the Administration of Children and Families (ACF) and the U.S. Department of Health and Human Services (DHHS).[5]

What are the possible sources of data for this indicator?

A rough estimate of this indicator can be obtained by counting those who are currently in a Council for Professional Recognition's CDA training course.[3] This can be done by contacting colleges and universities in the area of interest to find out if they offer the CDA Professional Preparation Program (CDA P3), and obtain current enrollment figures. Although this information will be the easiest to obtain, it may miss those who are taking early childhood courses that are not required for the CDA degree, but who intend to take the CDA test and interview once they meet the criteria. Moreover, because the CDA degree requires a substantial amount of "field work" (i.e., working with children directly in a care setting) and not necessarily "classes" for the program's entirety, this data source might not capture all individuals who intend to obtain a CDA degree.

Data can be collected by surveying individual child-care centers or homes. Communities can interview or survey individual child-care centers or homes (defined as all facilities that give care) on the number of non-CDA certified teachers on staff who currently are in classes to obtain certification. However, obtaining a representative sample of *all* centers and homes will be extremely difficult, making this strategy infeasible in many cases.

Data can be collected on course enrollment from colleges and universities that offer Early Childhood Education (ECE) courses that meet CDA criteria. The Council for Professional Recognition provides a state-by-state directory of colleges and universities that provide ECE training approved by the CDA. However, these listings do not differentiate between whether a school specifically offers CDA P3 training or offers ECE classes only.[3] Although collecting data from the colleges and universities in the directory will give an indication of how many are studying ECE, it will not differentiate those with the particular goal of certification.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Tracking enrollment in CDA programs would require collecting data from the institutions providing these programs. Data reliability would depend on the way these institutions collect and maintain this information.

Sources

[1] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[2] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[3] Council for Professional Recognition. (2002). *What is a child development associate credential?* Retrieved June, 25, 2002, from http://www.cdacouncil.org/index.htm

[4] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[5] DHHS/ACF. (2002, June, 21, 2002). *National child care information center*. Retrieved June, 25, 2002, from http://nccic.org/

[6] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[7] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[8] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[9] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[10] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[11] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[12] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

G. Children have access to high-quality early care and education
13. Number of child-care centers in the process of obtaining accreditation (C)
Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of child-care centers for children aged 0 to 5 (excluding those enrolled in kindergarten) that have begun the application and approval process for a voluntary set of guidelines put in place to assure high-quality child care.

Although organizations like the American Public Health Association (APHA) and the American Academy of Pediatrics (AAP) have compiled performance standards for child care, the term "accreditation" is usually linked to the standards of the National Association for the Education of Young Children (NAEYC).[17] NAEYC examines child-care centers for "developmentally appropriate" practice as determined by empirical research. Well-specified criteria focus on such aspects of the care setting as teacher-child and teacher-family interactions, curriculum, staff qualifications and professional development, administration, staffing, health and safety, nutrition, and the method the center uses to carry out ongoing evaluation.

NAEYC's process of applying for accreditation involves three stages: (1) "self-study," when the program works to meet the accreditation guidelines, (2) "validation," an on-site visit to confirm whether or not the program meets accreditation guidelines, and (3) "accreditation decision," which is made by a commission of three experts. This indicator should include programs that have formally applied to participate in the accreditation process and therefore are in any of the three stages.

Note: The information provided here focuses on NAEYC accreditation because NAEYC is the most well-known of the accrediting organizations and has the largest membership. However, other accrediting institutions could be included in the measurement of this indicator, including the National Early Childhood Program Accreditation (NECPA), the Council on Accreditation of Services for Children and Families (COA), and the National Accreditation Commission for Early Care and Education Programs (NACECEP).[12]

Why is this indicator important?

The aspects of quality child care that the NAEYC accreditation process assesses are based on developmental theory and empirical evidence. Because NAEYC accreditation criteria are based on research findings, they closely match the aspects of child care that have been shown to predict better language skills and cognitive development,[2,3,15,22] as well as behavioral and emotional adjustment in children.[7,8,16] For example, research has found that more specialized training in child development for caregivers is associated with more sensitive caregiving in both center and family child care, and that more sensitive care is related to better child outcomes.[8,9,13,20] NAEYC accreditation requires that teachers of young children have at least a baccalaureate degree in early childhood education/child development and 3 years of full-time teaching experience with young children. Moreover, a person with a graduate degree in either early childhood education or child development must oversee educational aspects of the center as center director, education coordinator, or curriculum specialist. As another example, lower child:caregiver ratios have consistently been found to predict more sensitive and stimulating caregiving behavior and higher-quality care.[2,10,20,26] The specifications for child:caregiver ratios that are included in the requirements for NAEYC accreditation differ depending on the age of the child; the younger the children, the fewer each caregiver should care for.

Although NAEYC-accredited centers are more likely to provide high-quality care than non-NAEYC-accredited centers, NAEYC accreditation does not guarantee that children receive the best possible care.[4,25] Accreditation by NAEYC involves meeting goals for specific aspects of child-care quality that are substantially above those set by state licensing standards, which aim only to establish a floor of quality. However, a study of child-care centers in Northern California found that, although NAEYC-accredited centers were much more likely to provide high-quality care than non-NAEYC-accredited centers, almost 40 percent of NAEYC-accredited centers offered only mediocre-quality care.[25]

Because the process of obtaining NAEYC accreditation involves steps to improve various aspects of child-care quality, it is likely that working to meet accreditation criteria will have a positive effect on the children in these centers. In recent research reported by the NICHD Study of Early Child Care, children who experienced increases in the quality of their child care over their early years had better language development and preacademic skills when they were 4.5 years old.[23] Additionally, there is evidence of better developmental outcomes for children in child-care settings that met APHA/AAP standards for group size, ratio, caregiver training, and caregiver education. When classes met more standards, children had better scores on assessments of school readiness and language and on ratings of behavior problems at 3 years.[2,8,9,13,20,21]

Because the accreditation process aims to create and maintain higher-quality child care, an increased number of centers working to obtain accreditation would be an important indicator of investments being made in improving the caregiving environments of young children.

Who else currently uses this indicator?

Connecticut, Delaware, Hawaii, Missouri, New York, and Rhode Island are examples of states currently tracking accreditation (although not necessarily the number of those in the process of obtaining accreditation).

NAEYC continually updates its records of the number of programs currently in the accreditation application process. As of February 1, 2002, there were 7,739 programs nationwide and 521 in California in the accreditation process for the first time; 2,319 programs nationwide (220 in California) were in the reaccreditation process.[18] (Centers that want to remain accredited must go through the reaccreditation process every 3 years.)

What are the possible sources of data for this indicator?

NAEYC provides the total number, by state, of programs that are pursuing NAEYC accreditation.[18]

Although it would be much more costly and time-consuming, a potentially more accurate way to collect this information would be to contact each program individually to assess accreditation status. (See the Reliability/Validity section for more information.)

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Basing this indicator solely on programs seeking NAEYC accreditation will not capture all centers seeking accreditation, because there are other accrediting institutions. However, because NAEYC is the largest accrediting organization (i.e., from 1985 to 1995, NAEYC accredited an average of 380 centers per year, whereas NECPA accredited an average of 15 centers per year from 1992 to 1995[19]), using only NAEYC accreditation to estimate this indicator will be fairly accurate. It is also important to note that the information on the NAEYC Web site is not always current, and that the NAEYC accreditation process can take a long time because of a shortage of personnel trained to evaluate and validate centers that have completed their self-study.

Part of the NAEYC accreditation process involves self-assessment, but decisions for accreditation are then based on assessments by NAEYC-trained reviewers. After the initial approval, the center must submit an annual report to NAEYC and undergo reaccreditation every 3 years. As with any judgment or rating of quality,

questions about the reliability of the measurement can be raised. To date, NAEYC appears not to have reported reliability data for measurement of its accreditation criteria. However, NAEYC is reviewing the accreditation system to improve its "credibility, reliability, and accountability." [11]

- Sensitivity to change:

Providing incentives for centers to become accredited is likely to influence this indicator. Arizona, Connecticut, and Minnesota already have accreditation incentive programs. Such programs offer higher reimbursement rates for accredited child care, quality enhancement grants and incentives for centers to attain and maintain accreditation, direct payments to accredited child-care providers, and/or funding priority for accredited providers.[24] At least one study has found that offering higher reimbursement rates for accredited centers increased the number of accreditation applications.[12]

Providing training and technical assistance to help centers that are working toward accreditation can increase the number of accredited centers.[4] A study of centers in Northern California found that child-care centers that received intensive support during the accreditation process were more than twice as likely to become accredited as centers that received moderate support, and 10 times as likely to become accredited as centers receiving limited support.[25] Intensive support included "on-site technical assistance from an early childhood professional, custom-designed training for staff and directors, funds to cover release time for staff participating in training, and an ongoing facilitated support group for directors." [25]

- Cultural issues:

Some studies have shown that both poorer children and children of color may benefit more from higher-quality care, especially in regard to language and cognitive outcomes.[1,5,6,14]

- Feasibility/burden:

State-level data on programs seeking NAEYC accreditation are already available on the NAEYC Web site. NAEYC does not maintain county-level information about programs in the process of accreditation.

If other accrediting organizations are included in this indicator, data collection will be more complicated and time-consuming, because accessing data from some accrediting organizations is more difficult than accessing it from NAEYC.

Sources

[1] Burchinal, M. R., Peisner-Feinberg, W., Bryant, D. M., & Clifford, R. (2000). Children's social and cognitive development and child-care quality: Testing for differential associations, gender, or ethnicity. *Applied Developmental Science, 4*(3), 149-165.

[2] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[3] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[4] Cost Quality and Research Study Team. (1995). *Cost, quality, and child outcomes in child care centers: Public report*. Denver, CO: Economics Department, University of Colorado at Denver.

[5] Currie, J., & Thomas, D. (1996). *Does Head Start help Hispanic children?* Los Angeles, CA: University of California at Los Angeles.

[6] Dearing, E., McCartney, K., & Taylor, B. (2001). Change in family income-to-needs matters more for children with less. *Child Development, 72*(6), 1779-1793.

[7] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[8] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[9] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[10] Galinsky, E. C., Howes, S., & Shinn, M. (1994). *The study of children in family care and relative care*. New York: Families and Work Institute.

[11] Goffin, S. G. (2002). *Recommendations for the next era of NAEYC's accreditation system from the National Commission on Accreditation Reinvention*. Retrieved July 29, 2002, from http://www.naeyc.org/accreditation/recommend.pdf

[12] Gormley, W. T., & Lucas, J. K. (August 2000). *Money, accreditation, and child care center quality (Working paper)*. New York: Foundation for Child Development.

[13] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[14] Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F.-R. (1990). Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child Development, 61*(2), 495-507.

[15] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[16] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[17] National Association for the Education of Young Children. (2002). *NAEYC accreditation*, Retrieved June 22, 2002, from http://www.naeyc.org/accreditation/default.asp

[18] National Association for the Education of Young Children. (2002). *Summary of accredited programs and programs pursuing accreditation*. Retrieved June 22, 2002, from http://www.naeyc.org/accreditation/center_summary.htm

[19] National Child Care Information Center. (1995, June). Accreditation provides benchmarks for quality. *Child Care Bulletin,* Issue 3.

[20] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[21] NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*(4), 1145-1170.

[22] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[23] NICHD Early Child Care Research Network. (2002). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal*, *39* 33-164..

[24] Philadelphia Citizens for Children and Youth. (2002, Spring). *Issue brief: Quality standards as a strategy*. Philadelphia, PA.

[25] Whitebook, M., Sakai, L., & Howes, C. (1997). *NAEYC accreditation as a strategy for improving child care quality: An assessment by the National Center for the Early Childhood Work Force*. Washington, DC: National Center for the Early Childhood Work Force.

[26] Whitebook, M., Howes, C., & Phillips, D. A. (1990). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.

G. Children have access to high-quality early care and education.

14. Number and percentage of early childhood education (ECE)/child-care providers who have participated in continuing education (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of child-care center teachers, child-care center teacher aides, and family home providers who work directly with children from 0 to 5 years of age (excluding those enrolled in kindergarten) in any type of care situation (e.g., center-based, home-based, preschool, other) who have received at least one Continuing Education Unit (CEU). The CEU is defined as "ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction."[8] CEUs are granted by the institution or group that provides the learning experience. The CEU was created to provide a permanent record of educational accomplishments for noncredit educational experiences.[8]

Because the term "CEU" is used freely and often defined by those offering specific services, CEU quality may vary greatly. Thus, to control for quality, the definition of this indicator should include that the CEU must be awarded from an institution or group that has been certified by the International Association for Continuing Education and Training (IACET), a nonprofit group that has set the international standards for continuing education of educators. Names and contact information for authorized institutions and groups are available on the IACET website.[9]

The percentage can be calculated by dividing the number of early childhood educators/child-care providers participating in continuing education (as defined above) by the total number of early childhood educators/child-care providers in the county/state.

Note: California does not require continuing education for either center-based child-care providers (i.e., teachers, teacher aides) or family-based child-care providers.

Why is this indicator important?

Caregiver training is associated with the quality of child care provided and with child outcomes.[13,14] Research has found that more specialized training in child development is related to more sensitive caregiving in both center and family care, and more sensitive care is associated with better social and cognitive outcomes in children.[4,5,7,13] In addition, formal training is associated with better quality care, whereas experience limited to working with children, but without formal training, is not necessarily related to better quality care.[4,6,10,15]

Although evidence suggests that additional teacher training in child development or early childhood education is associated with higher quality child care, the specific content that teachers might pursue through CEUs can vary, and evidence is limited about which course content will be most beneficial in terms of improving child-care quality overall. For instance, one teacher might gain a CEU credit for a seminar taken on the method of dialogic reading to children, whereas another teacher might obtain a credit for a class in fire safety. Furthermore, the quality of the program that provides the CEU and the implementation by the particular instructor may also be important but difficult to measure.

Continuing education has the potential of increasing the quality of care for children either through the dynamic aspects of quality (e.g., sensitivity to child needs) or through structural aspects (e.g. learning how to facilitate staffing changes to reduce child:caregiver ratios), or both. Both structural and dynamic aspects of child-care quality have been shown to predict children's language and general cognitive skills,[1,2,11,14] as well as children's behavioral and emotional development.[3,4,12]

Who else currently uses this indicator?

Connecticut and Michigan are examples of states that collect data on this indicator.

What are the possible sources of data for this indicator?

The most accurate information for this indicator is obtained directly from the child-care institution or provider. Because of the number of colleges, organizations, and companies that provide CEUs, it would be difficult to gain information about teachers' CEUs other than by contacting the child-care center or family-care homes directly. On contacting the child-care facility, information should be collected about the number of child-care center teachers, child-care center teacher aides, and family home providers who have obtained at least one CEU in child development or early childhood education, as well as information about where they obtained the credit. In addition, the name of the institution or group that awarded the CEU must be checked against the IACET list of authorized institutions or groups to ensure that the CEU was provided by an institution or group that meets the IACET's criteria for quality programs.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The degree to which CEU-granting institutions or groups authorized by the IACET award CEUs in California is unknown.

In addition, the definition of “participation,” “capable direction,” and “qualified instruction” may differ from one CEU-granting institution or group to another.

The degree to which the process of obtaining CEUs can be considered comparable to the training in child development and ECE that has been shown to predict more positive child outcomes in previous research is not known. The quality of a program and the specific topic it addresses may be important to whether or not and to what extent CEUs contribute to child-care quality.

Sources

[1] Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development, 67*, 606-620.

[2] Clarke-Stewart, K. A., Vandell, D. L., Burchinal, M., O'Brien, M., & McCartney, K. (2000). *Do features of child care homes affect children's development?* Irvine, CA: University of California.

[3] Deater-Deckard, K., Pinkerton, R., & Scarr, S. (1996). Child care quality and children's behavioral adjustment: A four-year longitudinal study. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(8), 937-948.

[4] Dunn, L. (1993). Proximal and distal features of day care quality and children's development. *Early Childhood Research Quarterly, 8*, 167-192.

[5] Fischer, J., & Earhart, B. (1991). Family day care: A theoretical basis for improving quality. *Early Childhood Research Quarterly, 6*, 549-563.

[6] Galinsky, E. C., Howes, S., & Shinn, M. (1994). *The study of children in family care and relative care*. New York: Families and Work Institute.

[7] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[8] International Association for Continuing Education and Training (IACET). (2002). *Criteria for awarding the IACET CEU*. Retrieved July 3, 2002, from http://www.iacet.org/guidelines/section2/index.htm

[9] International Association for Continuing Education and Training: IACET authorized providers. (2002). Retrieved July 18, 2002, from http://www.iacet.org/ceu/providerlistac.htm

[10] Kagan, S. L., & Newton, J. W. (1989). Public policy report: For-profit and non-profit child care: Similarities and differences. *Young Children, 45*(1), 4-10.

[11] McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244-260.

[12] McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparison of varying quality programs. *Journal of Applied Developmental Psychology, 6*, 247-260.

[13] NICHD Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly, 11*(3), 269-306.

[14] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[15] Whitebook, M., Howes, C., & Phillips, D. (1989). Who cares? Child care teachers and the quality of care in America. In *Final report: National child care staffing study*. Oakland, CA: Child Care Employee Project.

G. Children have access to high-quality early care and education.

15. Retention or turnover rate of child-care workers, by level of worker

Category: Performance measure

ADDITIONAL INDICATOR: Number of times children ages 0 to 5 (excluding those enrolled in kindergarten) experienced a change in a family or center child-care provider during the last year.

What is the definition of this indicator?

Turnover rates are calculated by assessing the number of child-care workers in center-based care or family-based care who have left the facility within the last year as a percentage of the total number of child-care workers in these facilities.[8,9,17]

Family-based care includes both small family-care homes and large family-care homes, and is defined by California regulations as a facility that "provides care, protection and supervision of children, in the care giver's own home, for periods of less than 24 hours per day, while the parents or authorized representatives are away." Small and large homes are differentiated by the maximum number of children they can serve, given their staffing numbers and the ages of the children. Small family care homes may serve up to 6 to 8 children; large family care homes may serve up to 12 to 14 children.[2]

A "child care center" is defined by California regulations as "any facility of any capacity other than a family day care home … in which less than 24-hour per day nonmedical supervision is provided for in a group setting."[3] Thus, child care centers are settings that are not within the caregivers home and that can maintain larger numbers of children, given that they adhere to state child:caregiver ratios.

In keeping with these definitions, calculation of turnover for this indicator should include those caring for children in small as well as large family care homes, in addition to those caring for children in a range of nonhome-based care settings, such as child-care centers, nursery schools, preschools, prekindergartens, early intervention programs, Head Start programs, and other center care programs. In addition, this indicator should be calculated both for primary teachers/providers and for assistant teachers/providers.

An additional indicator is the number of times children ages 0 to 5 (excluding those enrolled in kindergarten) experienced a change in a family or center child-care provider during the last year. Although retention or turnover rates at the child-care center level are important, a child-based indicator may be equally important because it allows for measurement of how caregiver turnover affects the child.

Why is this indicator important?

Child care outside the home is widespread. In 2001, 56 percent of children ages 3 to 5 (excluding those enrolled in kindergarten) were in child care.[6] Because a significant percentage of children spend time in child care, it is important for parents to have access to high-quality child-care programs. Research has shown that having child-care providers who are more highly qualified and have greater job stability is associated with more positive outcomes for children. [13]

Having stable child-care providers is beneficial to children. Research indicates that child-care providers with job stability are more attentive to children and engage them more often.[14,16,17] Children whose care providers are sensitive, responsive, and attentive fare better in many aspects of development.[13]

Despite the importance of stable child-care providers, turnover rates for this profession are among the highest.[13] In 1999 and 2000, the turnover rate for child-care providers in Northern California was 30 percent.[17] Turnover can be influenced by many factors, including job satisfaction, organizational commitment, salaries and wages, burnout, choice of other jobs, and other nonwork factors.[11] Turnover in child-care settings can result in vacancies being filled by less qualified staff and causes a lack of continuity of care for young children.[1,7] A child who experiences many changes in child-care providers may not have the opportunity to develop optimal, responsive relationships with familiar adults—a feature of high-quality early childhood care and education settings.[11,15]

Several states have adopted programs to increase the retention and training of child-care providers.[4] A recent review of state efforts found that 37 states and the District of Columbia have initiatives to address the problem of turnover.[15] California First 5 has partially funded the California Compensation and Retention Encourages Stability (CARES) initiative, which encourages training and retention by providing stipends to child-care providers.

Who else currently uses this indicator?

Some state-level efforts use this indicator. The California Child Care Resource and Referral Agency collects state based information for California. Other states that use this indicator include Michigan and Rhode Island.

What are the possible sources of data for this indicator?

Data can be collected from child-care programs. This indicator can be gathered by surveying all or a representative sample of licensed child-care programs, including child-care centers and family-based care facilities.

Standard survey items are available from national sources. Possible sources for questionnaire or interview items include the Early Childhood Longitudinal Survey, Birth Cohort (ECLS-B),[5] and National Household Educational Survey (NHES)[10] Both the ECLS-B and the NHES, 2001, collect this indicator through a parent report.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Research has shown that child-care turnover rates can be influenced by strategies such as including child-care providers in center decision-making.[12] Researchers hypothesize that orienting new employees to a child-care program can also help reduce turnover.[12] Staff meetings with child-care providers have been shown to buffer the effects of burnout, which may in turn reduce turnover rates.[14]

Several states participate in the Teacher Education and Compensation Helps (TEACH) Early Childhood Project. Founded in North Carolina and now in 19 states, this program provides scholarships, release time, and wage increases and bonuses to child-care teachers or providers who pursue and complete further education, and stay at their facility for a specified period of time. The TEACH program in North Carolina has documented an increase in retention.[4]

Sources

[1] Brimhall, D., & National Center for Education Statistics. (1999). *Unpublished tabulations from the 1999 National Household Education Survey: Generated for the Committee on Integrating the Science of Early Childhood Development.* Washington, DC: National Center for Education Statistics, U.S. Department of Education.

[2] California Health and Safety Regulation for Child Care, 101152 (2001).

[3] California Health and Safety Regulation for Child Care, 102352 (f)(1)(a-b) (2001).

[4] Child Care Services Association. (2002). *T.E.A.C.H. Early Childhood Project*. Retrieved July 2, 2002, from http://www.childcareservices.org/TEACH/T.E.A.C.H.%20Project.htm#Research

[5] Early Childhood Longitudinal Study- Birth Cohort (ECLS-B), Question #C5. http://nces.ed.gov/ecls/

[6] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: author.

[7] Goelman, H., & Guo, H. (1998). What we know and what we don't know about burnout among early childhood care providers. *Children and Youth Care Forum, 27*(3), 175-199.

[8] Lawrence, M., Brown, J., & Bellin, D. (1989). *Helping family child care providers stay in the business: Retention strategies from the California Child Care Initiative*. San Francisco: California Child Care Resource and Referral Network.

[9] Manlove, E. (1993). Multiple correlates of burnout in child care workers. *Early Childhood Research Quarterly, 8*, 499-518.

[10] National Household Education Survey (NHES): Before and After School Programs and Activities survey, Question #SK5. http://nces.ed.gov/nhes/

[11] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[12] Porter, L. W., & Steers, R.M. (1973). Organizational work and personal factors in employee turnover and absenteeism. *Psychological Bulletin, 80*, 151-176.

[13] Raikes, H. (1993). Relationship duration in infant care: Time with a high ability teacher and infant-teacher attachment. *Early Childhood Research Quarterly, 8*, 309-325.

[14] Stremmel, A., Benson, M., & Powell, D. (1993). Communication, satisfaction, and emotional exhaustion among child care center staff: Directors, teachers, and assistant teachers. *Early Childhood Research Quarterly, 8*, 221-233.

[15] Twombly, E. C., Montilla, M. D., & DeVita, C. J. (2001). *State initiatives to increase compensation for child care workers* (Paper prepared for the Foundation for Child Development). Washington, DC: The Urban Institute.

[16] Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America (Final Report: National child care staffing study)*. Oakland, CA: Child Care Employee Project.

[17] Whitebook, M., Sakai, L., Gerber, E., & Howes, C. (2001). *Then and now: Changes in child care staffing, 1994-2000*. Washington, DC: Center for the Child Care Workforce.

G. Children have access to high-quality early care and education.

16. Median pay for child-care workers (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the hourly salary that falls exactly in the middle of the range of child-care workers' hourly salaries. In other words, 50 percent of child-care workers earn more than the median pay, and 50 percent earn less.

"Pay" is defined here as "hourly salary" because the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor uses hourly salaries as the basis of its reports on income and wages. Although BLS also includes information on annual salary, it uses hourly salary to calculate this information. In addition, this indicator measures the "median," as opposed to "mean," because the mean can be influenced by a few very high or very low salaries, whereas the median is the midpoint regardless of the extremes.[7]

Why is this indicator important?

Higher wages for child-care workers are associated with better quality child care. [6,9] In both child-care centers and family-care facilities, research has found a strong relationship between workers' salaries and the quality of child care. A study of 75 child-care centers in three communities in California found that child-care provider wages predicted a center's ability to maintain quality over time, with higher wages related to better long-term quality.[12]

Higher wages are also associated with lower staff turnover. In the study mentioned above, providers with Bachelor's degrees and some college-level courses in early childhood development who received higher than average wages were more likely to stay in their jobs.[12] Low staff turnover is associated with better quality care, because more stable child-care providers can interact with children in more developmentally appropriate ways.[9]

Ultimately, the quality of child care is important because it is related to children's social and cognitive development. High-quality care is generally characterized by attentive and responsive child-care providers who provide cognitive and verbal stimulation for children, and is related to better cognitive and social developmental outcomes in children, from infancy to school entry, regardless of the type of child care.[9] One study found that children who attended high-quality child-care centers had better language, math, and general cognitive skills, and better peer relationships through second grade than children in poor-quality care.[10] (The study did not include children in family-based care.)

Who else currently uses this indicator?

The BLS collects this information for workers who are not self-employed. Not that data collected by the BLS does not include self-employed family-based care providers, owners or partners of unincorporated firms, and unpaid family workers. In addition, the current BLS occupational categories distinguish child-care workers from preschool teachers,[1] even though the responsibilities listed under each are not necessarily distinct, and although the two job categories often overlap in practice. Therefore, wage information for both of these categories should be considered.[7]

What are the possible sources of data for this indicator?

Nationally representative surveys gather this information. The Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) Caregiver Questionnaire includes a question on caregiver's income.[8]

The NICHD Study of Early Child Care assessed staff turnover and pay through a Child-Care Center Director Questionnaire, which was adapted from the Director Questionnaire used in the National Child Care Staffing Study.[11]

Through the Occupational Employment Statistics (OES) program, the BLS funds an annual survey that compiles occupational employment and wage estimates that are collected by state agencies and county organizations. In California, the state Employment Development Department (EDD) coordinates data collection. EDD contracts with local groups to collect information about the labor force in California's 58 counties. State- and county-level information is available on both the BLS[2] and the EDD[5] websites.

The Center for the Child-Care Workforce (CCW) annually surveys child-care center directors and family child-care providers to collect information on salaries and benefits for teachers, assistant teachers, center directors, and family-based child-care providers.[7] These surveys can be purchased through CCW's website.[4]

The California Child Care Workforce Study by the David and Lucile Packard Foundation also collects information on this indicator.[3]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

As noted above, BLS data do not include information on income for self-employed family-based care providers. In addition, BLS wage information for child-care workers and the preschool teachers should both be taken into consideration.[7]

Sources

[1] Bureau of Labor Statistics. (2002). *Alphabetical list of SOC occupations*. Retrieved June 21, 2002, from http://www.bls.gov/oes/2000/oes_alph.htm

[2] Bureau of Labor Statistics, U.S. Department of Labor, G16 - median pay indicator. www.bls.gov/oes/home.htm

[3] California Child Care Resource and Referral Network.*California Child Care Workforce Study*. Retrieved Aug 14, 2002, from http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=395

[4] Center for the Child Care Workforce, www.ccw.org/tpp/pubs/studies.html

[5] Employment Development Department Labor Market Information, State of California, www.calmis.ca.gov/htmlfile/ccois/Oor.htm

[6] Lamb, M. E. (1998). Nonparental child care: Context, quality, correlates. In W. Damon, I. E. Sigel, & K. A. Renninger (Eds.), *Handbook of Child Psychology* (5th ed., Vol. 4:Child Psychology in Practice, pp. 73-134). New York: Wiley & Sons, Inc.

[7] Laverty, K., Burton, A., Whitebook, M., & Bellm, D. (2001). *Current data on child care salaries and benefits in the United States*. Washington, DC: Center or the Child Care Workforce.

[8] National Center for Education Statistics. (2001). *Early Childhood Longitudinal Survey- Birth Cohort (ECLS–B) Child Care Provider Instrument, 18 months: Caregiver Questionnaire (Matrix)*. Retrieved June 21, 2002, from http://nces.ed.gov/ecls/pdf/birth/matrix.pdf

[9] National Research Council and Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[10] Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2000). *The children of the Cost, Quality, and Outcomes Study go to school: Technical report*. Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

[11] Whitebook, M., Howes, C., & Phillips, D. A. (1990). *Who cares? Child care teachers and the quality of care in America. Final Report of the National Child Care Staffing Study.* Oakland, CA: Child Care Employee Project.

[12] Whitebook, M., Sakai, L., Gerber, E., & Howes, C. (2001). *Then and now: Changes in child care staffing, 1994-2000: Technical report*. Washington, DC and Berkeley, CA: Center for the Child Care Workforce, and Institute of Industrial Relations, University of California, Berkeley.

G. Children have access to high-quality early care and education.

17. Number of calls received by Child Care Resource and Referral agencies (CCRRs) in each county, by type of caller (i.e., parents, child-care providers)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to (1) how many calls a CCRR receives from parents requesting child-care referral information or information on other issues such as quality care or child development, and (2) how many calls a CCRR receives from child-care providers requesting information on how to improve the quality of the care they provide, training and professional development opportunities, licensing requirements, and other issues related to the provision of child care.

Why is this indicator important?

CCCRs provide several services to parents and to child-care providers. CCRRs provide support to parents looking for child care by referring them to child-care providers. CCRRs also help educate parents in regard to issues concerning child care and child development, such as what constitutes quality care. In addition, CCRRs support child-care providers by providing training, and by helping providers meet licensing requirements and improve the quality of their care. CCRRs also advocate for children, parents, providers, and communities in the public policy arena on child-care issues.[4,8,10]

CCRRs may improve children's access to high-quality care. In theory, the services CCRRs provide can help improve children's access to high-quality care by (1) educating parents about what to look for when choosing care, thereby helping parents become monitors of child-care quality standards; (2) helping providers improve the quality of their care; and (3) advocating for more resources to improve the quality of care.[4,10] However, little research has been conducted to examine the effectiveness of CCRRs in accomplishing these goals. In addition, the ability of CCRRs to affect the quality of child care has been questioned because they do not provide parents with information about the quality of specific child-care centers and providers.[12]

Although the information provided by CCRRs can make parents more aware of their child-care options, that information does not necessarily improve how parents search for child care.[1,12] One study found that simply providing information to help parents determine the quality of child-care facilities they visited did not ensure that parents actually used the information; only 57 percent of the parents in the study reported using the information. Those parents who did use it, however, were more likely to (1) visit a child-care facility, (2) visit more facilities, (3) obtain advice from someone else who had a child in the facility being considered, and (4) telephone more providers.[1] They were also less likely

to consider the cost of care and distance from home as important factors in making their child-care decision. Because of the nature of the data, however, it is not possible to determine if the differential use of the information caused different search behaviors or if parents' different methods of searching for care influenced their use of the information.

Parents most often use informal sources when searching for child care.[6,10,11] For example, a study that examined the search behaviors of parents in an area without an organization specifically designed to provide child-care resource and referral services found that parents usually use informal sources (friends, relatives, and neighbors) to find child care and turn to formal sources only if the informal sources are unhelpful.[10,11] According to the 1995 National Household Education Survey (NHES:95), only 2 percent of parents with children aged 0 to 5 years old used a resource and referral service to find their child's primary, nonparental child-care arrangement.[6] Other studies have found slightly higher percentages (around 10 percent) of parents reporting to have used CCRRs to find child care.[12] In contrast, NHES:95 found that 59 percent of families used informal sources.[6]

Research has also examined how parents use CCRRs. A study of parents using family-based child care found some differences between parents who had contacted a CCRR and parents who did not have a CCRR in their community.[5] Specifically, the parents who contacted a CCRR relied more on formal informational sources in their search for child care, spent more time looking for a provider, and more of them had visited two or more providers during the course of their search. Although family income and parental educational level did not differ between the groups, children of parents who had used a CCRR were an average of 1.5 years younger than children of parents who did not use a CCRR.[5] In addition, both groups reported being satisfied with their child-care arrangements, but the majority of both groups (62 percent of those using a CCRR and 63 percent of those not using a CCRR) also said they would choose a different arrangement if all options were available to them. Finally, 73 percent of parents who used a CCRR said that the CCRR was somewhat or very helpful, but these ratings were not associated with the other information collected by the survey.[5]

How parents search for child care differs by income and demographic factors. In one study, parents with an annual income of less than $25,000 were more likely to use informal sources than parents who made more than $25,000 per year. Mothers from two-parent families were more likely than single parents to actively search for child care and less likely to make their child-care decisions on the basis of others' suggestions. Parents who perceived their neighborhoods to be transient were more likely to actively search for child care, whereas parents who perceived their neighborhoods to be more stable were more likely to use informal sources.[10,11] Other studies have found that white, educated, middle-

class parents make up the majority of people who use CCRRs, and that urban families are more likely to use CCRRs than rural families.[12]

Who else currently uses this indicator?

To date, no other organizations or states have been found to collect this indicator.

However, CCRRs exist in every state.[9] The National Association of Child Care Resource and Referral Agencies, an organization that supports local CCRRs and advocates on child-care issues at the national level, has a toll-free number and information on its website to help parents find their local CCRR.[7]

In addition, many states, including California, Illinois, Minnesota, Washington State, and Wisconsin, have state-wide child-care resource and referral network organizations. The California Child Care Resource and Referral Network is a private, nonprofit, statewide umbrella organization for county CCRRs.[3]

Additionally, the California Child Care Resource and Referral Agency collects related state-based information for the state of California. Specifically, it monitors CCCRs within the county.

What are the possible sources of data for this indicator?

Data can be collected from CCRRs directly, or from the California Child Care Resource and Referral Network. The Network lists contact information for CCRRs, by county for all counties in California, on its website.[2]

Are there any key issues or concerns about the use of this indicator?

- Other:

Every county in California has at least one CCRR. They are supported by the Child Development Division of the California Department of Education, and their services are free for all parents and child-care providers.

Sources

[1] Bogat, G. A., & Gensheimer, L. K. (1986). Discrepancies between the attitudes and actions of parents choosing day care. *Child Care Quarterly, 15*(3), 159-169.

[2] California Child Care Resource and Referral Network, www.rrnetwork.org

[3] California Child Care Resource and Referral Network. (2001). *History of the Network*. Retrieved July 10, 2002, from http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=596

[4] California Child Care Resource and Referral Network. (2001). *What is a Resource and Referral agency?* Retrieved July 12, 2002, from http://www.rrnetwork.org/calchildcare/onramp/article.php?ID=369

[5] Fuqua, R. W., & Schieck, R. (1989). Child Care Resource and Referral programs and parents' search for quality child care. *Early Childhood Research Quarterly, 4*, 357-365.

[6] Hofferth, S. L., Shauman, K. A., Henke, R. R., & West, J. (1998). *Characteristics of children's early care and education programs: Data from the 1995 National Household Education Survey* (No. NCES 98-128). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

[7] National Association of Child Care Resource and Referral Agencies, http://www.naccrra.org/

[8] National Association of Child Care Resource and Referral Agencies. (2002). *What is Child Care Resource and Referral (CCR&R)?* Retrieved July 12, 2002, from http://www.naccrra.net/About/aboutCCRR.htm

[9] National Association of Child Care Resource and Referral Agencies, Child Care Connector, http://childcareaware.org/

[10] Powell, D. R. (1983). Strategies for helping parents find child care: A research perspective. *Advances in Early Education and Day Care, 3*, 1-12.

[11] Powell, D. R., & Eisenstadt, J. W. (1983). Predictors of help-seeking in an urban setting: The search for child care. *American Journal of Community Psychology, 11*(4), 401-422.

[12] Pungello, E. P., & Kurtz-Costes, B. (1999). Why and how working women choose child care: A review with a focus on infancy. *Developmental Review, 19*, 31-96.

H. Children participate in early childhood education programs.

1. Number and percentage of children who have ever attended a nursery school, prekindergarten, or Head Start program by the time of kindergarten entry (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children entering kindergarten who have ever attended an early childhood education program, such as a preschool, nursery school, prekindergarten, or Head Start program. The percentage is calculated by dividing the number of children entering kindergarten who attended an early childhood education program by the total number of children entering kindergarten.

Why is this indicator important?

Participation in early childhood education programs can help low- and middle-income children prepare for school. Research on high-quality early intervention programs for low-income children[7,13,15] and middle-class children[17,19] has generally found that participation in educational programs before kindergarten entry is associated with better performance in the early years of school.

Program evaluations have found that although gains in the IQ scores of low-income children who participated in high-quality programs typically fade by about third grade, these same children tend to be retained in grade less often, referred less to special education services, and do better in school than low-income children who did not participate in high-quality interventions.[1,13,15]

Studies of middle-class children have also found that children who attended preschool generally had better outcomes than children who did not attend preschool. In one study, preschool attendees had higher scores on a measure of self-esteem, performed better on a measure of mathematical ability, and were absent less often from school than children who did not attend preschool. However, these two groups did not differ on measures of reading ability or general intelligence.[19] Another study found that children who had participated in preschool or child care the year before entering kindergarten were more successful in kindergarten, first grade, and second grade. The children scored above average on national standardized tests, were less likely to be retained, and were less likely to be placed in Chapter 1 programs that provide extra services for educationally disadvantaged children.[17]

Research indicates that when children participate in early childhood programs for a longer time and they have follow-up interventions into the early school years,

better outcomes result.[15] It is unclear, however, exactly how much early education is needed to achieve positive results.

Early childhood education may have long-term positive effects. Some high-quality early childhood programs have been found to have positive effects into the teen years and into adulthood.[3,16] For example, participants in one preschool program, the High/Scope Perry Preschool Project, had higher average achievement scores at age 14 and higher average literacy scores at age 19 when compared with the control group that did not attend a preschool program. At age 27, the participants were also less likely to have been arrested, less likely to have received welfare or other social services, more likely to earn $2,000 or more a month, more likely to own their own home, and more likely to have graduated from high school.[16] Another study, the Carolina Abecedarian Project, found that low-income children who participated in the educational component of a high-quality, intensive early intervention consistently had higher IQ scores from 6 months of age to age 21 than low-income children who did not participate in the educational component.[2,3,6] In addition, children in the educational component were less likely to be held back in school and less likely to be placed in special services than children who were not in the educational program.[2,3,6]

Participation in high-quality child care (which can be similar to early education programming) is also related to better cognitive and social developmental outcomes in young children.[13] In one study, children who attended high-quality child care centers had better language, math, and general cognitive skills, and better peer relationships through second grade than children in poor-quality care.[14]

Who else currently uses this indicator?

The U.S. Department of Health and Human Services uses a variant of this indicator as a measure of child well-being.[18] A variant of this indicator is also tracked in *America's Children: Key National Indicators of Well-Being 2002* (participation in center-based care, not ever attended by the time children entered kindergarten).[5] However, the Early Childhood Longitudinal Study, Kindergarten Cohort study does include this indicator.

Alaska, Hawaii, and Missouri are examples of states that also monitor this indicator.

What are the possible sources of data for this indicator?

Parent reports or program or school administrative records are possible sources of data for this indicator.

In addition, several large national datasets have collected information on this indicator, or a similar indicator; they include the Early Childhood Longitudinal

Study, Kindergarten Cohort (ECLS-K),[4] the National Household Education Survey 1991 (NHES:91),[10] the National Household Education Survey 1999 (NHES:99)[11], and the National Longitudinal Survey of Youth (NLSY).[12]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

It is important to note a measure of children who "ever" attended an early education program could include a wide range of early educational experiences, including children who attended a preschool program for 1 day and children who spent 3 years in a preschool program. A more useful indicator would be to measure the duration of regular participation in early childhood education programs, by first defining regular participation (e.g., X hours per week for X number of weeks). More research is needed to decide what constitutes regular participation in early childhood education programs.

- Cultural issues:

Participation in early educational programs differs by race and ethnicity. In 1996, Hispanic children ages 3 and 4 were less likely to be enrolled in nursery school, prekindergarten programs, or Head Start programs than white or black children of the same age. The percentages of white and black children ages 3 and 4 enrolled in these kinds of programs were similar to one another.[8] In 2001, black children ages 3 to 5 (excluding those enrolled in kindergarten) were more likely to participate in nursery schools, prekindergarten programs, Head Start programs, child care centers, and preschools than their white or Hispanic counterparts, and white children were more likely to participate in these kinds of programs than Hispanics.[9]

Head Start appears to be especially effective for black children and, in particular, for black children with below-average scores on cognitive measures before entering the program.[7] When possible, data should be disaggregated by ethnic groups.

- Other:

Attendance in early education programs differs by family income and mother's education. In 2001, children ages 3 to 5 (excluding those enrolled in kindergarten) from families with incomes below the poverty level were less likely than children from families with incomes at or above the poverty line to be participating in nursery schools, prekindergarten programs, Head Start programs, child-care centers, and preschools. In addition, children whose mothers had college degrees were more likely to be in early education programs than children with mothers who had not completed high school.[9] When possible, data should be disaggregated by economic levels.

Sources

[1] Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children, 5*(3), 25-50.

[2] Campbell, F. A., Helms, R., Sparling, J. J., & Ramey, C. T. (1998). Early-childhood programs and success in school: The Abecedarian study. In W. S. Barnett & S. S. Boocock (Eds.), *Early care and education for children in poverty: Promises, programs, and long-term results* (pp. 145-166). Albany, NY: State University of New York Press.

[3] Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology, 37*(2), 231-242.

[4] Early Childhood Longitudinal Study- Kindergarten Cohort (Fall Parent Interview), Questions CCQ.210 and CCQ.265. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[5] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[6] FPG Child Development Institute of the University of North Carolina at Chapel Hill. (2000). *The Carolina Abecedarian Project*. Retrieved July 24, 2002, from http://www.fpg.unc.edu/~abc/

[7] Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F.-R. (1990). Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child Development, 61*(2), 495-507.

[8] National Center for Education Statistics. (1998). *The condition of education 1998*. Washington, DC: U.S. Department of Education.

[9] National Center for Education Statistics. (2002). *The condition of education 2002*. Washington, DC: U.S. Department of Education.

[10] National Household Education Survey 1991 (NHES:91), Early Childhood Education Questionnaire, Questions P3O, P3P, P4N, and P4O. http://nces.ed.gov/nhes/pdf/quex/early/91_ece.pdf

[11] National Household Education Survey 1999 (NHES:99), Parent Interview, School Readiness Questionnaire, Questions PC3 and PC4 (see also PH4, PI6, and PI1). http://www.nces.ed.gov/nhes/pdf/quex/sr/99parent.pdf

[12] National Longitudinal Survey of Youth, 1979 Cohort (NLSY79), Round 19 Child Questionnaire, Child CAPI Supplement, Questions BKGN-2, BKGN-7, BKGN-8, and BKGN-12. http://www.bls.gov/nls/y79chyaquex/r19/y79childcapi00.pdf

[13] National Research Council and Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[14] Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2000). *The children of the Cost, Quality, and Outcomes Study go to school: Technical report*. Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

[15] Reynolds, A. J. (1994). Effects of a preschool plus follow-on intervention for children at risk. *Developmental Psychology, 30*(6), 787-804.

[16] Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry Preschool Study through age 27 (Monograph of the High/Scope Educational Research Foundation, 10)*. Ypsilanti, MI: High/Scope Press.

[17] Sheehan, R., Cryan, J. R., Wiechel, J., & Bandy, I. G. (1991). Factors contributing to success in elementary schools: Research findings for early childhood educators. *Journal of Research in Childhood Education, 6*(1), 66-75.

[18] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth: 2001*. Washington, DC: Author.

[19] Warash, B. G., & Markstrom-Adams, C. (1995). Preschool experiences of advantaged children. *Psychological Reports, 77*, 89-90.

H. Children participate in early childhood education programs.

2. Percentage of children with special needs who participate in early childhood care and education programs (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children with special needs in a county, as defined by the Individuals with Disabilities Education Act (IDEA), 0 to 5 years of age (excluding those enrolled in kindergarten) who are enrolled in center-based early childhood care and education programs and dividing it by the number of children with special needs in that county.[7,10,16,21] There may be county sources for obtaining the number of children with special needs. The 13 disabilities identified by IDEA are autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. Early childhood care and education programs include a wide array of nonhome-based care, such as child-care centers, nursery schools, preschools, prekindergartens, early intervention programs, Head Start programs, and other center-based care programs serving this age group.

Why is this indicator important?

Children are enrolled in and participate in early childhood care and education programs for a variety of reasons. They may be enrolled when their parents enter the labor force, participate in education or training programs, or want to provide their young children with learning and social opportunities.[10,19] High-quality early childhood care and education programs can lead to many positive outcomes for young children.

Early childhood care and education programs can lead to positive outcomes for children with special needs. Research has shown that attending early childhood care and education programs benefits children with special needs in ways similar to those for other children.[11,12] High-quality early childhood care and education programs provide a setting for developing skills in peer interactions, developing relationships with adults, and promoting language and other cognitive skills.[19] In addition, a quality early childhood care and education program is a child's initial encounter with a school-like environment, which can promote the development of behaviors and skills that can lead to a positive transition to kindergarten.[19]

Child care for children with special needs not only benefits children, but also their families.[11,12] For parents of children with special needs, early childhood care and education programs can provide respite from the increased attention required of caring for a child with special needs.[4]

Many barriers may prevent children with special needs from accessing early childhood care and education services. Research suggests that early identification and appropriate early interventions can help young children with special needs reach their full potential.[13] However, children with special needs are less likely to be in early childhood care and education programs, tend to begin these programs at older ages, and are in them for fewer hours compared with young children without special needs.[5,6,17,22] Early childhood care and education simply may not be accessible to them financially, or available spaces for children with special needs simply may not exist. Moreover, some child-care facilities may not have the equipment and training necessary to accommodate children with special needs and may therefore not enroll them. Transportation difficulties or the need for coordinating other early special interventions with early childhood care and education may prevent children with special needs from accessing high-quality early childhood care and education programs.[14,15]

Who else currently uses this indicator?

Many state efforts monitor this indicator for children's school readiness.

Examples of states that use this indicator are Missouri, New York, North Carolina, and Vermont.

What are the possible sources of data for this indicator?

Standard national survey items are available online. Some examples of national surveys that collect information on participation in early childhood care and education are: (1) the Early Childhood Longitudinal Study Kindergarten Cohort (ECLS-K) parent survey, which address whether a child has special needs[8] and early childhood care and education arrangements[9]; and (2) the National Household Education Survey (NHES), which address early childhood care and education arrangements.[1-3]

Data can be collected directly from parents or teachers. Communities can gather this indicator through parent or teacher surveys. Some examples of surveys are: Missouri's School Entry Assessment Project,[18] North Carolina's School Readiness Assessment,[20] and Vermont's "Ready Kindergartners" teacher questionnaire.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Most research does not distinguish between preschool, day care, and child care; the three terms are often used interchangeably.[19] We use the term "early childhood care and education programs" here to connote the range of center-based early childhood programs with an explicit learning/school preparation

component (noting that there are a range of developmentally appropriate early learning approaches).

Sources

[1] 1993 National Household Education Survey (NHES), Question R36. http://nces.ed.gov/nhes/

[2] 1995 National Household Education Survey (NHES), Question G06. http://nces.ed.gov/nhes/

[3] 2001 National Household Education Survey (NHES), Question EG2. http://nces.ed.gov/nhes/

[4] Ambler, L. (1996). *Respite care: A gift of time. (NICHCY Briefing Paper, 1-8.)*. Washington, D.C.: The National Information Center for Children and Youth with Disabilities.

[5] Booth, C. L., & Kelly, J. F. (1998). Child care characteristics of infants with and without special needs: Comparisons and concerns. *Early Childhood Research Quarterly, 13*, 603-622.

[6] Brandon, P. D. (in press). Child care utilization among working mothers raising children with disabilities. *Journal of Family and Economic Issues*.

[7] Dodge, D. T., & Bickart, T. S. (1998). *From preschool for parents: What every parent needs to know about preschool*. Naperville, IL: Sourcebooks, Inc.

[8] Early Childhood Longitudinal Survey- Kindergarten Cohort (Parent Survey), Questions CHQ.112, CHQ.120, and CHQ.123. http://nces.ed.gov/ecls/

[9] Early Childhood Longitudinal Survey- Kindergarten Cohort (Parent Survey), Questions CCQ.265, CCQ.325, and CCQ.375. http://nces.ed.gov/ecls/

[10] Fein, G. G., & Clarke-Stewart, K.A. (1973). *Day care in context*. New York: John Wiley and Sons.

[11] Guralnick, M. J. (1976). The value of integrating handicapped and nonhandicapped preschool children. *American Journal of Orthopsychiatry, 46*, 236-245.

[12] Ispa, J. (1981). Social interactions among teachers, handicapped children, and nonhandicapped children in a mainstream preschool. *Journal of Applied Developmental Psychology, 1*, 231-250.

[13] Karnes, M. B., & Lee, R. C. (1978). *Early Childhood*. Reston, VA: The Council for Exceptional Children.

[14] Kelly, J. F., & Booth, C. L. (1999). Child care for infants with special needs: Issues and applications. *Infants and Young Children, 12*(1), 26-33.

[15] Klein, N., & Sheehan, R. (1987). Staff development: A key issue in meeting the needs of young handicapped children in day care settings. *Topics in Early Childhood Special Education, 7*, 13-27.

[16] Lamb, M. E. (1998). Nonparental child care: Context, quality, correlates. In W. Damon, I. E. Sigel & K. A. Renninger (Eds.), *Handbook of Child Psychology, Vol. 4: Child psychology in practice, 5th Edition*. New York: John Wiley and Sons.

[17] Landis, L. J. (1992). Marital employment, and childcare status of mothers with infants and toddlers with disabilities. *Topics in Early Childhood Special Education, 12*, 496-507.

[18] Missouri's School Entry Assessment Project - Parent/Guardian Survey, Question 14.

[19] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[20] North Carolina's School Readiness Assessment - Parent Survey, Question #17.

[21] Scarr, S., & Eisenberg, M. (1993). Child care research: Issues, perspectives, and results. *Annual Review of Psychology, 44*, 613-644.

[22] Warfield, M. E., & Hauser-Cram, P. (1996). Child care needs, arrangements, and satisfaction of mothers of children with developmental disabilities. *Mental Retardation, 34*, 294-302.

I. Children receive early screening and intervention for developmental delays and other special needs.

1. Number and percentage of primary care providers who use developmental screenings for all children under age 3 (P)

Category: Performance measure

Surveying health care providers is a way of gathering this information, but one that pertains only to children with a regular source of medical care. As noted in Indicator B5, children may lack a regular source of medical care, particularly if they do not have health insurance.

What is the definition of this indicator?

This indicator refers to the total number of primary care providers who use developmental screenings (as identified by the Individuals with Disabilities Education Act [IDEA]) for all children under age 3. The 13 disabilities identified by IDEA are autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. The percentage is calculated by taking the number of primary care providers who use developmental screenings for all children under age 3 and dividing it by the total number of primary care providers.

Why is this indicator important?

Developmental screening allows for the identification of children who should receive more intensive diagnosis or assessment for a potential special need or disability.[14] The screening tests for deficiencies.[13] Identification of children with special needs allows them to receive appropriate interventions and services to ensure they do not fall behind in school.

Early identification of children with a disability is crucial to improving outcomes. Disabilities such as hearing loss, mental retardation, and some pervasive developmental disorders can be treated if detected at early ages.[7,17] For instance, early identification of hearing deficits and the appropriate intervention can help prevent delayed language skill development.[2] Furthermore, early developmental screening and identification of special needs can assist children in reaching their full potential[10] through enhanced developmental gains and reduced development of problems.[3,5,12,15] For example, early identification of special needs reduces the need for special education classes later and the chance of being held back in school.[11]

Research has also shown that it is cost-effective to begin interventions for children with special needs as early in life as possible,as opposed to later. Significant savings for children with special needs have been estimated when

the intervention begins at birth as opposed to age 6. This savings can be attributed to the decrease in the need for additional services/interventions for children who are identified early. Specifically, children not identified as having special needs are at risk for developing other developmental problems that require special services (e.g., delay of language development for children with hearing loss).[16]

Who else currently uses this indicator?

The American Academy of Pediatrics (AAP) has used this indicator. The AAP collected data on developmental screening practices of health care practitioners in 1991 in its Periodic Survey of Fellows. To our knowledge, this is the only example of this indicator in use.

Many national efforts monitor a related indicator. This indicator is tracked by several states as a child-based indicator for children's school readiness. Rhode Island collects this information through its Child Outreach program. Among other states, South Carolina also monitors this indicator. Neither South Carolina nor Rhode Island tracks this indicator as a primary-care-provider based indicator.

What are the possible sources of data for this indicator?

Data can be collected directly from health care providers. Communities wishing to gather this indicator can survey a representative sample of health care practitioners. Another way to gather this indicator is to examine health care practitioner records for the type of services provided.

Standard national survey items collect related information. The Early Childhood Longitudinal Survey, Kindergarten Cohort (ECLS-K) collects information from parents on the types of developmental delays that a child may have and when these delays were identified; however, ECLS-K does not gather information about whether children received a screening.[4]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Developmental screening practices vary from state to state.[6] These variations may make national benchmarking difficult.

Furthermore, many developmental delays may not be identifiable by age 3, such as a learning disability. Developmental delays are often identified at kindergarten entry during the screening processes schools may require at the point of kindergarten entry. Measurement of primary care provider practices for children under age 3 may not relate to the outcome of children receiving early interventions.

- Cultural issues:

Because developmental screenings may be incorporated into well-baby or well-child visits, access to developmental screening may be an issue for groups that are disproportionately poor who are unable to obtain health insurance or afford adequate medical care.[8]

- Other:

The IDEA Amendments of 1997 require early intervention for children identified with developmental disabilities.[9] Since the passage of the IDEA Amendments of 1997, the focus of developmental screenings has been on children from birth to 2 years.[1]

Sources

[1] American Academy of Pediatrics. (2001 July). Developmental surveillance and screening of infants and young children: Policy statement (RE0062). *Pediatrics, 108*(1), 192-196.

[2] American Academy of Pediatrics Task force on Newborn and Infant hearing. (1999). Newborn and infant hearing loss: Detection and intervention. *Pediatrics, 103*, 527-530.

[3] Cooper, J. H. (1981). *An early childhood special education primer*. Chapel Hill, NC: Technical Assistance Development System.

[4] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Questions CHQ.115-CHQ.260, and CHQ.290. http://nces.ed.gov/ecls

[5] Garland, C., Stone, N. W., Swanson, J., & Woodruff, G. (Eds.). (1981). *Early intervention for children with special needs and their families: Findings and recommendations. Westat Series Paper No 11.* Seattle, WA: University of Washington.

[6] Gracey, C. A., Azzara, C. V., & Reinherz, H. (1984). Screening revisited: A survey of US requirements. *The Journal of Special Education, 18*, 101-107.

[7] Guralnick, M. J. (1997). *The effectiveness of early intervention*. Baltimore, MD: Paul H. Brookes Publishing Co.

[8] Hoffman, C., & Gaskin, D. J. (2001). *The costs of preventable hospitalizations among uninsured and Medicaid adults*. Washington, DC: Kaiser Family Foundation.

[9] *Individuals with disabilities act of 1997*. (No. L No. 105-17).

[10] Karnes, M. B., & Lee, R. C. (1978). *Early childhood*. Reston, VA: The Council for Exceptional Children.

[11] KidSource OnLine, I. (2000, April 20). *What is early intervention?* Retrieved June 13, 2002, from http://www.kidsource.com/kidsource/content/early.intervention.html

[12] Maisto, A. A., & German, M. L. (1979). Variables related to progress in a parent-infant training program for high-risk infants. *Journal of Pediatric Psychology, 4*, 409-419.

[13] Meisels, S. J. (1986). Testing four- and five-year olds: Response to Salzer and to Shepard and Smith. *Educational Leadership, 44*, 90-92.

[14] Meisels, S. J., & Provence, S. (1989). *Screening and assessment: Guidelines for identifying young disabled and developmentally vulnerable children and their families*. Washington, DC: National Center for Clinical Infant Programs.

[15] Strain, P. S., Young, C. C., & Horowitz, J. (1981). Generalized behavior change during operational child training: An examination of child and family demographic variables. *Behavior Modification, 1*, 15-26.

[16] Wood, M. E. (1981). Costs of intervention programs. In C. Garland (Ed.), *Early intervention for children with special needs and their families: Findings and recommendations. Westat Series Paper No. 11*. Seattle, WA: University of Washington.

[17] Yoshinaga-Itano, C., Sedey, A. L., Coulter, D. K., & Mehl, A. L. (1998). Language of early- and later-identified children with hearing loss. *Pediatrics, 102*, 1161-1171.

I. Children receive early screening and intervention for developmental delays and other special needs.

2. **Number and percentage of children identified as having special needs by the time of kindergarten entry (P)**
3. **Number and percentage of children identified with disabilities who are referred to developmental services by the time of kindergarten entry (P)**

Category: Outcome measure

<u>What is the definition of this indicator?</u>

In these indicators, the terms "special needs" and "disabilities" are used interchangeably. Both refer to the following 13 disabilities identified in the Individuals with Disabilities Education Act (IDEA): autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment.

Indicator I2 refers to the number of children up to and including kindergarten entry (includes kindergarten screening) who have been identified as having a special need as defined by IDEA. The percentage is calculated by taking the number identified with special needs and dividing by the total number of children 0 to 5 years of age (including those enrolled in kindergarten).

Indicator I3 refers to the number of disabled children, up to and including kindergarten entry (includes kindergarten screening), who have been referred to developmental services. The percentage is calculated by taking the number referred to developmental services and dividing by the total number of children 0 to 5 years of age (including those enrolled in kindergarten) with disabilities.

- Ideally, the denominator for these indicators should include children who have been institutionalized and who are not captured by Census data. If available, we recommend seeking information on children who have been institutionalized and including this number in the denominator when calculating percentages.

- In California, children may enter kindergarten in a given year if they turn 5 on or before December 2 of that year.

Why is this indicator important?

Early identification of and intervention for children with special needs is important for enhancing development.[15] Many studies and literature reviews indicate that early identification of and intervention for children with special needs results in enhanced development and fewer developmental problems.[9,12,16,20]

Early intervention has important long-term effects. Several studies document the positive effects of special early interventions for infants, toddlers, and preschoolers with disabilities or at risk of disabilities.[13,17,23] One study found that children who participated in a preschool intervention program had more positive outcomes at age 19 in comparison with nonparticipants.[7] On average, program participants were more committed to schooling, had higher rates of high school graduation, and scored higher on reading, math, and language tests than nonparticipants did.[7] Furthermore, children with special needs in the program required fewer special education services at high school graduation and exhibited less antisocial or delinquent behaviors than children with special needs in the control group.[7]

Parents may encounter barriers to receiving appropriate referrals for their young children with special needs. One barrier may be a primary health care provider who is not able to identify children with special needs correctly and does not refer the child to appropriate services.[14,19] In addition, primary health care providers may not take parents seriously when they raise the possibility of their child's special need.[14]

Research has also shown that it is cost-effective to begin interventions for children with special needs earlier, as opposed to later. Children with unidentified special needs are at risk for developmental problems that may require costly special services if not addressed early.[22]

Who else currently uses this indicator?

Many national and state efforts use this indicator to monitor children's school readiness. The national effort *Healthy People 2010* tracks the number of people who have identified disabiltiites.[21] In California, data about infants and toddlers who are receiving interventions are available through the California Department of Developmental Services (DDS). The Special Education Division of the California Department of Education (CDE) also gathers information on children with special needs in Dataquest.[18] Additionally, the California Health Interview Survey is an example of a state organization that collects information about children with special needs on the state and community level.[8] An example of a state that identifies children with special needs is Rhode Island.

What are the possible sources of data for this indicator?

Data can be collected from records or directly from parents. Administrative data, such as school records, may show which students are classified as having special needs and which students have been referred for services. Another way to collect these indicators is to survey all or a representative sample of parents. Information about these indicators is available through the following state databases: California Department of Development Services and the California Department of Education. California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey the California Health Interview Survey.[8]

Standard national survey items can be found online. The Early Childhood Longitudinal Survey, Kindergarten Cohort (ECLS-K) has survey items on the identification of special needs in its Fall 1999 Parent Survey.[11] The Family and Child Experiences Survey (FACES) also has relevant survey items.[4,6] The National Household Education Survey (NHES) collects information on children with special needs and may be another source of survey items.[1-3,5]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

When data is collected from a parent survey, parents may be unaware of their child's special needs or be reluctant to acknowledge problems.

- Cultural issues:

Collecting data through parent surveys may not yield accurate estimates, because some parents may be reluctant to identify their child as being a "special needs" child. For almost 30 years (after a federal law began requiring schools to provide an appropriate educational program for students with disabilities), disproportionately high numbers of children in some racial and ethnic groups have been identified as disabled and placed in special education programs. At the same time, disproportionately low numbers have been placed in gifted programs.[10]

- Sensitivity to change:

There is some evidence that educating primary health care providers will increase appropriate referrals to early interventions.[14]

- Other:

Defined precisely, this indicator does not include those children who are identified with special needs *after* kindergarten entry. Most disabilities among children in this age group are identified at kindergarten entry.

Identification of special needs may depend on a child's access to trained health care professionals. Affordability may be a barrier to the kind of health care that would allow early identification of special needs. Additionally, the cost of treatment may prevent children from obtaining the appropriate interventions for their special needs. When possible, data should be disaggregated by economic levels.

Identification of a special need may not enhance school readiness if the child does not also receive an intervention.

Sources

[1] 1991 National Household Education Survey (NHES), Question #C11. http://nces.ed.gov/nhes

[2] 1993 National Household Education Survey (NHES), Question #R105. http://nces.ed.gov/nhes

[3] 1995 National Household Education Survey (NHES), Question #M04. http://nces.ed.gov/nhes

[4] 1998, 1999 Family and Child Experiences Survey (FACES) Fall Parent Survey, Question #E4. http://www.acf.dhhs.gov/programs/core/ongoing_research/faces/faces_intro.html

[5] 1999 National Household Education Survey (NHES), Question #PT05. http://nces.ed.gov/nhes

[6] 2000 Family and Child Experiences Survey (FACES) Spring Parent Survey, Question #K3. http://www.acf.dhhs.gov/programs/core/ongoing_research/faces/faces_intro.html

[7] Berrueta-Clement, J. R., Schweinhart, L. J., Barnett, W. S., Epstein, A. S., & Weikart, D. P. (1984). *Changed lives: The effects of the Perry Preschool Program on youths through age 19*. Ypsilanti, MI: The High/Scope Press.

[8] California Health Interview Survey, CA8-CA11. http://www.healthpolicy.ucla.edu/chis/news/

[9] Cooper, J. H. (1981). *An early childhood special education primer*. Chapel Hill, NC: Technical Assistance Development System.

[10] Cross, C. T. (2002). *Minority students in special and gifted education*. Retrieved July 2, 2002, from http://nationalacademies.org/legal.html

[11] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Questions CHQ.125, CHQ.160, CHQ.260, and CHQ.315. http://nces.ed.gov/ecls

[12] Garland, C., Stone, N. W., Swanson, J., & Woodruff, G. (Eds.). (1981). *Early intervention for children with special needs and their families: Findings and recommendations. Westat Series Paper No 11.* Seattle, WA: University of Washington.

[13] Guralnick, M. J. (1997). *The effectiveness of early intervention*. Baltimore, MD: Paul H. Brookes Publishing Co.

[14] Hendrickson, S., Baldwin, J. H., & Allred, K. W. (2000). Factors perceived by mothers as preventing families from obtaining early intervention services for their children with special needs. *Children's Health Care, 29*(1), 1-17.

[15] Karnes, M. B., & Lee, R. C. (1978). *Early childhood*. Reston, VA: The Council for Exceptional Children.

[16] Maisto, A. A., & German, M. L. (1979). Variables related to progress in a parent-infant training program for high-risk infants. *Journal of Pediatric Psychology, 4*, 409-419.

[17] Meisels, S. J., & Shonkoff, J. P. (2000). Early childhood intervention: A continuing evolution. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention, Second edition* (pp. 3-34). New York: Cambridge University Press.

[18] Special Education Division of the California Department of Education (CDE), http://www.cde.ca.gov/spbranch/sed/enrldata.htm

[19] Spiker, D., & Hebbeler, K. (1999). Early intervention services. In M. Levine, W. B. Carey & A. C. Crocker (Eds.), *Developmental behavioral pediatrics* (3rd ed., pp. 793-802). Philadelphia: W. B. Saunders Company.

[20] Strain, P. S., Young, C. C., & Horowitz, J. (1981). Generalized behavior change during operational child training: An examination of child and family demographic variables. *Behavior Modification, 1*, 15-26.

[21] U.S. Department of Health and Human Services. (2000). *Healthy people 2010 (Conference edition, in two volumes)*. Washington, DC.

[22] Wood, M. E. (1981). Costs of intervention programs. In C. Garland (Ed.), *Early intervention for children with special needs and their families: Findings and recommendations. Westat Series Paper No. 11*. Seattle, WA: University of Washington.

[23] Zeanah, C. H. (2000). *Handbook of infant mental health, Second edition*. New York: The Guilford Press.

I. Children receive early screening and intervention for developmental delays and other special needs.

4. Number and percentage of early childhood care and education providers who receive training and/or technical support for caring for children with special needs (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of early childhood educators and child care providers who receive training and/or technical support for caring for children with special needs. Training and/or technical support is defined as completion of college courses, degree programs, workshops, seminars, conferences, and orientation sessions, or on-the-job training or counseling specific to the care of young children with special needs (as defined by the Individuals with Disabilities Education Act [IDEA]). The 13 special needs identified by IDEA are autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. The percentage is calculated by taking the number of providers with training and/or technical support and dividing by the total number of early childhood care and education providers.

Why is this indicator important?

Educators and early care providers need training in many areas in order to work effectively with children with special needs. A wide range of specialized information is available about the characteristics of young children with a variety of special needs and about how to best promote their early health and learning, as well as support and assist their families. For example, special training in teaching methods and classroom management to incorporate special needs is useful.[4] Research has shown that trained caregivers have more positive attitudes toward children with special needs and more knowledge about programming for children with special needs.[8] In addition, caregivers with training report more comfort in dealing with the attachment and behavior issues of children with special needs.[14] Caregiver training is also rated by parents of children with special needs as a quality they desire in caregivers.[15]

One study found that 6 months after training, child-care providers had more positive attitudes towards children with special needs, had greater knowledge about programming for children with special needs, and used physical space more effectively to enhance child growth and development.[8]

Training has been suggested as one of the most important predictors of the quality of early childhood care and education.[6,11] Low levels of education and training among caregivers act as barriers to children receiving high-quality

child care.[9,10] Research has shown that preschools and child-care centers whose employees accept and value diversity among the children they serve are more likely to be successful in integrating special needs children.[13] In addition, educators with training were rated as more sensitive toward the needs of all children.[16] In general, children whose care providers are sensitive, responsive, and attentive fare better in many aspects of development.[12] Finally, training for child care providers allows young children with special needs to gain access to the entire range of early childhood care and education programs that are used by children with typical development.[7]

Who else currently uses this indicator?

State efforts use this indicator to monitor children's school readiness. One example of a state that uses this indicator is Rhode Island, which surveys child care centers to collect information on the training of family-based child care staff.

What are the possible sources of data for this indicator?

Data for this indicator can be gathered by surveying all or a representative sample of early childhood care and education programs or providers. In addition, some child care programs are funded by sources (e.g., Head Start) that require training for its providers in working with children with special needs. Such programs may keep records regarding this training.

Standard national survey items are available online. The Early Childhood Longitudinal Survey, Birth Cohort 2000 (ECLS-B) and the National Household Education Survey 1995 (NHES) both contain possible survey items on this issue.[1,5] Both surveys ask about provider training, but do not specify whether the training is for children with special needs. The ECLS-B cites the original source of its questions as the National Association for the Education of Young Children (NAEYC) Accreditation in California Study. The ECLS-B collects the data from child-care centers, whereas NHES 1995 collects it from parents.

California-specific data can be obtained from the California Commission on Teacher Credentialing. In California, early childhood educators are required to be certified by the California Commission on Teacher Credentialing (CCTC) to be hired by a public school system. Furthermore, to work with children with special needs, early childhood educators need to be certified in one of the following six categories of specialization: mild/moderate disabilities, moderate/severe disabilities, visual impairments, deaf and hard-of-hearing, physical and health impairments, and early childhood special education. Educators are required to complete a special education teacher preparation program, including student teaching, in the area of specialization. The number of educators trained to teach children with special needs can be obtained from the CCTC's certification records.

The California Compensation and Retention Encourage Stability (CARES) initiative seeks to encourage child-care provider training and retention by providing stipends to child-care providers. This program is partially funded by Proposition 10. Data about training may be available through this project.[2]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

To date, no information in this area has been located. One possible concern is that child care providers with little or no training might be less likely to respond to a survey, producing a low return rate or biased sample.

- Cultural issues:

The percentage of teachers who are from diverse backgrounds who teach children with special needs is in inverse proportion to the percentage of their students of diverse backgrounds. Approximately 86 percent of the teachers of children with special needs in the United States are white, whereas only 10 percent are African-American, 2 percent are Hispanic/Latino, and 2 percent are other ethnicities.[4]

- Sensitivity to change:

Founded in North Carolina and now in 19 states, the Teacher Education and Compensation Helps (T.E.A.C.H.) Early Childhood Project aims to improve child care by training child-care workers. This program has been successful in increasing the number of child-care providers who receive training by providing them with compensation for that training.[3]

Sources

[1] 2001 National Household Education Survey (NHES) Parent Report, Question #E24. http://nces.ed.gov/nhes

[2] California Child Care Workforce Resource Center. (2002, Feb 24). *California CCW Resource Center: CARES*. Retrieved July 24, 2002, from http://www.caccwrc.org/cares/cares.htm

[3] Child Care Services Association. (2002, Feb 27). *T.E.A.C.H. Early Childhood Project*. Retrieved July 24, 2002, from http://www.childcareservices.org/TEACH/T.E.A.C.H.%20Project.htm

[4] Crutchfield, M. (1997). *Who's teaching our children with disabilities? [Special Issue]*. Retrieved August 9, 2002, from http://www.kidsource.com/kidsource/content4/Spec_Ed/Spec_Ed.html

[5] Early Childhood Longitudinal Study- Birth Cohort (ECLS-B) Parent Report, Questions N13, N14, N15, N18, N21. http://nces.ed.gov/ecls/

[6] Fisher, J. L. (1989). *Family day care: Factors influencing the quality of caregiving practices.* Unpublished doctoral dissertation, University of Illinois, Urbana.

[7] Guralnick, M. J. (Ed.). (2001). *Early childhood inclusion: Focus on change*. Baltimore: Paul H. Brookes Publishing Company.

[8] Jones, S. N., & Meisels, S. J. (1987). Training family day care providers to work with special needs children. *Topics in Early Childhood Special Education, 7*(1), 1-12.

[9] Kelly, J. F., & Booth, C. L. (1999). Child care for infants with special needs: Issues and applications. *Infants and Young Children, 12*(1), 26-33.

[10] Klein, N., & Sheehan, R. (1987). Staff development: A key issue in meeting the needs of young handicapped children in day care settings. *Topics in Early Childhood Special Education, 7*, 13-27.

[11] Modigliani, K. (1994). *Promoting high-quality family child care*. Boston: Wheelock College.

[12] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[13] Peck, C. A., Odom, S. L., & Bricker, D. D. (1993). *Integrating young children with disabilities into community programs: Ecological perspectives on research and implementation*. Baltimore, MD: Paul H. Brookes.

[14] Sherwood-Puzzello, C. M., Perry, D. F., Wilkerson, S. A., & Hadadian, A. (2000). Infant mental health training needs of service providers in early intervention programs. *Infant-Toddler Intervention, 10*(4), 205-214.

[15] Wehman, T., & Gilkerson, L. (1999). Parents of young children with special needs speak out: Perceptions of early intervention services. *Infant-Toddler Intervention, 9*(2), 137-167.

[16] Whitebook, M., Sakai, L., Gerber, E., & Howes, C. (2001). *Then and now: Changes in child care staffing, 1994-2000*. Washington, DC: Center for the Child Care Workforce.

I. Children receive early screening and intervention for developmental delays and other special needs.

5. Number and percentage of primary care or early education providers who use developmental screenings for all children under age 3 (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of health care providers who screen for the following 13 disabilities identified by the Individuals with Disabilities Education Act (IDEA): autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, learning disability, speech or language impairment, traumatic brain injury, and visual impairment. The percentage is calculated by dividing the number of primary providers or early education providers who conduct physical, cognitive, emotional, and behavioral screenings by the total number of primary care providers or early education providers for children in the community/state. Note that by including both primary care and early education providers in this indicator, double counting is possible because some children may receive two or more screenings. However, including both provides a more complete picture.

Why is this indicator important?

Early identification of developmental delays is crucial to improving outcomes. Early developmental screening and identification of special needs can assist children to develop their full potential.[12] Many studies find that early identification and intervention for children with special needs results in enhanced developmental gains and a reduction in the development of problems.[6,7,13,20]

Most pediatricians screen for developmental disabilities. Because most children are seen for health care at primary health care facilities, they provide an ideal setting for developmental screenings.[4] It appears that many pediatricians conduct developmental screenings in one way or another. A survey found that pediatricians use both nonstandard and standard methods to screen for developmental disabilities, with 90 percent using nonstandard methods and 51 percent using standard methods.[3]

Despite its importance, parents encounter several barriers to receiving identification and intervention services for their children with special needs. The first barrier is their primary health care provider's lack of knowledge about children with special needs.[10] A majority of pediatricians believe they do not have enough training in developmental disabilities.[3] Another barrier is that some primary health care providers may not take parents seriously when they indicate their child's special need.[10] It appears that many health care providers lack the ability to correctly identify children with special needs.

Developmental screenings allow for the identification of children who should receive a more intensive diagnosis or assessment for a potential special need or disability.[15] The screening tests examine a child's performance in several areas of normal development and look for deficiencies.[14] The IDEA Amendments of 1997 require early identification and intervention for children with developmental disabilities.[11] Identification of children with special needs allows them to receive appropriate interventions and services. Since the passage of the IDEA Amendments of 1997, the focus of developmental screenings has been on children from birth to 2 years.[4] Developmental delays such as hearing loss, mental retardation, and some pervasive developmental disorders can be treated if detected early on.[9,21] For example, the early identification of hearing deficits may help prevent negative outcomes such as language skill delays.[5]

Who else currently uses this indicator?

The American Academy of Pediatrics (AAP) has used this indicator. The AAP collected data on developmental screening practices of health care practitioners in 1991 in its Periodic Survey of Fellows. To our knowledge, this is the only example of this indicator in use.

What are the possible sources of data for this indicator?

Data can be collected directly from health care providers. This information can be obtained by surveying the medical associations in California. Communities wishing to gather this indicator can survey a representative sample of health care practitioners. Another way to gather this indicator is to examine health care practitioner records for the type of services provided.

Standard national survey items are available online. The 1993 and 1999 National Household Education Survey (NHES) gathered parent report information about whether a child received preventive care.[1,2] The National Health Interview Surveys (NHIS) for 1998, 1999, and 2000 gathered parent report information about whether a child was identified by a health practitioner as having a developmental delay.[18]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

There is no official classification system for disabilities across states. IDEA recognizes 13 disabilities; however, only "learning disability" has a set classification criteria.

- Sensitivity to change:

Because this indicator is not widely collected, to our knowledge there are also no interventions to change this indicator. In addition, many disabilities can be treated only, not cured.

- Other:

Differences have been found among the various ways that states classify children.[16,17,19] In addition, screening practices also vary from state to state.[8] This may make state-to-state comparisons difficult.

Sources

[1] 1993 National Household Education Survey (NHES), Questions R103-R105C. http://nces.ed.gov/nhes

[2] 1999 National Household Education Survey (NHES), Questions PT1-PT10. http://nces.ed.gov/nhes

[3] American Academy of Pediatrics. (1991). *Periodic Survey of Fellows #13, Screening for developmental disabilities Executive Summary*. Retrieved June 24, 2002, from http://www.aap.org/research/ps13exm.htm

[4] American Academy of Pediatrics. (2001 July). Developmental surveillance and screening of infants and young children: Policy statement (RE0062). *Pediatrics, 108*(1), 192-196.

[5] American Academy of Pediatrics Task force on Newborn and Infant hearing. (1999). Newborn and infant hearing loss: Detection and intervention. *Pediatrics, 103*, 527-530.

[6] Cooper, J. H. (1981). *An early childhood special education primer*. Chapel Hill, NC: Technical Assistance Development System.

[7] Garland, C., Stone, N. W., Swanson, J., & Woodruff, G. (Eds.). (1981). *Early intervention for children with special needs and their families: Findings and recommendations. Westat Series Paper No 11.* Seattle, WA: University of Washington.

[8] Gracey, C. A., Azzara, C. V., & Reinherz, H. (1984). Screening revisited: A survey of US requirements. *The Journal of Special Education, 18*, 101-107.

[9] Guralnick, M. J. (1997). *The effectiveness of early intervention*. Baltimore, MD: Paul H. Brookes Publishing Co.

[10] Hendrickson, S., Baldwin, J. H., & Allred, K. W. (2000). Factors perceived by mothers as preventing families from obtaining early intervention services for their children with special needs. *Children's Health Care, 29*(1), 1-17.

[11] *Individuals with disabilities act of 1997*. (No. L No. 105-17).

[12] Karnes, M. B., & Lee, R. C. (1978). *Early childhood*. Reston, VA: The Council for Exceptional Children.

[13] Maisto, A. A., & German, M. L. (1979). Variables related to progress in a parent-infant training program for high-risk infants. *Journal of Pediatric Psychology, 4*, 409-419.

[14] Meisels, S. J. (1986). Testing four- and five-year olds: Response to Salzer and to Shepard and Smith. *Educational Leadership, 44*, 90-92.

[15] Meisels, S. J., & Provence, S. (1989). *Screening and assessment: Guidelines for identifying young disabled and developmentally vulnerable children and their families*. Washington, DC: National Center for Clinical Infant Programs.

[16] Mercer, C. D., King-Sears, P., & Mercer, A. R. (1990). Learning disabilities definitions and criteria used by state education departments. *Learning Disability Quarterly, 13*(2), 141-152.

[17] Mercer, J. (1973). *Labeling the mentally retarded*. Berkeley, CA: University of California Press.

[18] National Health Interview Survey, Questions CHS.031-CHS.060. http://www.cdc.gov/nchs/nhis.htm

[19] Patrick, J., & Reschly, D. (1982). Relationship of state educational criteria and demographic variables to school-system prevalence of mental retardation. *American Journal of Mental Deficiency, 86*(4), 351-360.

[20] Strain, P. S., Young, C. C., & Horowitz, J. (1981). Generalized behavior change during operational child training: An examination of child and family demographic variables. *Behavior Modification, 1*, 15-26.

[21] Yoshinaga-Itano, C., Sedey, A. L., Coulter, D. K., & Mehl, A. L. (1998). Language of early- and later-identified children with hearing loss. *Pediatrics, 102*, 1161-1171.

J. Children live in home environments supportive of optimal cognitive development.

1. **Number and percentage of families who report reading or telling stories regularly to their children, 3 to 5 years of age (P or C)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of parents or primary caregivers who report reading or telling stories to their children (3 to 5 years of age) regularly. The percentage is calculated by dividing the number of families who report reading or telling stories to their children regularly by the total number of families.

Recent studies of Hispanic literacy in the United States have shown that storytelling—central to many cultures—serves many of the same functions and has similar literacy development results as reading to children.[11]

Why is this indicator important?

Reading to children builds language and literacy skills essential for success in school. Children who are exposed to reading early in their development experience greater success in school.[10] Reading to children is related to positive outcomes in the areas of language development, emergent literacy, and reading achievement.[2] Specifically, early reading exposure promotes enhanced awareness of the function of print, recognizing sequence in stories, emergent writing skills, increased vocabulary, enhanced awareness of social conventions of speech, and enhanced ability to follow oral directions.[11] These skills contribute to a child's ability to express thoughts and feelings both in written and spoken form.[11] Reading to and with children also increases the child's cognitive awareness of the names and shapes of letters.[11] Reading to children has been shown to help develop imagination and creativity and to help motivate children to begin to read, which in turn helps them do better in school.[14]

Students who experience problems with early language skills are reported by teachers to be the most "unready" in their classes.[1] Furthermore, it has been well-documented that children who have difficulties learning to read do poorly in school, limiting their range of life opportunities.[9,18-20]

Reading to children improves children's interpersonal skills. In addition to language and literacy outcomes, shared reading contributes to social interaction skills needed in school.[2] Reading to young children can encourage positive parent-child interactions, which have an important influence on children's social and emotional development.[11] Research has shown that child behavioral and cognitive outcomes are partially mediated by the quality of mother-child interactions.[23] Positive mother-child relations also contribute to other social relationships, such as peer interactions, which can help ensure a smoother

transition to school.[22] Children who are able to establish and maintain friendships adjust to school more positively and have more friends. Enhanced social and communication skills help to create an environment that is more conducive to learning.[12]

Other organizations and states recognize the importance of reading to children. The importance of early literacy activities to later development in reading is gaining national attention. A major report by the National Academy of Sciences highlights the benefits of parental reading to young children, and the U.S. Department of Education is devoting increased attention to the topic with programs such as Early Reading First. A number of websites are also devoted to disseminating information to parents and caregivers about the importance of reading to young children[5,13,16] In addition, family literacy and reading are the focus of statewide efforts in Colorado, Ohio, Oklahoma, Tennessee, and Delaware. (See indicator J8.)

Who else currently uses this indicator?

National and state efforts use this indicator because of its strong relationship to children's readiness for school. This indicator is tracked nationally by Head Start, the Kaiser Family Foundation, the National Education Association, the U. S. Department of Education, and the U.S. Department of Health and Human Services.[21] *The Child Trends Databank* tracks this indicator,[3] as does *America's Children: Key National Indicators of Well-Being 2002*.[8] Note, however, that these organizations use the percentage of children read to, not the percentage of families who read to their children.

Examples of states that track family literacy activities as part of their school readiness efforts include Hawaii, Missouri, and Rhode Island.

Several national and statewide surveys have included questions about family reading and storytelling. The surveys include the Early Childhood Longitudinal Study, Kindergarten Cohort in the Fall Parent Questionnaire,[4] the National Household Education Survey Parent Interview,[15] the Head Start Family and Child Experiences Survey,[6,7] and the National Survey of America's Families.[17]

What are the possible sources of data for this indicator?

The best way to collect data on this indicator is to survey a representative sample of parents.

Relevant, standard national survey items for the surveys mentioned above are available online. Items include questions about how often family reading and storytelling occur in the home over a specific time period (e.g., in the last week).

Are there any key issues or concerns about the use of this indicator?

- Validity/Reliability:

Several national studies have found this indicator to be predictive of future school success. However, national levels fluctuated during the 1990s.[8] Therefore, fluctuation at the county level may not be related specifically to this phenomenon, but may instead be related to the measurement of this indicator.

- Sensitivity to change:

The national average for young children read to by a family member every day has fluctuated since the 1990s (increasing from 53 percent in 1993 to 58 percent in 1995, then dropping back to 54 percent in 1999 and then rebounding to 58 percent in 2001).[2] Although specific programs (e.g., Read to Achieve and America Reads) may increase reading to children among program participants, changes are not pervasive enough to affect national averages.

- Cultural issues:

As noted above, storytelling is central in many cultures and serves to support literacy development in some of the same ways as reading to children. It may be helpful to collect information on both storytelling and reading. When possible, data should be disaggregated by ethnic groups.

- Other:

People living in poverty may have less free time, lower levels of education, higher rates of illiteracy, and less money to spend on books—any of which may result in less time spent reading to their young children. In 2001, only 48 percent of children ages 3 to 5 in families with income below the poverty level were read to by a family member every day, compared with 61 percent of children in families with income above the poverty level.[8] When possible, data should be disaggregated by economic levels.

Sources

[1] Boyer, E. (1991). *Ready to learn: A mandate for the nation*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

[2] Bus, A. G., van Ijzendoorn, M. H., & Pelligrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65*(1), 1-21.

[3] Child Trends. (2002). *Child Trends Databank Indicator: Reading to young children*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[4] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Question HEQ.010. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[5] Early literacy references.*Talk, reach, read*, from www.zerotothree.org/brainwonders/links-body.html

[6] Family and Child Experiences Survey (FACES), Question #D1. http://www2.acf.dhhs.gov/programs/hsb/hsreac/faces/pdf/pfaces99.pdf

[7] Family and Child Experiences Survey (FACES), Question #D5. http://www2.acf.dhhs.gov/programs/hsb/hsreac/faces/pdf/pfaces99.pdf

[8] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[9] Fletcher, J. M., & Lyon, G. R. (1998). Reading: A research-based approach. In W. M. Evers (Ed.), *What's gone wrong in America's classrooms?* Stanford, CA: Hoover Institution Press.

[10] Halsall, S., & Green, C. (1995). Reading aloud: A way for parents to support their children's growth in literacy. *Early Childhood Education Journal, 23*(1), 27-31.

[11] Kagan, S. L., Moore, E., & Bradekamp, S. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: National Education Goals Panel, Goal 1 Technical Planning Group.

[12] Ladd, G. W. (1990). Having friends, keeping friends, making friends and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development, 61*, 1081-1100.

[13] Lyon, G. R. (2001). *Address to the White House summit on early childhood cognitive development: Summary comments: Address by G.R. Lyons, Chief, Child Development and Behavior Branch, National Institutes of Health*, 2002, from www.ed.gov/pressreleases/07-2001/07272001_lyon.html

[14] National Education Association. (2002). *Frequently asked questions: Reading across America*. Retrieved June 11, 2002, from http://www.nea.org/readacross/

[15] National Household Education Survey, Page 31. http://nces.ed.gov/nhes/pdf/quex/early/2001_ecpp.pdf

[16] National Parent Information Network (Writer) (2002). What does "early childhood education: Ready to Read, Ready to Learn" mean to parents? Video Webcast.

[17] National Survey of America's Families, http://newfederalism.urban.org/nsaf/family-environ.html

[18] Snow, C. E. (1994). Enhancing literacy development: Programs and research perspectives. In D. Dickenson (Ed.), *Bridges to literacy* (pp. 267-272). Cambridge, MA: Basil Blackwell.

[19] Snow, C. E. (1999). Facilitating language development promotes literacy learning. In L. Eldering & P. Leseman (Eds.), *Early education and culture* (pp. 141-162). New York: Falmer Press.

[20] Snow, C. E., & Tabors, P. O. (1993). Language skills that relate to literacy development. In B. Spodek & O. Saracho (Eds.), *Yearbook in early childhood education* (Vol. 4, pp. 1-20). New York: Teachers College Press.

[21] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth 2001*. Washington, DC: Author.

[22] Zaslow, M., Calkins, J., Halle, T., Zaff, J., & Margie, N. (2000). *Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies*. Washington, DC: Child Trends.

[23] Zaslow, M. J., Hair, E. C., Dion, M. R., Ahluwalia, S. K., & Sargent, J. (2001). Maternal depressive symptoms and low literacy as potential barriers to employment in a sample of families receiving welfare: Are there two-generational implications? *Women and Health, 32*(3), 211-252.

J. Children live in home environments supportive of optimal cognitive development.

2. Number and variety of reading materials in a child's home (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the amount of books, magazines, newspapers, and encyclopedias within a child's place of residence.[2] The variety of reading materials in a child's home refers to how many of the previous four categories are present within a child's home.[2]

Why is this indicator important?

Achievement in school is related to the amount of reading material in the home.[7] In the 1970s and 1980s, the average amount of reading material in U.S. homes declined, as did proficiency scores in schools.[2] Although a causal linkage cannot be assumed, the pattern of findings is consistent with reading material contributing to reading proficiency. The number of books in the home is additionally considered to be an indicator of a family that is supportive of literacy development.[5] A recent International Association for the Evaluation of Educational Achievement (IEA) study shows that the availability of books in the home and at school is important for the development of a child's reading and is correlated with high school grades.[5] Additionally, the amount of reading material in a home, along with other important factors such as shared book reading and the number of trips a family takes to the library, helps to develop emerging literacy and reading skills in children.[14]

Having a wide variety of reading materials in the home also appears to be important, correlating with higher levels of reading proficiency. Parents who are readers and buy a variety of reading materials are more likely to have children who are readers, increasing their chances for academic success.[12] For example, 17-year-olds who had 4 or more kinds of reading materials (books, magazines, newspapers, and encyclopedias) in their homes scored 25 points higher on the 1990 National Assessment of Educational Progress (NAEP) reading exam than those with two or fewer kinds of reading materials.[2] Children with a larger variety of reading materials (four or more) available also tend to have higher average scores on the NAEP math exams[8] and are also more likely to be read to by a parent than children with fewer reading materials (See indicator J1.)

Who else currently uses this indicator?

National efforts monitor this indicator for children's school readiness.

The alternate indicator is measured by the Educational Testing Service and is used as a measure by NAEP.[9] Additionally, information on the Even Start program is available in the Even Start Family Literacy Data.

What are the possible sources of data for this indicator?

Data can be directly assessed. The 1990 results of a direct survey of teens (who had similar amounts and types of reading materials in the home as younger children) about the amount and variety of reading materials in the home are graphed nationally and by state in *America's Smallest School: The Family*.[1]

Standard survey items are available online. A question on the original indicator can be found in the Early Childhood Longitudinal Study, Kindergarten Cohort(ECLS-K) in the Fall Parent Questionnaire in the Home Environment, Activities, and Cognitive Stimulation section.[3,4] For questions on the amount of children's books in the home, as well as the amount of all books in the home, see the Head Start Family and Child Experiences Survey (FACES).[6]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

The Raising a Reader Program has been implemented in a number of San Mateo County child-care facilities with low- and middle-income children.[11] The program provides children with a bag of three books each week that they return the following week. The program has shown success in encouraging developing literacy skills, narrowing the literacy gap between low- and middle-income groups, increasing the amount of books in the home, increasing the amount of average library trips per family, and increasing the frequency with which participating children read with their parents.[10]

- Other:

This indicator may be related to economic status, as parents who cannot afford to buy books are unable to provide a literacy-rich environment for their children. This situation can be exacerbated by a lack of libraries in low-income areas, or when they are present, the libraries are often inconveniently located, under-funded, and outdated.[13] Some families may not be able to afford to accumulate books in the home or do not view doing so as a priority.

Sources

[1] America's smallest school: The family, ftp://ftp.ets.org/pub/res/smschool.pdf

[2] Barton, P. E., & Coley, R. J. (1992). *America's smallest school: The family*. Princeton, NJ: Educational Testing Service: Policy Information Center.

[3] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Question HEQ.010. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[4] Early Childhood Longitudinal Study- Kindergarten Cohort: Fall Parent Questionnaire, Question HEQ.050. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[5] Elley, W. B. (1992). *How in the world do students read?: IEA study of reading literacy*. Hamburg: The International Association for the Evaluation of Educational Achievement.

[6] Head Start Family and Child Experiences Survey (FACES), http://www2.acf.dhhs.gov/programs/hsb/hsreac/faces/pdf/pfaces99.pdf

[7] Mullis, I. V. S., Dossey, J. A., Foertsch, M. A., Jones, L. R., & Gentile, C. A. (1991). *Trends in academic progress: Achievement of U.S. students in science, 1969-70 to 1990; mathematics, 1973 to 1990; reading, 1971 to 1990; writing, 1984 to 1990*. Washington, D.C.: U.S. Department of Education.

[8] Mullis, I. V. S., Dossey, J. A., Owen, E. H., & Philllips, G. W. (1991). *The state of mathematics achievement: NAEP's 1990 assessment of the nation and the trial assessment of the states*. Washington, D.C.: U.S. Department of Education.

[9] National Assessment of Educational Programs, http://nces.ed.gov/nationsreportcard/naepdata

[10] Peninsula Community Foundation. (2000). *Evaluating the Impact of the Raising a Reader Book Bag Program*. Palo Alto, California: Pacific Consulting Group.

[11] The Raising a Reader Program, http://www.raisingareader.org/pdfs/rar_phase1_eval.pdf

[12] Shanker, A. (1993). The home school. In *Where we stand, 1993*. Washington, D.C.: American Federation of Teachers.

[13] White Otto, B. (1993). Signs of emergent literacy among inner-city kindergartners in a story book reading program. *Reading and writing quarterly: Overcoming learning difficulties, 9*, 151-162.

[14] Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69*(3), 848-872.

J. Children live in home environments supportive of optimal cognitive development.

3. **Amount of educational television a child watches per weekday (P)**
4. **Amount of educational television a child watches per weekend day (P)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of hours every day, Monday through Friday, that a child, 0 to 5 years of age, watches programs that emphasize "formal" (classroom) and "informal" (cultural, children's, or lifelong learning) instructional programming.[3] The amount of educational television a child watches per weekend day is the same, except that it measures Saturday and Sunday.

Note: To properly use this indicator as a measure it is necessary to define categories for the number of hours that television is watched. The National Assessment of Education Progress uses 1, 2, 3, 4, 5, and 6+ hours as possible responses for the amount of television a child watches.

Why is this indicator important?

Educational television can enhance math, language, and literacy development. Time spent watching educational television rather than all television is related to emergent literacy outcomes much as is shared reading.[7,15] Numerous studies show that viewers of educational television learned both cognitive and social skills from such shows as *Mr. Rogers' Neighborhood, Sesame Street,* and *Captain Kangaroo*.[17] The National Household Education Survey has shown that prekindergarten children who watched *Sesame Street* and *Reading Rainbow* were more likely to be able to count to 20, identify the primary colors by name, and show other signs of emerging literacy and numeracy than their counterparts who did not view the programs.[20] First and second graders who watched *Sesame Street* were more likely to read on their own and less likely to need special help for reading problems.[20] Among children in low-income families, viewing *Sesame Street* at ages 2 and 3 was a positive predictor of vocabulary and math skills at age 5.[19]

These early achievements set children on paths for later success in school and help to provide the motivation and confidence children need to expect school success in the future.[9,10] Watching educational television during childhood is also positively related to high school grades and to teen book use (although both of these may be related to other outside variables such as parental beliefs about education or parents' monitoring of the viewing habits of their children).[13]

Educational television shows stimulate children's creativity and imaginations by providing them with ideas to draw on during creative tasks.[11] Studies show programs designed to help promote creativity and imagination increase social and cognitive problem solving.[4] Viewing educational programs that attempt to emphasize creative development in children is also found to be a fair predicator of their future likelihood for taking art classes, being involvement in creative activities, and being able to comprehend and explain ideas.[2] According to research studies, this association is associated with the moderate pace found in educational television shows. Programs like cartoons and violent television shows are faster paced and driven by more audio/visual effects. This faster pace has been shown to be negatively associated with creativity and with the ability to comprehend and explain complex ideas.[12]

Early exposure to certain types of television shows is also positively associated with viewing habits later in life. Those children who watched educational television shows were found to watch more informative television shows later in life. Likewise, children who watched more violent, sports, and entertainment-based shows were more likely to watch these types of shows later in life.[2]

Who else currently uses this indicator?

Several national efforts monitor this indicator. *Healthy People 2010* tracks the number of children who watch television 2 or fewer hours a day.[18] *The Child Trends DataBank* tracks hours of television watching.[5]

Additionally, this indicator (using varying age groups) is tracked nationally by the Carnegie Commission on Educational Television, the Federal Communication Commission, Nielson Media Research, and the Public Broadcast Service to determine the amount of viewers watching educational programming on television.

Rhode Island is an example of a state that collects data on this indicator.

What are the possible sources of data for this indicator?

Data can be directly assessed. The 1990 results of a national survey pertaining to general television watching habits of teenagers can be found in *America's Smallest School: The Family*, a survey conducted by the Educational Testing Service.[1]

Standard national survey questions are available online. A question pertaining to the general educational television viewing habits of young children can be found in the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) in the Fall Parent Questionnaire.[8]

Additionally, the Nielson television ratings accurately track the amount of viewing for all types of television across all demographic groups. It is possible to contact the Nielson Media Research group online.[16]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The type of child care (if any) in which a child participates, as well as the ability of the family to afford a television, are contributing factors to the amount of television (educational or otherwise) that a child watches.[13]

- Sensitivity to change:

Both of these indicators are sensitive to change insofar as educational shows such as *Sesame Street* and *Mr. Rogers' Neighborhood* are available and can attract large viewing audiences. Change can be greatly intensified, however, through parental encouragement of viewing and through discussion of shows with parents.[6]

- Other:

Both of these indicators may be affected by parents' educational levels, families' economic class, and the child's gender. A study of adolescent TV viewing behavior showed that adolescents whose parents had relatively low levels of education and income spent more time watching television and less time with other forms of media than their counterparts.[14] Studies also showed that males tend to watch about 1.5 hours more television per week than females. Conversely, females tend to watch more educational types of television shows.[2] These factors should be taken into account when tracking television viewing and considering its implications for children.

Sources

[1] America's smallest school: The family, ftp://ftp.ets.org/pub/res/smschool.pdf

[2] Anderson, D. R., Huston, A. C., Schmitt, K. L., Linebarger, D. L., & Wright, J. C. (2001). Early childhood television viewing and adolescent behavior: The recontact study. In *Monographs of the society for research in child development* (Vol. 66). Massachusetts: Blackwell.

[3] Barnouw, E. (1986). *A history of broadcasting in the United States. Vol. II--1933-1953, the golden web*. New York: Oxford University Press.

[4] Bryant, J., & Williams, M. (1997). *Impact of Allegra's Window and Gullah Gullah Island on preschool children's flexible thinking.* Paper presented at the Paper presented at the biennial meeting of the Society for Research in Child Development, Washington, DC.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Watching television*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Cook, T. D., Appleton, H., Conner, R. F., Shaffer, A., Tamkin, G., & Weber, S. J. (1975). *"Sesame Street" revisited: A study in evaluation research.* New York: Russell Sage.

[7] Dunn, M. E. (1981). Children's achievement at school-entry age as a function of mothers' and fathers' teaching sets. *Elementary School Journal, 81*, 245-253.

[8] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Question HEQ.080. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[9] Eccles, J. S., Wigfield, A., & Schiefele, U. (1997). Motivation to succeed. In W. Damon (Series Ed.) & N. Eisenberg (Ed.) (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development, 5th ed.* (5th ed. ed., pp. 1017-1096). New York: Wiley.

[10] Entwisle, D. R., Alexander, K. L., & Olson, L. S. (1997). *Children, schools, and inequality*. Boulder, CO: Westview.

[11] Hamgarth, F., & Reus, G. (1991). *Pluralism in the screen: Children's broadcasting in Germany.* Paper presented at the Paper presented at the Annual Meeting of the International Communication Association, Chicago, IL.

[12] Huston, A. C., & Wright, J. C. (1994). Educating children with television: The forms of the medium. In D. Zillman, J. Bryant & A. C. Huston (Eds.), *Media, family, and children: Social scientific, psychodynamic, and clinical perspectives*. Hillsdale, NJ: Erlbaum.

[13] Koolstra, C., & Van der Voort, T. (1996). Longitudinal effects of television on children's leisure-time reading: A test of three explanatory models. *Human Communication Research, 23*, 4-35.

[14] Larson, R. W., & Verma, S. (1998). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin, 125*, 701-736.

[15] Mason, J. (1980). When do children begin to read: An exploration of four year old children's letter and word reading competencies. *Reading Research Quarterly, 15*, 203-227.

[16] Nielson Media Research Group, http://www.nielsenmedia.com

[17] Stein, A. H., & Friedrich, L. K. (1975). The impact of television on children and youth. In E. M. Hetherington (Ed.), *Review of child development research* (Vol. 5). Chicago: University of Chicago Press.

[18] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference edition, in two volumes)*. Washington, DC: Author.

[19] Wright, J. C., & Huston, A. C. (1995). *The effects of educational TV viewing of lower income preschoolers on academic skills, school readiness, and school adjustment one to three years later*. Lawrence, KS: Center for Research on the Influences of Television on Children.

[20] Zill, M., Davies, E., & Daly, M. (1994). *Viewing of Sesame Street by preschool children in the United States and its relation to school readiness*. Rockville, MD: Westat.

J. Children live in home environments supportive of optimal cognitive development.

5. **Amount of noneducational television a child watches per weekday**
6. **Amount of noneducational television a child watches per weekend day**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the hours (Monday through Friday) that children 0 to 5 years of age watch programs that do not emphasize "formal" (classroom) or "informal" (cultural, children's, or lifelong learning) instructional programming.[3] The amount of noneducational television a child watches per weekend day is the same, except that it measures it during Saturday and Sunday.

Note: To properly use this indicator as a measure it is necessary to define categories for the number of hours that television is watched. The National Assessment of Education Progress uses 1, 2, 3, 4, 5, and 6+ hours as possible responses for the amount of television a child watches.

Why is this indicator important?

Children who watch long hours of television (3 hours a day or more) also have the lowest math and literacy proficiency levels in school. Although this relationship has not been proven causal, a 1990 National Assessment of Educational Programs(NAEP) study shows that among 17-year-old students, those who watched the least television attained the highest mathematics proficiency scores..[13]

Early exposure to certain types of television shows is also positively associated with viewing habits later in life. Those children who watched educational television shows were found to watch more informative television shows later in life. Likewise, children who watched more violent, sports, and entertainment-based shows were more likely to watch these types of shows later in life.[2]

Programs with violent content or content aimed solely at entertainment were found to have a negative association with later creativity and a positive association with passivity.[9] Viewing educational programs that attempt to emphasize creative development in children is found to be a fair predictor of future creative activity (e.g., the likelihood of taking art classes, involvement in creative activities, the ability to comprehend and express complex ideas).[2] According to studies, this association is conveyed through the moderate pace found in educational television shows. Programs like cartoons and violent television shows are faster-paced, driven by more audio/visual effects. This faster pace has been shown to be negatively associated with creativity and with

the ability to comprehend and explain complex ideas.[9] For instance, children who watch violent television tend to foster aggressive fantasies, to be restless, and to be impulsive. These three characteristics have been shown to decrease children's ability to be creative.[17]

Through the stereotypical behaviors and character development seen in many programs, children begin to form a view of the world coinciding with what they see on television.[8] Television programming has enforced traditional gender roles through observational learning.[10] Children's noneducational television programs, in particular, present a more gender-stereotyped picture of the world than do adult programs. In cartoons, men tend to be the dominant figures that solve problems, whereas women are portrayed as less intelligent, as well as sweet and childlike.[8] Socialization through television is also seen in shows depicting violence. Children who watch violence on television experience increased aggressive thoughts and behaviors, as well as higher systolic blood pressure.[4] Repeated viewing of violence over long periods of time may have more marked implications.[7]

Who else currently uses this indicator?

Several organizations track these indicators. The Federal Communications Commission, Nielson Media Research, and most television production track the number of viewers watching television programming. Many of these groups also have information broken down by age groups and other demographic distinctions.

The Child Trends DataBank tracks the number of hours spent watching television.[5] *The Healthy People 2010* tracks the number of children who watch television 2 or fewer hours a day.[18] *Trends in the Well-Being of America's Children & Youth: 2001* additionally monitors all TV watching by adolescents.[19]

Rhode Island is an example of a state that collects data on this indicator.

The Nielson television ratings track the number of viewers for all types of television viewing across all demographic groups. The data that Nielson Media collects can be broken down into more localized areas (cities or local markets) and by demographic groups (e.g., 6-11 year olds, 2-11 year olds, men, women).[16]

What are the possible sources of data for this indicator?

Data for this indicator can be directly assessed. The 1990 results of a survey pertaining to general television watching habits of teenagers can be found in *America's Smallest School: The Family*, a survey conducted by the Educational Testing Service.[1]

This indicator is measured in the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) as the total number of hours spent watching television on weekends and weekdays.[6] The National Assessment of Educational Programs (NAEP) asks about the average number of hours children spend watching television daily.[14] The NAEP data can also be broken down by state. The National Longitudinal Survey of Youth also measures the amount of hours that children watch television on weekends and weekdays.[15]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The type of child care (if any) in which a child participates, as well as the ability of the family to afford a television, are contributing factors to the amount of television (educational or otherwise) that a child watches.[11]

- Sensitivity to change:

Both of these indicators are sensitive to change with the emergence of new programs as evidenced by the popularity of some children's television shows such as *The Mighty Morphin Power Rangers*, *Pokemon*, *Rugrats*, and *Power Puff Girls*. These shows develop large followings and affect the amount of television viewed by children.

- Other:

Both of these indicators may be affected by the educational levels of parents, economic class, and gender. A study of adolescent TV viewing behavior showed that adolescents whose parents had relatively low levels of education and income spent more time watching television and less time with other forms of media than their counterparts.[12] Studies also showed that males tend to watch about 1.5 hours more of television per week than females. Conversely, females tend to watch more educational types of television shows.[2] These factors should be taken into account when tracking the rates and implications of television viewing.

Sources

[1] America's smallest school: The family, ftp://ftp.ets.org/pub/res/smschool.pdf

[2] Anderson, D. R., Huston, A. C., Schmitt, K. L., Linebarger, D. L., & Wright, J. C. (2001). Early childhood television viewing and adolescent behavior: The recontact study. In *Monographs of the society for research in child development* (Vol. 66). Massachusetts: Blackwell.

[3] Barnouw, E. (1986). *A history of broadcasting in the United States. Vol. II--1933-1953, the golden web*. New York: Oxford University Press.

[4] Bushman, B. J., & Geen, R. (1990). Role of cognitive-emotional mediators and individual differences in the effects of media violence on aggression. *Journal of Personality and Social Psychology, 58*, 156-163.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Child maltreatment*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Early Childhood Longitudinal Survey- Kindergarten Cohort (Spring Parent Interview), Questions DWQ080 and DWQ082. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[7] Eron, L. D., & Huesmann, L. R. (1990). The stability of aggressive behavior - even into the third generation. In M. Lewis & S. M. Miller (Ed.), *Handbook of developmental psychology* (pp. 147-156). New York: Plenum Press.

[8] Huston, A. C., Dunnerstein, E., Fairchild, H., Feshbach, N. D., Katz, P. A., Murray, J. P., et al. (1992). *Big world, small screen: The role of television in American society*. Lincoln, NE: University of Nebraska Press.

[9] Huston, A. C., & Wright, J. C. (1994). Educating children with television: The forms of the medium. In D. Zillman, J. Bryant & A. C. Huston (Eds.), *Media, family, and children: Social scientific, psychodynamic, and clinical perspectives*. Hillsdale, NJ: Erlbaum.

[10] Katz, P. A., & Walsh, V. (1991). Modification of children's gender-stereotyped behavior. *Child Development, 62*, 338-351.

[11] Koolstra, C., & Van der Voort, T. (1996). Longitudinal effects of television on children's leisure-time reading: A test of three explanatory models. *Human Communication Research, 23*, 4-35.

[12] Larson, R. W., & Verma, S. (1998). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin, 125*, 701-736.

[13] Mullis, I. V. S., Dossey, J. A., Owen, E. H., & Philllips, G. W. (1991). *The state of mathematics achievement: NAEP's 1990 assessment of the nation and the trial assessment of the states*. Washington, D.C.: U.S. Department of Education.

[14] National Assessment of Educational Programs, http://nces.ed.gov/nationsreportcard/naepdata

[15] National Longitudinal Survey of Youth 1999, http://data.bls.gov/labjava/nls_outside.jsp

[16] Nielson Media Research Group, http://www.nielsenmedia.com

[17] Singer, J. L., Singer, B., & Rapaczynski, W. (1984). Children's imagination as predicted by family patterns and television viewing: A longitudinal study. *Genetic Psychology monographs, 119*, 43-69.

[18] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference edition, in two volumes)*. Washington, DC: Author.

[19] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth 2001*. Washington, DC: Author.

J. Children live in home environments supportive of optimal cognitive development.

7. Number and percentage of parents taking parenting skill classes focused on supporting child development (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of parents who are enrolled in classes that teach how to encourage children to learn and become aware of their environment. The percentage of parents taking parenting skill classes that focus on supporting child development is calculated by taking the previous number and dividing by the total number of parents.

Why is this indicator important?

Parenting education classes have been linked to short-term positive effects on maternal knowledge, attitudes, and behavior.[8,14,15] (See indicators C4 and L4.) These effects are measured through surveys such as the Home Observation for Measurement of the Environment Screening Questionnaire (HSQ) or through evaluation by child-care providers and pediatricians. (See indicator O1.)

Accredited educational programs that include multiple approaches seem to have the best outcomes for both parent and child behavior.[5,18] Integrated programs such as Even Start have experienced great success in combining multiple approaches and services to prepare children for school.[3] These can include parent/child together time (reading together), parenting education, adult literacy, basic education, General Educational Degree (GED) preparation, English for Speakers of Other Languages (ESOL), high school, and developmentally appropriate early childhood education.

Larger family-improvement programs report measurable gains in terms of parental skills. Even Start parents made significant, moderate-sized gains on the HSQ, which is intended to measure the quality of cognitive stimulation and emotional support parents provide to their children. By way of comparison, parents from a control group in a study of the Comprehensive Child Development Program did not achieve gains on the HSQ. During the second national evaluation, depending on the age of the child and the year in question, between 36 and 54 percent of parents scored 75 percent or higher correct answers on the HSQ posttest.[2]

Parenting skill classes encourage positive parent-child interactions. Early interactions have an important influence on children's emotional development.[11] For instance, mother-child interactions appear to be the pathway through which such characteristics as literacy and mental well-being are transmitted from

mothers to their children. Mothers who are literate and not depressed tend to have better quality interactions with their children, and those interactions in turn predict better academic and behavioral outcomes for the children.[6,20] Additionally, quality interactions with parents benefit the development of other social interactions for children, which promotes a smoother transition to school.[19] Children who are able to establish and maintain friendships are perceived to adjust to school more positively and have more friends.[10] This enhanced social interaction and increased communicative ability aids in creating an environment conducive to learning.[10]

Parenting education classes provide the best results, for both parent and child, when coupled with family literacy and adult education programs. If a program addresses family literacy, adult education, and parenting education together and is of high quality and sufficiently structured to bring about sustainable change over time for parents, the chances of improving children's outcomes are greatly increased.[3] (See indicators J8 and N6.) Programs that combine these three aspects, such as Even Start, have made impressive gains in all three areas.[2] Large programs that offer these variety of services generally provide better educational opportunities than do smaller programs that focus on only one aspect of family literacy.[3]

Who else currently uses this indicator?

This indicator is currently used by the National Education Association and the U.S. Department of Education.

Rhode Island and Tennessee, among others, also use this indicator in their effort to improve parenting skills.

What are the possible sources of data for this indicator?

The Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K)[1] and the National Household Education Survey (NHES), Parent Interview[12] collect information on this measure.

The Tennessee Family Literacy Survey[16] contains a state-based question on parental skills educational opportunities offered through family literacy programs.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

This indicator is sensitive to change as evidenced by programs like Even Start, which has grown from an enrollment of 2,450 participating families in 1989-1990 to 34,400 participating families in 1996-1997.[17]

Studies on interventions aimed at improving parenting skills indicate that parenting behaviors can be changed, but not easily.[13] A number of programs have been successful in changing some domains of parenting and some of those changes resulted in improved child outcomes. Note that the strategies implemented in these interventions vary widely. Intensive interventions with explicitly defined goals have generally been evaluated with greater rigor and provide consistent positive conclusions.[4] Results of evaluations of more general, broad-based programs are less conclusive.

The national Even Start evaluation concluded that more than 80 percent of Even Start projects provided the wide variety of support services (including adult education, family literacy, and parenting skills classes) needed to help parents and children increase their general literacy.[15] Through the use of multiple national tests and surveys Even Start has demonstrated gains in adult education, increased literacy (for both parents and children), and improved parenting skills.[2]

- Other:

Because parenting skills programs can vary in their emphasis (i.e., encouraging behavior, teaching children lifelong skills, providing proper healthcare), grouping them into one indicator may be problematic. The child outcomes associated with different parenting skills may vary. For instance, a parenting program focusing on the proper healthcare of children would enhance the child's physical health and well-being and indirectly influence other outcomes. However, a parenting program focusing on appropriate discipline should decrease problem behaviors and could increase the quality of the relationship between the parent and child.[9]

The effectiveness of programs also largely depends on variables such as the program design, structure, and student-to-teacher ratios.[7]

This measure requires a clear definition of what constitutes parenting skills. Without a clear definition, determining what differentiates a parenting skills class from any other type of educational class would be difficult.

Sources

[1] Early Childhood Longitudinal Survey- Kindergarten Cohort (Fall Parent Interview), section PEQ. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[2] Even Start. (1998). *National evaluation of the Even Start Family Literacy Program: 1994-1997 final report*. Retrieved 7/19, 2002, from http://www.ed.gov/pubs/EvenStart/highlights.html

[3] Family Literacy Programs. (2001). *Even start family literacy programs elementary and secondary education act, title I, Appendix II: Attributes and indicators of a fully implemented Even Start Family Literacy Program.* Nashville, TN: State of Tennessee Department of Education.

[4] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington DC: Author.

[5] Field, T. M., Widmayer, S. M., Stringer, S., & Ignatoff, E. (1982). Teenage, lower-class, black mothers and their preterm infants: An intervention and developmental follow-up. *Child Development, 51*, 426-436.

[6] Hair, E. C., McGroder, S., Zaslow, M., Ahluwalia, S. K., & Moore, K. A. (forthcoming). How do maternal risk factors affect children in low-income families?: Further evidence of two-generational implications. *Journal of Prevention and Intervention in the Community*.

[7] Hayes, A. (1996). *Family Literacy: Directions in Research and Implications for Practice - Longitudinal study of family literacy program outcomes*. Retrieved July 9, 2002, from http://www.ed.gov/pubs/FamLit/long.html

[8] Johnson, D., & Walker, T. (1991). *Final report of an evaluation of the Avance parent education and family support program.* San Antonio, TX: Avance.

[9] Keller, J., & McDade, K. (2000). Attitudes of low-income parents toward seeking help with parenting: Implications for practice. *Child Welfare, 79*(3), 286-312.

[10] Ladd, G. W. (1990). Having friends, keeping friends, making friends and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development, 61*, 1081-1100.

[11] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: NEGP.

[12] National Household Education Survey, http://nces.ed.gov/nhes/

[13] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[14] Quint, J. C., Polit, D. F., Bos, H., & Cave, G. (1994). *New Chance: Interim findings on a comprehensive program for disadvantaged young mothers and their children.* New York: Manpower Demonstration Research Corporation.

[15] St. Pierre, R., Swartz, J., Gamse, B., Murray, S., & Deck, D. (1995). *National evaluation of the Even Start Family Literacy Program: Final report*. Cambridge, MA: Abt Associates Inc.

[16] Tennessee Family Literacy Survey, http://cls.coe.utk.edu/family-literacy-survey.html

[17] U.S. Department of Education Planning and Evaluation Service. (1998). *National evaluation of the Even Start Family Literacy Program 1998: 1994-1997 final report*. Washington, DC: U.S. Department of Education.

[18] Wasik, B., Ramey, C., Bryant, D., & Sparling, J. (1990). A longitudinal study of two early interventions on early school success. In R. E. Slavin, N. L. Karweit & B. A. Wasik (Eds.), *Preventing Early School Failure: research, Policy, and Practices.* Boston, MA: Allyn and Bacon.

[19] Zaslow, M., Calkins, J., Halle, T., Zaff, J., & Margie, N. (2000). *Background for community-level work on school readiness: A review of definitions, assessments, and investment strategies*. Washington, DC: Child Trends.

[20] Zaslow, M. J., Hair, E. C., Dion, M. R., Ahluwalia, S. K., & Sargent, J. (2001). Maternal depressive symptoms and low literacy as potential barriers to employment in a sample of families receiving welfare: Are there two-generational implications? *Women and Health, 32*(3), 211-252.

J. Children live in home environments supportive of optimal cognitive development.

8. Number of family literacy programs in the community and number of spaces available in family literacy programs in the community (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to whether programs exist in the community that families with children 0 to 5 years of age can join with the aim of building parental reading skills through work with literacy tutors, teaching parents how to read to their children, and providing encouragement and guidance in making reading a daily family activity. Many family literacy programs also provide pre-reading activities for young children, multigenerational literacy instruction, and other activities that encourage families to read and learn together.[1] The number of spaces in family literacy programs in the community refers to the total number of families, with children 0 to 5 years of age, which can be accommodated by family literacy programs in their community.

Why is this indicator important?

Family literacy programs can enhance children's cognitive development by educating parents about the role of the parent teacher. Before the age of 3 or 4, children's cognitive and behavioral patterns reflect the conditions and values that surround them at home. Family literacy programs try and improve general family literacy practices and teach parents about their role as parent teachers.[8,12] Preschool age children who attend family literacy programs have been widely shown to enjoy being in school with their parents and enjoy attending the programs. This component of family literacy—teaching children to like learning and the educational process—improves the chances of children achieving higher levels of educational attainment.[8]

Family literacy programs help increase the general educational level of parents, improving their chances to enter and stay in the job market.[13] Studies show that parents gain math, reading, and verbal skills, as well as a greater sense of self-confidence, which serve to help them become and stay employed.[9]

Family literacy programs are part of a national policy to improve adult education. The value of family literacy programs has become acknowledged on the national level with the passing of the Adult Education and Family Literacy Act (Title II of the Workforce Investment Act of 1998).[16] The act demonstrates the federal government's increased commitment to helping improve the conditions of many undereducated adults in the United States.

Family literacy programs have additionally been shown to increase the likelihood, and the amount, that parents read to their children. (See indicator

J1.) Children who are exposed to reading early in their development experience greater success on starting school.[7] Reading to children is related to positive outcomes, including language development, emergent literacy, and reading achievement.[2]

Family literacy classes have the best results, for both parent and child, when coupled with adult education and parenting education programs. If a program addresses family literacy, adult education, and parenting education together and is of high quality and sufficiently structured to bring about sustainable change over time for parents, the chances of improving children's outcomes is greatly increased. (See indicators J7 and N6.)[5] Programs that combine these three aspects, such as Even Start, have made impressive gains in all three areas.[4] Large programs that offer this variety of services generally provide better educational opportunities than do smaller programs that focus on only one aspect of family literacy.[5]

Who else currently uses this indicator?

This indicator is currently used by The National Center for Family Literacy,[10] the National Education Association, and the U.S. Department of Education. Additionally, information on the Even Start program is available in the Even Start Family Literacy Data.

Colorado, Delaware, Massachusetts, Ohio, Oklahoma, Pennsylvania, Tennessee, and Texas, among others, have implemented statewide family literacy programs and may have information on how many programs are in various communities and also how many spaces they have.

What are the possible sources of data for this indicator?

The best ways to collect data on this indicator is to survey a representative sample of parents or to identify all family literacy programs in the state through various state agencies such as the California Department of Revenue and the California Technology, Trade, and Commerce Agency.

Note: County Commissions should be able to survey programs in their counties and should be able to easily locate them if they are helping fund the programs.

The 2001 National Household Education Survey (NHES) Parent Interview has collected data on family literacy activities, but not family literacy programs.[11] Additionally, a question pertaining to family literacy activities can be found in the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) in the Fall Parent Questionnaire to measure Home Environment, Activities, and Cognitive Stimulation.[3] The Tennessee Family Literacy Survey contains a state-based question on family literacy activities (not family literacy programs).[15]

Are there any key issues or concerns about the use of this indicator

- Sensitivity to change:

This indicator is sensitive to change as evidenced by programs like Even Start which has grown from an enrollment of 2,450 participating families in 1989-1990 to 34,400 participating families in 1996-1997.[17]

The national Even Start evaluation concluded that more than 80 percent of Even Start projects provided the wide variety of support services (including adult education, family literacy, and parenting skills classes) needed to help parents and children increase their general literacy.[14] Through the use of multiple national tests and surveys Even Start has demonstrated gains in adult education, increased literacy (for both parents and children), and improved parenting skills.[4]

- Other:

The effectiveness of programs depends on variables such as the program design, structure, and student-to-teacher ratio.[8]

Additionally, this indicator affects people of lower incomes differently from their higher earning counterparts. People living in poverty generally have less free time to spend reading with their children, lower levels of education, higher rates of illiteracy, and less money to spend on books. These factors result in only 48 percent of the children age 3-5 who live below the poverty line being read to by a family member every day, compared with 61 percent of children who live above the poverty line.[6] These issues need to be addressed before those who could most benefit from family literacy programs enter programs with their children. Additionally, people from these groups are less likely to participate in family literacy programs for many of the aforementioned reasons.

Sources

[1] American Library Association. (1999, Apr 1). *Family literacy – Helping parents help their children*. Retrieved June 21, 2002, from http://www.ala.org/pio/factsheets/familyliteracy.html

[2] Bus, A. G., van Ijzendoorn, M. H., & Pelligrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65*(1), 1-21.

[3] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), Question HEQ.010. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[4] Even Start. (1998). *National evaluation of the Even Start Family Literacy Program: 1994-1997 final report*. Retrieved 7/19, 2002, from http://www.ed.gov/pubs/EvenStart/highlights.html

[5] Family Literacy Programs. (2001). *Even start family literacy programs elementary and secondary education act, title I, Appendix II: Attributes and indicators of a fully implemented Even Start Family Literacy Program.* Nashville, TN: State of Tennessee Department of Education.

[6] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[7] Halsall, S., & Green, C. (1995). Reading aloud: A way for parents to support their children's growth in literacy. *Early Childhood Education Journal, 23*(1), 27-31.

[8] Hayes, A. (1996). *Family Literacy: Directions in Research and Implications for Practice - Longitudinal study of family literacy program outcomes*. Retrieved July 9, 2002, from http://www.ed.gov/pubs/FamLit/long.html

[9] National Center for Family Literacy. (1996). *The power of family literacy*. Louisville, KY: Author.

[10] National Center for Family Literacy. (2002, 7-8-02). *Parents and children learning together*. Retrieved 8-22, 2002, from http://www.famlit.org/

[11] National Household Education Survey, Questions P19 and E36. http://nces.ed.gov/nhes/

[12] Nickse, R. (1993). *A typology of family and intergenerational literacy programs: Implications for evaluation.*: ERIC Document Reproduction Service.

[13] Peyton, T., Wheeler, M. G., & Dalton, D. (1998). *States can use family literacy programs to support welfare reform goals*. Louisville, KY: National Center for Family Literacy.

[14] St. Pierre, R., Swartz, J., Gamse, B., Murray, S., & Deck, D. (1995). *National evaluation of the Even Start Family Literacy Program: Final report*. Cambridge, MA: Abt Associates Inc.

[15] Tennessee Family Literacy Survey, http://cls.coe.utk.edu/family-literacy-survey.html

[16] U.S. Department of Education. (2001, Feb 22). *Even Start Family Literacy Programs Statute*. Retrieved Aug 22, 2002, from http://www.evenstart.org/fam_lit.pdf

[17] U.S. Department of Education Planning and Evaluation Service. (1998). *National evaluation of the Even Start Family Literacy Program 1998: 1994-1997 final report*. Washington, DC: U.S. Department of Education.

K. Children enter kindergarten ready for school.

1. Number and percentage of children entering kindergarten ready for school as determined by assessments completed by teachers and parents that indicate the child is ready in the areas of cognitive, social, emotional, language, approaches to learning, and health/physical development (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number and percentage of children who are ready for school upon entering kindergarten in multiple domains of development. The California Children & Families Commission (CCFC) School Readiness Initiative has adopted the definition of children's school readiness proposed by the National Education Goals Panel (NEGP). That definition consists of the following five dimensions of development, each of which is important as children make the transition to kindergarten:[4]

(1) Physical well-being and motor development (e.g., height, weight, general health/ill-health, gross and fine motor skills)
(2) Emotional well-being and social competence (e.g., the ability to form positive relationships with teachers and peers, self-concept, ability to express feelings appropriately)
(3) Approaches to learning (e.g., curiosity, task persistence, reflection)
(4) Communicative skills (e.g., listening skills, vocabulary, emergent literacy)
(5) Cognition and general knowledge (e.g., early mathematics knowledge, knowledge about the properties of objects).[4]

The precise measurement of these domains will be determined as part of the CCFC School Readiness Initiative. Consideration is being given to the Desired Results measure developed by the California Department of Education, Child Development Division because it provides continuity with other prekindergarten efforts in the state.

Why is this indicator important?

School readiness is important because children whose knowledge and skills are far behind those of their new classmates enter school at a disadvantage. Children who have difficulty catching up in the early school years face greater challenges throughout their school careers.[3] Investments in children's early development can help them enter school ready to engage in learning and relationships. For example, screening for and then treating health problems in the early years can prevent children from entering school with undetected and untreated vision, hearing, or dental problems, or with untreated chronic health conditions (such as asthma) that could hamper their adjustment to school. (See indicators A through F.) High-quality early childhood care and

education settings can foster greater eagerness to learn and early communication and math skills in a way that sets children on a different course for learning in the early school years. (See indicators G through J.) Similarly, positive relationships with parents and other caring adults in the early years help lay the foundation for establishing positive relationships with teachers and children in school. (See indicators L through P.)

Monitoring school readiness can inform both practice and policies. For example, monitoring school readiness assessments can:

- Identify children's strengths and where they need more support
- Suggest classroom pedagogical practices
- Identify needs for more or stronger community programs or investments
- Increase local, state, and national awareness and accountability for the well-being of children.

School readiness is shaped and nurtured by the family and community. Children who experience families and communities that provide them with such things as healthy nutrition, safe places to live, engaging learning environments, and quality early education are more likely to be ready to learn when they enter kindergarten. Therefore, families and communities need to be part of interventions aimed at improving children's school readiness.

Assessments of school readiness need to be done at multiple levels. To understand how and why children are ready for school, assessments need to be conducted with the children themselves, their families, the schools that serve them, and their communities.

Who else currently uses this indicator?

Information about children's school readiness is collected on several national surveys. For instance, the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) gathered information on each of these areas of development at kindergarten entry.[2] The findings reported thus far from this national study have focused on individual skills or domains, not on global single scores.[11] Information comes from parents, teachers, and direct assessment. The sources vary depending on the component being addressed. (For example, information on health is gathered from parents and direct assessments; information on social development comes from parents and teachers; information on cognitive development comes from teachers and direct assessments.)

In the National Household Education Survey (NHES) information on children's school readiness has been gathered through parent questionnaires across multiple years.[5] In 1993, NHES contained a school readiness module that included items from all five NEGP dimensions of children's development and behavior. Items touched on every domain of child development included in this indicator.

Several states have collected information on the multiple aspects of children's school readiness. For example, for the health dimension, North Carolina collected information on children's health status from parents, whereas Vermont and Missouri collected information from teachers. For the social development dimension Missouri, North Carolina, and Vermont gathered information through teacher questionnaires. For the communication skills dimension, North Carolina gathered information through direct assessment and a parent questionnaire, whereas Missouri and Vermont gathered it through teacher questionnaires. For the cognitive development dimension, in North Carolina and South Carolina children were assessed directly; teacher questionnaires were used in Missouri. Finally, for the approaches to learning dimension, teacher questionnaires were used in Missouri and Vermont, whereas a parent questionnaire was used in North Carolina.

What are the possible sources of data for this indicator?

The possible sources for this indicator are teacher report, parent report, or direct assessment. The recommended source varies, depending on the aspect of child development being examined (see Feasibility and Burden below). These issues will be considered fully in the evaluation of the CCFC's School Readiness Initiative.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Reliability issues vary depending on the source of information. Direct assessment presents challenges because of difficulties in assessing young children accurately. Some of the issues include young children's rapid rates of growth (even over the course of the first few months of kindergarten), short attention spans, or hesitancy with an unfamiliar examiner.[10] Given such issues, it may be difficult to accurately capture and quantify what a kindergartner knows and can do.

Parent and teacher reports may also have problems with reliability. When asking parents to report on their children's development, because of the lack of a reference group, the parents may not be able to report accurately if asked to compare a child's skills and status to those of other children of the same age. This is not a problem for teachers, who do have access to a reference group. However, one problem with teacher reports might be that teachers have varying expectations of children. Therefore, a child might be rated by one teacher as developing adequately for a certain dimension, when another teacher might think that the same child is behind where he/she should be (i.e., a lack of consistency of ratings across different teachers).

Some have expressed concern about teacher ratings of children if a possibility exists that teachers feel that their own performance will be evaluated in light of the ratings. Assessments or ratings carried out at the start of the year (e.g., the kindergarten year) can help guard against bias of this kind, as can carefully separating the completion of ratings on children from any form of promotion or feedback for the teachers. Selection of specific instruments to use for direct assessments of children to contribute to a picture of their school readiness should take into account the record of the measure with respect to both reliability and validity. Concerns may arise about the validity of direct assessments used with children who are learning English as a second language or are unfamiliar with the format and nature of interactions during direct assessment.

- Sensitivity to change:

Research indicates that a variety of early experiences and programs that young children are exposed to can positively influence the different dimensions of children's school readiness. High-quality child care has been found to lead to better outcomes in children's social, language, and cognitive development than lower quality care.[1,6-9]

- Cultural issues:

Some child assessments or ratings for parents to complete may not be available in languages other than English. It is important to review the record of measures for any issues regarding their appropriateness for use with children of different cultures.

- Feasibility/burden:

Thoroughly assessing all five dimensions of child development and functioning for a large number of children in a standard manner can be time-consuming and costly. It is therefore important to identify a limited number of key indicators or items that can reliably and efficiently measure the five dimensions of children's school readiness.

- Other:

Note that computing a single number or score for this indicator is impossible because of the multiple dimensions included in the definition of school readiness. In addition, given the current status of school readiness research, it would be inadvisable to create a cutoff score for "ready" versus "not ready" using this indicator. We currently do not know how these domains function in combination. For example, a child with cognitive deficits but strong social skills may be worse off than a child who is strong in both areas but better off than a child with health problems. Given such complexities, a summary score that collapses across dimensions, giving equal weight to each, would not be appropriate.

Sources

[1] Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M. & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology, 37*(2), 231-242.

[2] Early Childhood Longitudinal Survey- Kindergarten Cohort, http://nces.ed.gov/ecls

[3] Entwisle, D. R., & Alexander, K. L. (1993). Entry into school: The beginning school transition and educational stratification in the United States. *Annual Review of Sociology, 19*, 401-423.

[4] Kagan, S. L., Moore, E., & Bradekamp, S. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: National Education Goals Panel Goal 1 Technical Planning Group.

[5] National Household Education Survey, http://nces.ed.gov/nhes

[6] National Research Council and Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early child development. Committee on integrating the science of early childhood development*. Washington, DC: National Academy Press.

[7] NICHD Early Child Care Research Network. (1999). Child outcomes when child care center classes meet recommended standards of quality. *American Journal of Public Health, 89*(7), 1072-1077.

[8] NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development, 71*(4), 960-980.

[9] Schweinhart, L. J., Barnes, H. V. & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry Preschool Study through age 27 (Monograph of the High/Scope Educational Research Foundation, 10)*. Ypsilanti, MI: High/Scope Press.

[10] Shepard, L., Kagan, S. L., & Wurtz, E. (1998). *Principles and recommendations for early childhood assessments*. Washington, DC: National Education Goals Panel Goal 1 Early Childhood Assessments Resource Group.

[11] West, J., Denton, K., & Germino-Hausken, E. (2000). *America's kindergartners*. Washington, DC: National Center for Education Statistics.

K. Children enter kindergarten "ready for school".

2. Number and percentage of children who participate in school-linked transition/school readiness immersion programs (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of children who participated in school-linked transition/School Readiness immersion programs. A percentage can be calculated by dividing the number of children who participated in such programs by the total number of children entering kindergarten.

Why is this indicator important?

The transition from early childhood care and education settings or home to kindergarten is significant in the lives of young children and can be a stressful time for both the children and their families. Children must learn to accommodate to formalized routines, to be more independent and responsible, and to interact with teachers in ways that center around academic progress.[10] The transition is also important when considering how poverty affects schooling. Stratification begins early and can affect the entire course of a student's education.[3] Many poor and minority students enter kindergarten lacking many of the competencies required for being successful in school. This can create a mismatch between children's skills and the expectations of schools and teachers.[3] Although the transition to kindergarten is a critical point in children's lives, little research has been done on what practices can best facilitate a positive entry into kindergarten. However, recommended transition practices have been formulated.

The transition to kindergarten involves connections between children, families, schools, and communities. To facilitate successful transition, the connections between these spheres should be fostered.[10] From the perspective of individual children, if a child has had the experiences necessary to develop certain skills and characteristics, the transition is likely to go more smoothly. For instance, social skills have been found to be important, and the development of such skills can be facilitated before school entry by interactions with peers, either through parents' creation of chances for their children to interact with other children or through preschool experience.[6] Preschool participation can also benefit cognitive development, and cognitive gains can aid in the kindergarten transition by helping children to be placed in higher ability groups and heightening the expectations of teachers, setting children on a trajectory for success.[2]

The role that schools take when children are transitioning to kindergarten can influence how well children and families adjust to formal schooling. Contact between kindergartens and early childhood care and education settings has been a useful way to create smoother transitions.[11] Kindergarten teachers can visit early care and education settings to become acquainted with their future students by interacting with them and by talking with their care providers/teachers. Kindergarten teachers can then begin planning for individual students before they enter their classrooms, helping to ease the transition.[12] Another way to build connections is by arranging for children to visit the kindergartens they will be attending. If children know what to expect in kindergarten, they may feel less anxiety during the transition.[5]

Although connections between kindergartens and early childhood care and education settings are important, connections between schools and homes may be even more important, especially because not every child receives early care and education. Schools should reach out to families before children enter kindergarten.[12] Recommended practice includes written or personal communications with parents about the school and the steps they could be taking to prepare their children. Other options are home visits by teachers or principals or orientation sessions before the school year begins. It is also recommended that such practices continue after children transition into kindergarten through activities such as family visits to schools, the solicitation of parent volunteers in classrooms, and home visits by teachers.[11] Another benefit of these strategies is increased parent participation in their child's schooling/education, which has been shown to increase children's success in school.[8,9]

Connections between schools and community resources should also be fostered. If schools are connected to health and social services, kindergarten teachers can respond to the individual needs of their students as children make the transition.[12] Connections between schools and community organizations can also help educators find and contact the parents of children who are not enrolled in preschool before kindergarten.

The transition to kindergarten can be made easier through connections between children, parents, schools, and community organizations. These connections and the resulting smooth transition can help set children on a trajectory for continuing school success.

Who else currently uses this indicator?

In the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K), information on schools' transitional practices was gathered from teachers (e.g., young children spending time in kindergarten classrooms, home visits, parent orientation sessions before the school year).[1] However, ECLS-K did not gather information about the specific number of children or families that took part.

North Carolina's 2000 school readiness assessment gathered information from teachers about their transitional practices and from parents about the transitional outreach that they received.[7] Teachers were asked about activities that they may have used with some or all students; parents were asked about outreach activities that they may have received.

As part of Vermont's assessment of kindergarten readiness, school principals were asked about their schools' transition activities. They also were asked to estimate the extent of parent participation.[4]

What are the possible sources of data for this indicator?

Parents of entering kindergartners can be surveyed about participation in transitional programs or activities. Similarly, teachers and school principals can be surveyed about schools' transitional programs and activities offered by or linked to their schools.

Administrative records from school readiness immersion and other transitional programs can also be a source of data.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The reliability of information gathered from parents about children's participation in a specific transition activity or program may be questionable. Parents may not be able to report accurately on the exact program or services that they or their children received. The most accurate information on this indicator would come from examination of programs' administrative records for the number of families served.

Sources

[1] Early Childhood Longitudinal Survey- Kindergarten Cohort (Teacher Questionnaire, Part B), Question 8. http://nces.ed.gov/ecls

[2] Entwisle, D. R. (1995). The role of schools in sustaining early childhood program benefits. *The Future of Children, 5*(3), 133-144.

[3] Entwisle, D. R., & Alexander, K. L. (1993). Entry into school: The beginning school transition and educational stratification in the United States. *Annual Review of Sociology, 19*, 401-423.

[4] Gorman, K. S., & Burns, C. E. (2000). *Final report: A multi-part assessment of kindergarten readiness*. Vermont: Agency of Health and Human Services Planning Division.

[5] Kagan, S. L., & Neuman, M. J. (1998). Lessons from three decades of transition research. *The Elementary School Journal, 98*(4), 365-379.

[6] Maxwell, K. L., & Eller, S. K. (1994). Children's transition to kindergarten. *Young Children, 49*(6), 56-63.

[7] Maxwell, K. L., Ridley, S. M., Keyes-Elstein, L., & Bryant, D. M. (2001). *North Carolina's kindergartners and schools technical report: Addendum to the summary report*. Chapel Hill, NC: University of North Carolina, Frank Porter Graham Child Development Center.

[8] Nord, C. W., Brimhall, D., & West, J. (1997). *Father's involvement in their children's schools*. Washington, DC: U.S. Department of Education (NCES 98-091).

[9] Nord, C. W., & West, J. (2001). *Fathers' and mothers' involvement in their children's schools by family type and resident status*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 2001-032).

[10] Rimm-Kaufman, S. E., & Pianta, R. C. (2000). An ecological perspective on the transition to kindergarten: A theoretical framework to guide empirical research. *Journal of Applied Developmental Psychology, 21*(5), 491-511.

[11] Smolkin, L. B. (1999). The practice of effective transitions: Players who make a winning team. In R. C. Pianta, & M. J. Cox (Ed.), *The transition to kindergarten* (pp. 325-349). Baltimore, MD: Paul H. Brookes Publishing Co., Inc.

[12] The National Education Goals Panel. (1998). *Ready schools*. Washington, DC: author.

L. Children are safe from intentional injuries in their homes and communities.

1. **Number and percentage of children with substantiated or confirmed (open) cases of child abuse (C)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of cases which, on investigation, show evidence of maltreatment or risk of maltreatment to a child. The percentage of substantiated or confirmed cases can be calculated by dividing the number of substantiated or confirmed cases of child abuse among children ages 0 to 5 by the number of children 0 to 5 years of age.

Why is this indicator important?

Child abuse and neglect can result in many short- and long-term negative outcomes.[4,7,16] Psychological deficits such as aggression, depression, and posttraumatic stress disorder may occur.[7] These deficits may impair a child's ability to make and keep friends.[5] Children who are able to establish and maintain friendships adjust to school more positively and have more friends.[11] Furthermore, children who enter school with friends have more positive attitudes toward school and lower levels of school avoidance.[12] In contrast, poor peer relations are associated with later emotional and mental health problems, dropping out of school, and delinquency.[9,13]

Child abuse and neglect can also result in direct negative academic consequences. Abused and neglected children show deficits in learning such as low academic achievement, learning impairment, difficulty concentrating, difficulty in schoolwork, and reduced verbal and motor skills.[18] In addition, neglected and abused children tend to have lower grades, standardized test scores, and rates of grade promotion.[3,21] Furthermore, child abuse and neglect is linked to with language deficits, reduced cognitive functioning, and attention-deficit disorders.[1,6,7,10,16]

Abused children also suffer many physical consequences. Child abuse can result in injuries, and contribute to ill physical health, failure to thrive (because the child is unable to take in and retain the nutrition needed to gain weight and grow appropriately), and other somatic complaints.[8] Such developmental problems may lead to increased absenteeism, which may subsequently cause problems in adapting to a school environment.[15] At its most extreme, abuse can result in death.

Child abuse affects large numbers of children. In particular, young children are most at risk for child abuse.[19]

Who else currently uses this indicator?

Several nationwide efforts monitor this indicator. The U.S. Department of Health and Human Services tracks this indicator to study health conditions and health care.[20] *Child Health USA 2001* and *The Child Trends Databank* also track this indicator.[2,14]

Several states use this indicator to monitor children's school readiness. Examples of states using this indicator include Hawaii, New York, Rhode Island, South Carolina, and Vermont.

What are the possible sources of data for this indicator?

Data can be collected from public databases. The California Department of Social Services has statistics about the rate of child abuse and neglect. State level data on child abuse cases can also be obtained from National Data Archive on Child Abuse and Neglect's National Child Abuse and Neglect Data System (NCANDS).

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

A change in the number of substantiated or confirmed cases of child abuse may not reflect an actual change in the number of events, but rather a change in the reporting of cases of child abuse and neglect, changes in program funding and staffing, or changes in policies.

- Sensitivity to change:

One study shows that a home visitation intervention targeted toward parents during the prenatal, postnatal, and toddler periods was effective in reducing the number of child maltreatment reports as compared with a control group. [17] However, the study was conducted with a relatively small sample and a largely white population.[17]

Generally, research has shown that short-term interventions are limited in their ability to reduce child abuse rates.[16]

Sources

[1] Augoustinos, M. (1987). Developmental effects of child abuse: A number of recent findings. *Child Abuse and Neglect, 11*, 15-27.

[2] Child Trends. (2002). *Child Trends Databank Indicator: Child maltreatment*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[3] Eckenrode, J., Laird, M., & Doris, J. (1991). *Maltreatment and social adjustment of school children*. Washington, DC: U.S. Department of Health and Human Services.

[4] English, D. J. (1998). The extent and consequences of child maltreatment. *The Future of Children: Protecting children from abuse and neglect, 8*(1), 39-53.

[5] Englund, M., Levy, A., Hyson, D., & Sroufe, A. (2000). Adolescent social competence: Effectiveness in a group setting. *Child Development, 71*, 1049-1061.

[6] Fantuzzo, J. W. (1990). Behavioral treatment of the victims of child abuse and neglect. *Behavior Modification, 14*, 316-339.

[7] Guterman, N. B. (2001). *Stopping child maltreatment before it starts: Emerging horizons in early home visitation services*. Thousand Oaks: Sage.

[8] Hart, S. N., Binggeli, N. J., & Brassard, M. R. (1998). Evidence for the effects of psychological maltreatment. *Journal of Emotional Abuse, 1*, 27-58.

[9] Harter, S. (1983). Developmental perspective on the self-system. In P. Mussen (Ed.), *Handbook of child psychology: Social and personality development* (Vol. 4). New York: Wiley.

[10] Kolko, D. (1992). Characteristics of child victims of physical violence: Research findings and clinical implications. *Journal of Interpersonal Violence, 7*(2), 244-276.

[11] Ladd, G. W. (1990). Having friends, keeping friends, making friends and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development, 61*, 1081-1100.

[12] Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*, 1168-1189.

[13] Marshall, H. (1990). The development of self-concept. *Young Children, 44*, 44-51.

[14] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington DC: U.S. Department of Health and Human Services.

[15] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: Author.

[16] National Research Council. (1993). *Understanding child abuse and neglect*. Washington, DC: National Academy Press.

[17] Olds, D. L. (1992). Home visitation for pregnant women and parents of young children. *American Journal of Disabled Children, 146*, 704-708.

[18] Osofsky, J. D. (1999). The impact of violence on children. *The Future of Children Journal, 9*(3), 33-49.

[19] U.S. Department of Health and Human Services. (2001). *Indicators of welfare dependence.* Washington DC.

[20] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth 2001*. Washington, DC: Author.

[21] Wolfe, D. A., & Mosk, M. D. (1983). Behavioral comparisons of children from abusive and distressed families. *Journal of Consulting and Clinical Psychology, 51*, 702-708.

L. Children are safe from intentional injuries in their homes and communities.

2. Number and percentage of child maltreatment in which there is a recurrence within a 6-month period (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of substantiated cases of child maltreatment in which a recurrence of maltreatment takes place within 6 months. Substantiated cases are those in which sufficient evidence exists to support a finding of maltreatment under state law. The percentage is calculated by dividing the number of substantiated cases with a recurrence of maltreatment with 6 months by the total number of child maltreatment cases for that time period.

This indicator can also refer to the number of indicated cases (used by some states); indicated cases are those in which there is reason to believe that maltreatment has occurred, but which cannot be substantiated under state law.

Why is this indicator important?

Although child deaths caused by maltreatment are relatively infrequent, intervention is critical, particularly for young children. Approximately 1,200 children died of maltreatment in 2000.[7] Intervention and prevention of a recurrence may be especially important for young children because infants under the age of 1 accounted for 44 percent of the reported maltreatment fatalities, and children under the age of 6 accounted for 85 percent of the maltreatment fatalities.[7]

The likelihood of a recurrence of maltreatment varies by region, and is influenced by many factors such as the type of maltreatment, family characteristics, and services available to the family.[3,4] In 1999, on the basis of data from 20 states (including California), about 8 percent of maltreatment victims suffered a recurrence within 6 months of their initial maltreatment.[6] In California, about 11 percent of maltreatment victims suffered a recurrence within 6 months.[6] The percentage of recurrence seems to be greatest during the first 6 months after the initial substantiated case.[2]

Although existing data do not show that a large number of children experience chronic maltreatment, such maltreatment remains a concern because of its obvious seriousness. A review of more than 80 studies suggests that families who experience recurrence experience only 1 maltreatment recurrence, and most (50 percent) of these recurrences took place within 6 months of the first substantiated case.[2] Studies report recurrence rates as low as 0 percent within 24 months of the first maltreatment occurrence, and as

high as 85 percent within 10 years of the first maltreatment occurrence.[2] Most of these findings are based on child protective agency-based samples.

Note that most of the research in the area of maltreatment is based on administrative records, retrospective reports, and small, cross-sectional samples based on child protective agency reports. Population-based samples to examine the incidence and recurrence of maltreatment are needed to draw firmer conclusions about recurrence.

Who else currently uses this indicator?

This indicator is tracked nationally. This indicator is tracked and reported annually at the national level by the U.S. Department of Health and Human Services (DHHS) as part of its tracking of trends in maltreatment.[6] DHHS also reports a percentage for selected states, including California. *Healthy People 2010* also tracks this indicator.[5]

What are the possible sources of data for this indicator?

The National Child Abuse and Neglect Data System (NCANDS) is the national source for this indicator. Because NCANDS data is provided by states, the California Department of Social Services collects and reports the data that is maintained by NCANDS.

Another national data source is the National Incidence Study of Child Abuse and Neglect (NIS). This study includes not only cases substantiated or indicated by child protective services workers, but also cases known to community professionals but not necessarily reported to child protective services. NIS bases its estimates on information from about 5,600 community professionals, including emergency room workers who come into contact with maltreated children. The most recent estimates are based on survey data from 1993, and the most recent survey before that was conducted in 1986.

This indicator should be available at a county level through the state or county department of protective services (California Department of Social Services). Currently, California does not report maltreatment recurrence rates or percentages in its monthly state child welfare services reports.[1] It is not known if these data will ever be released, given laws regarding confidentiality and the possible purging of child welfare records.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Substantiated and indicated cases of child maltreatment do not include cases of child maltreatment that never come to the attention of child protective services workers. However, prior victims of substantiated maltreatment may be more

likely to have additional cases substantiated, in part because a case manager monitors them.

In addition, reliability over time may be problematic as a result of the indicator's sensitivity to change in funds, staffing, laws, etc.

- Sensitivity to change:

In general, changes to this indicator related to program funding, staffing, and reporting laws are to be expected.

- Cultural issues:

On the basis of 1999 NCANDS data, the youngest children (under the age of 4) were most likely to experience a recurrence of maltreatment. In addition, white, non-Hispanic children were more likely than black and Asian/Pacific Islander children to experience a recurrence.[6]

- Other:

Although the federal definition of recurrence includes both substantiated and indicated cases, some states include only substantiated cases.

Sources

[1] California Department of Social Services. (2001). *Comprehensive children's report: Characteristics of children receiving child welfare services in California*. Sacramento, CA: Author.

[2] DePanfilis, D., & Zuravin, S. J. (1998). Rates, patterns, and frequency of child maltreatment recurrences among families known to CPS. *Child Maltreatment, 3*(1), 27-42.

[3] DePanfilis, D., & Zuravin, S. J. (1999). Epidemiology of child maltreatment recurrences. *The Social Service Review, 73*(2), 218-239.

[4] English, D. J., Marshall, D. B., Brummel, S., & Orme, M. (1999). Characteristics of repeated referrals to child protective services in Washington State. *Child Maltreatment, 4*(4), 297-307.

[5] U.S. Department of Health and Human Services. (2000). *Healthy people 2010 (Conference Edition, in Two Volumes)*. Washington, DC.

[6] U.S. Department of Health and Human Services (2001). *Child maltreatment 1999.* Washington, DC: U.S. Government Printing Office.

[7] U.S. Department of Health and Human Services: Administration on Children Youth and Families. (2002). *National Child Abuse and Neglect Data System (NCANDS): Summary of key findings from calendar year 2000.*, from http:www.calib.com/nccanch/pubs/factsheets/canstats.cfm

L. Children are safe from intentional injuries in their homes and communities.

3. Number and Percentage of children who have ever witnessed domestic violence (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children who report that in a domestic violence situation, they see the actual violent event, hear the violent event, are physically assaulted while near the victim during the violent event, are taken hostage in the domestic violence situation, or are forced to participate in the domestic violence.[3] The percentage is calculated from the number of children who report having witnessed domestic violence divided by the total number of children surveyed.

Why is this indicator important?

Witnessing domestic violence can have detrimental effects on children. These effects can be grouped into two main areas: behavioral and emotional effects, and cognitive effects.

Witnessing domestic violence has negative behavioral and emotional effects on children. Research with the Child Behavior Checklist has shown that children witnessing domestic violence more often exhibit externalizing (antisocial tendencies, aggression) as well as internalizing (fear, anxiety, depression, inhibition) behavior problems than other children.[1,19] They also have lower social competence levels than other children and have trouble forming peer relationships.[1] Children able to establish and maintain friendships are perceived to adjust to school more positively.[11] Furthermore, children who enter school with friends have more positive attitudes toward school and lower levels of school avoidance.[12] Poor peer relations are associated with later emotional and mental health problems, school dropout, delinquency, poor social skills, and a lack of empathy for peers.[5,14] Witnessing domestic violence may also have effects in adulthood such as depression, posttraumatic stress symptoms, and low self-esteem in women and posttraumatic stress symptoms in men.[18]

Witnessing domestic violence has negative cognitive effects on children. Domestic violence exposure is linked to lower cognitive functioning, including language lag, developmental delays, and poor academic performance.[9,17,22]

Exposure to domestic violence is also associated with attitudes toward the use of violence and children's violent behavior.[20] Children witnessing violence may acquire attitudes that justify their use of violence.[7] One study examined incarcerated youth exposed to violence as children found that they believed aggression would enhance their image or reputation.[21]

Who else currently uses this indicator?

The California Department of Justice - Criminal Justice Statistics Center maintains updated statistics on domestic abuse on both the state and county levels.

What are the possible sources of data for this indicator?

Data can be collected directly from parents. Communities wishing to gather this indicator can survey a representative sample of parents.

Standard national survey items are available online. The Family and Child Experiences Survey (FACES) collects data on this indicator.[4]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Parents who are asked if their child has ever witnessed domestic violence may have difficulty reporting on events retrospectively. Because many children who witness domestic violence are also victims of child abuse, parents involved in the abuse may not make valid responses to survey questions about family violence. In addition, children who witnessed violence may be separated from their families and living in foster care. A survey of parents reporting on children residing with them would miss these children.[15] Furthermore, parents may be hesitant to accurately answer questions regarding this indicator if they are the victims of the domestic violence.

- Sensitivity to change:

Several programs have been implemented to affect the number and percentage of children witnessing domestic violence by preventing domestic violence from occurring. One study showed that battered women's shelters reduce the risk of reoccurring violence.[2] Other programs have been shown to increase knowledge of and change attitudes toward domestic violence. However, these programs did not measure the effects on actual domestic violence behavior changes.[6,8,10,13]

- Cultural issues:

Although domestic abuse exists in all racial and ethnic groups rates of such abuse for immigrant women may be underreported because of legal, social, and economic issues.[16]

- Other:

This indicator collects data on whether or not a child witnessed domestic violence. However, the degree of violence that a child is exposed to varies in frequency, duration, and severity, and this indicator does not attempt to capture such variations.[23]

Sources

[1] Achenbach, T. M., & Edelbrock, C. (1983). *Manual for the child behavior checklist and revised child behavior profile*. Burlington, VT: University of Vermont Department of Psychiatry.

[2] Berk, R. A., Newton, P. J., & Berk, S. F. (1986). What a difference a day makes: An empirical study of the impact of shelters for battered women. *Journal of Marriage and Family, 48*(3), 431-490.

[3] Edleson, J. L. (1999). Children's witnessing of adult domestic violence. *Journal of Interpersonal Violence, 14*(8), 839-870.

[4] Family and Child Experiences Survey - Spring Parent Survey, Questions #P2a and #N17. http://www2.acf.dhhs.gov/programs/hsb

[5] Harter, S. (1983). Developmental perspective on the self-system. In P. Mussen (Ed.), *Handbook of child psychology: Social and personality development* (Vol. 4). New York: Wiley.

[6] Jaffe, P., Suderman, M., Reitzel, D., & Killip, S. M. (1992). An evaluation of a secondary school prevention program on violence in intimate relationships. *Violence and Victims, 7*(2), 129-146.

[7] Jaffe, P., Wilson, S., & Wolfe, D. E. (1986). Promoting changes in attitudes and understanding of conflict resolution among child witnesses of family violence. *Canadian Journal of Behavioral Science, 18*, 356-366.

[8] Jones, L. E. (1991). The Minnesota School Curriculum Project: A statewide domestic violence prevention project in secondary schools. In B. Levy (Ed.), *Dating violence: Young women in danger* (pp. 258-266). Seattle, WA: Seal Press.

[9] Kerouac, S., Taggart, M. E., Lescop, J., & Fortin, M. F. (1986). Dimensions of health in violent families. *Health Care for Women International, 7*, 413-426.

[10] Krajewski, S. S., Rybarik, M. F., Dosch, M. F., & Gilmore, G. D. (1996). Results of a curriculum intervention with seventh graders regarding violence in relationships. *Journal of Family Violence, 11*(2), 93-112.

[11] Ladd, G. W. (1990). Having friends, keeping friends, making friends and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development, 61*, 1081-1100.

[12] Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*, 1168-1189.

[13] Lavoie, F., Vezina, L., Piche, C., & Bovin, M. (1995). Evaluation of a prevention program for violence in teen dating relationships. *Journal of Interpersonal Violence, 10*(4), 516-524.

[14] Marshall, H. (1990). The development of self-concept. *Young Children, 44*, 44-51.

[15] McKibben, L., DeVos, E., & Newberger, E. (1989). Victimization of mothers of abused children: A controlled study. *Pediatrics, 84*, 531-535.

[16] Orloff, L. E., Jang, D., & Klein, C. F. (1995). With no place to turn: Improving advocacy for battered immigrant women. *Family Law Quarterly, 29*(2), 313-329.

[17] Rossman, B. B. (1998). Descartes' error and posttraumatic stress disorder: Cognition and emotion in children who are exposed to parental violence. In G. W. Holden, R. Geffner & E. N. Jouriles (Eds.), *Children exposed to marital violence* (Vol. 223-256). Washington, DC: American Psychological Association.

[18] Silvern, L., Karlyl, J., Waelde, L., Hodges, W. F., Starel, J., Heidt, E., et al. (1995). Retrospective reports of parental partner abuse: Relationships to depression, trauma symptoms, and self-esteem among college students. *Journal of Family Violence, 10*, 177-202.

[19] Singer, M. I., Anglin, T. M., Song, L., & Lunghofer, L. (1995). Adolescents' exposure to violence and associated symptoms of psychological trauma. *Journal of the American Medical Association, 273*, 477-482.

[20] Singer, M. I., Guo, D. B., Slovak, K., & Frierson, T. (1998). *The mental health consequences of children's exposure to violence*. Cleveland, OH: Cuyahoga County Community Mental Health Research Institute, Mandel School of Applied Social Sciences, Case Western Reserve University.

[21] Spaccarelli, S., Coatsworth, J. D., & Bowden, B. S. (1995). Exposure to serious family violence among incarcerated boys: Its association with violent offending and potential mediating variables. *Violence and Victims, 10*, 163-182.

[22] Wildin, S. R., Williamson, W. G., & Wilson, G. S. (1991). Children of battered women: Developmental and learning profiles. *Clinical Pediatrics, 30*(5), 299-304.

[23] Wolak, J. (1998). Children exposed to partner violence. In J. L. Jasiniki & L. Williams (Eds.), *Partner violence: A comprehensive review of 20 years of research*. Thousand Oaks, CA: Sage.

L. Children are safe from intentional injuries in their homes and communities.

4. Number and percentage of parents in the county participating in parenting education classes and/or other educational opportunities focused on discipline (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of parents participating in classes and/or opportunities focused on discipline. The percentage is calculated by dividing the total number of parents participating by the total number of parents in the county.

Why is this indicator important?

A wide range of parenting education classes are offered to parents to help establish appropriate and effective discipline guidelines for them to use.[2] These parenting education classes, which are designed to help parents address daily stressors, provide models of parenting practices.[1] Classes on parenting practices can help parents establish developmentally appropriate and effective discipline guidelines for children ages 0 to 5, and also assist parents in preventing problem behaviors from occurring in the first place. Exposure to different models of parenting practices allows parents to adjust their parental behavior, as well as to adapt models to reflect their family's values.[1]

NOTE: The most effective parenting intervention programs provide sufficient intensity; sufficient duration; appropriate timing (in the first 3 years of life); direct engagement of parents, children, and the larger family; diverse supports and services; and responsive and individualized programming.[3,4] Results of evaluations of more general, broad-based parenting intervention programs provide less consistent results. (See indicators J7, J8, and O1.)

Appropriate discipline depends on the child's age and the specific facts of the situation. Research suggest that parents should set clear rules and limits on acceptable behavior for their child's age and consistently enforce the rules and limits.[1] For example, a parent's response to an infant crying in a store should be different from a parent's response to a 10-year-old crying in a store for a toy. Regardless of the age of the child, however, it is important for parents to provide consistent, responsive, and sensitive care to their children. In addition, parents should explain the importance of following rules and limits, and acknowledge their children's positive behaviors.

Parents need and want help identifying effective parenting skills. Several national surveys have reported that parents favor services designed to assist with child rearing.[2] There is also evidence that suggests parents need help with parenting. For example, a national survey reported that 61 percent of parents

accept spanking as a form of discipline and 31 percent think spanking is appropriate for children under the age of 2.[5] These findings suggest that parents need more information regarding child development and appropriate discipline options. (See indicator O1.)

Who else currently uses this indicator?

We have not located any other communities that are tracking this indicator.

What are the possible sources of data for this indicator?

Counties can survey a random sample of their families to develop an estimate of the proportion of families participating in classes. Alternatively, class participation data could be obtained from programs being held in the county. The total number of parents in the county would be used to determine the percent of participating parents.

This information may also be available from service providers' administrative program data.

Are there any key issues or concerns about the use of this indicator?

- Other:

Various factors influence the type of discipline parents may feel is appropriate and acceptable. (See indicator O1.)

Sources

[1] Borkowski, J., Ramey, S., & Stile, C. (2002). Parenting research: Translations to parenting practices. In J. Borkowski, S. Ramey & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development.* (pp. 365-386). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

[2] McCurdy, K., & Daro, D. (2001). Parent involvement in family support programs: An integrated theory. *Family Relations, 50*(2), 113-121.

[3] Ramey, C. T., & Ramey, S. L. (1998). Early intervention and early experience. *American Psychologist, 53*, 109-120.

[4] Ramey, S. L. (2002). The science and art of parenting. In J. G. Borkowski, S. L. Ramey & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development*. Mahwah, NJ: Lawrence Erlbaum Associates.

[5] *What grown-ups understand about children: A national benchmark survey.* (2000). Washington, DC: Zero to Three.

L. Children are safe from intentional injuries in their homes and communities.

5. Number and percentage of families in the county served by home visitation programs focused on family support and basic-needs assistance (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the total number of families served by home visitations programs in a given county. The percentage is calculated by dividing the total number families served by home visitation programs that provide family support and basic needs assistance by the total number of families in the county.

Why is this indicator important?

Home visitation programs are a common community approach for targeting at-risk infants and toddlers.[3] There are numerous models of home visiting, such as Parents as Teachers, Nurse Home Visitation, Home Instruction Program for Preschool Youngsters, and Building Strong Families. Most programs focus on enhancing child outcomes; however, many home visitation programs have numerous objectives, including improving parenting skills, providing social support, and preventing child maltreatment.[2,3] Home visitation programs usually serve parents of children 0 to 5 years of age. Some home visitation program models only serve children 0 to 1 years of age such as Healthy Start, or 0 to 3 such as Early On®. A summary of different types of home visitation programs can be found online.[5]

Home visitation programs may be effective. A small body of research supports the effectiveness of home visitation programs, particularly the nurse home visiting program. Short-term benefits include increased spacing between pregnancies and improved growth in low-birth-weight infants.[4,7-9] Long-term benefits include fewer subsequent unwanted pregnancies and a decrease in verified incidents of child abuse and neglect.[6] However, note that these results were achieved in the context of home visiting programs that closely followed program protocols and had close clinical supervision.[9]

Home visitation programs overcome many of the barriers of traditional programs. Home visitation programs by design are believed to overcome many of the obstacles that other family support programs face, such as poor family participation, and concrete barriers for families, such as lack of transportation and child care. Home visitors are proactive and take the services to the family.[7] Services needing follow-up such as checking on referrals can be addressed during ongoing visits. In addition, services are provided in a familiar setting and the family does not have to discuss problems in front of others. (See indicators L6, L7, O7, and O8.)

Who else currently uses this indicator?

The California Department of Social Services collects this indicator in a data table of families participating in “family maintenance” services, and “pre-placement (in foster care) services.”[1]

What are the possible sources of data for this indicator?

Counties may conduct a random survey of their families to collect data. They may also survey home visitation programs to see which programs provide family support and basic-needs assistance and identify the number of families served.

Sources

[1] California Department of Social Services. (2002). *Data Table*. Retrieved July 24, 2002, from http://www.dss.cahwnet.gov/research/res/pdf/Soc291YR01.PDF

[2] Council on Child and Adolescent Health. (1998). The role of home-visitation programs in improving health outcomes for children and families. *Pediatrics, 101*(3), 486-489.

[3] Drummond, J. E., Weir, A. E., & Kysela, G. M. (2002). Home visitation programs for at risk young families: A systemic literature review. *Canadian Journal of Public Health, 93*(2), 153-158.

[4] Hammond-Ratzlaff, A., & Fulton, A. (2001). Knowledge gained by mothers enrolled in a home visitation program. *Adolescence, 36*(143), 435-442.

[5] Institute for Children, Youth, and Families, http://www.icyf.msu.edu

[6] Kitzman, H., Olds, D. L., Henderson, C.R., Hanks, C., et al. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearings: A randomized controlled trial. *Journal of the American Medical Association, 278*(8), 644-652.

[7] McCurdy, K. (2001). Can home visitation enhance maternal social support? *American Journal of Community Psychology, 29*(1), 97-112.

[8] Olds, D. L., Eckenrode, J. J., Henderson, C. R., Kitzman, H.J., et al. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association, 278*(8), 637-643.

[9] Olds, D. L., Henderson, C. R., Kitzman, H. J., Eckenrode, J. J., et al. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

L. Children are safe from intentional injuries in their homes and communities.

6. Average number of home visits focused on family support and basic-needs assistance made to each family (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the average number of home visits made to each family participating in a program that provides home visiting services focused on family support and basic needs assistance. This indicator can be calculated by addint the total number of home visits to each family and dividing by the total number of families served.

Why is this indicator important?

Home-visitation programs are a common community approach to serving at-risk infants and toddlers.[2,3] There are numerous models of home visiting, such as Parents as Teachers, Nurse Home Visitation, Home Instruction Program for Preschool Youngsters, and Building Strong Families. Most home-visitation programs focus on enhancing child outcomes, but many programs have additional objectives such as improving parenting skills, providing social support, and preventing child maltreatment.[2,3,5,6,8,9]

The number of home visits a family receives varies across models of home-visitation programs. For example, home visits can be monthly, biweekly or weekly; visit frequency is usually based on the needs of families and resources available. Nurse home-visitation programs are mostly like to have a protocol indicating a certain number of required visits.[3,8,9]

Home visitation programs may be beneficial to children and families. A small body of research supports the effectiveness of home-visitation programs. Short-term benefits include increased spacing between pregnancies and improved growth in low-birth-weight infants.[4,7-9] Long-term benefits include fewer subsequent unwanted pregnancies and a decrease in verified incidents of child abuse and neglect.[5] However, note that these results were achieved in the context of home-visiting programs that closely followed program protocols and had close clinical supervision.[9] (See indicators L5 and L7.)

Who else currently uses this indicator?

National, state, and local efforts use this indicator. The Parents as Teachers' national office tracks and reports this indicator for all of its participating communities. It reports the percentage of families who receive 1 to 5 home visits, 6 to 12 home visits, and 13 or more visits per year. Nurse Home Visitation

programs also closely track the number of visits. More information can be found online.[10]

Some Early Head Start programs have home visiting components and may also track the number of home visits made by their programs.

The California Department of Social Services collects this indicator and maintains a data table of families participating in ”family maintenance” services, and “pre-placement (in foster care) services.”[1]

What are the possible sources of data for this indicator?

Home-visitation programs can be surveyed to collect this data. This data may also be available from administrative program records.

Are there any key issues or concerns about the use of this indicator?

- Other:

The average number of visits may be misleading. For example, a community may report the average number of home visits to be 4 per family when the program served 20 families and 10 received 7 visits and the rest received only 1 visit each. Accordingly, when considering, averages, frequency distributions should also be considered.

Sources

[1] California Department of Social Services. (2002). *Data Table*. Retrieved July 24, 2002, from http://www.dss.cahwnet.gov/research/res/pdf/Soc291YR01.PDF

[2] Council on Child and Adolescent Health. (1998). The role of home-visitation programs in improving health outcomes for children and families. *Pediatrics, 101*(3), 486-489.

[3] Drummond, J. E., Weir, A. E., & Kysela, G. M. (2002). Home visitation programs for at risk young families: A systemic literature review. *Canadian Journal of Public Health, 93*(2), 153-158.

[4] Hammond-Ratzlaff, A., & Fulton, A. (2001). Knowledge gained by mothers enrolled in a home visitation program. *Adolescence, 36*(143), 435-442.

[5] Kitzman, H., Olds, D. L., Henderson, C.R., Hanks, C., et al. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearings: A randomized controlled trial. *Journal of the American Medical Association, 278*(8), 644-652.

[6] Kitzman, H., Olds, D. L., Sidora, K., Henderson, C. R., et al. (2000). Enduring effects of nurse home visitation on maternal life course: A 3-year follow-up of a randomized trial. *Journal of the American Medical Association, 283*(15), 1983-1989.

[7] McCurdy, K. (2001). Can home visitation enhance maternal social support? *American Journal of Community Psychology, 29*(1), 97-112.

[8] Olds, D. L., Eckenrode, J. J., Henderson, C. R., Kitzman, H.J., et al. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association, 278*(8), 637-643.

[9] Olds, D. L., Henderson, C. R., Kitzman, H. J., Eckenrode, J. J., et al. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

[10] Parents as Teachers, http://www.patnc.org

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7. Number and percentage of home visitors with the required level of home-visitation program training. (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of required home-visitation training hours attended, number of required courses taken, or the required degree or certificate attained. The definition of this indicator will depend of the specific home-visitation program being implemented in the community. The percentage is calculated by dividing the number of home visitors with the required level of training by the total number of home visitors in the community.

Why is this indicator important?

The home-visitation programs that demonstrate benefits for families have some type of training requirement for their home visitors.[1] The home visitation models that provide the most benefits either use nurses or well-trained paraprofessionals.[1,3] In addition, research suggests that home visitation programs should be linked to existing community health care systems and other community-based family support programs. (See indicators L5 and L6.)[1]

The level of preparation required by the home visitor varies by the model of home-visitation programs. For example, some models use trained paraprofessionals, such as those who have taken Parents as Teachers training, whereas other models require registered nurses. The Parents as Teachers program requires that each parent educator take training offered through its national center and requires yearly professional development courses to maintain certification. On the other hand, some models require limited training, such as Building Strong Families, which requires only 2 days of training.[2]

Who else currently uses this indicator?

No other national organizations or states track this indicator.

What are the possible sources of data for this indicator?

The National Parents as Teachers program suggests ways to document the training level of home visitors. They suggest that community-based programs track the annual number of hours that providers receive training and the number of trainees maintaining Parents as Teachers certification through annual training. More information can be found online.[4]

Other possible sources would be administrative program records from home visitation programs. However, it is unclear how many models track this information.

Sources

[1] Council on Child and Adolescent Health. (1998). The role of home-visitation programs in improving health outcomes for children and families. *Pediatrics, 101*(3), 486-489.

[2] The Institute for Children, Youth and Families at Michigan State University, http://www.icyf.msu.edu

[3] McCurdy, K. (2001). Can home visitation enhance maternal social support? *American Journal of Community Psychology, 29*(1), 97-112.

[4] Parents as Teachers, http://www.patnc.org

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8. Number of calls received by hot lines per population over a year (C) Number of calls received by warm lines per population over a year (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of calls received by hot and warm lines in a county as a ratio of the population of the county per year. Hot and warms lines are distinct services and should be monitored separately. Hot lines are crisis lines staffed by individuals who have received some type of formal training, such as counselors. Warm lines are precrisis lines staffed by peers who may or may not have received training. Hot (crisis) lines have been in use for many decades, whereas warm lines are a new type of precrisis service.[1] Hot and warm lines are set up to provide support across a wide range of topics, such as domestic violence, child care referrals, parenting, and mental health needs.

Why is this indicator important?

The use of hot and warm lines may indicate the need for services and support in a community. These lines are sometimes used to refer individuals to services, and they may contribute to stronger communities by building peer support networks.[2]

Note: Research on total use of, access to, or availability of hot and warm lines is limited.[1] Instead, most research focuses on individual hot or warm lines, such as suicide hot lines and mental health warm lines.[1]

Who else currently uses this indicator?

We know of no other organizations or states that collect this indicator.

What are the possible sources of data for this indicator?

Data can be collected from each individual hot and warm line program. Communities may track program telephone records or possibly collect administrative data on the types of calls received and the actions that programs suggest to callers.

Data can also be collected directly from populations. Communities can survey target populations to gather information about whether or not individuals are using the hot and warm lines.

Are there any key issues or concerns about the use of this indicator?

- Other:

Hot and warm lines are distinct services and should be measured separately.

Lack of telephones in households and languages barriers may prohibit some populations from using the hot and warm lines. This possibility should be taken into consideration when interpreting the data. When possible, data should be disaggregated by economic levels and racial/ethnic background.

It is difficult to gauge the effectiveness of hot and warm line services, given the range of issues they address, the range of training of service providers, and the lack of consistent approaches to providing services. One indicator that may be helpful to pursue is the tracking of referrals after calls.

Sources

[1] Pudlinski, C. (2001). Contrary themes on three peer-run warm lines. *Psychiatric Rehabilitation Journal, 24*(4), 397-400.

[2] Ritchie, J., Stewart, M., Ellerton, M., Thompson, D., et al. (2000). Parents' perceptions of the impact of a telephone support group intervention. *Journal of Family Nursing, 6*(1), 25-45.

L. Children are safe from intentional injuries in their homes and communities.

9. Number and percentage of families in the county served by family-resource centers offering family support (P)

Category: Performance measure

What is the definition of this indicator?

The indicator can be calculated by totaling the number of families being served by family-resource centers in a county. The percentage is calculated by dividing the total number of families being served by the total number of families in the county. This indicator should focus on collecting an unduplicated count of families being served by family resource centers within a county.

Why is this indicator important?

Communities have identified family-support programs as a way to help parents navigate the challenges of parenthood and daily stressors.[1,2] Family-support programs typically provide support regarding child development. Programs usually focus on explaining to parents the developmentally appropriate expectations for children 0 to 5 years of age. Parents with realistic expectations typically experience less parental stress, and less stress has been associated with enhanced caregiving capacities for parents receiving support.[3]

Family-support programs are not being fully used. Even though some communities have family-support programs that are readily available, program providers have difficulty in engaging and maintaining their target audience—parents.[2] Parents do not use the family support programs as fully as they might, even though several national surveys have reported that parents favor services designed to assist with parenting.[2]

Many factors may influence a parent's decision to participate in a family-support program. These factors include staff characteristics, location of the program, type of services offered, and stability of the program (e.g., funding).[2] However, it is difficult to know why parents do or do not participate in these programs, because few studies have prospectively followed parents from initial recruitment through program completion.[2] Nevertheless, communities continue to offer a variety of services through family resources centers to assist families.

Who else currently uses this indicator?

We have not located any other communities that are tracking this indicator.

What are the possible sources of data for this indicator?

Communities can survey families in their counties to collect information on the number of families served by family resource centers and then calculate the percentage of total families served.

This information may also be available from administrative program data.

Are there any key issues or concerns about the use of this indicator?

- Other:

The potential exists for double-counting families. It is possible for the same family to be served by multiple family-resource centers or to be served multiple times by the same family-resource center. It would thus be preferable to use a denominator that counts at-risk families, rather than all families. The number of low-income families might serve as a proxy for at-risk families.

Sources

[1] Martin, J., Chenoweth, L., et al. (2000). An emerging trend: Culturally-responsive parenting education. *Journal of Family Consumer Sciences, 92*(3), 11-12.

[2] McCurdy, K., & Daro, D. (2001). Parent involvement in family support programs: An integrated theory. *Family Relations, 50*(2), 113-121.

[3] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

L. Children are safe from intentional injuries in their homes and communities.

10. Ratio of children 0 to 5 years of age to adults in a neighborhood (C)
Category: Structural measure

What is the definition of this indicator?

This indicator is defined as the number of children 0 to 5 years of age compared with the number of adults in a neighborhood. Dividing the number of children by the number of adults and reporting it as a fraction will produce this ratio.

Why is this indicator important?

The percent of the population consisting of children under the age of 5 has policy implications regarding the allocation of resources and services. Children help make up the dependent population, which is defined as the proportion of the population that is economically inactive because of their age.[3] A neighborhood with a large number of children relative to adults may be poorer and have fewer resources. A large number and proportion of children would also suggest a need for more services directed to young children in a neighborhood.

Little research focuses on the size of the adult population in a neighborhood relative to the number of young children and how it affects young child development. However, other studies have examined neighborhood effects on children, especially adolescents.[1] For example, evidence suggests that children, especially youths, who have access to stable quality relationships with adults other than their parents, show benefits across multiple dimensions, such as school achievement.[2] If young children are in neighborhoods where watchful adults live, they may be better supervised in general and safer from harm. However, neighborhoods vary in cohesiveness and degree of mutual involvement; accordingly, if this indicator is seen as relevant to children's safety, it may be important to examine the adult sense of watchfulness over children in a neighborhood rather than the sheer number of adults relative to children.

Who else currently uses this indicator?

To date, no other organizations or states have been found to collect this indicator.

What are the possible sources of data for this indicator?

The U.S. Census can be used to gather this indicator at the Census track level.

Data can be collected directly from neighborhoods. Communities could also administer a household survey to collect information on the number of children (0 to 5 years of age) in relation to number of adults in the neighborhood.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

It is not clear how the ratio of children (0 to 5 years of age) and adults in a neighborhood will help measure how children can be kept safe from intentional injuries in their home or communities. As noted above, it may be more important to asses the involvement of families or neighborhood cohesiveness, rather than sheer number and this ratio of adults and children.

- Other:

Communities will have to decide how to define a neighborhood. How neighborhoods are defined may affect the ability to use decennial census data as currently reported. Communities may have to have census data manipulated to arrive at the adult:child ratio at the neighborhood level.

Sources

[1] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[2] Scales, P., & Gibbons, J. (1996). Extended family members and unrelated adults in the lives of young adolescents: A research agenda. *Journal of Early Adolescence, 16*(4), 365-389.

[3] U.S. Department of Health and Human Services. Office of the Assistant Secretary For Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth.* Washington, DC: U.S. Government Printing Office.

L. Children are safe from intentional injuries in their homes and communities.

11. Number of family-support programs or slots in each county (C)

Category: Structural measure

What is the definition of this indicator?

This indicator can be defined as the number of family-support programs offered in a community. The indicator can be calculated by totaling the number of programs.

Why is this indicator important?

Family-support programs provide help for parents to navigate the challenges of parenthood and daily stressors.[2,3] (See indicators O7 and O8.) Family-support programs typically provide support regarding child development. Parents with realistic expectations typically experience less parental stress, and less stress has been associated with enhanced caregiving capacities for parents receiving support.[4] Programs usually focus on explaining to parents the developmentally appropriate expectations for children 0 to 5 years. There are numerous types of family-support programs such as home-visiting programs, parent education classes, early intervention services, and government-sponsored programs such as the Special Supplemental Food Program for Women, Infants, and Children (WIC).

Many parents do not use family-support programs. Even though some communities have family-support programs that are readily available, program providers have difficulty in engaging and maintaining their target audience, parents.[3] Parents do not use the family support programs as fully as they might, even though several national surveys have reported that parents favor services designed to assist with parenting.[3] Nevertheless, many communities continue to offer family-support programs to assist families. (See indicators L4 and L9.)

Who else currently uses this indicator?

The Institute for Children, Youth and Families at Michigan State University disseminates available information regarding family-support programs. The list of family-support programs can be found online.[1] However, the website does not indicate where these programs are implemented.

West Virginia, among other states, tracks the number of early parent education programs.

What are the possible sources of data for this indicator?

Communities can survey service providers in their counties to collect information on the number of family-support programs. Communities may also ask their counties schools, libraries, etc., to collect data on the availability of family-support programs.

Are there any key issues or concerns about the use of this indicator?

- Other:

This indicator needs clarification in terms of what is meant by "availability." For example, a program in 1 county could service 20 families; however, the county may have more than 200 families in need of the services. Therefore, the family-support program would not be available to the majority of the families in need, whereas in another county, a program could serve 20 of the 40 families in need.

Community should also consider an indicator that captures the number and percentage of families that are served by family support programs.

Sources

[1] The Institute for Children, Youth and Families at Michigan State University, http://www.icyf.msu.edu

[2] Martin, J., Chenoweth, L., et al. (2000). An emerging trend: Culturally-responsive parenting education. *Journal of Family Consumer Sciences, 92*(3), 11-12.

[3] McCurdy, K., & Daro, D. (2001). Parent involvement in family support programs: An integrated theory. *Family Relations, 50*(2), 113-121.

[4] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

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12. Violent crime rates (C)

Category: Structural measures

What is the definition of this indicator?

Violent crime rates are the total number of reported violent crime offenses per 100,000 inhabitants. Violent crimes involve force or threat of force, and include murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault. Violent crime rates are calculated using two primary sources: the U.S. Department of Justice's National Crime Victimization Survey (NCVS) and the Federal Bureau of Investigation's (FBI's) Uniform Crime Reports (UCR). Population statistics generated by the FBI are used to calculate crime rates and to estimate the proportion of the population covered by the UCR program. The total number of violent crime offenses are reported as rates per 100,000 inhabitants. Rates may be calculated at the national, state, and local levels.[1]

Why is this indicator important?

Violence has direct and indirect negative effects on children's health. Violence leading to injury and mortality has obvious negative effects. Violence can have indirect negative effects as well. For instance, numerous studies have documented that young children who are exposed to violence are likely to exhibit emotional distress, more immature behavior, and regressions in toileting and language; adolescents may display delinquent behaviors.[5,7] Furthermore, some children show symptoms very similar to posttraumatic stress disorder after exposure to violence, such as repeated re-experiencing and numbing of responsiveness.[3] The impact of exposure to violence on children depends on many factors, including the age of the child, frequency and type of exposure to violence, characteristics of the neighborhood, amount and quality of support provided by caregivers, experience of previous trauma, proximity to the violent event, and familiarity with the victim or perpetrator.[6]

Violence has negative effects on parenting and child development. Research shows that in neighborhoods that have high levels of violence, parents may restrict their children's outside activities. Although this restriction may increase the child's safety, it may also affect the child's cognitive stimulation and ability to establish a sense of autonomy.[4] In addition, the child may be limited in terms of developing relationships with peers and older adults in the neighborhood.[3]

Who else currently uses this indicator?

America's Children: Key National Indicators of Well-Being 2002 collects information on the violent crime victimization rate of youths ages 12 to 17.[2]

The California Department of Justice also tracks violent crimes on both the state and county levels.

What are the possible sources of data for this indicator?

There are two national sources of data: NCVS and the FBI's UCR.

Since 1973, the NCVS has been the primary source of information on criminal victimization and provides the largest national forum for victims to describe the impact of crime and characteristics of violent offenders. Each year, data are obtained from a nationally representative sample of nearly 100,000 persons on the frequency, characteristics, and consequences of criminal victimization by rape, sexual assault, robbery, assault, theft, household burglary, and motor vehicle theft. Data are calculated for the population as a whole, as well as for segments of the population such as women, the elderly, racial and ethnic groups, city dwellers, regions, and other groups.

The FBI's UCR program is a nationwide, cooperative statistical effort of nearly 17,000 law enforcement agencies that voluntarily report data on reported crimes. Crime statistics are available at the national, state, and local level. For example, Alameda County can obtain the rates of violent crimes per 100,000 inhabitants as reported by the Alameda Police Department and the Alameda County Sheriff Department. Population statistics generated by the FBI are used to calculate crime rates and to estimate the proportion of the population covered by the UCR program.

The Bureau of Justice Statistics (BJS) and the Office of Community Oriented Policing Services (COPS) have also developed a software program for localities to use in conducting their own telephone surveys of residents to collect data about crime victimization, attitudes toward policing, and other community-related resources. This software is available free from BJS.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Rates based on national data may not reflect actual local rates reliably; local sources may be more reliable.

Rates are based on reported offenses only and therefore do not reflect all violent crimes that occur.

- Other:

Calculation of rates should be based on population estimates reported from the 2000 Census for each county.

Sources

[1] Bureau of Justice Statistics. (2001). *Crime and victims statistics*, from http://www.ojp.usdoj.gov/bjs/cvict.htm

[2] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[3] Jenkins, E. J., & Bell, C. C. (1997). Exposure and response to community violence among children and adolescents. In J. D. Osofsky (Ed.), *Children in a violent society.* (pp. 9-31). New York: The Guilford Press.

[4] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[5] Osofsky, J. O. (1995). The effects of exposure to violence on young children. *American Psychologist, 50*, 782-788.

[6] Osofsky, J. O. (Ed.). (1997). *Children in a violent society.* New York: The Guilford Press.

[7] Singer, M. I., Anglin, T. M., Song, L., & Lunghofer, L. (1995). Adolescents' exposure to violence and associated symptoms of psychological trauma. *Journal of the American Medical Association, 273*, 477-482.

M. Fewer teenagers give birth, and more teenage parents delay subsequent pregnancies.

1. Number and rate of births to young teenage mothers (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator reflects the number of live births to females ages 15-17. As calculated by the National Center for Health Statistics, the teen birth rate is the number of births to females aged 15-17 per 1,000 females ages 15-17.

Why is this indicator important?

Despite dramatic reductions in the 1990s, teen birth rates in the United States remain high compared with other industrialized countries. The U.S. teen birth rate is at an all-time historical low, with preliminary data for 2001 indicating the birth rate for females ages 15 to17 at 25.3 births per 1,000 ,[19] down from 38.7 births per 1,000 in 1991—a decrease of 35 percent. Declines have occurred in the teen birth rate for teens across all age groups, all racial and ethnic groups, and in every state and the District of Columbia. Nevertheless, the recent decline in the teen birth rate was preceded by an equally dramatic increase in teen births between 1986 and 1991 (27 percent).In addition, the United States continues to have a teen birth rate that is substantially higher than those in other industrialized countries. For example, the U.S. teen birth rate (for ages 15-19) in the late-1990s was more than 1.5 times that of Great Britain, more than 2.5 times that of Canada, and 10 times more than that of Japan.[26]

In 2000, (the most recent year for which data are available), California's birth rate for females aged 15 to 17 was 28.6 births per 1,000.[30]

Births to young teenagers pose several health risks to both mothers and their children. Teenage mothers are less likely than older mothers to receive adequate prenatal care,[27] which is associated with a greater likelihood of having healthy children who are better able to engage in the learning process.[10] Additionally, a lack of prenatal care can lead to poor health, physical complications, and developmental problems in children that may lead later to increased absenteeism and problems in adapting to school.[10]

In addition, teenage mothers are more likely to have low-birth-weight babies,[29] a risk factor for a variety of health and developmental problems. (See indicators A2 and A3.)

Teenage mothers are also more likely to smoke during pregnancy than older pregnant women,[14] which has been associated with a greater chance of having a premature birth (less than 37 completed weeks of gestation) and a low-birth-weight baby (5.5 pounds or less).[28] (See indicator F2.) These complications

have been shown to put the child at greater risk for serious and long-term illnesses, developmental delays, and dying in the first year of life.[28]

Teenage mothers often face more disadvantages both before and after they have their first birth. Research has shown that, compared with older mothers, teen mothers display a higher likelihood of welfare dependence, are more likely to experience relationship instability, have lower educational attainment, have less spacing between children, and are less likely to cultivate stimulating home environments for their children.[7,14,22]

Children raised by teen mothers are more likely to experience academic and social problems than children raised by older mothers.[22] They are less likely to become high school graduates and are more likely to engage in early sexual activity and become teenage parents themselves.[8,12,14-17] (See Indicator M5.)

Who else currently uses this indicator?

Many national and state efforts use this indicator. This indicator is currently used by the American Medical Association, the Centers for Disease Control and Prevention, Child Trends, Kids Count, the National Campaign to Prevent Teen Pregnancy, the National Center for Health Statistics, Planned Parenthood, UNICEF, the U.S. Department of Health and Human Services,[25] the U.S. Department of Labor, *America's Children: Key National Indicators of Well-Being* 2002,[6] and several states.

Healthy People 2010 tracks the number of intended pregnancies of women in different age groups, as well as the number of pregnancies among adolescent females.[24] The Child Trends DataBank and the Maternal and Child Health Bureau also track this indicator.[5,21]

In California, the California Department of Health Services tracks this indicator.

What are the possible sources of data for this indicator?

The number of teen births and teen birth rates are compiled from birth records. Nationally, birth records are accumulated in a database at the Division of Vital Statistics, a branch of the National Center for Health Statistics in the Natality Data, Public Use data files. Locally, birth records can be obtained by contacting county or state health departments. In addition, the total number of live births by teens can be found in U.S. Census data.

Teen birth data and standard survey items are available online. National and state-level teen birth rates are distributed by the National Center for Health Statistics and can be found online.[23]

Additionally, estimates of teen birth rates are available for states and selected U.S. cities in Child Trends' *Facts At A Glance* publication[4] and the Kids Count and Child Trends report *The Right Start for America's Newborn: A Decade of City and State Trends (1990-1999)*.[13]

California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey the California Health Interview Survey.[2]

<u>Are there any key issues or concerns about the use of this indicator?</u>

- Reliability/Validity:

The data are highly reliable, because most births occur in hospitals and because maternal age is generally reported on the birth certificate.

- Sensitivity to change:

Teen birth rates are sensitive to change as evidenced by the dramatic increase in teen birth rates from 1986 to 1991 and the steady decline that followed and continues through today. Although no one factor can be identified as underlying this decline, several have been suggested as contributors, including an increase in initiatives to prevent teen pregnancy, an increase in sexuality education programs, a strong economy, child support enforcement, the introduction and use of new contraceptive methods, an increase in conservative attitudes toward premarital sexual activity, and possibly welfare reform.[3,11,18,31]

Some pregnancy prevention programs have shown success in recent years. Experimental programs that include voluntary community service by teenagers and time for them to reflect on their service (e.g., Teen Outreach Program), and high-quality, intensive early-childhood programs that focus on disadvantaged children (e.g., Abecedarian) have been successful in preventing teenage pregnancies.[1,9] Other nonexperimental research studies have suggested that other factors such as encouraging parent-child communication about pregnancy are associated with a reduction in teenage pregnancies and births.[17]

- Cultural issues:

Preliminary 2001 teen birth rates (for ages 15 to 17) are higher for Hispanic and black females (56.9 per 1,000 and 45.6 per 1,000, respectively) than for non-Hispanic white teenagers (14.2 per 1,000).[20] When possible, data should be disaggregated by ethnic groups.

- Other:

Older and married teens are more likely to have given birth than their younger and/or unmarried counterparts.[28]

Sources

[1] Allen, J. P., Philiber, S., Herrling, S., & Kuperminc, G. P. (1997). Preventing teen pregnancy and academic failure: Experimental evaluation of a developmentally-based approach. *Child Development, 64*(4), 729-742.

[2] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[3] Centers for Disease Control and Prevention. (1998). Youth risk behavior surveillance - United States, 1997. *Morbidity and Mortality Weekly Report, 47*(3), 1-89.

[4] Child Trends. (2001). *Facts at a glance*, from http://www.childtrends.org/PDF/FAAG2001.pdf

[5] Child Trends. (2002). *Child Trends Databank Indicator: Teen births*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[7] Furstenberg, F. F., Jr., Brooks-Gunn, J., & Morgan, S. P. (1987). *Adolescent mothers in later life*. Cambridge, MA: Cambridge University Press.

[8] Haveman, R., Wolfe, B., & Peterson, E. (1997). *Children of early childbearers as young adults*. Washington, DC: The Urban Institute Press.

[9] Horacek, H. J., Ramey, C. T., Campbell, F. A., Hoffmann, K. P., & Fletcher, R. H. (1987). Predicting school failure and assessing early intervention with high-risk children. *Journal of the American Academy of Child & Adolescent Psychiatry, 26*(5), 758-763.

[10] Kagan, S. L., Moore, E., & Bradekamp, S. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: National Education Goals Panel, Goal 1 Technical Planning Group.

[11] Kahn, J. G., Brindis, C. D., & Glei, D. A. (1999). Pregnancies averted among U.S. teenagers by the use of contraceptives. *Family Planning Perspectives, 31*(1), 29-34.

[12] Kahn, J. R., & Anderson, K. E. (1992). Intergenerational patterns of teenage fertility. *Demography, 29*(1), 39-57.

[13] Kids Count, & Child Trends. (2002). *The right start for America's newborn: A decade of city and state trends (1990-1999)*, from http://www.aecf.org/kidscount/rightstart2002/

[14] Levine, J. A., Pollack, H., & Comfort, M. E. (2001). Academic and behavioral outcomes among the children of young mothers. *Journal of Marriage and the Family, 63*(2), 355-369.

[15] Manlove, J. (1997). Early motherhood in an intergenerational perspective: The experiences of a British cohort. *Journal of Marriage & the Family, 59*(2), 263-279.

[16] Manlove, J., Terry, E., Gitelson, L., Papillo, A. R., & Russell, S. (2000). Explaining demographic trends in teenage fertility, 1980-1995. *Family Planning Perspectives, 32*(4), 166-175.

[17] Manlove, J., Terry-Humen, E., Papillo, A. R., Franzetta, K., Williams, S., & Ryan, S. (2001). *Background for community-level work on positive reproductive health in adolescence: Reviewing the literature on contributing factors*. Washington, DC: Child Trends.

[18] Manlove, J., Terry-Humen, E., Papillo, A. R., Franzetta, K., Williams, S., & Ryan, S. (2002). *Preventing teenage pregnancy, childbearing, and sexually transmitted diseases: What the research shows*. Washington, DC: Child Trends.

[19] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2000). *Births: Final data for 2000.* Hyattsville, MD: National Center for Health Statistics.

[20] Martin, J. A., Park, M. M., & Sutton, P. D. (2002). Births: Preliminary data for 2001. *National Vital Statistics Reports, 50*(10).

[21] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington, DC: U.S. Department of Health and Human Services.

[22] Moore, K. A., Morrison, D. R., & Greene, A. D. (1997). Effects on the children born to adolescent mothers. In R. A. Maynard (Ed.), *Kids having kids: Economic costs and social consequences of teen pregnancy* (pp. 145-180). Washington, DC: The Urban Institute Press.

[23] National Center for Health Statistics, Births: Final data for 2000, http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_05.pdf

[24] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference Edition, in Two Volumes)*. Washington, DC: Author.

[25] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth 2001*. Washington, DC: Author.

[26] UNICEF. (2001). *A league table of teenage births in rich nations*. Florence, Italy: UNICEF Innocenti Research Centre.

[27] Ventura, S. J. (1995). Births to unmarried mothers: United States, 1980-1992. *Vital and Health Statistics, 21*(53).

[28] Ventura, S. J., Curtin, S. C., Mathews, T. J., & Hamilton, B. E. (2001). Births to teenagers in the United States, 1940-2000. *National Vital Statistics Reports, 49*(10).

[29] Ventura, S. J., Martin, J. A., Curtin, S. C., Menacker, F., & Hamilton, B. E. (1999). *Births: Final data for 1999* (National Vital Statistics Reports, Vol. No. 49(1)). Hyattsville, MD: National Center for Health Statistics.

[30] Ventura, S. J., Mathews, T. J., & Hamilton, B. E. (2001). Teenage births in the United States: Trends, 1991-2000, an update. *National vital statistics reports, 50*(9).

[31] Wertheimer, R., Jager, J., & Moore, K. A. (2000). *State policy initiatives for reducing teen and adult nonmarital childbearing: Family planning to family caps*. Washington, DC: The Urban Institute.

M. Fewer teenagers have babies, and more parenting teenagers delay subsequent pregnancies.

2. Number and percentage of teenage births within 24 months of a previous birth (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator is defined as the number of children born to teenagers under the age of 18 within 24 months of their having given birth to another child. The percentage of teenage births within 24 months of a previous birth is calculated by taking this number and dividing it by the total number of live teenage births.

Why is this indicator important?

A large number of teen births are repeat births. Repeat births represent more than 20 percent of all births to teenagers, or approximately 112,000 births in 1999. These births are often closely spaced: Almost 1 in 4 women whose first birth occurred before age 18 has a second birth within 24 months. The large majority of repeat births to teenagers (70 percent) are to those who are unmarried.[3,15]

These repeat births come at a great cost to the teenage mothers themselves, their children, and society at large. The problems associated with teenage motherhood are particularly acute for, and are less likely to be overcome by, teenagers who are parenting more than one child.[3] Research shows that teenagers who have subsequent births, in particular closely spaced births, are less likely to obtain a high school diploma and are more likely to live in poverty or receive welfare than those who have only one child during adolescence.[5] Women having a second birth in their teens are less likely to hold down jobs, more likely to earn lower wages, and have fewer opportunities for career advancement than women who postpone additional births.[4] These financial difficulties are also harmful to the children of teenage mothers. Studies show that children from lower-income homes score lower on standardized tests for verbal ability[1] and have lower cognitive abilities such as reading, number skills, problem solving, creativity, and memory.[13]

The risks of low birth weight and poor health outcomes also increase for children born to teenagers who already have had a child. These children are also more likely to suffer from child abuse or to be placed into foster care.[1] Ill health and physical and developmental problems may lead to increased absenteeism, resulting in problems in adapting to school.[10]

Studies show that repeat teen pregnancies are sensitive to change. Studies suggest that a combination of keeping teen mothers in school and living at home might help to prevent subsequent teen pregnancies. Additionally, involvement in

social institutions (e.g., churches, community centers, sports, after-school activities) may also help to prevent pregnancies because they provide something positive in which at-risk teens can become engaged.[6]

Who else currently uses this indicator

Many national and state efforts monitor this indicator for children's school readiness. This indicator is currently used by the American Medical Association, the Centers for Disease Control and Prevention, Child Trends, *Kids Count*, the National Campaign to Prevent Teen Pregnancy, the National Center for Health Statistics, Planned Parenthood, the U.S. Department of Health and Human Services, the U.S. Department of Labor, UNICEF, and the World Health Organization. *Healthy People 2010* also tracks this indicator.[14]

Rhode Island and South Carolina are two examples of states that also use this indicator.

What are the possible sources of data for this indicator?

This indicator can be compiled from birth records. Nationally, birth records are accumulated in a database at the Division of Vital Statistics, a branch of the National Center for Health Statistics in the Natality Data, Public Use data files. Locally, these records can be obtained by contacting county or state health departments.

Standard survey items and public use data files are available online. National and state-level information on teenage subsequent births is distributed by the National Center for Health Statistics and can be found in *Births: Final data for 2000*;[9] the 2001 preliminary data are also available online.[8]

California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey the California Health Interview Survey.[2]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

This indicator is sensitive to change as evidenced by studies that have found that between its peak in 1991 and 2001, the overall U.S. teen pregnancy rate declined by a striking 26 percent. Although the rate of first births to teenagers declined by 13 percent during that time, the rate of second births to teenagers fell by a full 21 percent.[3] Programs that have shown successful results in reducing the percentage of subsequent teen pregnancies used nurses to provide home visits aimed at improving young mother's parenting skills and also healthy lifestyle choices. According to a study reported in the *Journal of the American*

Medical Association, 5 years after the birth of a first child, nurse-visited women in Memphis, Tennessee, had 14 percent fewer subsequent pregnancies and a 34 percent reduction in closely spaced pregnancies.[3] Additionally, women who had gone through the program experienced a 4-month greater interbirth interval than women in the control group. The study also shows that these women experienced decreased welfare dependency and increased rates of employment. Although the cost of the home visits ran $2,800 a year per family, the authors suggest that healthier children and more self-sufficient mothers will offset these costs in the long run.[3]

- Cultural issues:

In 1995, of all teen births among blacks, 24 percent were subsequent births, among Hispanics, 23 percent were subsequent births, and among whites, 19 percent were subsequent births.[11] A greater disparity can be found when examining only those women who had already had a teen birth. In this group 42 percent of blacks had a subsequent birth compared with 39 percent of Hispanics and 33 percent of whites.[6]

- Other:

Levels in this indicator may be related to race, sex, and economic well-being. National data indicate that high school males were normally more sexually active than females, Hispanic and black adolescents were more active than whites, and adolescents who had parents with lower levels of education were generally more sexually active than their counterparts with more highly educated parents.[12] Adolescents from low-income homes were also more likely to engage in sexual activities than adolescents from middle- or upper-income homes.[12] These high-risk groups were also more likely to have subsequent births.[7]

Sources

[1] Brooks-Gunn, J., Britto, P. R., & Brady, C. (1999). Struggling to make ends meet: Poverty and child development. In M. E. Lamb (Ed.), *Parenting and child development in "nontraditional" families* (pp. 279-304). Mahwah, NJ: Lawrence Erlbaum Associates.

[2] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[3] Dailard, C. (2000). Reviving interest in policies and programs to help teens prevent repeat births. *The Guttmacher Report, 3*(3).

[4] Hofferth, S. L., Moore, K. A., & Caldwell, S. (1978). *The consequences of age at first childbirth: Labor force participation and earnings.* Washington DC: The Urban Institute Press.

[5] Manlove, J., Mariner, C., & Romano, A. (1998). *Positive educational outcomes among school-age mothers.* Washington DC: Child Trends.

[6] Manlove, J., Mariner, C., & Romano Papillo, A. (2000). Subsequent fertility among teen mothers: Longitudinal analyses of recent national data. *Journal of Marriage and the Family, 62*, 430-448.

[7] Mott, F. L. (1986). The pace of repeated childbearing among young American mothers. *Family Planning Perspectives, 18*, 5-12.

[8] National Center for Health Statistics, http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_10.pdf

[9] National Center for Health Statistics, Question T33. http://www.healthpolicy.ucla.edu/chis/news/CHIS2001_adolescent_q.pdf

[10] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: NEGP.

[11] Rosenberg, H. M., Ventura, S. J., Marurer, J. D., Heuser, R. L., & Freedman, M. A. (1995). Births and deaths: United States, 1995. *Monthly Vital Statistics Report, 45*(Suppl. 2).

[12] Smith, C. A. (1997). Factors associated with early sexual activity among urban adolescents. *Social Work, 42*(4), 334-346.

[13] Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*(4), 711-723.

[14] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference Edition, in Two Volumes)*. Washington, DC: Author.

[15] Ventura, S. J., Mathews, T. J., & Hamilton, B. E. (2001). Teenage births in the United States: Trends, 1991-2000, an update. *National vital statistics reports, 50*(9).

M. Fewer teenagers have babies, and more parenting teenagers delay subsequent pregnancies.

3. Percentage of adolescents who have never engaged in sexual intercourse before age 18 (C)

Category: Performance measure

What is the definition of this indicator?

This indicator is calculated by taking number of adolescents who have never engaged in sexual intercourse before age 18 and dividing it by the total number of adolescents under age 18.

Why is this indicator important?

Research has shown that children of teenage mothers have lower levels of cognitive and academic achievement, and higher levels of behavioral problems.[3,4,7,9] A parent's age at the time of birth is significantly related to his/her child's well-being. Low early cognitive attainment may in turn hinder the ability of a child to engage in the early learning that is important for school readiness.[15] Children of teenage parents are also more likely to grow up in homes that have lower levels of emotional support and are less likely to earn high school diplomas.[17]

Additionally, teen motherhood is often accompanied by poverty and hardships for both mother and child.[22] Teen parents are generally unprepared for the financial, emotional, and psychological challenges of early childbearing. The effects of these challenges are borne primarily by the children of teen mothers, followed by the mothers themselves, the mothers' families, and, finally, by the government and taxpayers.[2]

Adolescents who engage in sexual intercourse at a young age prolong the time period during which they are at-risk for pregnancy and sexually transmitted diseases.[23] Younger age at first sexual intercourse is associated with a variety of negative outcomes among teens, including a greater likelihood of having nonvoluntary or unwanted sex,[16] having multiple sexual partners,[20] and having a teenage birth.[11,25] Studies also show that older age at first sexual intercourse is associated with a greater chance of using contraception at that time and of more consistent use of contraception in subsequent sexual encounters.[12,14] Contraception use is rising among teens, but remains, inconsistent, especially among younger adolescents, placing them at greater risk for an unintended pregnancy.[8]

Who else currently uses this indicator?

Many national and state efforts monitor this indicator for children's school readiness. This indicator is tracked nationally by the American Medical Association, the Centers for Disease Control and Prevention, the U.S. Department of Labor, *Kids Count*, the National Campaign to Prevent Teen Pregnancy, the National Center for Health Statistics, Planned Parenthood, UNICEF, the U.S. Department of Health and Human Services,[27] and the World Health Organization. *Healthy People 2010*[26] and*The Child Trends DataBank* also track this indicator,[6] as does the Maternal and Child Health Bureau (although by grade in high school instead of by age) in *Child Health USA 2001*.[13]

The states of South Carolina and Rhode Island, among others, also track adolescent sexual activity.

What are the possible sources of data for this indicator?

A direct survey of a representative sample of students under age 18 is the easiest and most accurate way to collect data on this issue. Questions pertaining to the general sexual activities of children between seventh and twelfth grade can be found in the National Longitudinal Survey of Adolescent Health.[19]

Standard survey items are available online. National survey data has been collected by the National Family Growth Survey for females who are sexually active by age 18.[2] This statistic was also collected for an article in *Social Forces* for males who are sexually active.[10] Also, school-based data on the sexual activities of adolescents is available from the Youth Behavior Surveillance System for students attending grades 7-12.[28]

For a sample survey designed for California, see the California Health Interview Survey, which has questions pertaining to the age of first sexual intercourse.[5] The California Youth Risk Behavior Survey also has a measure pertaining to this indicator.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

A paper in *Family Planning Perspectives* examines estimates of sexual behaviors of teenagers from multiple sources. It found that differences occur in the estimates but that the patterns are the same across multiple national surveys.[21]

The definition of sexual behavior is complex and socially defined as indicated in the following quotation:

"Measuring any behavior using self-reporting is challenging, but measuring sexual behavior poses special problems. The primary challenges of measuring sexual behavior among teenagers are that:

- Sexual behavior is viewed as a private matter in our culture. There are strong norms about not discussing one's own behavior with other people, especially with strangers. Respondents may be reluctant to answer these questions, or they may refuse to answer them, either actively or passively by denying that they are engaging in the behavior.
- Sexual behavior among teenagers may also be tinged by social desirability issues. Teens may be reluctant to admit to engaging in behaviors that are disapproved of. For prevention programs, this issue may be particularly important if program participants do not honestly report their actions out of fear of disapproval. The corollary is that teens may be too eager to admit to engaging in behaviors that are socially acceptable.

For reasons of both privacy norms and social desirability, estimates of the prevalence of sexual behaviors among teenagers may be biased."[24]

Standard interview items have been developed by the National Survey of Family Growth[18] and the Youth Risk Behavior Survey.[29]

- Sensitivity to change:

This indicator is sensitive to change as evidenced by the declining number of teens who report engaging in sexual intercourse. According to the National Survey of Family Growth, in 1990 the percent of women who had had sexual intercourse by age 15 was 25 percent. According to the same survey, in 1995 that percent had dropped to 13.55 percent.[2] This decline was characteristic of trends related to teenage sexual behavior since 1990.[23] It points to the success of reproductive health interventions, the general increase in public awareness, and targeted programs such as Postponing Sexual Involvement, Human Sexuality, and Health Screening.[1]

- Other:

This indicator may be related to race, sex, and economic well-being. By age 18 males were normally more sexually active on average than females, Hispanic and black adolescents are more sexually active on average than whites, and adolescents from low-income homes are more likely on average to engage in sexual activities.[23]

Sources

[1] Aarons, S. J., Jenkins, R. R., Raine, T. R., El-Khorazaty, M. N., Woodward, K. M., Williams, R. L., et al. (2000). Postponing sexual intercourse among urban junior high school students - A randomized controlled evaluation. *Journal of Adolescent Health, 27*(4), 136-147.

[2] Abma, J., Chandra, A., Mosher, W., Peterson, L., & Piccinino, L. (1997). Fertility, family planning, and women's health: New data from the 1995 National Survey of Family Growth. *Vital and Health Statistics, 23*(19).

[3] Baldwin, W., & Cain, V. S. (1991). The children of teenage parents. In J. F. F. Furstenberg, R. Lincoln & J. Menken (Eds.), *Teenage sexuality, pregnancy, and childbearing* (pp. 265-279). Philadelphia, PA: University of Pennsylvania Press.

[4] Broman, S. (1981). Long-term development of children born to teenagers. In K. G. Scott, T. Field & E. G. Robertson (Eds.), *Teenage parents and their offspring* (pp. 195-224). New York, NY: Cambridge University Press.

[5] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[6] Child Trends. (2002). *Child Trends Databank Indicator: Sexually experienced teens*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[7] Furstenberg, F. F., Jr., Brooks-Gun, J., & Morgan, S. P. (1987). *Adolescent mothers in later life*. New York, NY: Cambridge University Press.

[8] Henshaw, S. K. (1999). Unintended pregnancy in the United States. *Family Planning Perspectives, 30*(1), 24-29 & 46.

[9] Hofferth, S. L. (1987). Social and economic consequences of teen childbearing. In S. L. Hofferth & C. Hayes (Eds.), *Risking the future: Adolescent sexuality, pregnancy, and childbearing* (Vol. 2, pp. 123-144). Washington, DC: National Academy Press.

[10] Ku, L., Sonenstein, F. L., & Pleck, J. H. (1993). Neighborhood, family, and work: Influences on the premarital behaviors of adolescent males. *Social Forces, 72*(2), 479-503.

[11] Manlove, J., Terry, E., Gitelson, L., Papillo, A. R., & Russell, S. (2000). Explaining demographic trends in teenage fertility, 1980-1995. *Family Planning Perspectives, 32*(4), 166-175.

[12] Manning, W. D., Longmore, M. A., & Giordano, P. C. (2000). The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives, 32*(3), 104-110.

[13] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington, DC: U.S. Department of Health and Human Services.

[14] Mauldon, J., & Luker, K. (1996). The effects of contraceptive education on method use at first intercourse. *Family Planning Perspectives, 28*(1), 19-24 & 41.

[15] Maynard, R. A. (1997). The costs of adolescent childbearing. In R. A. Maynard (Ed.), *Kids having kids: economic costs and social consequences of teen pregnancy* (pp. 185-337). Washington, DC: The Urban Institute Press.

[16] Moore, K. A., Manlove, J., Glei, D. A., & Morrison, D. R. (1998). Non-marital school-age motherhood: Family, individual, and school characteristics. *Journal of Adolescent Research, 13*(4), 443-457.

[17] Moore, K. A., Morrison, D. R., & Greene, A. D. (1997). Effects on the children born to adolescent mothers. In R. A. Maynard (Ed.), *Kids having kids: Economic costs and social consequences of teen pregnancy* (pp. 145-180). Washington, DC: The Urban Institute Press.

[18] National Family Growth Survey, http://www.cdc.gov/nchs/nsfg.htm

[19] National Longitudinal Survey of Adolescent Health, http://www.cpc.unc.edu/projects/addhealth/codebooks.html

[20] Santelli, J. S., Brener, N. D., Lowry, R., Bhatt, A., & Zabin, L. (1998). Multiple sexual partners among US adolescents and young adults. *Family Planning Perspectives, 30*(6), 271-275.

[21] Santelli, J. S., Lindberg, L. D., Abma, J., McNeely, C. S., & Resnick, M. (2000). Adolescent sexual behavior: Estimates and trends from four nationally representative surveys. *Family Planning Perspectives, 32*(4), 156-165, 194.

[22] Sarin, R. (2002). *Kid-friendly cities health improvement report card*. Washington, DC: Population Connection.

[23] Smith, C. A. (1997). Factors associated with early sexual activity among urban adolescents. *Social Work, 42*(4), 334-346.

[24] Sonenstein, F. L. (1997). Using self reports to measure program impact. *Children and Youth Services Review, 19*(7), 567-585.

[25] Thornberry, T. P., Smith, C. A., & Howard, G. J. (1997). Risk factors for teenage fatherhood. *Journal of Marriage and the Family, 59*, 505-522.

[26] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference Edition, in Two Volumes)*. Washington, DC: Author.

[27] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth 2001*. Washington, DC: Author.

[28] Youth Risk Behavior Survey, Questions 57-64. http://www.cdc.gov/nccdphp/dash/yrbs/survey99.htm

[29] Youth Risk Behavior Survey, http://www.cdc.gov/nccdphp/dash/yrbs/index.htm

M. Fewer teenagers have babies, and more parenting teenagers delay subsequent pregnancies.

4. **Number and percentage of sexually active adolescents reporting regular use of birth control (C)**

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of people under age 18 who are having sexual intercourse and report using some type of medical or chemical birth control (birth control pill, condom, IUD, diaphragm, cervical cap, spermicide, Norplant, Depo-Provera) at the most recent intercourse. The percentage of sexually active adolescents reporting regular use of birth control is calculated by taking the previous number and dividing it by the total number of sexually active adolescents under age 18.

Why is this indicator important?

In 2001, teen birth rates hit a record low, yet remain higher than in any other industrialized nation.[19,24] This is attributable to multiple factors, including: a general decline in U.S. birth rates, an increase in teen pregnancy prevention initiatives, an increase in sexual education programs, and greater availability of contraceptives.[7,13,19] Teens with easily accessible information about reproductive health are more likely to use contraception than those who lack such access.[20,22] Some studies show that reproductive health classes, offered in many schools, result in decreased sexual activity, as well as increased use of various types of birth control.[15,20] Additionally, adolescents who discuss sexual risk with their partners are much more likely to use contraceptives than those who do not discuss such risks.[34]

Adolescent perception of peer beliefs involving contraceptives is also an important determining factor of teen birth control use. For example if a teen believes that his/her friends do not use condoms or do not like using them, he/she is less likely to use condoms.[33]

Studies additionally show that an older age at first sexual intercourse is associated with a greater chance for use of contraception at that time and more consistent use of contraception in subsequent sexual encounters.[20 22] Despite the dropping teenage birth rate, studies show that adolescents (especially younger adolescents) do not consistently use contraceptives.[11] Teens who experience nonvoluntary sex or have older sexual partners also are less likely to use contraceptives on a regular basis than most teens.[3,28]

Contraceptive use to prevent teen pregnancy is also important for child development. Research shows that children of teen parents experience lower levels of cognitive and academic achievement, and higher levels of behavioral problems.[4,5,12,23] Low cognitive attainment may in turn hinder the ability of a child to engage in the early learning that is important for school readiness.[23]

Who else currently uses this indicator?

Many national and state efforts monitor this indicator for children's school readiness. This indicator is currently used by the American Medical Association, the Centers for Disease Control and Prevention, Child Trends, *KIDS COUNT*, the National Campaign to Prevent Teen Pregnancy, the National Center for Health Statistics, Planned Parenthood, UNICEF, the U.S. Department of Labor, the U.S. Department of Health and Human Services,[31] and the World Health Organization. *The Child Trends DataBank* tracks condom use and birth control pill use.[8,9] *Healthy People 2010* tracks the number of adolescents age 15-17 who use contraception.[30] The Maternal and Child Health Bureau tracks condom use at time of last sex in *Child Health USA 2001*.[21]

California, South Carolina, and Rhode Island are a few of the states that also use this indicator.

What are the possible sources of data for this indicator?

A direct survey of a representative sample of students under age 18 is an easy and accurate way to collect data on this issue.

Child Trends conducted a review of more than 150 research studies on adolescent reproductive health.[19]

Additional survey data may be found online for (1) females who are sexually active by age 18;[2] and (2) males who are sexually active by age 18.[16]

Standard survey items are available online. Questions pertaining to the general sexual activities of adolescents from seventh through twelfth grades can be found in the National Longitudinal Survey of Adolescent Health.[25] The National Longitudinal Survey of Youth also collects this indicator through national surveys.[26]

In addition, school-based data on the sexual activities of adolescents is available from the Youth Behavior Surveillance System for students attending grades 7 through 12.[35]

For a sample survey targeting California, see the California Health Interview Survey, which has questions pertaining to teen use of birth control.[6] The

California Youth Risk Behavior Survey also has a measure pertaining to this indicator.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Measuring any behavior using self-reporting is challenging, but measuring sexual behavior poses special problems. The primary challenges of measuring sexual behavior among teenagers are:

- "Sexual behavior is viewed as a private matter in our culture. There are strong norms about not discussing one's own behavior with other people, especially with strangers. Respondents may be reluctant to answer these questions, or they may refuse to answer them, either actively or passively by denying that they are engaging in the behavior."[27]
- "Sexual behavior among teenagers may also be tinged by social desirability issues. Teens may be reluctant to admit to engaging in behaviors that are disapproved of. For prevention programs, this issue may be particularly important if program participants do not honestly report their actions out of fear of disapproval. The corollary is that teens may be too eager to admit to engaging in behaviors that are socially approved."[27]

For reasons of both privacy norms and social desirability, estimates of the prevalence of sexual behaviors among teenagers may be biased.[27]

- Sensitivity to change:

This indicator is sensitive to change as evidenced by the increasing number and percentage of teens consistently using some form of birth control during sex.[13] A number of intervention programs have shown results pointing to increased contraceptive use among sexually active teenagers. For example, the Children's Aid Society – Carrera involves a long-term and holistic approach providing medical care while also encouraging sports, sexual education, self-expression through the arts, and academic support. It has shown increased female use of highly effective forms of medical and chemical forms of birth control, as well as increased reproductive knowledge among females.[32] Other programs, such as Teen Talk, use lectures, role-playing, films, and discussion to help improve the consistent use of contraceptives among sexually active males.[10] Programs like Postponing Sexual Involvement/ENABL, Project SNAPP, and the Youth AIDS Prevention Project all use lessons on decision-making skills, strategies to deal with pressures for sexual intercourse, and contraceptive use to increase the amount of teen contraceptive use. These programs center around lectures, small group exercises, class discussions, and more interactive methods of teaching (role-playing, games, guided discussions, etc.).[1,14,18]

- Other:

This indicator is affected by racial and economic factors. For example, teens in communities with large Hispanic populations are less likely to use contraceptives than teens in other communities.[17] Additionally, adolescents from disadvantaged communities with high rates of poverty are less likely to use any form of birth control consistently.[29]

Sources

[1] Aarons, S. J., Jenkins, R. R., Raine, T. R., El-Khorazaty, M. N., Woodward, K. M., Williams, R. L., et al. (2000). Postponing sexual intercourse among urban junior high school students - A randomized controlled evaluation. *Journal of Adolescent Health, 27*(4), 136-147.

[2] Abma, J., Chandra, A., Mosher, W., Peterson, L., & Piccinino, L. (1997). Fertility, family planning, and women's health: New data from the 1995 National Survey of Family Growth. *Vital and Health Statistics, 23*(19).

[3] Abma, J., Driscoll, A., & Moore, K. (1998). Young women's degree of control over first intercourse: An explanatory analysis. *Family Planning Perspectives, 30*(1), 12-18.

[4] Baldwin, W., & Cain, V. S. (1991). The children of teenage parents. In J. F. F. Furstenberg, R. Lincoln & J. Menken (Eds.), *Teenage sexuality, pregnancy, and childbearing* (pp. 265-279). Philadelphia, PA: University of Pennsylvania Press.

[5] Broman, S. (1981). Long-term development of children born to teenagers. In K. G. Scott, T. Field & E. G. Robertson (Eds.), *Teenage parents and their offspring* (pp. 195-224). New York, NY: Cambridge University Press.

[6] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[7] Centers for Disease Control and Prevention. (1998). Youth risk behavior surveillance - United States, 1997. *Morbidity and Mortality Weekly Report, 47*(3), 1-89.

[8] Child Trends. (2002). *Child Trends Databank Indicator: Birth control pill use*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[9] Child Trends. (2002). *Child Trends Databank Indicator: Condom use*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[10] Eisen, M., Zellman, G., & McAlister, A. (1990). Evaluating the impact of a theory based sexuality and contraceptive education program. *Family Planning Perspectives, 22*(6), 261-271.

[11] Henshaw, S. K. (1999). Unintended pregnancy in the United States. *Family Planning Perspectives, 30*(1), 24-29 & 46.

[12] Hofferth, S. L. (1987). Social and economic consequences of teen childbearing. In S. L. Hofferth & C. Hayes (Eds.), *Risking the future: Adolescent sexuality, pregnancy, and childbearing* (Vol. 2, pp. 123-144). Washington, DC: National Academy Press.

[13] Kahn, J. G., Brindis, C. D., & Glei, D. A. (1999). Pregnancies averted among U.S. teenagers by the use of contraceptives. *Family Planning Perspectives, 31*(1), 29-34.

[14] Kirby, D., Korpi, M., Adivi, C., & Weissman, J. (1997). An impact evaluation of Project SNAPP: An AIDS and pregnancy prevention middle school program. *AIDS Education and Prevention, 9 (supplement)*.

[15] Ku, L., Sonenstein, F. L., Lindberg, L. D., Bradner, C. H., Boggess, S., & Pleck, J. H. (1998). Understanding changes in sexual activity among young metropolitan men: 1979-1995. *Family Planning Perspectives, 30*(6), 256-262.

[16] Ku, L., Sonenstein, F. L., & Pleck, J. H. (1993). Factors influencing first intercourse for teenage men. *Public Health Reports, 108*(6), 680-694.

[17] Ku, L., Sonenstein, F. L., & Pleck, J. H. (1993). Neighborhood, family, and work: Influences on the premarital behaviors of adolescent males. *Social Forces, 72*(2), 479-503.

[18] Levy, S., Perhats, C., Weeks, K., Handler, A., & Zhu, C. (1995). Impact of a school-based AIDS prevention program on risk and protective behavior for newly sexually active students. *Journal of School Health, 65*(4), 145-151.

[19] Manlove, J., Terry-Humen, E., Papillo, A. R., Franzetta, K., Williams, S., & Ryan, S. (2002). *Preventing teenage pregnancy, childbearing, and sexually transmitted diseases: What the research shows*. Washington, DC: Child Trends.

[20] Manning, W. D., Longmore, M. A., & Giordano, P. C. (2000). The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives, 32*(3), 104-110.

[21] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington, DC: U.S. Department of Health and Human Services.

[22] Mauldon, J., & Luker, K. (1996). The effects of contraceptive education on method use at first intercourse. *Family Planning Perspectives, 28*(1), 19-24 & 41.

[23] Maynard, R. A. (1997). *Kids having kids: Economic costs and social consequences of teen pregnancy*. Washington, DC: The Urban Institute.

[24] Moore, K. A., Manlove, J., Terry-Humen, E., Williams, S., Papillo, A. R., & Scarpa, J. (2001). *Facts at a glance*. Washington, DC: Child Trends.

[25] National Longitudinal Survey of Adolescent Health, http://www.cpc.unc.edu/projects/addhealth/codebooks.html

[26] National Longitudinal Survey of Youth '99, http://data.bls.gov/labjava/nls_outside.jsp

[27] Sonenstein, F. L. (1997). Using self reports to measure program impact. *Children and Youth Services Review, 19*(7), 567-585.

[28] Stock, J. L., Bell, M. A., Boyer, D. K., & Conell, F. A. (1997). Adolescent pregnancy and sexual risk-taking among sexually abused girls. *Family Planning Perspectives, 29*(5), 200-203 & 227.

[29] Sucoff, C. A., & Upchurch, D. M. (1998). The neighborhood context and the risk of childbearing among metropolitan-area black adolescents. *American Sociological Review, 63*, 571-585.

[30] U.S. Department of Health and Human Services. (2000). *Healthy People 2010 (Conference Edition, in Two Volumes)*. Washington, DC: Author.

[31] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth 2001*. Washington, DC: Author.

[32] Walter, H., & Vaughn, R. (1993). AIDS risk reduction among a multi-ethnic sample of urban high school students. *Journal of the American Medical Association, 257*(24), 3382-3386.

[33] Whitaker, D. J., & Miller, K. S. (2000). Parent-adolescent discussions about sex and condoms: Impact of peer influences of sexual risk behavior. *Journal of Adolescent Research, 15*(2), 251-273.

[34] Whitaker, D. J., Miller, K. S., May, D. C., & Levin, M. L. (1999). Teenage partners' communication about sexual risk and condom use: The importance of parent-teenager discussions. *Family Planning Perspectives, 31*(3), 117-121.

[35] Youth Risk Behavior Survey, Questions 57-64.
http://www.cdc.gov/nccdphp/dash/yrbs/survey99.htm

N. Families are self-sufficient.

1. Number and percentage of children living in poverty (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children living in households that report an income below the poverty guideline established by the U.S. Department of Health and Human Services. For 2002, $18,100 was established as the poverty guideline for a family of 4; thus, a family of 4 must have a pretax cash income exceeding $18,100 to be above the poverty line.[21] The poverty guideline adjusts according to size of the family unit, increasing or decreasing at a rate of $3,080 per person.[10] The percentage can be calculated by dividing the number of children living in poverty by the number of children in the population or area being studied. Data on this indicator should be organized into the following age ranges: 0 to 5, and 5 and older.

Why is this indicator important?

Poverty and its associated conditions can have significant effects on children's development and well-being, particularly in early childhood.[11] Children in families who are at or below the poverty line generally have more behavior problems, more social and emotional problems, and lower self-esteem than their peers.[12] These youth have more physical health problems and poorer nutrition than their nonpoor counterparts.[3] In addition, as poverty persists, children are more likely to feel sad and anxious, and interactions with their mothers are likely to become less emotionally expressive, involved, responsive, and cognitively stimulating.[12]

Academic outcomes also appear to be negatively influenced by a lower socioeconomic status. On average, children from economically disadvantaged families score lower on standardized tests for verbal ability[3] and exhibit lower performance in areas such as reading, math,[13] problem-solving, creativity and memory.[19] Research suggests that these outcomes could be related to the lack of resources to provide "cognitively stimulating materials, experiences, and activities" in the home.[13] In addition, the ill-health and physical and developmental problems that are associated with poverty may lead to increased absenteeism from school and, in turn, to problems adapting to school.[17] In adolescence, poverty is associated with fewer total years of schooling and higher school failure and dropout rates.[16]

The conditions associated with poverty can also be detrimental to children's health. Children in poverty are more often exposed to a poor physical environment in the home (including unclean[12] and unsafe conditions, such as the presence of environmental toxins).[18] They are more likely to have chronic conditions and have less access to healthcare. Children in poverty are

also more likely to experience such conditions as abuse, lower quality child care, and malnutrition.[18]

Who else currently uses this indicator?

Several national and state efforts monitor this indicator. Among others, the Annie E. Casey Foundation's *Kids Count Data Book*,[1] the *California County Data Book 2001* (Children Now),[6] the *California State and County Quick Facts*, The California Child Care Resource & Referral Network,[4] *Child Trends' Databank*,[5] the Children's Defense Fund, *America's Children: Key National Indicators of Well-Being 2002*,[14] the Head Start Bureau, the Institute for Research on Poverty, National Longitudinal Surveys, the Maternal and Child Health Bureau,[15] and the Urban Institute (for use in *Snapshots of America's Families*, for example), all use this indicator.

What are the possible sources of data for this indicator?

National data are collected by several sources. National, state, and county information is collected in the 2000 Census by the U. S. Census Bureau. National data is available annually from the Current Population Survey.[22] Data on the nation and 13 states (including California) are collected by the National Survey of America's Families (NSAF).[23]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Poverty level calculated by income does not include all of the impacts of various family economic resources and expenses. Currently, poverty measures do not take into account the following: the financial effects of federal, state, and local taxes (e.g., the federal income tax, the Social Security payroll tax, Earned Income Tax Credits), work-related expenses (e.g., child care, transportation, uniforms), government subsidies, medical expenses, "near-money benefits" (e.g., food stamps, public housing),[24] and expenses that differ by geographic region.[9] Furthermore, poverty guidelines do not take into account whether a family spends money on housing (rent or mortgage payments) or not (in the case of home ownership). As such, two families receiving the same income could have significantly different experiences, depending on their housing expenditures.[2]

In recent reports the U.S. Census Bureau used key elements from the National Research Council to calculate poverty rates from 1990 to 1997 that were different from official rates. The calculation method takes into account in-kind transfers, such as food stamps and housing benefits, and work -elated expenditures. The new measure tends to increase the relative poverty rate of children living with employed low-income persons with higher work-related expenses and to decrease the relative poverty rate of children who are more likely to live in families that receive in-kind transfers.[14]

- Sensitivity to change:

There is evidence that the percentage of children in poverty nationally has decreased significantly over the last few years.[24] In 1996, 21 percent of children were identified as poor, whereas only 18 percent were identified as poor in 1998.[24] The trend was especially pronounced for children in single-parent families.[24] By 2000, the percent of children in poverty was at its lowest in 25 years at 16 percent.[5]

However, poverty is likely to be persistent on the individual level. Children who are poor in any given year have an 80% chance of being poor the subsequent year.[8]

- Cultural issues:

Young black and Hispanic children are three times more likely to live in poverty than their white counterparts.[18] When possible, data should be disaggregated by ethnic groups.

- Other:

Developmental and behavioral outcomes related to poverty differ according to how long and how many times a child lives in poverty, and how severe the poverty is.[12]

The discrepancy between the percentage of children and the percentage of adults living in poverty is significant. Nationally, in 2000, 9.4 percent of adults between age 18 and 64 lived in poverty, compared with 16.1 percent of youth under 18.[20] In California in 2000, more than 21 percent of children under age 4 lived in poverty, compared with 11.7 percent of California adults.[7]

Children under age 3 are the most likely population to live in poverty; 2.1 million children in this age range were poor in 2000.[18]

Sources

[1] Annie E. Casey Foundation. (2000). *Kids Count Data Book, 2000: State profiles of child well-being*. Baltimore, MD: author.

[2] Betson, D. M. (1995). *Effect of home ownership on poverty measurement* (Working Papers Series: Housing Costs). Washington, DC: U.S. Census Bureau.

[3] Brooks-Gunn, J., Britto, P. R., & Brady, C. (1999). Struggling to make ends meet: Poverty and child development. In M. E. Lamb (Ed.), *Parenting and child development in "nontraditional" families* (pp. 279-304). Mahwah, NJ: Lawrence Erlbaum Associates.

[4] California Child Care Resource & Referral Network, http://www.rrnetwork.org/calchildcare/onramp/county.php?ID=783

[5] Child Trends. (2002). *Child Trends Databank Indicator: Children in poverty*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Children Now. (2002). *California county data book 2001*. Oakland, CA: Author.

[7] Children's Defense Fund. (2002). *Census 2000 supplementary survey: Poverty status during previous 12 months, by age*. Retrieved June 19, 2002, from www.childrensdefense.org/fs_poverty_statebystate.htm

[8] Children's Defense Fund. (2002). *Facts and FAQs*. Retrieved June 19, 2002, from www.childrensdefense.org/fairstart-faqs.htm

[9] Citro, C. F., & Michael, R. T. (Eds.). (1995). *Measuring poverty: A new approach*. Washington, DC: National Academy Press.

[10] Department of Health and Human Services. (2002). Annual update of the HHS poverty guidelines. *Federal Register, 67*(31), 6931-6933.

[11] Duncan, G., & Brooks-Gunn, J. (1997). Income effects across the life span: Integration and interpretation. In G. Duncan, & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 596-610). New York: Russel Sage Foundation.

[12] Eamon, M. K. (2000). Structural model of the effects of poverty on externalizing and internalizing behaviors of four- to five-year-old children. *Social Work Research, 24*(3), 143-154.

[13] Eamon, M. K. (2002). Effects of poverty on mathematics and reading achievement of young adolescents. *Journal of Early Adolescence, 22*(1), 49-74.

[14] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[15] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington, DC: U.S. Department of Health and Human Services.

[16] McLoyd, V. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*(2), 185-204.

[17] National Education Goals Panel. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: author.

[18] Song, Y., & Lu, H.-H. (2002). *Early childhood poverty: A statistical profile (March 2002)*. Retrieved June 18, 2002, from http://cpmcnet.columbia.edu/dept/nccp/ecp302.html

[19] Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*(4), 711-723.

[20] U.S. Census Bureau. (2001). *People and families in poverty by selected characteristics: 1999 and 2000*. Retrieved July 23, 2002, from www.census.gov/hhes/poverty/poverty00/tablea.pdf

[21] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[22] US Census Bureau, http://www.census.gov/hhes/www/saipe.html

[23] Wigton, A., & Weil, A. (2000). 1999 Snapshots of America's families II: A view of the nation and 13 states from the National Survey of America's Families. In J. Koppelman (Ed.), *Snapshots II*. Washington, DC: Urban Institute.

[24] Zedlewski, S. R. (2001). *1999 Snapshots of America's families II*. Retrieved June 19, 2002, from www.urban.org/content/Research/NewFederalism/NSAF/Snapshots/1999Results/FamilyEconomicWellBeing/FamilyEcon.htm

N. Families are self-sufficient.

2. Number and percentage of parents reporting food security (i.e., no hunger, as opposed to moderate or severe hunger) (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of parents who indicate that their household has food security and does not experience hunger (both terms are defined below). The percentage is calculated by taking the number of parents reporting food security divided by the total number of parents.

The U.S. Department of Agriculture (USDA) is arguably the most well-established institution conducting research on food security. The USDA provides the following definitions of terms:

- Food security is "access by all members [of a household] at all times to enough food for an active, healthy life." [16] Food security includes at least: "(1) the ready availability of nutritionally adequate and safe foods, and (2) an assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies)."[16]
- Hunger is a severe expression of food insecurity, characterized by the recurrent and involuntary lack of access to food because of financial reasons.[15,16]
- Households and individuals are identified as experiencing food insecurity and hunger only if these outcomes are due to "financial resource constraint," and not due to voluntary behaviors (such as dieting).[1]

The U.S. Department of Health and Human Services and the Centers for Disease Control and Prevention employ similar definitions.[4]

Why is this indicator important?

Lack of adequate food and nourishment is detrimental to children's health and development.[9] Food insecurity and particularly hunger are detrimental to a variety of developmental and behavioral outcomes in children.[1] For example, malnutrition[3] and undernutrition[5,4] may negatively affect cognitive development and academic achievement, evidenced in outcomes such as decreased learning ability, lower levels of attention,[12] and a higher frequency of school absence due to illness.[3] In addition, undernourishment can lead to fatigue,[3] anxiety, decreased motivation, apathy, and compromised emotional development in

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[3] Malnutrition can be understood as "a condition that results from an excess, imbalance, or deficit of nutrient availability in relation to tissue needs."[4]

[4] Undernutrition can be understood as "a form of malnutrition resulting from a deficit of nutrient availability in relation to tissue needs … Undernutrition is accompanied by an excessive loss of lean body mass in children and adults."[4]

general,[12] which are negative outcomes in their own right and can also negatively affect children's interest in and ability to learn. Similarly, the deficiency of certain micronutrients, more likely among people experiencing food insecurity, can produce negative outcomes. For example, lower than average IQ levels have been found in children with an iodine deficiency.[8]

Who else currently uses this indicator?

Many national and state efforts use this indicator to monitor children's school readiness. *Healthy People 2010* tracks this indicator, and a variant of this indicator is monitored in *America's Children: Key National Indicators of Well-Being 2002*[7] as well as in *Trends in the Well-being of America's Children and Youth*.[17]

What are the possible sources of data for this indicator?

Data and parent survey items are available from national sources. The National Survey of America's Families collects data on food security at the national level and for 13 states, including California.[18] In addition, the USDA's Economic Research Service collects state and national data on this indicator through the Food Security Supplement to the Current Population Survey.[14] This 18-item instrument (or a shorter 6-item instrument) is designed to determine if households (distinguishing between adults and children) have experienced hunger or food insecurity over the past year. Of the 18 items, 12 are used to compose a general food security scale. The data and survey items for the above surveys are available online.

The Centers for Disease Control and Prevention collects information on the following question in the Social Context Module of the Behavioral Risk Factor Surveillance System (BRFSS): "In the past 30 days, have you been concerned about having enough food for you or your family?"[4]

Other sources of data on this indicator include: The Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) (U.S. Department of Education; National Center for Education Statistics); National Health and Nutrition Examination Survey;[1] Survey of Program Dynamics (U.S. Census Bureau); U.S. Census Bureau;[14] \USDA; and Centers for Disease Control and Prevention.[4]

At the state level, the University of California, Los Angeles' Center for Health Research uses this indicator as a measure in the California Health Interview Survey.[2]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Reporting by parents may differ by gender, with women being more likely to report concern about food security.[4] The USDA's 18-variable estimates on levels of food insecurity are statistically reliable.[1,15] The USDA's food security scale is "reliable in describing the status of a population," but at this point has not been supported as reliable in describing the status of an individual household.[1]

Food security, insecurity, and hunger, and the behaviors and perceptions that accompany these experiences, are extremely complicated phenomena that may be prone to inaccurate or misleading reporting. Respondents experiencing food insecurity may have trouble understanding the survey question or may feel discomfort (or embarrassment or wariness) reporting on such a sensitive topic. The potentially episodic nature of food security and insecurity may also complicate accurate reporting.[4] In addition, household reports of food insecurity may not reflect the food availability experienced by children, given that parents will often limit their food intake so that children have enough to eat.[6] Therefore, measures of this indicator need to focus on hunger or food insecurity that have resulted from financial constraints (not, for example, from dieting or being too busy to eat).[1]

Overall, the USDA's 18-item food security indicator has been shown to be a stable, valuable measure, and is regarded as the government's primary source for food security information.[1]

- Sensitivity to change:

Fluctuations in food security are related to fluctuations in rates of poverty. One survey found insecurity reported at a level of 6 percent in 1996 and 4.6 percent in 1998.[4] Between 1995 and 1999 a 12 percent national decline occurred in food insecurity, and a 24 percent decrease took place in families experiencing hunger.[13] Reports of children's hunger declined by about half between 1995 and 1999.[10]

- Cultural issues:

The food security indicator appears to vary by race and ethnicity. Hispanics and non-Hispanic blacks report the highest rates of food insecurity[11] and the highest rates of child hunger.[10] When possible, data should be disaggregated by ethnic groups.

- Other:

The differences in food security rates reported by different states have been significant. Levels of reported concern for food security varied from 3.1 percent to 9.4 percent in a study of Maryland, Montana, Pennsylvania, Virginia, Kansas, Louisiana, and South Carolina.[4]

Note that this indicator, specifically as expressed by the collection of USDA's items, does not provide information on food safety, nutritional status, or the availability of food in the community.[1]

Given that food insecurity and "food insecurity with severe hunger" apply to a small proportion of households (0.8 percent and 0.5 percent, respectively), it may be valuable to consider an additional measure of children's nutritional well-being.[7] The Healthy Eating Index (HEI) can supply information about diet quality, including the number and percentage of children who consume the recommended quantity of fruits, vegetables, and dairy products per day. A significant proportion of American youth do not consume enough of these kinds of foods. In fact, less than a quarter of children 2 to 5 years of age have what the USDA's Center for Nutrition Policy and Promotion consider a "good diet," and this figure declines significantly with age.[6] Youth with poor diets are at greater risk for malnutrition, obesity, and certain diseases.[6]

Sources

[1] Bickel, G., Nord, M., Price, C., Hamilton, W., & Cook, J. (2000). *Guide to measuring household food security*. Alexandria, VA: Office of Analysis, Nutrition, and Evaluation (Food and Nutrition Service, USDA).

[2] California Health Interview Survey, Question AM1-5. http://www.healthpolicy.ucla.edu/chis/news/

[3] Center on Hunger Poverty and Nutrition Policy. (1994). *The link between nutrition and cognitive development in children* (Information Analyses). Medford, MA: Tufts University.

[4] Centers for Disease Control and Prevention. (2000). Self-reported concern about food security: Eight States, 1996-1998. *Morbidity and Mortality Weekly Report, 49*(41), 933-936.

[5] Dietz, W. H., & Trowbridge, F. L. (1990). Symposium on the identification and prevalence of undernutrition in the United States: Introduction. *The Journal of Nutrition, 120*(8), 917-918.

[6] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001.* Paper presented at the Federal Interagency Forum on Child and Family Statistics, Washington, DC.

[7] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[8] McGuire, J., & Bundy, D. (1996). Nutrition, cognitive development, and economic progress. *Social Policy Report, X*(5), 26-28.

[9] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[10] Nord, M., & Bickel, G. (2002). *Measuring children's food security in U.S. households, 1995-1999* (Food Assistance and Nutrition Research Report No. 25). Washington, DC: Economic Research Service, USDA.

[11] Nord, M., Kabbani, N., Tiehen, L., Andrews, M., Bickel, G., & Carlson, S. (2000). *Household food security in the United States, 2000*. Washington, DC: Economic Research Service, USDA.

[12] Pollitt, E., Golub, M., Gorman, K., Grantham-McGregor, S., Levitsky, D., Schurch, B., et al. (1996). A reconceptualization of the effects of undernutrition on children's biological, psychosocial, and behavioral development. *Social Policy Report, X*(5), 1-22.

[13] Schultheis, M. B. (2000). *New report shows improvement in hunger, but challenges remain* (News release No. 0301.00). Washington, DC: U.S. Department of Agriculture.

[14] U.S. Census Bureau. (2002, May 30). *State and county quick facts*. Retrieved June 18, 2002, from http://quickfacts.census.gov/qfd/states/06000.html

[15] U.S. Department of Agriculture. (2000). *Q & A's: Measuring food insecurity in the United States: Prevalence of food insecurity and hunger, by state, 1996-1998*. Retrieved June 18, 2002, from www.usda.gov/events/q414.htm

[16] U.S. Department of Agriculture. (2002, June 6). *Food security in the United States: Briefing*. Retrieved June 18, 2002, from www.ers.usda.gov/briefing/foodsecurity/

[17] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[18] Wigton, A., & Weil, A. (2000). 1999 Snapshots of America's families II: A view of the nation and 13 states from the National Survey of America's Families. In J. Koppelman (Ed.), *Snapshots II*. Washington, DC: Urban Institute.

N. Families are self-sufficient.

3. Number and percentage of children who move more than once in a year (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children under age 18 who change their primary residence, or the home in which they typically spend more than half of their time, more than once a year. A change in residence is typically characterized as a change in documented address, such as that listed in schools' or primary care providers' records.[5] The percentage can be obtained by dividing the number of children moving more than once a year by the total number of children in the study area/population. Data on this indicator should be organized into the following age ranges: 0 to 5 and 5 and older.

Why is this indicator important?

Frequent mobility can exert a significant negative influence on a child's quality of life and well-being.[11] Given the proposition that being connected to a community is important for children's healthy development, especially in cases of poverty or mental health problems within the family,[6] frequent relocation can have detrimental effects on several child outcomes. Cohesive, integrated neighborhoods, for example, are associated with more comprehensive parental monitoring of children;[9,10] consistent monitoring has been associated with increases in academic functioning, social competency, and responsibilities, and with decreases in behavior problems and depression. (See indicator O1.)[3] Furthermore, in female youth, relocation is associated with lower levels of life satisfaction (although it has also been linked to lower levels of depression).[2] In addition, children have reported feelings of loss due to relocation, most likely due to the decrease in, or loss of, contact with relatives and friends.[7] Finally, youths who experience frequent residential mobility are more likely than their peers to repeat a grade in school,[17] to achieve lower levels of educational attainment,[1] to drop out of high school,[11] to earn lower scores on tests, and to earn lower grade point averages.[11] However, evidence suggests that moving from high-poverty neighborhoods may be beneficial.[8]

Residential instability is important to track because it can reflect other characteristics of the child's family, such as an insecure economic or family situation. For instance, residential mobility is likely to occur among those experiencing divorce, unemployment, low socioeconomic status, and/or changing economic opportunities.[12] In fact, one school of thought believes that residential mobility, in and of itself, does not necessarily lead to negative outcomes for children; those negative outcomes that do occur may, in fact, be the products of the same conditions that caused the residential instability and that have historically been associated with negative outcomes.[11] However, an exception to

this model involves families in the military and the highly educated—typically a population with higher socioeconomic status and continuous employment—who may move more frequently than those with less education because of geographically diverse job opportunities.[12]

Another concern related to relocation is the transmission of information to the child's school. With each move, there is risk that the new school receiving a relocated child will not have adequate information about him or her. In these cases, the child may be placed in an inappropriate academic track or be subjected to unnecessary and frustrating repetition of subject material.[11]

Who else currently uses this indicator?

School systems, the Panel Study of Income Dynamics (PSID),[4] the U.S. Department of Commerce,[11] and the U.S. Department of Health and Human Services in *Trends in the Well-Being of America's Children & Youth 2001*[16] are some of the institutions that track this indicator.

What are the possible sources of data for this indicator?

Any institution that collects information on the residential location of children, or of families with children, will be able to produce data for this indicator. School transfer records, for example, can be used to track a child's residential stability.

Surveys represent another data collection strategy. The U.S. Census Bureau collects residential information in several of its surveys. Every 10 years the Census collects retrospective data on individuals' residential location 5 years before the interview.[12] Starting in 1999, the American Community Survey began collecting information about residence "one year ago;" this information was asked about all individuals over the age of 1.[15] The National Health Interview Survey (Child Health Supplement) also collects information about the residential mobility of children.[11,14]

Most generally, these surveys' questions are based on the following models: "In the last [x] year(s), how many times have you changed residence?", "At [date], were you living in this residence?,"[12] and "Have you moved to another residence since [date]?"[5] An example of such a survey given in California, is the Standardized Testing And Reporting (STAR) test which, in a less direct question, assesses how often children move.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

School records may not be a particularly valid source of relocation data, because they cover only those children who are in school and reflect only the location of the child at the beginning of, or during, the school year. Given that families with

children are more likely to move during the summer,[13] it is possible that multiple relocations could occur while school is out of session and therefore would not be reflected in school records.

- Sensitivity to change:

If we assume that adult mobility reflects child mobility, it appears that this indicator is sensitive to change. The percent of the U.S. population who moved between 1985 and 1990 was 2.6 percentage points higher than the percent of movers between 1990 and 1995.[12] Furthermore, recent social policies, such as the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), may encourage or necessitate low-income families to relocate;[11] this possibility suggests that the rate of children moving more than once in a year may increase, as well. However, changes are likely to be small or moderate, requiring a sample size that is large enough to detect such changes.

- Cultural issues:

In 1995, Hispanics, Asians, and Pacific Islanders had the highest rates of residential mobility, at roughly 55 percent of each population moving over 5 years. In comparison, just under 48 percent of non-Hispanic blacks and 42 percent of non-Hispanic whites changed residence between 1990 and 1995.[12]

Certain populations may experience more pronounced negative effects of residential relocation. For example, following a move, black and Hispanic children, children in earlier school grades, and boys appear to be at the most risk for depressed academic achievement.[11]

- Other:

Between 1990 and 1995, more than half of children aged 5 to 9 years old moved residences.[12]

Most changes in residence begin and end within the same county.[12]

Sources

[1] Aquilino, W. S. (1996). The life course of children born to unmarried mothers: Childhood living arrangements and young adult outcomes. *Journal of Marriage and the Family, 58*, 293-310.

[2] Brown, A. C., & Orthner, D. K. (1990). Relocation and personal well-being among early adolescents. *Journal of Early Adolescence, 10*(3), 366-381.

[3] Hair, E. C., Jager, J. O., & Cochran, S. W. (2001). Parent-child relationship. In E. Hair, K. Moore, D. Hunter, & J. Kaye (Eds.), *Youth outcomes compendium*. Washington, DC: Child Trends & Edna McConnell Clark Foundation.

[4] Hill, M. S., Yeung, W.-J. J., & Duncan, G. (1996). Timing of childhood events and early-adult household formation. *New Directions for Child Development, 71*(Spring), 87-109.

[5] Myers, S. M. (1999). Residential mobility as a way of life: Evidence of intergenerational similarities. *Journal of Marriage and the Family, 61*(4), 871-880.

[6] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[7] Riesch, S. K., & Jacobson, G. A. (1994). Young adolescents' identification of difficult life events. *Clinical Nursing Research, 3*(4), 393-413.

[8] Ross, C. E., Reynolds, J. R., & Geis, K. J. (2000). The contingent meaning of neighborhood stability for residents' psychological well-being. *American Sociological Review, 65*, 581-597.

[9] Sampson, R. J. (1992). Family management and child development: Insights from social disorganization theory. In J. McCord (Ed.), *Facts, framework, and forecasts: Advances in criminological theory* (Vol. 3, pp. 63-93). New Brunswick, NJ: Transaction Publishers.

[10] Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology, 94*, 774-802.

[11] Scanlon, E., & Devine, K. (2001). Residential mobility and youth well-being: Research, policy and practice issues. *Journal of Sociology & Social Welfare, 28*(1), 119-138.

[12] Schachter, J. P. (2000). *Special studies: Geographic mobility* (Current Population Reports No. P23-200). Washington, DC: U.S. Census Bureau.

[13] Tucker, C. J., Long, L., & Marx, J. (1995). Seasonality of children's residential mobility: A research note. *Population Research and Policy Review, 14*(2), 205-213.

[14] Tucker, C. J., Marx, J., & Long, L. (1998). "Moving on": Residential mobility and children's school lives. *Sociology of Education, 71*(2), 111-129.

[15] U.S. Census Bureau. (2001). *Census 2000 Supplemental Survey: Residence one year ago*. Retrieved June 22, 2002, from www.census.gov/c2ss/www/Methodology/Definitions.htm

[16] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[17] Wood, D., Halfon, N., Scarlata, D., Newacheck, P., & Nessim, S. (1993). Impact of family relocation on children's growth, development, school function, and behavior. *Journal of the American Medical Association, 270*, 1334-1338.

N. Families are self-sufficient.

4. Number and percentage of families who receive enhanced case management with services to meet their basic needs (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of families who receive a particular type of assistance from social services professionals and agencies. Typically, enhanced case management involves matching individual social services professionals to specific families to help them navigate the social services system, to locate available resources in their community, and to customize programs according to the families' unique needs. This type of enhanced,[4,14] or intensive,[9,15] case management[5] is associated with greater program retention, satisfaction,[9] motivation, and investment on the client level,[3] and more positive goal-related outcomes on the program level.[12,13] This indicator distinguishes between families that are processed through social services without partnership with any one caseworker or resource center's team, and families that have a specific, identifiable, and consistent point of contact to the system.

The percentage can be calculated by dividing the number of families receiving these enhanced services by the number of families who receive services to meet their basic needs.

Why is this indicator important?

Several social assistance programs have shown that families who experience more enhanced guidance from caseworkers and resource centers appear to enjoy higher quality services and better general outcomes. For example, a study group in the Minnesota Family Investment Program featured, among other aspects, enhanced case management in which social service providers worked closely with the client to navigate available and relevant resources, develop employment plans, and clarify program requirements.[7,13] By the end of the study, participants in this group appeared to have benefited more from the assistance program than did the control group; the employment, income, and marriage rates of the program participants were also significantly higher than those of the control group.[13] Similarly promising findings were found for intensive case management in the Job Opportunities and Basic Skills Training Program (JOBS),[12] Wisconsin's New Hope program,[3] and Florida's Family Transition Program (FTP),[2] whose participants were more informed regarding key information about their welfare programs than those not

[5] Enhanced or intensive case management refers to more significant, and often more regular, interaction between individuals and their caseworkers than has been available historically. This interaction may include components such as smaller caseloads for the case manager, periodic home visits, detailed and closely monitored plans for reaching clients' goals, mentoring, "special program participation incentives,"[14] and/or a strong emphasis on motivating the client.[4]

in the program.[2] In general, enhanced case management appears to significantly further the assistance program's goals and may be key in families' ability to access certain services.

Compared with standard case management, more intensive case management has been associated with a greater reduction of client needs[1] and with lower costs to the program over time.[11] Furthermore, enhanced case management has ultimately been found to be more cost-effective than standard case management in many different areas of social services,[6,17] despite high initial cost.[11] However, in the case of certain client populations, such as those with serious mental illness, intensive case management has not been found to be cost-effective.[5,15]

This indicator is particularly important because it can help agencies identify areas or populations who are not receiving this generally beneficial assistance.

Who else currently uses this indicator?

Because this is a new, original indicator, it is not currently known to be tracked by any institutions.

What are the possible sources of data for this indicator?

This indicator is original and is not currently in use by any organization or institution. Certain sources, such as the U.S. Department of Health and Human Services and the National Survey of America's Families (NSAF),[16] collect data on enrollment in social services programs, but not on the interaction between clients and service workers.

On a very general, family level, this information could be collected by asking families several questions (e.g., "Do you feel you get the help that you need in accessing social services? Do you get personal help with issues that concern you? Do you see the same caseworker every time? How often do you see this caseworker?"). However, these questions have unknown validity and reliability. Families unfamiliar with the variety of resources available to them would have inadequate knowledge to use in assessing their satisfaction with social services assistance.

Alternatively, local welfare offices could track how many clients receive which type of case management. However, data from individual offices may not necessarily provide the scope of information needed to calculate the total number and percentage of families who receive these services.

Items relevant to this indicator could be added to a survey such as the California Staffing Survey (CSS). The CSS is a caseworker survey designed and administered by Rand in its evaluation of the CalWORKs (TANF) program.[10] However, it would have to be administered in each county.

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

Differences have been found among different racial and ethnic groups in the use of social services. A study of elderly long-term care recipients found that Hispanic participants used significantly fewer agency services than did Caucasian participants.[8] Instead, the Hispanic participants turned to sources of informal support.

Receiving assistance in accessing social services may be influenced by the culture of participating families. Individuals from certain cultural backgrounds may consider significant involvement in family issues by nonfamily members unacceptable or undesirable. In addition, language barriers may make personal interaction with social services professionals ineffective and undesirable for certain populations. Fortunately, services employing enhanced case management may be more equipped to identify and address the needs of non-English-speaking populations.

Sources

[1] Bjoerkman, T., Hansson, L., & Sandlund, M. (2002). Outcome of case management based on the strengths model compared to standard care: A randomized controlled trial. *Social Psychology & Psychiatric Epidemiology, 37*(4), 147-152.

[2] Bloom, D., Kemple, J. J., Morris, P., Scrivener, S., Verma, N., & Hendra, R. (2000). *The Family Transitions Program: Final report on Florida's initial time-limited welfare program*. New York: Manpower Demonstration Research Corporation.

[3] Bos, J. M., Huston, A. C., Granger, R. C., Duncan, G. J., Brock, T. W., & McLoyd, V. C. (1999). *New hope for people with low incomes: Two-year results of a program to reduce poverty and reform welfare*. New York: Manpower Demonstration Research Corporation.

[4] Dolan-Mullen, P., DiClemente, C. C., Velasquez, M. M., Timpson, S. C., Groff, J. Y., Carbonari, J. P., et al. (2000). Enhanced prenatal case management for low income smokers. *Tobacco Control, 9*(Suppl III), iii75-iii77.

[5] Ford, R., & Raftery, J. (1997). Intensive case management for people with serious mental illnesses, site 2: Cost-effectiveness. *Journal of Mental Health, 6*(2), 192-200.

[6] French, M. T., McCollister, K. E., Cacciola, J., Durell, J., & Stephens, R. (2002). Benefit-cost analysis of addiction treatment in Arkansas: Specialty and standard residential programs for pregnant and parenting women. *Substance Abuse, 23*(1), 31-51.

[7] Gennetian, L. A., & Miller, C. (2000). *Reforming welfare and rewarding work: Final report on the Minnesota Family Investment Program: Vol. 2, Effects on children*. New York: Manpower Demonstration Research Corporation, Minnesota Department of Human Services.

[8] Greene, V. L., & Monahan, D. J. (1984). Comparative utilization of community based long term care services by Hispanic and Anglo elderly in a case management system. *Journal of Gerontology, 39*(6), 730-735.

[9] Holloway, F., & Carson, J. (1998). Intensive case management for the severely mentally ill: Controlled trial. *British Journal of Psychiatry, 172*, 19-22.

[10] Klerman, J. A., Zellman, G. L., Chun, T., Humphrey, N., Reardon, E., Farley, D., et al. (2000). *Welfare reform in California: State and county implementation of CalWORKs in the second year*. Santa Monica, CA: Rand.

[11] Llorca, P., Toumi, M., Hansen, K., Barré, S., & François, C. (2001). Deinstitutionalization of schizophrenic patients: Cost-consequences and policy implication of intensive case management versus standard case management. *Value in Health, 4*(2), 145-146.

[12] McGroder, S. M., Zaslow, M. J., Moore, K. A., & LeMenestrel, S. M. (2000). *National evaluation of welfare-to-work strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes study*. Washington, DC: U.S. Department of Health and Human Services.

[13] Miller, C., Knox, V., Gennetian, L. A., Dodoo, M., Hunter, J. A., & Redcross, C. (2000). *Reforming welfare and rewarding work: Final report on the Minnesota Family Investment Program: Vol. 1, Effects on adults*. New York: Manpower Demonstration Research Corporation, Minnesota Department of Human Services.

[14] Office of the Assistant Secretary for Planning & Evaluation (U.S. Department of Health and Human Services). *Substance abuse*. Retrieved July 15, 2002, from http://aspe.os.dhhs.gov/hsp/isp/ancillary/sa.htm

[15] UK700 Group. (2000). Cost-effectiveness of intensive v. standard case management for severe psychotic illness: UK700 case management trial. *British Journal of Psychiatry, 176*, 537-543.

[16] Wigton, A., & Weil, A. (2000). 1999 Snapshots of America's families II: A view of the nation and 13 states from the National Survey of America's Families. In J. Koppelman (Ed.), *Snapshots II*. Washington, DC: Urban Institute.

[17] Zimmer, J. G., Eggert, G. M., & Chiverton, P. (1990). Individual versus team case management in optimizing community care for chronically ill patients with dementia. *Journal of Aging & Health, 2*(3), 357-372.

N. Families are self-sufficient.

4.1 Number and percentage of families who receive support services through family resource centers

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of families who have children under age 5 and who receive support services from a family resource center (FRC) in their community. The percentage can be calculated by dividing this number by the number of families with children under age 5 who live in the community.

FRCs typically provide a wide range of services in a "one–stop" community hub to improve access to direct care, referrals, or information.[7] Although the centers come in various forms, common initiatives include a neighborhood focus, high degree of collaboration, active inclusion of multiple constituencies, integrated services and case management, and an intensive view of children's needs in the context of family and neighborhood.[1]

Core services offered on site include medical care, counseling, food assistance transportation assistance, parenting and literacy classes, and education programs. Referrals include child care, and specialty medical, dental, and vision services. In addition, direct links with early childhood and development programs such as Head Start, Early Start, and home visitation are available.[7]

Why is this indicator important?

FRCs are able to provide more comprehensive and coordinated family support services than categorically funded programs or large social service agencies. FRCs tend to be less bureaucratic (thus making it easier and more efficient to receive services), to take a more holistic approach to working with families, to provide a broader range of services, and to be located in a more convenient locations than services provided through social service agencies.[8] For children and families with multiple and complex needs and who are involved with multiple agencies and providers, lack of coordination can be a key barrier to comprehensive care.[2] FRCs are designed to promote coordination by housing multiple agencies and providers under one roof and through case coordination. FRCs offer a single portal of entry into a network of support services. Through the use of comprehensive intake procedures, coordinated case management, and advocacy efforts, FRCs can increase the use and coordination of services.[7]

Some FRCs have been linked to positive changes in children's health and educational outcomes. One evaluation found that FRCs were able to connect children to services they otherwise may not have received.[4] This evaluation found that children who had access to a school-based health center were twice as likely to visit a physician and 1.4 times as likely to receive routine dental and

mental health services than they were in the prior year (when they did not have access to the school-based health center).[4] FRCs also have been linked to improvements in students' civic and educational performance, based on teacher pre- and post-ratings.[5] These improvements were greater for students who participated in more FRC programs and who were low achievers (had low grade point averages) at the start of the study.[5] When center-based activities were combined with weekly home visits, children experienced significant gains on cognitive measures.[6]

FRCsmake services more culturally appropriate and accessible to families. Because FRCs are housed in and serve neighborhoods, they can respond better to the economic and cultural needs of specific neighborhoods.[7] Their neighborhood location also makes them more accessible to community residents.[7] Transportation barriers are also reduced when multiple services can be received in one location, eliminating the need for multiple trips.[7]

FRCs can improve cost-effectiveness through reducing duplication of services. FRCs can reduce costs by eliminating duplicative intake, assessment, scheduling, and overhead costs that would occur if services were housed in multiple agencies and at different locations.[7]

Use of this indicator could help family resources centers identify areas or populations who are not receiving this type of assistance. Documenting which families are being served by FRCs (e.g., families from specific ethnic or language groups, families with children under age 5 or enrolled in a linked school) could identify groups that are not using their services. Such information may suggest the need to develop or expand programs or outreach efforts to meet the needs of various groups. Moreover, knowing what percentage of the families in the community are using an FRC's services, can help set reasonable expectations about the amount of impact these services might have on the neighborhood overall.

Who else currently uses this indicator?

We know of no institutions that are tracking this indicator. However, evaluations of initiatives, such as the Statewide Evaluation of the California Healthy Start School-Linked Service Initiative, have documented the numbers and demographics of families and individuals served through FRCs involved in those initiatives.[3]

What are the possible sources of data for this indicator?

FRC administrative data are the best source of information. Most FRCs have multiple funding agencies and are required to collect data on participation and types of services provided. Many of the centers are located at schools, and the school district may keep information on the centers as well.

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

FRCs may be better equipped to identify and address the needs of specific cultural and linguistic groups because of their familiarity with the local community. However, data on whether FRCs are able to attract, serve, and support families from different cultural groups more successfully that other types of service agencies has not been systematically collected. Data on the use of FRCs by various cultural groups would be very informative.

Sources

[1] Dupper, D. R., & Poertner, J. (1997). Public schools and the revitalization of impoverished communities: school-linked, family resource centers. *Social Work, 42*, 415-422.

[2] Gardner, S. (1994). *Reform options for the intergovernmental funding system: Decategorization policy issues*. Washington, DC: The Finance Project.

[3] Golan, S., Shaver, D., Wagner, M., Wechsler, M., & Williamson, C. (1996). *From principles to action: Local implementation of California's Healthy Start school-linked services initiative*. Menlo Park, CA: SRI International.

[4] Kaplan, D., Brindis, C., Phibbs, S., Melinkovich, P., Naylor, K., & Ahlstrand, K. (1999). A comparison study of an elementary-based school health center: Effects on health access and use. *Archives of Pediatric Adolescent Medicine, 153*(3), 235-243.

[5] Lesh, A. (1997). *Evaluation report: Health Start, Covine Elementary School*. Los Angeles, CA: Tulleners Research and Consuilting, Inc.

[6] Ramey, S. (1999). Head Start and preschool education. *American Psychologist, 54*(5), 344-346.

[7] Waddell, B., Shannon, M., & Durr, R. (2001). *Using family resources centers to support California's young children and their families*. Los Angeles, CA: UCLA Center for Healtheri Children, Families and Communities.

[8] Weissbourd, B., & Kagan, S. (1989). Family support programs: Catalyst for change. *American Journal of Orthopsychiatry, 59*(1), 20-31.

N. Families are self-sufficient: families participate in opportunities to improve their economic status and access to basic needs.

5. Number and percentage of qualified families receiving Temporary Assistance for Needy Families (TANF) (P)

Category: Performance measure

What is the definition of this indicator?

TANF was implemented nationally in 1997 as the principal federal/state welfare program; the program is state- or tribe-run. State or tribe governing bodies receive a block grant allocation from the federal government to be used for "benefits, administrative expenses, and services targeted to needy families".[10] Each governing body organizes TANF expenditures according to its unique needs and populations to meet the following goals: "(1) provide assistance to needy families so that children may be cared for in their own homes or in the homes of relatives;[6] (2) end the dependence of needy parents on government benefits by promoting job preparation, work, and marriage; (3) prevent and reduce the incidence of out-of-wedlock pregnancies and establish annual numerical goals for preventing and reducing the incidence of these pregnancies; and (4) encourage the formation and maintenance of two-parent families."[12] In California, the TANF program is called California Work Opportunity and Responsibility to Kids (CalWORKs).[11]

This indicator refers to the actual number and percentage of families who receive funding and benefits from TANF within the population of families qualified for TANF funding and benefits. Foremost, income determines eligibility; families are considered to be qualified for TANF if they are identified as "needy" by their state. Additional criteria, however, must also be met for a family to be qualified for TANF. With few exceptions, the family must include a minor child or a pregnant individual; parent(s) must work at least 20 hours or more per week, as determined by the state and his/her family structure;[7] and single parents under 18 years of age must attend high school or equivalent training and must live in an adult-supervised setting.[8] For the most part, the family must not be aliens to the United States or include an adult who has received federal welfare assistance for more than 5 years.[8,10] However, California has slightly different criteria—the time limit is 18-24 months, and benefits are granted to legal immigrants.[12] Other factors that could make a family ineligible include not cooperating in establishing paternity, not paying child support, committing parole violations, or fleeing prosecution, custody, or confinement after conviction.[8] Additionally, factors such as caring for a disabled family member, being the victim of domestic abuse, or

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[6] Goal "Number One" refers to assisting families to have the financial resources to care for their children, rather than obligating children to enter foster care because of insufficient family resources. This goal does not concern outside-of-home child care, which TANF financially supports.

[7] An exception is made in certain families. For example, single-parents with children under 12 months of age may be exempt from this requirement.[8]

participating in a certain quantity of community service may exempt families from TANF time limits.[12]

Why is this indicator important?

Families' eligibility for TANF may be particularly important in understanding the economic conditions and overall economic well-being of a population or area. The number and percentage indicates, most generally, how many of those families experiencing pronounced financial need are obtaining help in meeting these needs. A large percentage of families enrolled in TANF, in the population of families qualified for TANF, indicates that the economic needs of this segment of the community are being addressed. Conversely, a small percentage indicates that many families with inadequate financial resources are not having those needs addressed. In the latter case, the underutilization of such welfare assistance may hint at larger problems within a population or area, such as barriers to accessing these resources. Alternatively, high enrollment might be seen as a failure of caseworkers to help parents find jobs and become self-sufficient.

Several benefits may accompany enrollment in TANF for the parent and their children. TANF programs can offer help with tracking and enforcing child support; identifying domestic violence, learning disabilities, mental health issues, and alcohol or other drug dependence in family members; obligating teen parents to work toward a high school degree or similar qualification; and determining eligibility for medical assistance from the state.[13] Furthermore, rates of parental employment and total earnings for TANF participants have increased significantly since the debut of the program.[13]

The CalWORKs program cites the improvement of child well-being as one of its main goals; the state requires school attendance and immunizations, for example, for children receiving benefits.[6] All of these factors would most likely provide a healthier environment for the development of children in the family.

For information on the effects of welfare reform on children, see The David and Lucille Packard Foundation's 1997 publication *The Future of Children: Welfare to Work, Vol. 7*(1).[1]

Who else currently uses this indicator?

As this indicator focuses only on the population of families qualified for TANF receipt, it is original and is not currently in use by any organization or institution. Institutions such as CalWorks (e.g., in its *Quarterly Report for the State Fiscal Year*),[9] Child Trends (e.g., in the Child Trends DataBank),[4] Counting California,[5] the U.S. Department of Health and Human Services' Administration for Children and Families (ACF)[10] and the Urban Institute[14] use data about TANF enrollment and TANF recipients in the general population.

What are the possible sources of data for this indicator?

Data on this indicator could be collected from families in the studied region or population. With the information families provide, they could be identified as qualified or not qualified for TANF funding. The indicator can then be calculated from this total and the total number of TANF cases in the population or area, which is accessible from the California Department of Social Services.

The National Survey of America's Families (NSAF),[14] or the U.S. Department of Health and Human Services, could provide state-wide estimates of the number of families eligible for TANF, as well as the an estimate on the total number of TANF cases in California.

The National Longitudinal Survey of Adolescent Health (AddHealth), the National Longitudinal Survey of Youth, 1997 (NLSY97), the Population Survey of Income Dynamics (PSID), and the Survey of Income and Program Participation (SIPP) have all asked parents about receipt of financial aid.[7]

This indicator could also be estimated by caseworkers who are familiar with a given population or area. Relevant questions for this indicator could be added to a survey such as the California Staffing Survey (CSS). The CSS is a caseworker survey designed and administered by Rand in its evaluation of the CalWORKs program.[6]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Because virtually ever state and tribal region has different criteria for TANF eligibility,[12] it would be difficult to estimate this indicator nationally or regionally. Analysis within a given state or tribal region, however, appears to be feasible.

Note that this indicator will not necessarily reflect the total number and percentage of needy families receiving TANF funds; it reflects the number of needy families who qualify for TANF funds *and* who receive TANF funds. Families that experience need or other financial hardship, but who do not qualify for TANF funding—due to program time limits or other exclusionary criteria—would not be captured in this indicator. Indeed, 22.2 percent of the reasons for which families were no longer receiving aid in 2000 involved "failure to cooperate with eligibility requirements".[13] As such, this indicator may give an overly positive picture of how well a whole population's or area's needs are being addressed.

- Cultural issues:

Over the past decade, the racial composition of families enrolled in TANF has changed significantly, with a greater proportion of Hispanic families and a smaller proportion of white families participating. This trend is particularly pronounced in

states like California, where Hispanic families make up 45 percent of TANF participants.[13] Nationally, TANF families in 2000 were 39 percent African American, 31 percent white, 25 percent Hispanic, 2.2 percent Asian, and 1.6 percent Native American;[13] among children on TANF, 40 percent were African American, 27 percent were Hispanic, and 27 percent were white.[2]

- Other:

For each month in 2000, more than 500,000 families in California received TANF benefits, amounting to roughly 30 percent of national TANF funds.[13] California is one of six states that continues to provide TANF benefits to children of adults who have reached the program's eligibility time limit.[13]

In 2000, the maximum annual TANF benefit that could be awarded to a California single-parent family of 3 with no earnings was $7,512. This total was 21.9 percent of the state's median income and 53.1 percent of the federal poverty level.[3]

TANF is distinct from welfare programs of the past in that very large percentages of its funds go to noncash benefits for recipients (e.g., child care costs [30 percent], transportation costs, tax benefits, and social programs).[14] California's cash expenditures, however, were among the highest in the nation at 55 percent if its TANF funds.[14]

Sources

[1] Behrman, R. E. (Ed.). (1997). Welfare to work. *The Future of Children, 7*(1).

[2] Brooks, J. L., McGroder, S. M., Zaslow, M. J., McGarvey, A. M., Wood, R., & Gallagher, M. (forthcoming). *Welfare programs and policies: Focusing on children*. Washington, DC: Child Trends.

[3] Cauthen, N. K., Knitzer, J., & Ripple, C. H. (2000). *Map and track: State initiatives for young children and families, 2000 edition*. New York: National Center for Children in Poverty.

[4] Child Trends. (2002). *Child Trends Databank Indicator: AFDC/TANF*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[5] Counting California, http://countingcalifornia.cdlib.org/matrix/c178.html

[6] Klerman, J. A., Zellman, G. L., Chun, T., Humphrey, N., Reardon, E., Farley, D., et al. (2000). *Welfare reform in California: State and county implementation of CalWORKs in the second year*. Santa Monica, CA: Rand.

[7] National Longitudinal Survey of Adolescent Health (AddHealth) Parent Questionnaire, Question A57. http://www.cpc.unc.edu/projects/addhealth/codebk1.html

[8] Personal responsibility and work opportunity reconciliation act of 1996, H.R. 3734, 106th Congress(1996).

[9] Quarterly CalWorks Report State Fiscal Year, http://www.dss.cahwnet.gov/research/CalWORKsRe_400.htm

[10] U.S. Department of Health and Human Services: Administration for Children and Families. (2001). *Fact Sheet*. Retrieved June 26, 2002, from www.acf.dhhs.gov/news/facts/tanf.html

[11] U.S. Department of Health and Human Services: Office of Family Assistance. (August 21, 2000). *Names of state TANF programs*. Retrieved July 11, 2002, from http://www.acf.hhs.gov/programs/ofa/

[12] U.S. Department of Health and Human Services: Office of Family Assistance. (March, 2000). *TANF selected provisions of state plans*. Retrieved July 11, 2002, from www.acf.dhhs.gov/programs/ofa/PROVIS.htm

[13] U.S. Department of Health and Human Services: Office of Planning, Research, & Evaluation. (2002). *Temporary Assistance for Needy Families program (TANF): Fourth annual report to Congress*. Retrieved July 11, 2002, from http://www.acf.dhhs.gov/programs/opre/ar2001/indexar.htm

[14] Weil, A. (2002). *Ten things everyone should know about welfare reform* (New Federalism: Issues and Options for States, Series A, No. A-52). Washington, DC: The Urban Institute.

N. Families are self-sufficient.

6. Percentage of parents participating in education, training, English to speakers of other languages (ESOL) classes, literacy, and/or General Equivalency Diploma (GED) programs (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the total number of people in a community, with children ages 0 to 5 years, who are enrolled in such classes divided by the total number of parents in the community.

Why is this indicator important?

People with strong basic education and literacy skills work more and earn more than individuals with lower levels of skill.[9] Almost half of all adult welfare recipients do not have high school diplomas or GED certificates. Those without high school diplomas or GED certificates, when in the work force, earn a mean monthly income of $452 compared with $1829 for those with a Bachelor's degree. In addition, welfare recipients, ages 17 to 21, only read at a sixth grade level and those with the lower levels of literacy skills work, on average, 11 weeks a year, whereas recipients with higher literacy skills work 29 weeks a year on average.[9] Additionally, people with less education are more likely to become locked in a chronic and intergenerational cycle of welfare dependency than those people with higher levels of educational attainment.[11]

In recent years, adult education initiatives have begun to receive added attention. With the passing of the Adult Education and Family Literacy Act (Title II of the Workforce Investment Act of 1998), the federal government has shown an increased commitment to helping to improve the conditions of many undereducated adults in the United States.

Integrated programs such as Even Start have experienced great success in preparing children for school by combining parent/child "together time" (reading together), parenting education, adult literacy, basic education, GED preparation, ESOL, high school, and developmentally appropriate early childhood education.[5] Considering that one of the most consistent predictors of children's success and attendance in school is the education level of their primary caregivers,[1] attempting to raise parents' level of education is often suggested as one way to enhance children's achievement. At least one nonexperimental study supports this hypothesis.[7] Additionally, a recent national evaluation concluded that a strong relationship exits between the use of support services and hours of instruction received within adult education.[15]

Adult education classes have the best results, for both parent and child, when coupled with family literacy and parenting education programs. (See

indicators J8 and J.7.) If a program addresses family literacy, adult education, and parenting education together and is of high quality and sufficiently structured to bring about sustainable change over time for parents, the chances of improving children's outcomes greatly increases.[5] Large programs that combine these three aspects, such as Even Start, have made impressive gains in all three areas[4] because they are better able to provide all the educational opportunities necessary to promote family literacy.[5]

Who else currently uses this indicator?

Many national efforts monitor this indicator. This indicator is used, for determining the coverage of adult education initiatives, by Even Start, the Federal Interagency Forum on Child and Family Statistics, the National Center for Family Literacy, the National Education Association, and the U.S. Department of Education.

What are the possible sources of data for this indicator?

Standard survey items are available online. The Early Childhood Longitudinal Survey, Kindergarten Cohort (ECLS-K) uses job training and education levels as measures of childhood well-being.[3] The 2001 National Household Education Survey: Adult Education and Lifelong Learning Interview has also collected data on those taking these classes, but not specifically on parents.[8]

The National Survey of America's Families also collects this indicator through asking if parents take GED classes, receive job training, or take college courses.[10]

The Tennessee Family Literacy Survey is a state-based question on adult educational opportunities offered through family literacy programs.[13]

Additionally, the California Department of Education's California Adult School Enrollment Summary 1995 - 2000 contains much of the information needed to track this indicator.[2]

Are there any key issues or concerns about the use of this indicator?

- Other:

This indicator, as used by programs like Even Start, is sensitive to change.[6] The national Even Start evaluation concluded that more than 80 percent of Even Start projects provided the wide variety of support services (which include adult education, family literacy, and parenting skills classes) needed to help parents and children increase their general literacy practices.[12]

The U.S. Department of Education also has a guide to setting up state-based adult education and literacy programs.[14]

The denominator might be “parents in need of education or training”, because need is likely to vary across counties; however, no good way exists to assess this objectively yet efficiently at the county level. Accordingly, the county’s population of parents is recommended as the denominator.

Sources

[1] Annie E. Casey Foundation. (2000). *Child care you can count on: Model programs and policies*. Retrieved August 1, 2002, from http://www.caseyfoundation.org/publications/child/afford.htm

[2] California Department of Education. (2001). *California adult school enrollment summary 1995 - 2000*. Retrieved July 25, 2002, from http://www.cde.ca.gov/adulteducation/datacollect/enrollindex.html

[3] Early Childhood Longitudinal Survey- Kindergarten Cohort (Fall Parent Interview), Section PEQ. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[4] Even Start. (1998). *National evaluation of the Even Start Family Literacy Program: 1994-1997 final report*. Retrieved July 19, 2002, from http://www.ed.gov/pubs/EvenStart/highlights.html

[5] Family Literacy Programs. (2001). *Even start family literacy programs elementary and secondary education act, title I, Appendix II: Attributes and indicators of a fully implemented Even Start Family Literacy Program.* Nashville, TN: State of Tennessee Department of Education.

[6] Federal Interagency Forum on Child and Family Statistics. (2001). *America's children: Key national indicators of well-being, 2001*. Washington, DC: Author.

[7] Magnusson, K., & McGroder, S. (in press). Trickle down learning: The effect of maternal education on young children's school readiness and academic problems.

[8] National Household Education Survey, http://nces.ed.gov/nhes/

[9] National Institute for Literacy. (1996). *Fact sheets*. Washington, DC: Author.

[10] National Survey of America's Families, Questions L-14, L-16, and L-18. http://www.urban.org/UploadedPDF/1999_Methodology_1.pdf

[11] Peyton, T., Wheeler, M. G., & Dalton, D. (1998). *States can use family literacy programs to support welfare reform goals*. Louisville, KY: National Center for Family Literacy.

[12] St. Pierre, R., Swartz, J., Gamse, B., Murray, S., & Deck, D. (1995). *National evaluation of the Even Start Family Literacy Program: Final report*. Cambridge, MA: Abt Associates Inc.

[13] Tennessee Family Literacy Survey, http://cls.coe.utk.edu/family-literacy-survey.html

[14] U.S. Department of Education. (1999). *Guide for the development of a state plan under Title II--Adult Education and Literacy of the Workforce Investment Act of 1998*. Retrieved Jul. 19, 2002, from http://www.ed.gov/offices/OVAE/AdultEd/guidance2000.doc

[15] Young, M., Morgan, M., Fitzgerald, N., & Fleischman, H. (1994). *National evaluation of adult education programs: Final report*. Arlington, VA: Development Associates Inc.

N. Families are self-sufficient.

7. Median household income (C)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to a dollar amount, relative to which half of all the household incomes in the study area are higher, and half are lower. For example, the national median household income in 2000 was $42,100; half of all U.S. households had incomes greater than this amount, and the other half had less than this amount.[8]

Why is this indicator important?

The median household income of particular counties or neighborhoods can be a valuable indicator because the economic well-being of a household is often closely tied to that of the children within it.

A family's household income is an important factor in several areas of children's lives. It can help to determine the availability and quality of medical care,[9] child care, housing,[4] cognitively stimulating activities, and daily sustenance the child will receive. Compared with children from higher income families (those with incomes at 200 percent or higher than the poverty level), children from low-income families are much more likely to be in poor to fair health; to have a physical, learning, or mental health activity-limiting condition; or to experience certain school-related problems (e.g., suspension or expulsion, low engagement, skipping class).[5] This difference is particularly pronounced in regard to behavioral and emotional problems. Only 4 percent of children from higher income families exhibited high levels of these problems, whereas 23 percent of children in families on welfare and 14 percent of children from families who had recently left welfare exhibited high levels of behavioral and emotional problems.[10] Attention to the issues concerning low-income children could only be maintained through tracking median household income; the two-level, poor vs. not-poor, poverty indicator would obscure such cases.

Data on the median household income can help researchers identify the economic character of neighborhoods, regions, or populations within California, and then to design or adopt intervention approaches accordingly. This indicator can portray an area's socioeconomic status relative to federal poverty guidelines (low-income or higher income).

Who else currently uses this indicator?

Virtually all organizations that report poverty data report household income and median household income. The Annie E. Casey Foundation's *Kids Count Data Book*, California Child Care Referral Network, California Department of

Education, *California County Data Book 2001* (Children Now),[1] *California State and County Quick Facts*, Children's Defense Fund, Head Start Bureau, Institute for Research on Poverty, the U.S. Department of Health and Human Services[7] and the Urban Institute (for use in *Snapshots of America's Families*, for example) are some of the entities and publications that report this indicator.

What are the possible sources of data for this indicator?

Surveys can be used to collect this information. National-, state-, and county-level information is collected by the U. S. Census Bureau (Current Population Reports; "USA Counties"; Block Group Information). Data on the nation and 13 states (including California) are collected by National Survey of America's Families.[9] Data on the median household income of families with children are available from the Census' Current Population Survey. The National Immunization Survey and National Longitudinal Surveys also collect this data. Information for this indicator, in virtually all cases, is collected through the respondent's report of his or her income.

The household income is obtained by totaling the incomes, the sum of 15 different cash sources, of each individual (15 years old or older) living together in one household.[6] Once the information on incomes of all or a sample of households in a geographical unit has been collected, a dollar amount, above and below which the studied household incomes would be evenly divided, can be identified.

The U.S. Bureau of Labor Statistics also collects information on this indicator in the Local Area Unemployment Statistics (LAUS) data.[2]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Concerns about the validity of this indicator stem from respondents misreporting—most often, underreporting—their income.[6] Another concern arises because a household's income is calculated according to its income from the previous year for all individuals (over the age of 15) living in the household at the time of the survey.[6] The household's actual economic experience may not be reflected when income is calculated in this way, because the makeup of the household's wage-earners may have been significantly changed since the time of the survey.

It is important to discuss the concerns intrinsic to any indicators that measure a median value. Median household income will not reflect the disparity between an area's high and low household incomes, and will not indicate a change in the distribution within these ranges, as long as the balance between the two sides remains constant. For example, a community may have most of its households concentrated around the median, or the two groups could be distributed heavily

in the very low- and very high-income ranges. The *median* for these two communities could be similar, but the differences between the two—one involving a population that is economically homogenous, the other involving a population with extreme wealth and extreme poverty—would be obscured.

Finally, note that fluctuations in income over the course of the year are not captured by this measure. Instability in income may be important to children's well-being.

- Sensitivity to change:

From the late 1960s through today, the median income in the United States has increased 34.2 percent.[8] Individual household incomes may vary because of changes in household composition as much as they would vary with changes in the personal income of individuals within the household. As households gain and lose wage-earners or as their residents achieve higher levels of educational achievement, the households' total income will change.[3]

- Cultural issues:

Although the national median household income did not change from 1999 to 2000, the median household income increased for blacks and Hispanics.[8]

The Census Bureau has found that the median household income for Native American areas is "significantly different from the estimates for those outside those geographic areas."[8]

- Other:

Although the national median household income remained the same from 1999 to 2000,[8] California was one of only two states in which the median household income increased during this period.[8]

Note that the term "household" denotes all individuals living together in a housing unit, regardless of their relationship to one another. This term is distinct from "family," which applies only to individuals related by blood, marriage, or adoption who reside together.[6] Therefore, this indicator should not be understood as a reflection of the economic experience of a child's family.

Sources

[1] Children Now. (2002). *California county data book 2001*. Oakland, CA: Author.

[2] Local Area Unemployment Statistics, http://www.ers.usda.gov/Data/Unemployment/RDList2.asp?ST=CA&SF=8A

[3] McNeil, J. (1998). *Changes in median household income: 1969 to 1996* (Current Population Reports: Special Studies No. P23-196). Washington, DC: U.S. Department of Commerce (Economics and Statistics Administration), Bureau of the Census.

[4] Song, Y., & Lu, H.-H. (2002). *Early childhood poverty: A statistical profile (March 2002)*. Retrieved June 18, 2002, from http://cpmcnet.columbia.edu/dept/nccp/ecp302.html

[5] Tout, K., Scarpa, J., & Zaslow, M. J. (2002). *Children of current and former welfare recipients: Similarly at risk* (Research brief). Washington, DC: Child Trends.

[6] U.S. Census Bureau. (2002, April 3). *Current Population Survey (CPS): Definitions and explanations*. Retrieved June 21, 2002, from http://www.census.gov/population/www/cps/cpsdef.html

[7] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[8] Weinberg, D. H. (2001). *Income and poverty 2000 estimates* (Press Briefing). Washington, DC: U.S. Census Bureau.

[9] Wigton, A., & Weil, A. (2000). 1999 Snapshots of America's families II: A view of the nation and 13 states from the National Survey of America's Families. In J. Koppelman (Ed.), *Snapshots II*. Washington, DC: Urban Institute.

[10] Zaslow, M. J., Moore, K. A., Tout, K., Scarpa, J., & Vandivere, S. (2002). How are children faring under welfare reform? In A. Weil & K. Finegold (Eds.), *Welfare reform: The next act*. Washington, DC: The Urban Institute Press.

N. Families are self-sufficient.

8. Unemployment rate

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the total number of individuals in the study area/population who are available to work but do not have, and are looking for, either a full- or part-time job,[8] divided by the total number of adults in the labor force of the study area/population. The labor force includes individuals with jobs and individuals without jobs who are looking for work.[6] Typically, the population of those not in the labor force comprises "students, housewives, retired workers, seasonal workers… in an off season who [are] not looking for work, institutionalized people, and people doing only incidental unpaid family work (less than 15 hours during the reference week)."[15]

The Current Population Survey (CPS) is used to calculate the national unemployment rate. It surveys the civilian noninstitutional population.[9] The CPS uses the following definitions: (1) Employed individuals are "all persons who, during the reference week, (a) did any work at all (at least one hour) as paid employees, worked in their own business, profession, or on their own farm, or worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family, and (b) all those who were not working but who had jobs or businesses from which they were temporarily absent because of vacation, illness, bad weather, childcare problems, maternity or paternity leave, labor-management dispute, job training, or other family or personal reasons, whether or not they were paid for the time off or were seeking other jobs"[6] and (2) Unemployed persons are those "who had no employment during the reference week, were available for work, except for temporary illness, and had made specific efforts to find employment sometime during the 4-week period ending with the reference week…".[6] Individuals who "want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but who are not currently looking because they believe there are no jobs available or there are none for which they would qualify" are identified as "not in the labor force" and are considered neither employed nor unemployed.[5]

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[8] Individuals who are temporarily absent from their job, as well as those expecting to be recalled to their place of employment following layoffs, are considered employed.

[9] The civilian noninstitutional population is defined by CPS as "persons 16 years of age and older residing in the 50 States and the District of Columbia who are not inmates of institutions (for example, penal and mental facilities, homes for the aged), and who are not on active duty in the Armed Forces."[5]

Why is this indicator important?

Parental employment can have a significant influence on the quality of the child's family environment. Studies have indicated that a parent's unemployment leads to stress in the family environment, and that it may have a negative effect on the quality of the parent-child relationship and the well-being of the family in general.[9] Children may experience diminished self-confidence and feelings of insecurity, confusion, frustration, and anxiety with the onset of parental unemployment.[14] Certain studies show that such changes may be mediated through the effects of unemployment on parents. For example, joblessness is associated with maternal depressive symptoms, which is associated with more frequent maternal punishment of children, which in turn is associated with difficulty in children's concentrating ("cognitive distress") and depressive symptoms in youth.[12] Unemployment has also been linked to a less involved, less affectionate parenting style.[10] Finally, researchers speculate that parental unemployment may foster in children feelings of pessimism, diminished confidence in the economic system, and even compromised performance in their own jobs later in life.[14]

Parental unemployment has also been linked to lower levels of academic achievement and to fewer educational opportunities for their children.[1]

Who else currently uses this indicator?

National efforts monitor this indicator for children's school readiness. Monitoring entities include Urban Institute (*Snapshots of America's Families*, based on the National Survey of America's Families), the U.S. Census Bureau's "*USA Counties*" series, the *Kids Count Data Book*, *America's Children: Key National Indicators of Well-Being* 2002,[8] and the *City and County Databook* (U.S. Census), among others. The U.S. Department of Health and Human Services also uses this indicator as a measure of poverty.[16] Counting California tracks unemployment as well.[7]

What are the possible sources of data for this indicator?

State, national, and certain cities' unemployment data are collected by the Current Population Studies (U.S. Census Bureau; Bureau of Labor Statistics—BLS),[6] and the Current Employment Statistics program.[3] State, metropolitan area, and certain cities' information on this indicator is available from the Geographic Profile of Employment and Unemployment (BLS).[4]

The Current Population Survey is a household-based survey that collects employment information about residents in a given household. The Current Employment Statistics program collects information from payroll data of state- and industry-level sources.[3]

Drawing data from the Current Populations Survey, the Current Employment Statistics, and unemployment insurance information, the BLS employs "estimating equations based on regression techniques" to calculate state and regional unemployment rates.[6] Unemployment information on census regions and divisions can be calculated by the BLS, as well.[11]

National Longitudinal Surveys and National Survey of America's Families (NSAF) also collect data on this indicator.

The California Department of Employment also tracks this indicator using monthly rates for counties.[13]

<u>Are there any key issues or concerns about the use of this indicator?</u>

- Reliability/Validity:

Note that unemployment rates for states, regions, census regions, and divisions are from estimates calculated from national information, and not from raw data. For national regions and states, these figures are produced by "estimating equations based on regression techniques"; for smaller regions and divisions, figures are produced by "summing the model-based estimates for the component states and then calculating the unemployment rate".[6] The BLS warns that state estimates are subject to "larger sampling and nonsampling errors" than national estimates.[3]

- Sensitivity to change:

During the late 1990s, the national unemployment rate remained largely the same.[17] Rates in select populations, however, did experience change. Employment increased significantly among single-parent, low-income individuals.[17] In April 2002, the jobless rate for the nation was 6 percent of the labor force. The unemployment rate in California over the past year increased from 5 percent in April 2001, to 6.4 percent in April 2002.[6]

- Cultural issues:

Employment and unemployment rates vary slightly across racial and ethnic lines. In 2001, 16.9 percent of white families, 20 percent of black families, and 13.1 percent of Hispanic families contained no employed members.[2] Similarly, 4.2 percent of whites, 8.7 percent of blacks, and 6.6 percent of Hispanics over age 16 were unemployed in 2001.[5]

- Other:

Unemployment rates are strongly associated with whether the adult is of low-income or higher income economic status; 67 percent of low-income single-parents, and 94 percent of higher income single-parents, were employed at the time of 1999 NSAF data collection.[17]

In California, roughly 40 percent of low-income single parents were out of a job in 1999.[17]

Sources

[1] Becker, R., & Nietfeld, M. (1999). Unemployment and educational opportunities of children in the process of social transformation: An empirical study on the effects of socioeconomic deprivation on intergenerational educational transmission. *Kolner Zeitschrift für Soziologie und Sozialpsychologie, 51*(1), 55-79.

[2] Bureau of Labor Statistics. (2002). *Current news releases: Employment and earnings characteristics of families*. Retrieved July 24, 2002, from http://www.bls.gov/news.release/famee.toc.htm

[3] Bureau of Labor Statistics. (2002). *Employment, hours, and earnings from the Current Employment Statistics (National)*. Retrieved June 22, 2002, from http://www.bls.gov/ces/home.htm#overview

[4] Bureau of Labor Statistics. (2002). *Geographic profile of employment and unemployment*. Retrieved June 21, 2002, from http://www.bls.gov/gps/home.htm

[5] Bureau of Labor Statistics. (2001). *Labor force statistics from the Current Population Survey: Technical notes to household survey data published in "Employment and Earnings"*. Retrieved June 22, 2002, from http://www.bls.gov/cps/cpstn1.htm#Concepts

[6] Bureau of Labor Statistics. (2002). *Regional and state employment and unemployment: April 2002*. Washington, DC: United States Department of Labor.

[7] Counting California, http://countingcalifornia.cdlib.org/matrix/c178.html

[8] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[9] Jones, L. P. (1988). The effect of unemployment on children and adolescents. *Children & Youth Services Review, 10*(3), 199-215.

[10] Kohen, D. E. (1998). *Parenting behaviors: Associated characteristics and child outcomes.* Unpublished Dissertation, Columbia University, New York.

[11] Local Area Unemployment Statistics, http://www.ers.usda.gov/Data/Unemployment/RDList2.asp?ST=CA&SF=8A

[12] McLoyd, V., Jayaratne, T. E., Ceballo, R., & Borquez, J. (1994). Unemployment and work interruption among African American single mothers: Effects on parenting and adolescent socioemotional functioning. *Child Development, 65*, 562-589.

[13] Monthly Labor Force Data for Counties, http://www.calmis.cahwnet.gov/htmlfile/subject/lftable.htm

[14] Schliebner, C. T., & Peregoy, J. J. (1994). Unemployment effects on the family and the child: Interventions for counselors. *Journal of Counseling & Development, 72*(4), 368-372.

[15] U.S. Census Bureau. (2001). *American Community Survey methodology: Definitions: Employment status*. Retrieved July 24, 2002, from http://www.census.gov/acs/www/Methodology/Definitions/Employme.htm

[16] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[17] Zedlewski, S. R. (2001). *1999 Snapshots of America's families II*. Retrieved June 19, 2002, from www.urban.org/content/Research/NewFederalism/NSAF/Snapshots/1999Results/FamilyEconomicWellBeing/FamilyEcon.htm

N. Families are self-sufficient.

9. Housing costs above 30 percent or 50 percent of median household income (C)

Category: Structural measure

What is the definition of this indicator?

The U.S. Census Bureau defines housing costs as the sum of "mortgage and rent payment, real estate taxes, insurance, upkeep of place, utilities, homeowner membership fees, land rent, and mobile home park fees".[6,10] The indicator, then, is this dollar amount as compared with 30 percent and 50 percent of the median household income in the study area/population. (See indicator N7.) The U.S. Department of Housing and Urban Development defines "affordable units" as "the number of units with housing costs at 30 percent of income for each income range" (i.e., less than 50 percent, less than 100 percent, less than 150 percent, or 200 percent or more of the poverty line) in a given area.[4] Conversely, housing costs at 30 to 50 percent of household income are considered to be "moderate cost burden" to residents, whereas housing costs exceeding 50 percent are considered to be a "severe cost burden" to residents.[4] In 1997, more than 6 million households living below the poverty level were paying 30 percent or more of their income in housing costs.[5]

Why is this indicator important?

This community-level indicator can inform research on the economic context, particularly in regard to housing stress, of an area or population. The indicator typically reflects low socioeconomic conditions, because the percentage of housing cost is often a higher percentage of household income in low- and very –low-income households (i.e., greater than 30 or 50 percent of household income).[4]

Information about the socioeconomic context of a community is important because it can greatly influence the developmental, academic, and health-related outcomes of the area's children. (See indicator N1.)

Who else currently uses this indicator?

National efforts monitor this indicator. The National Low Income Housing Coalition uses this, and related, information. The U.S. Census Bureau also employs this indicator in several documents, including the Statistical Abstract of the United States. In addition, this indicator is used in *America's Children: Key National Indicators of Well-Being 2002*.[3] The U.S. Department of Health and Human Services also uses this indicator to evaluate standards of living.[8] Counting California also tracks housing costs as a percentage of income.[2]

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[10] Typically, the Census does not include the cost of maintenance and repairs in this total, although information on these expenditures is available.[6]

What are the possible sources of data for this indicator?

Several national organizations collect data on this indicator. The American Housing Survey (AHS), developed by the U.S. Department of Housing and Urban Development (HUD) and conducted by the U.S. Census Bureau, collects data on household income and on the household's monthly housing costs. From this information, the percentage of household income devoted to housing costs can be calculated for almost any area or population.[6] The original survey—the AHS-National—is conducted on a national level, and is representative of the United States. HUD and the Census have also developed a separate survey to use in collecting information about the country's largest cities. This is the AHS-Metropolitan Sample, which includes such areas as San Francisco, San Jose, and Oakland in its data collection.[7]

The Census Bureau calculates this indicator by multiplying monthly average housing cost by 12, and dividing the resulting dollar amount by the median annual income of the area/population.[6]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

The method of data collection and estimation may have changed over time for specific regions. Because housing data for the Los Angeles-Long Beach metropolitan area, for example, is no longer collected by the AHS-Metropolitan survey, the area's housing estimates are calculated from the AHS-National survey.[7] As a result, it may not be appropriate to examine trends over time for Los Angeles-Long Beach for the period that data collection strategy changed.

One concern cited by the Bureau of the Census stems from reports of housing cost at 100 percent or more of household income. The Bureau suggests that this may be due to inaccurate reporting or could reflect temporary living situations; these cases can be considered "missing or unreliable data" for the purposes of analysis.[6]

- Sensitivity to change:

Studies have shown that, nationally, no change occurred between 1997 and 1999 in regard to families' ability to afford housing.[10] However, lower income households are experiencing significant change in regard to the cost of housing relative to their income. From 1996 to 1997, rent expenses increased by 3.1 percent, whereas the average income for low-income workers increased by only 1.9 percent.[9] This, combined with the lack of enough "affordable" housing units in many American cities,[9] suggests that with time more and more households will be paying more than 30 percent or 50 percent of their incomes in housing costs.

- Cultural issues:

Asian American households and households with three or more children (especially those headed by females and/or minorities) have higher average housing costs than other populations.[1]

- Other:

Typically, renters experience higher housing costs than homeowners.[1] In 1999, American renters were paying, on average, 26 percent of their income in housing costs; owners were paying 17 percent[4]; 21 percent of renters were paying more than 50 percent of their income in housing costs.[4]

Sources

[1] Chi, P. S. K., & Laquatra, J. (1998). Profiles of housing cost burden in the United States. *Journal of Family and Economic Issues, 19*(2), 175-193.

[2] Counting California, http://countingcalifornia.cdlib.org/matrix/c178.html

[3] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[4] National Low Income Housing Coalition. (2001). *Low income housing profile*. Retrieved June 22, 2002, from http://www.nlihc.org/pubs/profile/profile.pdf

[5] U.S. Bereau of the Census American Housing Survey Branch. (1999). *American Housing Survey for the United States, 1997: Table 2-13. Selected housing costs: Occupied units*. Retrieved June 22, 2002, from www.census.gov/hhes/www/housing/ahs/ahs97/tab213.html

[6] U.S. Census Bureau. (2001). *The American Housing Survey: Appendix A. Definitions*. Retrieved June 22, 2002, from http://www.census.gov/hhes/www/housing/ahs/ahs99/appendixa.pdf

[7] U.S. Census Bureau. (2001). *The American Housing Survey: Appendix B. Metropolitan and national sample designs*. Retrieved June 22, 2002, from http://www.census.gov/hhes/www/housing/ahs/ahs99/appendixb.pdf

[8] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth*. Washington, DC: Author.

[9] U.S. Department of Housing and Urban Development. (1999). *The widening gap: New findings on housing affordability in America*. Washington, DC: Author.

[10] Zedlewski, S. R. (2001). *1999 Snapshots of America's families II*. Retrieved June 19, 2002, from www.urban.org/content/Research/NewFederalism/NSAF/Snapshots/1999Results/FamilyEconomicWellBeing/FamilyEcon.htm

N. Families are self-sufficient.

10. Percentage of teenagers who are mothers, under age 18 (C)

Category: Structural measure

What is the definition of this indicator?

The percentage of teenage mothers, under age 18, is determined by dividing the number of mothers, under age 18, by the number of all females under age 18.

Why is this indicator important?

A mother's age at time of birth is significantly related to her child's well-being. Research has shown that children of teenage mothers have lower levels of cognitive and academic achievement, and higher levels of behavioral problems.[2,3,6,7] Low cognitive attainment and higher levels of behavioral problems may in turn hinder the ability of a child to engage in the early learning that is important for school readiness.[16] Children of teen parents are also more likely to grow up in homes that have lower levels of emotional support, and are less likely to earn high school diplomas.[18] (See indicator M1.)

Additionally, teen motherhood is often accompanied by economic disadvantages for both mother and child.[19] Teenage mothers are, generally, unprepared for the financial, emotional, and psychological challenges of early childbearing. The effects of these challenges are borne primarily by the children of teen mothers, followed by the mothers themselves, the mothers' families, and by the government and taxpayers.[17] Many teenage mothers ado not pursue high school diplomas and receive welfare.[11]

Economic disadvantages are also associated with health problems. These health problems, if severe (such as unintentional injury), lead to cognitive and other developmental problems for children as well as behavioral problems. (See indicator N1.)

Teenage mothers are less likely to live in their parents' households. Although more than 60 percent of young teen mothers live with their own parents and their child, they are less likely than other teens to live with their parents.[12]

Who else currently uses this indicator?

Many national and state efforts monitor this indicator for children's school readiness.

This indicator is currently used by the American Medical Association, the Centers for Disease Control and Prevention, *Kids Count*, the National Campaign to Prevent Teen Pregnancy, the National Center for Health Statistics, Planned Parenthood, UNICEF, the U.S. Department of Labor, and the U.S. Department of

Health and Human Services. *The Child Trends DataBank* tracks teen births[5] as does the Maternal and Child Health Bureau's *Child Health USA 2001*.[15]

California, Rhode Island, and South Carolina, among other states, collect this indicator.

What are the possible sources of data for this indicator?

This indicator can be compiled from birth records. Birth records are accumulated in a database at the Division of Vital Statistics, a branch of the National Center for Health Statistics. These statistics are reported yearly in the National Vital Statistics Reports.[20] Locally, these records can be obtained by contacting local or state health departments.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

This indicator is sensitive to change as evidenced by the steady decline in teen birth rates since 1991. In 2001, the birth rate for teens ages 15 to 19 reached its lowest level in the more than 60 years for which comparable data are available.[14] Several factors have been suggested as contributing to this decline, including an increase in teen pregnancy prevention initiatives, an increase in sexuality education programs, a strong economy, child support enforcement, greater availability of contraceptive methods, an increase in conservative attitudes toward premarital sexual activity, and possibly, welfare reform.[4,8,13,22]

Some programs that encourage steps to prevent teen pregnancy have also shown success in recent years. For instance, Children's Aid Society – Carrera is a program aimed at providing a long-term holistic approach to family system philosophy through supplying medical care and services while also encouraging individual sports, family life, sexual education, self-expression through the arts, and academic support. It has been shown to increase the number of females using effective forms of birth control, as well as increasing their general knowledge of sexuality and reproduction.[21] Programs like Postponing Sexual Involvement/ENABL, Project SNAPP, and Youth AIDS Prevention Project all use lessons on decision-making skills, strategies to deal with pressures for sexual intercourse, and contraceptive use. They have been highly successful at increasing contraceptive use among teenagers in the program. These programs center around lectures, small group exercises, class discussions, and more interactive methods of teaching (e.g., role-playing, games, guided discussions).[1,9,10]

- Cultural issues:

Preliminary 2001 teen birth rates (for ages 15 to 17) are higher for Hispanic and black females (56.9 per 1,000 and 45.6 per 1,000, respectively) compared with

birth rates for non-Hispanic white teenagers (14.2 per 1,000).[14] These differences in birth rates are reflective in the number of unmarried parents.

- Other:

The denominator for this indicator may be difficult to obtain in non-Census years.

Sources

[1] Aarons, S. J., Jenkins, R. R., Raine, T. R., El-Khorazaty, M. N., Woodward, K. M., Williams, R. L., et al. (2000). Postponing sexual intercourse among urban junior high school students - A randomized controlled evaluation. *Journal of Adolescent Health, 27*(4), 136-147.

[2] Baldwin, W., & Cain, V. S. (1991). The children of teenage parents. In J. F. F. Furstenberg, R. Lincoln & J. Menken (Eds.), *Teenage sexuality, pregnancy, and childbearing* (pp. 265-279). Philadelphia, PA: University of Pennsylvania Press.

[3] Broman, S. (1981). Long-term development of children born to teenagers. In K. G. Scott, T. Field & E. G. Robertson (Eds.), *Teenage parents and their offspring* (pp. 195-224). New York, NY: Cambridge University Press.

[4] Centers for Disease Control and Prevention. (1998). Youth risk behavior surveillance - United States, 1997. *Morbidity and Mortality Weekly Report, 47*(3), 1-89.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Teen births*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Furstenberg, F. F., Jr., Brooks-Gun, J., & Morgan, S. P. (1987). *Adolescent mothers in later life*. New York, NY: Cambridge University Press.

[7] Hofferth, S. L. (1987). Social and economic consequences of teen childbearing. In S. L. Hofferth & C. Hayes (Eds.), *Risking the future: Adolescent sexuality, pregnancy, and childbearing* (Vol. 2, pp. 123-144). Washington, DC: National Academy Press.

[8] Kahn, J. G., Brindis, C. D., & Glei, D. A. (1999). Pregnancies averted among U.S. teenagers by the use of contraceptives. *Family Planning Perspectives, 31*(1), 29-34.

[9] Kirby, D., Korpi, M., Adivi, C., & Weissman, J. (1997). An impact evaluation of Project SNAPP: An AIDS and pregnancy prevention middle school program. *AIDS Education and Prevention, 9 (supplement)*.

[10] Levy, S., Perhats, C., Weeks, K., Handler, A., & Zhu, C. (1995). Impact of a school-based AIDS prevention program on risk and protective behavior for newly sexually active students. *Journal of School Health, 65*(4), 145-151.

[11] Manlove, J., Mariner, C., & Romano, A. (1998). *Positive educational outcomes among school-age mothers.* Washington DC: Child Trends.

[12] Manlove, J., Mariner, C., & Romano Papillo, A. (2000). Subsequent fertility among teen mothers: Longitudinal analyses of recent national data. *Journal of Marriage and the Family, 62*, 430-448.

[13] Manlove, J., Terry-Humen, E., Papillo, A. R., Franzetta, K., Williams, S., & Ryan, S. (2002). *Preventing teenage pregnancy, childbearing, and sexually transmitted diseases: What the research shows*. Washington, DC: Child Trends.

[14] Marti, J. A., Park, M. M., & Sutton, P. D. (2002). Births: Preliminary data for 2001. *National Vital Statistics Reports, 50*(10).

[15] Maternal and Child Health Bureau. (2002). *Child Health USA 2001*. Washington, DC: U.S. Department of Health and Human Services.

[16] Maynard, R. A. (1997). The costs of adolescent childbearing. In R. A. Maynard (Ed.), *Kids having kids: economic costs and social consequences of teen pregnancy* (pp. 185-337). Washington, DC: The Urban Institute Press.

[17] Maynard, R. A. (1997). *Kids having kids: Economic costs and social consequences of teen pregnancy*. Washington, DC: The Urban Institute.

[18] Moore, K. A., Morrison, D. R., & Greene, A. D. (1997). Effects on the children born to adolescent mothers. In R. A. Maynard (Ed.), *Kids having kids: Economic costs and social consequences of teen pregnancy* (pp. 145-180). Washington, DC: The Urban Institute Press.

[19] Sarin, R. (2002). *Kid-friendly cities health improvement report card*. Washington, DC: Population Connection.

[20] Ventura, S. J., Mosher, W. D., Curtin, S. C., & Abma, J. C. (2001). Trends in pregnancy rates for the United States, 1976-97: An update. *National Vital Statistics Reports, 49*(4), 8.

[21] Walter, H., & Vaughn, R. (1993). AIDS risk reduction among a multi-ethnic sample of urban high school students. *Journal of the American Medical Association, 257*(24), 3382-3386.

[22] Wertheimer, R., Jager, J., & Moore, K. A. (2000). *State policy initiatives for reducing teen and adult nonmarital childbearing: Family planning to family caps*. Washington, DC: The Urban Institute.

N. Families are self-sufficient.

11. Percentage of mothers who are unmarried(C)

Category: Structural measures

What is the definition of this indicator?

This indicator refers to the number of unmarried women who have children divided by the number of all women with children.

Why is this indicator important?

Children born to unmarried mothers are more likely to be poor, to grow up in a single-parent family, and to experience multiple living arrangements during childhood.[17] These issues are all associated with lower levels of educational attainment and a higher risk of teen pregnancy and nonmarital childbearing.[15] Children in single-parent homes tend to receive lower levels of parental supervision and also tend to have worse relationships with their parents than their counterparts do with married parents.[2] Several studies have also shown that child development is best provided when children have the opportunity to have a warm, close, and enduring relationships with both of their parents.[14]

Births to unmarried women have increased since the post-war decades, experiencing a large increase during the 1980s.[18] In 1970, 11 percent of all births were to unmarried mothers compared with 33 percent by 1999.[17] Although the vast majority of births to teenagers are nonmarital, the majority of non-marital births are to women aged 20 and older.[17] The number of births outside of wedlock stabilized in the late 1990s and, although nonmarital births among women in their twenties have increased, birth rates among women in their teens have been declining.[10]

Even before a child is born to an unmarried parent, he or she is faced with challenges to his or her social and cognitive development. Unmarried mothers are less likely to receive adequate prenatal care than their married counterparts.[20] Prenatal care has been shown to increase the likelihood of having healthy children.[9] Being in good health has been shown to be an important contributor to children's ability to focus on experiences that are crucial to engaging in the learning process.[9] (See indicator C2.) A lack of prenatal care can lead to poor health, physical complications, and developmental problems that may lead to increased absenteeism and problems adapting to school[9] (See indicator A6.)

Poor children have been shown to score lower on standardized tests for verbal ability[3] and to have lower cognitive skills such as reading, number skills, problem solving, creativity, and memory.[16] Of all single-parent families headed by an unmarried mother, 37 percent live in poverty.[4] Poverty has

additionally been linked to fewer total years of schooling, higher rates of school failure, higher dropout rates, and child behavioral problems.[6,11] (See indicator N1.)

Who else currently uses this indicator?

Many national and state efforts monitor this indicator for children's school readiness. This indicator is used by the American Medical Association, the Centers for Disease Control and Prevention, Kids Count, the National Center for Health Statistics, Planned Parenthood, UNICEF, the U.S. Department of Labor, and the U.S. Department of Health and Human Services.[19] Additionally, *The Child Trends DataBank* tracks related information pertaining to family structure,[5] as does *America's Children: Key National Indicators of Well-Being 2002*.[8]

States that collect this indicator include Oklahoma, Rhode Island, and South Carolina.

What are the possible sources of data for this indicator?

The number of children born to unmarried parents can be compiled from birth records. Birth records are accumulated in a database at the Division of Vital Statistics, a branch of the National Center for Health Statistics.[13] Locally these records can be obtained by contacting local or state health departments. Note that this indicator may be difficult to collect in non-Census years.

Data can also be collected directly from parents. Surveying a sample of parents will also give a fair indication of the percent of unmarried parents. Such survey questions and results can be found in the "Parent In-Home" section of the Add Health Wave I Instrument.[1] This survey collects an extensive marital history for respondent's parents.

Standard national survey items are available online. Questions pertaining to the marital status of parents can be found in the Early Childhood Longitudinal Study (ECLS-K), Kindergarten Class of 1998-1999 in the Fall Parent Questionnaire in section MHQ (Parent Marital History).[7]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

The vast majority of births outside of marriage occur to adults aged 20 and over. Currently, other than providing contraceptive services, little is known about how to reduce the number of births occurring outside of marriage. Offering more programs that reduce sexual risk-taking activities, promote relationship building, and/or increase contraceptive use may be helpful in reducing such births.[12]

- Other:

Note that this indicator concerns children born to mothers who have never been married. Children also live with divorced, separated, and unmarried cohabiting parents, but the evidence involving the effects of these living situations is complex and often too varied to use in drawing generalizations or in finding statistically significant patterns.

The denominator for this indicator may be difficult to obtain in non-Census years.

Sources

[1] Add Health Wave I Instrument, Parent in the Home section. http://www.cpc.unc.edu/projects/addhealth/codebk1.html

[2] Amato, P. R. (2000). *A generation at risk: Growing up in an era of family upheaval* (1st ed.). Cambridge, Mass: Harvard University Press.

[3] Brooks-Gunn, J., Britto, P. R., & Brady, C. (1999). Struggling to make ends meet: Poverty and child development. In M. E. Lamb (Ed.), *Parenting and child development in "nontraditional" families* (pp. 279-304). Mahwah, NJ: Lawrence Erlbaum Associates.

[4] Child Trends. (2001). *Special tabulations of the March 2001 Current Population Survey*. Washington, DC: Author.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Family structure*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Eamon, M. K. (2000). Structural model of the effects of poverty on externalizing and internalizing behaviors of four- to five-year-old children. *Social Work Research, 24*(3), 143-154.

[7] Early Childhood Longitudinal Survey- Kindergarten Cohort (Fall Parent Interview), Section MHQ. http://nces.ed.gov/ecls/pdf/fallkind/interview.PDF

[8] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[9] Kagan, S. L., Moore, E., & Bradekamp, S. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: National Education Goals Panel, Goal 1 Technical Planning Group.

[10] Martin, J. A., Hamilton, B. E., Ventura, S. J., Menacker, F., & Park, M. M. (2000). *Births: Final data for 2000.* Hyattsville, MD: National Center for Health Statistics.

[11] McLoyd, V. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*(2), 185-204.

[12] Moore, K., Jekielek, S., & Emig, C. (2002). *Marriage from a child's perspective: How does family structure affect children, and what can we do about it?* (Research Brief). Washington, DC: Child Trends.

[13] National Center for Health Statistics, Births: Final data for 2000, http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_05.pdf

[14] Popenoe, D. (1996). *Life without father: Compelling new evidence that fatherhood and marriage are indispensable for the good of children and society*. New York, NY: The Free Press.

[15] Seltzer, J. (2000). Families formed outside of marriage. *Journal of Marriage and the Family, 62*(4), 1247-1268.

[16] Stipek, D. J., & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*(4), 711-723.

[17] Terry-Humen, E., Manlove, J., & Moore, K. (2001). *Births Outside of Marriage: Perceptions vs. Reality, Research Brief,* . Washington, DC: Child Trends.

[18] U.S. Department of Health and Human Services. (2001). *Indicators of welfare dependence.* Washington DC.

[19] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children and youth 2001*. Washington, DC: Author.

[20] Ventura, S. J. (1995). Births to unmarried mothers: United States, 1980-1992. *Vital and Health Statistics, 21*(53).

O. Parents provide nurturing and positive emotional support to their children.

1. **Number and percentage of families/parents rated by self-response survey as demonstrating adequate parenting skills (P)**

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of parents rated as meeting their child's developmental needs by providing for the child's basic physical needs, and by providing warm and responsive care, positive discipline, and appropriate cognitive stimulation. That percentage is derived by dividing the number of parents rated as proficient in these areas by the total number of parents.

Why is this indicator important?

Research on parenting has focused on understanding how parenting practices and parent-child relationships contribute to children who grow and develop into adults who are healthy, capable, self-sufficient, and fully functioning members of their communities.[4,7,16] Clearly, parenting supports several domains of a child's development.

To rate parenting skills, it is necessary to define "good parenting skills"—a difficult task. In fact, in recent decades good parenting has come to be viewed as the way in which parents adjust their behavior in response to the needs and characteristics of their children, the conditions in which they live, and the circumstances of their own lives.[21] Researchers suggest that effective parenting requires a combination of two global dimensions: "demandingness" (i.e., discipline and strictness) and "responsiveness" (e.g., warmth and support).[17] Many argue that parenting styles result from the interactions of these two dimensions (which have also been characterized as dimensions about control and emotional tone in the parent child relationship).[3,18] Although the two global dimensions focus primarily on the affective quality of the parent-child relationship, extensive evidence also indicates that language stimulation, exposure to stimulating activities, and access to cognitively stimulating play and reading materials contribute to children's development.[5,31]

Positive parenting skills and a positive parent-child relationship influence outcomes throughout childhood from infancy, into middle childhood, and through adolescence. Furthermore, the parenting skills required change as a child's needs change. In infancy and early childhood, attachment (e.g., a close emotional relationship with a parent) is central to effective parenting. Attachment theory postulates that if a parent's responses to a child in infancy are sensitive and highly-attuned, the child achieves better self-regulation and a healthier sense of self.[30,33,35] Children who can rely on such a relationship are better able to handle frustration, are more attentive during the preschool years, and do better

academically and emotionally during the early elementary years than do children with less sustaining parental relationships.[6,9,13,21] Furthermore, a mother's sensitive response is consistently a strong predictor of positive outcomes for the child, both cognitively and socially.[22-25]

By middle childhood, a parent's ability to help the child foster positive peer relationships and to support engagement in school activities becomes more central. Children who have a secure relationship with a parent show greater social competence,[12,32] display peer relationships that are more committed and emotionally close, show more positive emotions, and are more empathetic and prosocial with other children.[14,36]

In adolescence, a time when parents and children spend less time together, the ability of a parent to monitor, guide, and support the child becomes more important. As such, effective parental monitoring has also been linked to higher levels of self-esteem and competence, and a greater sense of responsibility in adolescents, as well as lower levels of antisocial and problem behaviors.[11]

Who else currently uses this indicator?

Several states attempt to monitor parenting. For instance, Minnesota recognizes the "percent of families with parenting knowledge and skills to anticipate and meet developmental needs of their children" as important.

What are the possible sources of data for this indicator?

Data can be collected using surveys. Data is collected using several complex, self-response items related to parenting behavior in national surveys such as the Early Childhood Longitudinal Survey, Kindergarten Cohort (ECLS-K),[8] the National Longitudinal Survey of Youth (NLSY), 1997,[1] and the National Longitudinal Survey of Adolescent Health.[20] These more complex ratings address parental monitoring, parental limit setting, parent-youth closeness/intimacy, family routines, amount of interaction between parent(s) and youth, and perceived family cohesion, as opposed to one broad measure of parenting skills.[11] The following three sections of the ECLS-K survey specifically address parenting behaviors: Discipline, Warmth, and Emotional Supportiveness (DWQ); Home Environment, Activities, and Cognitive Stimulation (HEQ); and Parent's Involvement With Child's School (PIQ).[8]

This indicator is also recommended by the National Outcome Work Groups.

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Reliability and validity have been established for the parenting measures used in the NLSY 79 and NLSY 97 surveys.[2,19] Data in other surveys (National Longitudinal Survey of Adolescent Health and ECLS-K) is also available for such analyses.

Caution should be taken if relying solely on ratings of parenting provided by pediatricians and/or child-care providers. Ideally, parenting skills are measured by integrating multiple data sources such as parental self-report, administrative and clinical records, teacher reports of parental involvement, and ratings of interviewers or observers.[29] Studies have shown that measurement of parenting through observation provides the most consistent prediction of child outcomes across domains (i.e., academic and behavioral) and across child outcomes from different informants (i.e., parent, teacher, child, or direct assessment). In addition, maternal reports of parenting skills predict direct assessments of the child's cognitive ability, asdo parental reports of academic and behavior outcomes.[26]

- Sensitivity to change:

Studies of interventions aimed at improving parenting skills indicate that parenting behaviors can be changed, but that they are not easy to change.[21] Several evaluations have proven successful in changing some domains of parenting, and some evaluations have linked these changes to improved child outcomes. Note that the strategies implemented in these interventions vary widely. Intensive interventions with explicitly defined goals have generally been evaluated with greater rigor and provide consistent positive conclusions.[28] The most effective programs rely on six principles pertaining to effective parent- and child-based intervention: sufficient intensity; sufficient duration; appropriate timing (in the first 3 years of life); direct engagement of parents, children, and the larger family context; diverse supports and services; and responsive and individualized programming.[27] Results of evaluations of more general, broad-based programs provide less consistent results.

- Cultural issues:

In rating parenting, culture and socioeconomic context need to be taken into account. Parenting is, in part, preparation of a child to participate in a social and cultural context, and emphasis on socialization and parental input can differ accordingly.[10,15] Furthermore, measures of parenting may function differently in differing racial/ethnic groups.[34] Parenting behavior that fosters positive development may vary in light of contextual factors (e.g., the degree of neighborhood violence). Much greater vigilance and monitoring functioning may be needed to support positive development in a dangerous neighborhood than in a safe neighborhood.

- Other:

This measure requires a clear definition of parenting skills to determine if the provider's rating is based solely on a parent's provision of basic physical care or also pertains to children's social-emotional and cognitive needs. Simple ratings by providers or individual survey items may not capture the complex and multidimensional nature of parenting.

Sources

[1] 1997 National Longitudinal Survey of Youth, http://www.bls.gov/nls/

[2] Baker, P. C., Keck, C. K., Mott, F. L., & Quinlan, S. V. (1993). *NLSY child handbook, revised edition: A guide to the 1986-1990 National Longitudinal Survey of Youth Child Data*. Columbus, OH: Center for Human Resource Research.

[3] Baumrind, D. (1991). Parenting styles and adolescent development. In J. Brooks-Gunn, R. Lerner & A. C. Peterson (Eds.), *The encyclopedia of adolescence* (pp. 746-758). New York: Garland.

[4] Borkowski, J., Ramey, S., & Stile, C. (2002). Parenting research: Translations to parenting practices. In J. Borkowski, S. Ramey & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development*. Mahwah, NJ: Lawrence Erlbaum Associates.

[5] Brooks-Gunn, J., Klebanov, P. K., & Liaw, F. R. (1994). The learning, physical, and emotional environment of the home in the context of poverty: The Infant Health and Development Program. *Children and Youth Services Review, 17*, 251-276.

[6] Carlson, E. A., Jacobvitz, D., & Sroufe, L. A. (1995). A developmental investigation of inattentiveness and hyperactivity. *Child Development, 66*, 37-54.

[7] Cox, M. (forthcoming). Parent-child relationship. In M. Bornstein, L. Davidson, C. Keyes & K. Moore (Eds.), *Well-being: Positive development across the lifespan*. Hillsdale, NJ: Lawrence Erlbaum.

[8] Early Childhood Longitudinal Survey Kindergarten Survey (ECLS-K), http://nces.ed.gov/ecls/

[9] Egeland, B., Pianta, R., & O'Brien, M. (1993). Maternal intrusiveness in infancy and child maladaptation in early school years. *Development and Psychopathology, 81*, 359-370.

[10] Field, T. M., Sostek, A. M., Vietze, P., & Leiderman, P. H. (Eds.). (1981). *Culture and early interactions*. Hillsdale, NJ: Lawrence Erlbaum Associates.

[11] Hair, E., C, Cochran, S. W., & Jager, J. (2001). Parent-child relationship. In E. Hair, K. Moore, D. Hunter & J. W. Kaye (Eds.), *Youth Development Outcomes Compendium*. Washington DC: Child Trends.

[12] Hair, E. C., Jager, J., & Garrett, S. B. (2002). *Background for community-level work on social competency in adolescence: Reviewing the literature on contributing factors*. Washington DC: Child Trends.

[13] Jocobvitz, E., & Sroufe, L. A. (1987). The early caregiver-child relationship and Attention Deficit Disorder with hyperactivity in kindergarten. *Child Development, 58*, 1488-1495.

[14] Kestenbaum, R., Fauber, E., & Sroufe, L. A. (1989). Individual differences in empathy among preschoolers: Concurrent and predictive validity. In N. Eisenberg (Ed.), *Empathy and related emotional responses: New directions for child development* (pp. 51-56). San Francisco: Jossey-Bass.

[15] Leiderman, P. H., Tulkin, S. R., & Rosenfeld, A. (Eds.). (1977). *Culture and infancy: Variations in the human experience*. New York: Academic Press, Inc.

[16] Maccoby, E. E. (2000). Parenting and its effects on children: On reading and misreading behavior genetics. *Annual Review of Psychology, 51*, 1-27.

[17] Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (Vol. 4, pp. 1-101). New York: Wiley.

[18] Michael, A., & Sameroff, A. J. (1995). *Parenting style: Is the whole more than the sum of its parts? (Poster).* Paper presented at the Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

[19] Moore, K. A., McGroder, S. M., Hair, E. C., & Gunnoe, M. (1999). *NLSY97 codebook supplement main file round 1. Appendix 9: Family process and adolescent outcomes measures*. Washington DC: Bureau of Labor Statistics, U.S. Department of Labor.

[20] National Longitudinal Study of Adolescent Health, http://www.cpc.unc.edu/projects/addhealth/

[21] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[22] NICHD Early Child Care Research Network. (1997). Infant child care and attachment security: Results of the NICHD Study of Early Child Care. *Child Development, 68*, 860-879.

[23] NICHD Early Child Care Research Network. (1997). *Mother-child interaction and cognitive outcomes associated with early child care: Results from the NICHD Study.* Paper presented at the Workshop on Longitudinal Research on Children, Washington, DC.

[24] NICHD Early Child Care Research Network. (1998). Early child care and self control, compliance, and problem behavior at 24 and 36 months. *Child Development, 69*, 1145-1170.

[25] NICHD Early Child Care Research Network. (1999). Chronicity of depressive symptoms, maternal sensitivity, and child functioning at 36 months: Results from the NICHD Study of Early Child Care. *Developmental Psychology, 35*, 1297-1310.

[26] Observational Studies Research Team. (1991). *Measuring parenting behavior in low income families: Differing approaches to measuring parenting behavior in a study of low income families*. Washington DC: Child Trends.

[27] Ramey, C. T., & Ramey, S. L. (1998). Early intervention and early experience. *American Psychologist, 53*, 109-120.

[28] Ramey, C. T., Ramey, S. L., Lanzi, R. G., & Cotton, J. N. (2002). Early educational interventions for high-risk children: How center-based treatment can augment and improve parenting effectiveness. In J. G. Borkowski, S. L. Ramey & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development*. Mahwah, NJ: Lawrence Erlbaum Associates.

[29] Ramey, S. L. (2002). The science and art of parenting. In J. G. Borkowski, S. L. Ramey & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development*. Mahwah, NJ: Lawrence Erlbaum Associates.

[30] Sameroff, A. J. (1989). General systems and the regulation of development. In M. Gunnar & E. Thelen (Eds.), *Systems and development: The Minnesota Symposium on Child Psychology* (Vol. 22, pp. 219-235). Hillsdale, NJ: Erlbaum.

[31] Snow, C. E., Barnes, W. S., Chandler, J., Goodman, I. F., & Hemphill, J. (1991). *Unfulfilled expectations: Home and school influences on literacy*. Cambridge, MA: Harvard University Press.

[32] Sroufe, L., Schork, E., Motti, F., Lawroski, N., & LaFrenier, P. (1984). The role of affect in social competence. In C. Izard, J. Kagan & R. Zajonc (Eds.), *Emotions, cognition, and behavior* (pp. 289-319). Oxford: Oxford University Press.

[33] Sroufe, L. A. (1995). *Emotional development: The organization of emotional life in the early years*. Cambridge: Cambridge University Press.

[34] Sugland, B. W., Zaslow, M., Smith, J. R., Brooks-Gunn, J., Coates, D., Blumenthal, C., et al. (1995). The Early Childhood HOME Inventory and HOME-Short Form in differing racial/ethnic groups: Are there differences in underlying structure, internal consistency subscales, and patterns of prediction? *Journal of Family Issues, 16*(5), 632-663.

[35] Tronick, E. (1989). Emotions and emotional communication in infants. *American Psychologist, 44*, 112-119.

[36] Troy, M., & Sroufe, L. A. (1987). Victimization among preschoolers: Role of attachment relationship history. *Journal of the American Academy of Child and Adolescent Psychiatry, 26*, 166-172.

O. Parents provide nurturing and positive emotional support to their children.

2. Mothers' perceptions of their social support and density of social ties (P)

Category: Outcome measure

What is the definition of this indicator?

Maternal social support is defined as mothers' perception of the degree to which they are receiving support from significant others, neighbors, relatives, and community groups.[6] This indicator is calculated by totaling the number of mothers who report they feel supported or strongly supported by significant others, neighbors, relatives, and community groups. and dividing by the total population of mothers, with children age 0 to 5. The density of maternal social ties is calculated by totaling the number of individuals or groups (e.g., significant others, neighbors, relatives, community groups) that a mother reports she could turn to for social support.

Why is this indicator important?

Access to social support networks enhances maternal parenting skills. Maternal social support is positively correlated with the level of stimulation a mother provides to her child and negatively correlated with the level of mother-child stress.[1] Mothers who are socially isolated or insulated from others in their networks may be more likely to be abusive or neglectful of their children than mothers who have a strong social network to rely on for support.[8]

Mothers who are more satisfied with their social networks and who have larger networks are more likely to exhibit optimal maternal parenting behavior (e.g., provide more stimulating home environments, more responsive parenting).[3] Additionally, research suggests that the engagement of mothers in their own social networks may play either a facilitative or inhibitive role in the social relations of their children, through the processes of modeling, teaching, sanctioning, providing opportunities, and providing a secure base.[11] Mothers with larger social networks are more likely to engage in developmentally appropriate parenting as well, adopting a style that is responsive, accepting, and involved, rather than being overly controlling of their child's behavior.[2]

Strong kinship networks among mothers are positively associated with both improved adolescent psychological well-being and increased maternal well-being.[10] In addition, mothers who have larger social networks are more likely to be involved in their children's lives, both at home and in school.[9] The size of mothers' social networks is also related to maternal social skills, a predictor of children's social competence.[7]

Who else currently uses this indicator?

The index is used in Healthy Families America's *A Guide for Evaluating Healthy Families America Efforts* and in the Oregon *Healthy Start Evaluation*.

What are the possible sources of data for this indicator?

The Maternal Social Support Index (MSSI)[5] includes personal support, parental support, and belonging subscales.[4] The index includes 21 items evaluating the quantity and quality of social support available to mothers. The index is based on seven dimensions: help with daily tasks; satisfaction with visits from relatives; help with crisis; emergency child care; satisfaction with communication from male support figure; satisfaction with communication from another adult; and community involvement. This instrument is self-administered or read to the mother by the home visitor.

Sources

[1] Adamakos, H., Ryan, K., Ullman, D., & Pascoe, J. (1986). Maternal social support as a predictor of mother-child stress and stimulation. *Child Abuse and Neglect, 10*, 463-470.

[2] Burchinal, M., Follmer, A., & Bryant, D. (1996). Maternal social support and family structure with maternal responsiveness to child outcomes among African American families. *Developmental Psychology, 32*, 1073-1083.

[3] Jennings, K., Stagg, V., & Connors, R. (1991). Social networks and mothers' interactions with their preschool children. *Child Development, 62*, 966-978.

[4] Maternal Social Support Index, http://www.mcl.tulane.edu/infinity_project/glossary.htm#mssi

[5] Pascoe, J., & French, J. (1990). The reliability and validity of the Maternal Social Support Index for primiparous mothers: A brief report. *Family Medicine, 22*, 228-230.

[6] Pascoe, J., Ialongo, N., Horn, W., Reinhart, M., & Perradatto, D. (1988). The reliability and validity of the maternal social support index. *Family Medicine, 20*, 271-276.

[7] Prinstein, M., & La Greca, A. (1999). Links between mother's and children's social competence and associations with maternal adjustment. *Journal of Clinical Child Psychology, 28*, 197-210.

[8] Salzinger, S., Kaplan, S., & Artemyeff, C. (1983). Mothers' personal social networks and child maltreatment. *Journal of Abnormal Psychology, 92*, 68-76.

[9] Sheldon, S. (2002). Parents' social networks and beliefs as predictors of parent involvement. *Elementary School Journal, 102*, 301-316.

[10] Taylor, R., & Roberts, D. (1995). Kinship support and maternal and adolescent well-being in economically disadvantaged African-American families. *Child Development, 66*, 1585-1597.

[11] Tietjen, A. (1985). Relationships between the social networks of Swedish mothers and their children. *International Journal of Behavioral Development, 8*, 195-216.

O. Parents provide nurturing and positive emotional support to their children.

3. Number and percentage of children living with parents with a history of mental problems (or current mental health problem) (P)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number and percentage of children 0 to 5 years of age living with a parent who has been diagnosed with a mental illness since the child was born. Mental health disorders can be characterized in a variety of ways. Serious mental health issues are "psychiatric disabilities that seriously interfere with one or more aspects of a person's daily life."[8] More broadly defined, mental health issues may also include symptomatic problems (e.g. anxiety, mood change, difficulty sleeping, changes in eating patterns) or indicators of risk for mental illness.[8] The number of children living with parents with a history of mental problems (or a current mental health problem) can be calculated by totaling the number of children who are living with a parent who has been diagnosed with a mental illness, either currently or in the past. The percentage is calculated by dividing the number of children living with parents with a history of mental problems (or a current mental health problem) by the total number of children in the population.

Why is this indicator important?

Mental illness has harmful consequences not only for the individual, but also for society. The current prevalence estimate is that about 20 percent of the U.S. population is affected by mental disorders during a given year.[11] Having a mental illness increases the probability of an individual receiving welfare and places stress on marriage; the ability to work is limited for about half of those with a serious mental illness.[7] Delay in diagnosis results in increased health care utilization and costs estimated to be $17 billion in lost workdays each year.[1,2] As a result, the President's New Freedom Commission on Mental Health was established to call attention to and help improve mental health services in the United States.[11]

Children who have clinically depressed parents or parents reporting symptoms of depression are at risk for a variety of negative outcomes, such as health, cognitive, and socioemotional problems.[5] Their parents have poorer quality parenting skills, such as increased aggravation in parenting, and less cognitive-stimulating and supportive interactions with their children.[6,14]

In addition, children whose parents report more depressive symptoms perform worse on math and reading assessments, and have more behavior problems than children whose parents have fewer depressive symptoms.[6,14]

Who else currently uses this indicator?

Some states are collecting this information. The California Department of Mental Health tracks information pertaining to this indicator.[4] Connecticut collects information on the mental health needs of all family members as part of a Service Needs Assessment for their welfare reform program. Rhode Island reports an indicator named "percent of children born to parents with a history of mental problems."

What are the possible sources of data for this indicator?

National survey questions are available online. Using questions from the Mental Health Inventory of the Medical Outcomes Study, the National Survey of America's Families collected data on an indicator of mental health in both 1997 and 1999. Data and questions for this indicator from the National Survey of America's Families are available online.[13] The estimates from this survey are nationally representative of families in America. The estimates for "percent of children ages 0 to 17 with a parent reporting symptoms of poor mental health" can be found online.[13]

In addition, the National Evaluation of Welfare to Work Strategies Child Outcome Study collected information on the number of depressive symptoms reported by parents using the Center for Epidemiologic Studies – Depression Scale (CES-D).[9]

Several well-established questionnaires can be ordered. Directly administered surveys can allow evaluators to screen for mental health problems. Survey questions for the General Health Questionnaire can be purchased online.[10] Survey Questions for the CES-D can be ordered free of charge from the National Institute of Mental Health.[3]

Other possible sources include:

1) Actual clinical diagnosis by a trained professional from the mental health field
2) Records from the intake of welfare recipients, if and when screening for mental illness is mandated
3) Survey questions that ask whether respondents are currently or have ever been diagnosed with a mental health problem.

California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey.[3]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Scales using questions based on the Diagnostics and Statistical Manual of Mental Disorders (such as the CES-D) have been judged "somewhat more valid and reliable than other questions."[8]

- Cultural issues:

Evidence suggests that cultural sensitivity should be taken into account when diagnosing depression, for a number of reasons. Some examples follow, but for a more in-depth discussion see the Surgeons General report online:[11,12]

- Many members of minority groups fear or feel ill at ease with the mental health system, which they view as based primarily on the experiences of white European populations.
- The prevalence of mental disorders is estimated to be higher among blacks than among whites, which appears to be due to socio-economic differences.
- Poverty, disinclination to seek help, and lack of health and mental services deemed appropriate and responsive are major contributors to delays by blacks being treated until symptoms become severe.
- Blacks are more likely than whites to use the emergency room for mental health problems.
- The prevalence of depressive symptomatology is higher among Hispanic women than among Hispanic men (46 compared with 20 percent).
- Depression is a significant problem in many American Indian/Alaska Native communities.

- Other:

Assessments of symptoms of mental health problems can be made in surveys; diagnoses of serious mental health problems should be made by trained professionals.

The severity of a mental illness ranges widely, from treatable issues that may not interfere greatly with daily activities, to those that require hospitalization.

Sources

[1] Agency for Healthcare Research and Quality. (2002). *Screening for depression: a summary of the evidence for the U.S. Preventive Services Task Force*, from http://www.ahrq.gov/clinic/uspstfix.htm

[2] Agency for Healthcare Research and Quality. (2002). *Screening for depression: recommendations and rationale*, from http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

[3] Center for Epidemiologic Studies Depression Scale (developed by NIMH), available from NIMH, 6001 Executive Boulevard, Room 8184, MSC 9663, Bethesda, MD 20892-9663.

[4] County Department of Mental Health, http://www.dmh.cahwnet.gov/docx/CMHDA.pdf

[5] Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Review, 108*, 50-76.

[6] Hair, E. C., McGroder, S., Zaslow, M., Ahluwalia, S. K., & Moore, K. A. (forthcoming). How do maternal risk factors affect children in low-income families?: Further evidence of two-generational implications. *Journal of Prevention and Intervention in the Community*.

[7] Jayakody, R., & Pollack, H. (1997, November). *Barriers to self-sufficiency among low-income, single mothers: substance use, mental health problems, and welfare reform.* Paper presented at the Association for Public Policy Analysis and Management, Washington, DC.

[8] Johnson, A., & Mechstroth, A. (1998). *Ancillary services to support welfare to work*. Washington, DC: U.S. Department of Health and Human Services, & the Office of the Assistant Secretary for Planning and Evaluation.

[9] McGroder, S., Zaslow, M., Moore, K. A., & LeMenestrel, S. M. (2000). *National Evaluation of Welfare-to-Work Strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes Study*. Washington, DC: U.S. Department of Health and Human Services, U.S. Department of Education.

[10] nferNelson Education and Specialist Assessments Product Directory, http://www.nfer-nelson.co.uk/html/edu/

[11] U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General-executive summary*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, & National Institute of Mental Health.

[12] U.S. Department of Health and Human Services. (2001). *Indicators of welfare dependence.* Washington DC.

[13] Vandivere, S., Moore, K. A., & Zaslow, M. (2000). *Children's family environment: Findings from the National Survey of America's Families*. Retrieved July 17, 2002, from http://newfederalism.urban.org/nsaf/tables/family_environ_1.htm

[14] Zaslow, M. J., Hair, E. C., Dion, M. R., Ahluwalia, S. K., & Sargent, J. (2001). Maternal depressive symptoms and low literacy as potential barriers to employment in a sample of families receiving welfare: Are there two-generational implications? *Women and Health, 32*(3), 211-252.

O. Parents provide nurturing and positive emotional support to their children.

4. Number and percentage of mothers screened for and referred for depression (C)

Category: Performance measure

What is the definition of this indicator?

Screening refers to the process of determining the probability that depression exists.[5] The diagnostic criteria for depression (as established in the Diagnostic and Statistical Manual of Mental Disorders) requires the presence of depressed mood along with other symptoms such as reduction of interest and/or pleasure in activities, including sex; feelings of guilt, hopelessness, and worthlessness; suicidal thoughts (recurrent); sleep disturbance (insomnia or hypersomnia); appetite/weight changes; attention/concentration difficulties; decreased energy or unexplained fatigue; and psychomotor disturbances. The number of mothers screened for and referred for depression is the count of women who have children 0 to 5 years of age and who have been identified as exhibiting depressive symptoms. The percentage of mothers screened and referred for depression is calculated by dividing the number of mothers in the population of interest who have been screened for and referred for depressive symptoms by the total number of mothers in the population of interest.

Why is this indicator important?

In a presidential address on April 14, 2002, President George W. Bush named a "fragmented mental health service delivery system" as an obstacle to quality mental health care. Further complicating this obstacle is the fact that mental health disorders are difficult to diagnose.

Mental illness has harmful consequences not only for the individual, but also for society. The current prevalence estimate is that about 20 percent of the U.S. population is affected by mental disorders during a given year.[19] Having a mental illness increases the probability of an individual receiving welfare and places stress on marriage; the ability to work is limited for half of those with a serious mental illness.[13] Delay in diagnosis results in increased health care utilization and costs an estimated $17 billion in lost workdays each year.[2,3] Responding to these concerns, President Bush established the President's New Freedom Commission on Mental Health to call attention to and help improve mental health services in the United States[6]

Depression in adults has consequences for their children as well. When parents experience symptoms of depression (e.g., feeling sad, worthless, or hopeless) this can be a risk factor for their children. Children of depressed mothers are more likely than other children to have behavior problems, academic difficulties, and health problems.[11,22] Research has found these relationships to

apply both to the general population and to mothers and children receiving welfare.[4] Depressed mothers are also more likely to have poorer parenting skills and to be more negative in their interactions with their children.[11,12,22]

Who else currently uses this indicator?

This indicator is tracked by the California Department of Mental Health.[7]

What are the possible sources of data for this indicator?

Data can be collected from records or directly from parents:
1) Records from the intake of welfare-recipients, when screening for depression is mandated
2) Records from pediatricians, when screening for depression is mandated for new mothers
3) Directly administered surveys to parents, which can allow evaluators to screen for depressive symptoms
4) Survey questions that ask whether respondents have ever been screened for depression, or whether anyone (doctor, caseworker, etc.) has suggested that they see a mental health professional.

This indicator has potential. No established national indicator reports on the rates of screening and referrals for depression, but surveys and sources exist from which this indicator could be developed. Many welfare programs screen their clients for depression, and many national surveys such as the Early Childhood Longitudinal Survey, Kindergarten Cohort (ECLS-K),[10] the National Health Interview Survey (NHIS)[16] and the National Longitudinal Survey of Youth 1979 (NLSY79)[17] include questions from the Center for Epidemiologic Studies – Depression Scale (CES-D).[14] Questions from the CES-D scale can be found in national surveys such as the ECLS-K, NHIS and the NLSY79.[1,10,16,17]

California specific data (statewide and for most counties) are collected by the University of California, Los Angeles (UCLA) Center for Health Policy Research in the California Health Interview Survey.[8]

Are there any key issues or concerns about the use of this indicator?

- Reliability/validity

Scales with good reliability and validity are available. Scales using questions based on the Diagnostics and Statistical Manual of Mental Disorders (such as the CES-D scale) have been judged "somewhat more valid and reliable than other questions."[14]

- Cultural issues:

Evidence suggests that cultural sensitivity should be taken into account when diagnosing depression, for a number of reasons. Some examples follow, but for a more in-depth discussion see the Surgeons General report online.[19,20]

  - Many members of minority groups fear or feel ill at ease with the mental health system, which they view as based primarily on the experiences of white European populations.
  - The prevalence of mental disorders is estimated to be higher among blacks than among whites, which appears to be due to socio-economic differences.
  - Poverty, disinclination to seek help, and lack of health and mental services deemed appropriate and responsive are major contributors to delays by blacks being treated until symptoms become severe.
  - African Americans are more likely than whites to use the emergency room for mental health problems.
  - The prevalence of depressive symptomatology is higher in Hispanic women than among Hispanic men (46 compared to 20 percent).
  - Depression is a significant problem in many Native American/Alaska Native communities.

- Feasibility/burden:

A recent review of tools for screening depression suggests a number of scales that have proven to work well as screeners for depression, and are easy to administer, including the CES-D[9] and GHQ scales.[2,18] They also suggest that "asking the following two questions may be as effective as using longer screening instruments: Over the past 2 weeks, have you ever felt down, depressed, or hopeless? Over the past 2 weeks, have you felt little interest or pleasure in doing things?"

If depression screening is mandatory for welfare caseloads in California, this could be an indirect source for collecting this information, although changing caseloads could undermine the continuity necessary for monitoring outcomes.

- Other:

First, the user should have a specific population in mind when using this indicator, given that the general population of mothers is not routinely screened for depression. Furthermore, a false diagnosis of depression can harm an individual. Two groups known to be at risk of depression, however, are new mothers and those receiving welfare—groups over-represented among young parents.

Second, there are many tools for diagnosing depression. The expression of depressive symptoms should not be confused with a diagnosis of clinical depression; the latter should clearly be made by a trained professional.

Third, the U.S. Preventive Services Task Force (USPSTF) recommends screening adults for depression in clinical practices that have systems in place to assure accurate diagnosis, effective treatment, and follow-up.[2,3]

Depression occurs in approximately 20 percent of women, compared with 10 percent of men over a lifetime.[21]

Each year, more than 400,000 women suffer from postpartum depression, with less severe postpartum mood changes know as “baby blues” afflicting up to 80 percent of new mothers. Untreated, postpartum depression can lead to “further depression, substance abuse, loss of employment, divorce and further social alienation, self-destructive behavior, or even suicide,” as well as putting the health of children at risk.[15]

Sources

[1] Adamakos, H., Ryan, K., Ullman, D., & Pascoe, J. (1986). Maternal social support as a predictor of mother-child stress and stimulation. *Child Abuse and Neglect, 10*, 463-470.

[2] Agency for Healthcare Research and Quality. (2002). *Screening for depression: a summary of the evidence for the U.S. Preventive Services Task Force*, from http://www.ahrq.gov/clinic/uspstfix.htm

[3] Agency for Healthcare Research and Quality. (2002). *Screening for depression: recommendations and rationale*, from http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

[4] Ahluwalia, S. K., McGroder, S. M., Zaslow, M., & Hair, E. C. (2001). *Symptoms of depression among welfare recipients: a concern for two generations*. Washington, DC: Child Trends.

[5] Bhatia, S. C., & Bhatia, S. K. (1999). Depression in women: diagnostic and treatment considerations. *American Family Physician, 60*, 225-240.

[6] Bush, G. W. (2002). *President's New Freedom Commission on Mental Health*. Washington, DC: Office of the Press Secretary.

[7] California Department of Mental Health. (2000). *Statistics and data analysis*. Retrieved July 25, 2002, from http://www.dmh.cahwnet.gov/SADA/default.asp

[8] California Health Interview Survey, Question AJ3. http://www.healthpolicy.ucla.edu/chis/news/

[9] CES-D, http://psychiatry.uchc.edu/screening/CES-D/

[10] Early Childhood Longitudinal Study- Kindergarten Cohort (ECLS-K), http://nces.ed.gov/ecls/kindergarten/data.asp

[11] Hair, E. C., McGroder, S., Zaslow, M., Ahluwalia, S. K., & Moore, K. A. (forthcoming). How do maternal risk factors affect children in low-income families?: Further evidence of two-generational implications. *Journal of Prevention and Intervention in the Community*.

[12] Hops, H. (1995). Age- and gender-specific effects of parental depression: a commentary. *Developmental Psychology, 31*(3), 428-431.

[13] Jayakody, R., & Pollack, H. (1997, November). *Barriers to self-sufficiency among low-income, single mothers: substance use, mental health problems, and welfare reform.* Paper presented at the Association for Public Policy Analysis and Management, Washington, DC.

[14] Johnson, A., & Mechstroth, A. (1998). *Ancillary services to support welfare to work*. Washington, DC: U.S. Department of Health and Human Services, & the Office of the Assistant Secretary for Planning and Evaluation.

[15] Melanie Stokes Postpartum Depression Research and Care Act, 107th Cong. H.R. 2380 (2001).

[16] National Health Interview Survey, http://www.cdc.gov/nchs/nhis.htm

[17] National Longitudinal Survey of Youth 1979, http://www.bls.gov/nls/nlsy79.htm

[18] nferNelson, http://www.nfer-nelson.co.uk/html/edu/

[19] U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General-executive summary*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, & National Institute of Mental Health.

[20] U.S. Department of Health and Human Services. (2001). *Indicators of welfare dependence.* Washington DC.

[21] Weismann, M. M., & Olfson, M. (1995). Depression in women: Implications for health care research. *Science, 269*, 799-801.

[22] Zaslow, M. J., Hair, E. C., Dion, M. R., Ahluwalia, S. K., & Sargent, J. (2001). Maternal depressive symptoms and low literacy as potential barriers to employment in a sample of families receiving welfare: Are there two-generational implications? *Women and Health, 32*(3), 211-252.

O. Parents provide nurturing and positive emotional support to their children.

5. Number and percentage of parents actually receiving treatment for depression or other mental health problems (C)

Category: Performance Measure

What is the definition of this indicator?

This indicator refers to the number of parents of children 0 to 5 years of age who report having received treatment or counseling for depression or other mental health problems. Treatment can include counseling, hospital visits, medications, use of a mental health facility, or doctor's office visits. The percentage of parents receiving treatment for depression or other mental health problems is calculated by taking the number of parents receiving treatment for depression or other mental health problems and dividing it by the number of parents of children 0 to 5 years of age who have a need for treatment. The denominator for this indicator may be problematic, because determining the number of parents who need treatment is extremely difficult. Two possible options would be to count only those parents who have been specifically referred for treatment through particular programs or to use the number of parents as the denominator.

Why is this indicator important?

Depressed mothers are more likely than nondepressed mothers to have poor parenting skills.[5,9,18] For instance, mothers who report more depressive symptoms have increased aggravation in parenting and less cognitively stimulating and supportive interactions with their children.[9,18] In addition, depressed mothers withdraw from their children or become intrusive and hostile toward them.[15] Poor parental mental health is also associated with harsh, inconsistent, and detached parenting. This contributes to the withdrawal, reduced activity and dysphoria observed in the children of these parents.[15]

The children of mothers who suffer from mental health problems are also more likely than other children to have behavioral, socioemotional, and health problems, which may lead to academic difficulties.[1,6,15] Compared with the children of nondepressed parents, the children of depressed parents are themselves more likely to develop mental health problems.[15] In addition, children of depressed mothers have poorer physical health than the children of nondepressed mothers.[1] Furthermore, in school, children whose parents report more depressive symptoms perform worse on math and reading assessments and have more behavior problems than children whose parents have fewer depressive symptoms.[9] These differences are found across all income levels.[1]

Treatment of depression and mental health problems can be effective. Approximately 1 in 10 women with young children experience depression,[6,15] although the incidence of depressive symptoms is higher for single parents in

low-income families.[4] However, depression can often be cured or the symptoms greatly alleviated.[14] Additionally, treatment is more effective and recurrences are less likely the earlier treatment begins.[14] Treatment of parents for mental problems should be expected to improve outcomes for the children of these parents.

Who else currently uses this indicator?

This indicator is tracked by the California Department of Mental Health.[3]

What are the possible sources of data for this indicator?

Data can be collected directly from parents or possibly from records. Communities wishing to gather this indicator can survey all or a representative sample of parents in the community. To collect information on the number of parents who are in need of treatment, communities may want to perform assessments or administer screening questionnaires such as the Center for Epidemiologic Studies – Depression Inventory (CES-D) or the General Health Questionnaire (GHQ) on the parents being surveyed, because respondents may not be aware that they are in need of treatment. The University of California at Los Angeles' Center for Health Policy Research uses a single question to measure depression referral in the California Health Interview Survey.[2] However, because these are not diagnostic instruments, they would only be crude indicators of the need for treatment. This information may also be collected from healthcare provider records.

Although self-report measures are not sufficient to diagnose depression, such measures are effective at assessing depressive symptoms. In one study involving children, when using the cutoff scores suggested for identifying depressed children with the Children's Depression Inventory (CDI), clinicians misdiagnosed 86 percent of depressed children,[13] although testing and assessment of children may be more challenging than testing and assessing adults. Although such measures may not be sufficient to diagnose depression, self-reporting inventories are useful in assessing depressive symptoms,[8] and researchers using the Beck Depression Inventory – II (BDI-II) showed that accuracy could be improved by recalibrating the cutoff scores on the basis of comparison with the results of diagnoses made by clinical interviews.[7]

The CES-D has proven to be an effective self-reporting measure of depressive symptoms and is highly correlated with clinical diagnosis of depression.[17] The GHQ also results in measures of depressive symptoms that are correlated with the results of clinical interviews, and it has a high test-retest reliability over a 2-week period.[10] Another well-documented self-reporting measure is BDI-II, which has been designed to match the criteria for depression outlined in the Diagnostic and Statistical Manual – IV (DSM-IV).[7] In addition, the Hamilton Depression Inventory has proven to be a valid and reliable self-reporting measure of the

severity of depressive symptoms, and has also been designed to include depressive symptoms described in the DSM-IV.[16]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Major measures of depressive symptoms, such as the CES-D or the GHQ, have high levels of reliability. Also, such tests generally correlate fairly well with clinical diagnoses among adults.[7,10,16,17]

Because many studies of children with depressed parents have only examined parents who have received treatment in a hospital or clinic, much of the literature on this indicator may be accurate only for persons who are more seriously depressed than the typical person who may suffer from less severe forms of depression.[6]

- Cultural Issues:

Women from diverse backgrounds experience rates of depression comparable to those of white women, but are at greater risk of having their depression go unrecognized or may not be likely to be treated by culturally competent professionals. Concerns have been raised that not enough research is addressing the efficacy of treatments for women from diverse backgrounds.[12]

- Other:

Depression rates are often measured as being twice as high among mothers living in poverty as those for mothers living at or above the poverty line.[15]

The literature on this indicator has mostly focused on the mental health of mothers, with relatively little attention paid to the mental health of fathers.[6] Research has shown, however, that parent-child interactions of depressed mothers are more negative than those of depressed fathers, and depressed mothers display less positive affect than depressed fathers.[11] This suggests that studies that focus solely on mothers' mental health are not representative of all parents.

In families experiencing marital harmony, maternal depression is less likely to lead to adverse consequences in children.[15]

Sources

[1] Ahluwalia, S. K., McGroder, S. M., Zaslow, M., & Hair, E. C. (2001). *Symptoms of depression among welfare recipients: A concern for two generations (Research Brief No. 2001-12)*. Washington, DC: Child Trends.

[2] California Department of Mental Health. (2002). *Medi-Cal Speciality Mental Health Services*. Retrieved July 25, 2002, from http://www.dmh.cahwnet.gov/SADA/default.asp

[3] California Health Interview Survey, http://www.healthpolicy.ucla.edu/chis/news/

[4] Child Trends. (1994). *How well are they faring? AFDC families with preschool children at the outset of the JOBS program* (No. 1994-17). Washington, DC: Author.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Parental symptoms of depression*. Retrieved July 9, 2002, from www.childtrendsdatabank.org

[6] Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*(1), 50-76.

[7] Dozois, D. J. A., Dobson, K. S., & Ahnberg, J. L. (1998). A psychometric evaluation of the Beck Depression Inventory-II. *Psychological Assessment, 10*(2), 83-89.

[8] Fristad, M. A., Emery, B. L., & Beck, S. J. (1997). Use and abuse of the children's depression inventory. *Journal of Consulting & Clinical Psychology, 65*(4), 699-702.

[9] Hair, E. C., McGroder, S., Zaslow, M., Ahluwalia, S. K., & Moore, K. A. (forthcoming). How do maternal risk factors affect children in low-income families?: Further evidence of two-generational implications. *Journal of Prevention and Intervention in the Community*.

[10] Hardy, G. E., Shapiro, D. A., Haynes, C. E., & Rick, J. E. (1999). Validation of the General Health Questionnaire-12: Using a sample of employees from England's health care services. *Psychological Assessment, 11*(2), 159-165.

[11] Jacob, T., & Johnson, S. (1997). Parent-child interaction among depressed fathers and mothers: Impact on child functioning. *Journal of Family Psychology, 11*(4), 391-409.

[12] Keita, G. P. (2002, January 30, 2002). *Women's mental health: What do we know and what do we need?* Retrieved July 25, 2002, from www.apa.org/ppo/issues/pwomensmh102.html

[13] Matthey, S., & Petrovski, P. (2002). The Children's Depression Inventory: Error in cutoff scores for screening purposes. *Psychological Assessment, 14*(2), 146-149.

[14] National Institute of Mental Health - U.S. Department of Health and Human Services. (2000). *Depression: What every woman should know*. Bethesda, MD: author.

[15] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[16] Reynolds, W. M., & Kobak, K. A. (1995). Reliability and validity of the Hamilton Depression Inventory: A paper-and-pencil version of the Hamilton Depression Rating Scale Clinical Interview. *Psychological Assessment, 7*(4), 472-483.

[17] Wong, Y.-L. I. (2000). Measurement properties of the Center for Epidemiologic Studies--Depression Scale in a homeless population. *Psychological Assessment, 12*(1), 69-76.

[18] Zaslow, M. J., Hair, E. C., Dion, M. R., Ahluwalia, S. K., & Sargent, J. (2001). Maternal depressive symptoms and low literacy as potential barriers to employment in a sample of families receiving welfare: Are there two-generational implications? *Women and Health, 32*(3), 211-252.

O. Parents provide nurturing and positive emotional support to their children.

6. Number and percentage of parents receiving treatment for alcoholism or substance abuse (C)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of parents who report having received treatment or counseling designed to help them stop using alcohol or drugs (not including cigarettes) since the birth of their first child. Treatment can include counseling; visits to the hospital, a residential drug or alcohol rehabilitation facility, a mental health facility, a doctor's office, or an emergency room; treatment in a jail or institution; participation in a self-help group (e.g., Alcoholics Anonymous); detoxification; or any treatment for medical problems associated with alcohol or drug use. The percentage is calculated by taking the number of parents who received treatment for alcoholism or substance abuse and dividing it by the number of parents that have a need for treatment. The denominator for this is problematic, given that determining the number of parents who need treatment is extremely difficult. One option would be to count only those parents who have been specifically referred for treatment through particular programs. If a survey of parents is conducted, a question could be posed to the parent; however, sample sizes are likely to be small and underreporting is likely, resulting in an unreliable estimate. All parents could be used as the denominator as well.

Why is this indicator important?

In 1996, it was estimated that 6 percent of children in the United States had at least 1 parent who was in need of treatment for illicit drug abuse, 4 percent lived with at least 1 parent who was dependent on illicit drugs, and 8 percent lived with at least 1 parent who was dependent on alcohol.[5]

Untreated parental alcoholism and substance abuse can negatively influence children's well-being. Research has shown that children of alcoholics are at a higher risk for becoming alcoholics themselves when compared with children of nonalcoholics.[2,7,20] Similarly, children whose parents are substance abusers are also more likely to become substance abusers themselves.[4] One study found prenatal alcohol exposure was linked with depression in children.[13] Parents who abuse alcohol and substances are also more likely to abuse their children.[9] Alcohol, and some illicit drugs, can increase excitability, irritability, and paranoia, which when combined with the lowered inhibitions caused by these substances may result in increased violent and aggressive behaviors, particularly in those prone to violent behavior.[9]

Parental alcohol and substance abuse is also related to children's poor academic outcomes. One study found that parental alcoholism is linked to poor intellectual outcomes in elementary school.[14] Children of alcoholics are more likely to have academic difficulty than other students, often because alcoholic parents are less likely to provide the supervision, support, and intellectual engagement that their children need to succeed in school.[6] Similarly, children whose parents are substance abusers are at greater risk of retardation, learning impairments, and poor school achievement.[4]

Treatment for alcoholism and substance abuse has many benefits for both the parent who is receiving treatment and the children of such parents. National studies suggest that drug treatment can be effective.[8,9] Note, however, that the effectiveness of treatment can vary on the basis of the extent of the problems, the type of treatment, the length and intensity of treatment, the related services used to address the problems, and the patient's active engagement in the process.[12] Beyond the benefits for the parent, it follows that children of effectively treated parents will benefit from a reduction in the negative behaviors and risks posed by substance abusing parents.

Who else currently uses this indicator?

The U.S. Office of Applied Studies, Substance Abuse and Mental Health Services Administration (SAMHSA) coordinates and manages collection of national data on treatment admissions. Through the Treatment Episode Data Set (TEDS), SAMHSA collects information on treatment admissions to facilities that are licensed or certified by state substance abuse agencies. The system includes data that are routinely collected by states to monitor their substance abuse treatment systems. Note, however, that because this system represents admissions and not individuals, double counting could occur; moreover the system represents only those facilities that are licensed or certified by the state. Thus, it is not an all-inclusive system. More information about TEDS can be found online,[17] including the latest data for California.[18] TEDS does not differentiate between parents and nonparent participants.

The California Department of Alcohol & Drug Programs collects data for California in its participant records;[3] however, the Department does not differentiate between parents and nonparent participants.

What are the possible sources of data for this indicator?

Although problematic, these data can probably be obtained only by asking parents. Underreporting in a survey is quite likely. Also, because the percentage who are abusers is fairly low, the percentage and number who receive treatment will be even lower. With modest samples there maybe be too few cases to provide stable estimates if a survey approach is used.

Several national surveys collect information on substance abuse and treatment. The National Household Survey on Drug Abuse (NHSDA) has a section on substance abuse treatment. The survey is nationally representative and is available online.[11] The 1998, 1999, and 2000 National Health Interview Survey (NHIS) surveys adults regarding their alcohol use behaviors, but this survey does not ask questions about treatment.[10]

The Teenage Parent Demonstration, a welfare-to-work project, in Camden and Newark, New Jersey, and Chicago, Illinois, conducted interviews of participants that queried them about whether or not they received treatment for substance abuse.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

One study found that workplace and legal interventions played a factor in receiving treatment for alcohol abuse.[19] Another study found that involvement in and retention of individuals in outpatient treatment for alcohol abuse could be influenced by internal (e.g., feeling a sense of accomplishment) and external motivation (e.g., financial incentives).[16] One program, Project MATCH, showed that those individuals with a higher motivation to change at the start of treatment were more likely to have successful outcomes after the intervention.[15]

- Cultural issues:

A recent review noted that: "Studies among Hispanics have found substantial differences among Hispanic subgroups in drinking patterns and rates of alcohol-related problems. Moreover, no single variable can explain the observed patterns. Similarly, numerous factors have been shown to shape drinking patterns among blacks, including individual and environmental characteristics as well as historical and cultural factors. Different subgroups of Asian-Americans also vary substantially in their rtes of drinking and heavy drinking, although their lifetime alcohol use is lower than the national average. Genetic and cultural factors, as well as stress and historic experiences, may influence drinking patterns of Asian-Americans. The widely differing drinking patterns among Native Americans also are likely shaped by a variety of influences".[1]

- Other:

Receiving treatment for alcoholism may depend on a person's ability to afford treatment or whether a person has health insurance. This indicator may reflect socioeconomic status. Moreover, note that receiving treatment does not necessarily mean that the parent is no longer abusing substances.

Sources

[1] Caetano, R., Clark, C., & Tam, T. (1998). Alcohol consumption among racial/ethnic minorities. Theory and research. *Alcohol Health and Research World, 22*(4), 233-241.

[2] Cotton, N. S. (1979). The familial incidence of alcoholism: A review. *Journal of Studies on Alcohol, 40*, 89-116.

[3] Department of Alcohol and Drug Programs. (2000). *Participant records*. Retrieved July 25, 2002, from http://www.adp.ca.gov/

[4] Gerstein, D. R., Johnson, R. A., & Larison, C. L. (1997). *Alcohol and other drug treatment for parents and welfare recipients: Outcomes, costs, and benefits*. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health & Human Services.

[5] Huang, L. X., Cerbone, F. G., & Cfroerer, J. C. (1998). *Children at risk because of parental substance abuse. Analyses of substance abuse and treatment need issues.* Rockville, MD: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[6] Johnson, J. L., & Leff, M. (1999). Children of substance abusers: Overview of research findings. *Pediatrics, 103*(5 Supplement), 1085-1099.

[7] Merikangas, K. R., Leckman, J. F., Prussoff, B. A., Pauls, D. L., & Weissman, M. M. (1985). Familial transmission of depression and alcoholism. *Archives of general psychiatry, 42*, 367-372.

[8] Moos, R. H., Finney, J. W., Ouimette, P. C., & Suchinsky, R. T. (1999). A comparative evaluation of substance abuse treatment: I. Treatment orientation, amount of care, and 1-year outcomes. *Alcoholism: Clinical & Experimental Research, 23*(3), 529-536.

[9] National Center of Addiction and Substance Abuse at Columbia University. (1999). *No safe haven: Children of substance-abusing parents*, from http://www.casacolumbia.org/usr_doc/7167.pdf

[10] National Health Interview Survey, Questions AHB.140-AHB.180. http://www.cdc.gov/nchs/nhis.htm

[11] National Household Drug Abuse Survey, Section TX. http://www.samhsa.gov/oas/nhsda.htm

[12] National Institute of Drug Abuse - National Institues of Health. (1999). *Principles of drug addiction treatment: A research-based guide*. Retrieved July 22, 2002, from http://165.112.78.61/PODAT/PODATIndex.html

[13] O'Connor, M. J., & Kasari, C. (2000). Prenatal alcohol exposure and depressive features in children. *Alcoholism: Clinical & experimental research, 24*(7), 1084-1092.

[14] Poon, E., Ellis, D. A., Zucker, R. A., & Fitzgerald, H. E. (2000). Intellectual, cognitive, and academic performance among sons of alcoholics during the early school years: Differences related to subtypes of familial alcoholism. *Alcoholism: Clinical & experimental research, 24*(7), 1020-1027.

[15] Project MATCH Research Group. (1998). Matching alcoholism treatments to client heterogeneity: Project MATCH post-treatment drinking outcomes. *Journal of Studies on Alcohol, 58*(1), 7-29.

[16] Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors, 20*(3), 279-297.

[17] Treatment Episode Data Set, see questionnaire. http://www.samhsa.gov/oas/dasis.htm#teds2

[18] Treatment Episodes Data Set, see full report.
http://wwwdasis.samhsa.gov/webt/quicklink/CA01.htm

[19] Weisner, C., & Matzger, H. (2002). A prospective study of the factors influencing entry to alcohol and drug treatment. *Journal of behavioral health services & research, 29*(2), 126-137.

[20] West, M. O., & Prinz, R. J. (1987). Parental alcoholism and childhood psychopathology. *Psychological Bulletin, 102*, 204-218.

O. Parents provide nurturing and positive emotional support to their children.

7. Number and percentage of people who are aware of any support services available in their community (P)

Category: Performance measure

What is the definition of this indicator?

This indicator refers to the number of individuals who are aware of the availability of any support services in their community. That awareness can be measured by asking whether respondents know of a place where they, or a friend, could go if they needed help. For the most part, people only need to know about one service to meet their needs, as opposed to being aware of all of the possible resources available. The percentage can be calculated by measuring the number of people in the population who are aware of services and dividing that by the total number of people in the community.

Why is this indicator important?

Support services are important for parents. Research has shown that the more support services that parents use, the less likely that they are to engage in negative parental behaviors.[5] These services can come in the form of formal or informal supports.[7] Informal supports such as social support networks reduce social isolation,[8] whereas more formal support services provide information to parents and may provide a role model for parenting behavior.[14] In addition, social support networks are associated with improved parenting skills, greater knowledge of child development and improved family relations.[8] The absence of support services can have negative effects. For instance, low-income parents who identified few social supports were more likely to hit or slap their child during a crisis.[5]

Support services are important for the well-being of children beyond the positive influence the services may have on parenting skills. In particular, formalized services can increase children's positive outcomes.[9] Interventions have been shown to enhance school performance of children.[2-4,6,11,12] They can also enhance cognitive and social development.[2-4,13] In addition, children benefit from receiving the health care support services that fall into the broad category of "early intervention."[9]

Despite the benefits of support services, there are many barriers to receiving support services. Clearly, members of a community must know that services are available to them in order to take advantage of them. Furthermore, even if parents are aware of the services, research has shown that many are reluctant to use them. Parents have indicated that they would not seek help from doctors, pastors, or teachers because they were afraid of being judged or appearing stupid.[7] As a result, not only is it important for programs to make the

community aware of the services they offer, but to communicate the benefits of such services and develop an element of trust within the community.

Who else currently uses this indicator?

No national organizations or states track this indicator.

What are the possible sources of data for this indicator?

Communities wishing to gather this indicator could survey all or a representative sample of households. Data cannot be collected from program participants, because they would be a self-selected and biased sample.

One national survey collects similar information. The 1997 and 1999 National Survey of America's Families, a nationally representative survey, gathered information about whether respondents knew of services to address varied problems and why people did not access support services for help with specific issues (e.g., keeping their children out of trouble with pregnancy, drugs, or crime; arguing a lot with their children). Among the possible responses are "Didn't know where to go for help" and "No services available in the community."[10]

Although we were unable to locate any communities that use the exact measure of awareness of support services defined above, several communities attempt to gather information about respondents' perceptions of, or their access to, support services in their community. The Adaptive Coping with Urban Crime and Fear survey asked Baltimore, Maryland residents about their perceptions of social support resources. The Family Context Interview surveyed Atlanta, Georgia households about their perception of the accessibility of community services. The Neighborhood Context survey includes items on the availability of resources and services in a neighborhood. The Neighborhood Study Questionnaire assessed the awareness of available services in Cleveland, Ohio.

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Research has found that awareness of support services can be influenced through a parent education program. One study found that parent education/training increased parents' sense of competence and reduced their sense of social isolation.[1]

- Cultural issues:

There may be cultural differences in the use of support services. Specifically, a stigma may be associated with using support services. For example, in Hispanic families, the family is considered to be the primary social support unit, and t a stigma is associated with seeking help from sources outside the family.[15]

- Other:

This indicator may be influenced by the ability of support services to promote their services and activities within the community. In addition, awareness does not necessarily imply acceptance, appropriateness, or use of services.

Sources

[1] Barber, J. G. (1992). Evaluating parent education groups: Effects on sense of competence and social isolation. *Research on Social Work Practice, 2*, 28-38.

[2] Farran, D. C. (1990). Effects of intervention with disadvantaged and disabled youth: A decade review. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 501-539). New York: Cambridge University Press.

[3] Farran, D. C. (2000). Another decade of intervention for children who are low income or disabled: What do we do now? In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (Second ed., pp. 510-548). New York: Cambridge University Press.

[4] Guralnick, M. J. (1998). The effectiveness of early intervention for vulnerable children. *American Journal of Mental Retardation, 102*, 319-345.

[5] Hashima, P. Y., & Amato, P. R. (1994). Poverty, social support, and parental behavior. *Child Development, 65*, 394-403.

[6] Karoly, L. A., Greenwood, P. W., Everingham, S. S., Houbе, J., Kilburn, M. R., Rydell, C. P., et al. (1998). *Investing in our children: What do we know and don't know about the costs and benefits of early childhood interventions*. Santa Monica, CA: RAND.

[7] Keller, J., & McDade, K. (2000). Attitudes of low-income parents toward seeking help with parenting: Implications for practice. *Child Welfare, 79*(3), 285-312.

[8] Mueller, M. R., & Patton, M. Q. (1995). Working with poor families: Lessons learned from practice. *Marriage and Family Review, 21*, 65-90.

[9] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[10] National Survey of America's Families, Questions N10D and N11D. http://www.urban.org/content/Research/NewFederalism/NSAF/Questionnaire/Question.htm

[11] Ramey, C. T., & Campbell, F. A. (1984). Preventative education for high-risk children: Cognitive consequences of the Carolina Abecedarian Project. *American Journal of Mental Deficiency, 88*, 515-523.

[12] Schweinhart, L. J., Barnes, H., Weikart, D. P., Barnett, W. S., & Epstein, A. S. (1993). *Significant benefits: The High/Scope Perry Preschool study through age 27*. Ypsilanti, MI: The High/Scope Press.

[13] Skonkoff, J. P., & Hauser-Cram, P. (1987). Early intervention for disabled infants and their families. *Pediatrics, 80*(650-658).

[14] Tracy, E. M. (1990). Identifying social support resources of at-risk families. *Social Work, 35*, 193-288.

[15] Vega, W. A., Hough, R. L., & Romero, A. (1983). Family life patterns of Mexican Americans. In G. J. Powell (Ed.), *The psychosocial development of minority group children* (pp. 194-251). New York: Brunner/Mazel.

O. Parents provide nurturing and positive emotional support to their children.

8. Number and percentage of parents who report a sense of belonging to the neighborhood/community (P)

Category: Structural measure

What is the definition of this indicator?

This indicator refers to the total number of parents who feel a sense of belonging (i.e., report feeling connected or strongly connected) to their communities. A parent's sense of belonging is defined as the degree to which they feel as though characteristics of their neighborhood or community (e.g., friends, neighbors, the community itself, places of worship, coworkers) add to their sense of connectedness to their community.[11] The percentage is calculated by dividing the number of parents who report a sense of belonging by the total number parents.

Why is this indicator important?

Parents who feel connected to their communities feel that they have a better quality of life. Social connectedness, which includes the relationships and interpersonal social resources that an individual possesses, is a stronger predictor of perceived quality of life in a community than the community's education level or income.[8] It is also more predictive of personal happiness than personal income or education levels. In contrast, a decreased sense of belonging is associated with depressive symptoms.[6] Communities where social connection is higher are less likely to experience crime and are more likely to have clean public spaces.[7]

Communities that provide youth with a strong sense of belonging are better able to deter negative behaviors. For instance, communities that foster a sense of belonging in their youth are the most able to deter adolescent alcohol use.[5] In addition, research examining social connectedness among youth on college campuses suggests that such connectedness may lower the risk of binge drinking.[12]

A sense of belonging is also associated with positive youth behaviors. Early exposure to community service activities can help promote connectedness and a sense of belonging in one's community.[4] International research suggests that volunteerism and close relationships among students may also facilitate later interest in civic life.[3]

Who else currently uses this indicator?

This indicator is currently used by the Center for Creative Leadership (CCL) in Colorado, the Center on Urban Poverty & Social Change at Case Western Reserve University (CWRU), and the Saguaro Seminar at Harvard University.

What are the possible sources of data for this indicator?

This indicator can be gathered by surveying a representative sample of parents. The Social Capital Community Benchmark Survey national sample included 3,000 respondents. It also had representative samples in 40 communities nationwide (in 29 states, including California) which included an additional 26,200 respondents.[10] These subpopulations provide site-specific data for researchers interested in particular municipalities or geographic areas. Data for the Social Capital Community Benchmark Survey were collected via a telephone survey.

This indicator is measured by the Sense of Belonging Scale (developed by CWRU)[2] and the Campbell Community Survey (CCL)[1].

Standard survey items are available online. The Social Capital Community Benchmark Survey, designed by the Saguaro Seminar: Civic Engagement in America, also collects information on this indicator. The full set of items from the survey can be found online.[9] The survey asks questions about familiarity with neighbors, attendance at cultural events, volunteerism, trust in civil servants, political knowledge, and the perception of the respondent's ability to effect change in his or her community, along with other issues.

Are there any key issues or concerns about the use of this indicator?

- Cultural issues:

Results from the Social Capital Community Benchmark Survey suggest that residents of ethnically diverse communities are less likely to connect with other people in their communities, even informally, than are residents of more ethnically homogenous communities. When possible, data should be disaggregated by ethnic groups.

Sources

[1] Campbell Community Survey, http://www.aspenmeasures.org/html/final_results.asp?table=instrument&id=118

[2] Center on Urban Poverty and Social Change, http://povertycenter.cwru.edu/

[3] Flanagan, C., Bowes, J., Jonsson, B., Csapo, B., & Sheblanova, E. (1998). Ties that bind: Correlates of adolescents' civic commitments in seven countries. *Journal of Social Issues, 54*, 457-475.

[4] Flanagan, C. A., & Gill, S. (1999, April 16). *Social integration, identity, and youth civic commitments.* Paper presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque, NM.

[5] Grossman, M., Chaloupka, F., Saffer, H., & Laixuthai, A. (1994). Effects of alcohol price policy on youth: A summary of economic research. *Journal of Research on Adolescence, 4*, 347-364.

[6] Hagerty, B., & Williams, R. (1999). The effects pf sense of belonging, social support, conflict and loneliness in depression. *Nursing Research, 48*, 215-219.

[7] Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

[8] Saguaro Seminar. (2001). *Social capital benchmark survey*. Cambridge, MD: Harvard University.

[9] Social Capital Community Benchmark Survey, http://www.ropercenter.uconn.edu/scc_bench.html

[10] Social Capital Community Benchmark Survey, http://www.cfsv.org/communitysurvey/ca.html

[11] The Roper Center for Public Opinion Research. (2001). *Social capital benchmark survey: Methodology and documentation*. Storrs, CT: Author.

[12] Weitzman, E., & Kawachi, I. (2000). Giving means receiving: The protective effect of social capital on binge drinking on college campuses. *American Journal of Public Health, 90*, 1936-1939.

O. Parents provide nurturing and positive emotional support to their children.

9. Percent of parents who are afraid to let their children play outside because of concern about crime or the children's safety (P)

Category: Structural measure

What is the definition of this indicator?

This indicator is calculated by dividing the number of parents who responded that they were afraid to let their children play outside because of concern about crime or child's safety by the total number of parents.

Why is this indicator important?

Parents' fear of letting their child play outside may restrict children's' activities, which can have a negative impact on child development.[5] To the extent that parents' fears reflect actual neighborhood risks, they indicate the extent to which children do not have safe neighborhoods in which to play. Parents' perceptions of lack of safety in their neighborhoods are likely to make them unwilling to let their children take advantage of outside facilities or resources such as playgrounds, libraries, and parks.[7] Children who live in such severely constricted conditions may have less opportunity to develop relationships with peers and other adults and a sense of autonomy.[5 7]

Parents' fear of letting children play outside may also negatively affect parenting styles. Research has shown that parents who live in an unsafe environment may use harsh and punitive methods of discipline and show less warmth and affection in an effort to keep their children safe.[3] Moreover, to cope with the stress of unsafe neighborhoods, families may adopt a world view that is distant and lacking in trust, which can cause problems in social settings like school, and interfere with the healthy development of relationships.[3]

Who else currently uses this indicator?

No national monitoring groups or organizations are currently tracking this indicator.

What are the possible sources of data for this indicator?

This indicator can be gathered by surveying a representative sample of parents. Data can be collected in a telephone survey, an in-home survey, or in a questionnaire given to parents when their children enter kindergarten.

This indicator has been used in nationally representative surveys. This indicator is used in The Family and Child Experiences Survey (FACES) and the Kindergarten Year (Spring 2000) Head Start parent survey. This indicator was

later adapted for use in the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K).[1]

Variations on this indicator are used by several community and city organizations. For example, the Violence Intervention Project in New Orleans, Louisiana, measured parents' and children's perceptions of violence in their neighborhoods.[2] Additional community-based surveys that measure perceptions of neighborhood safety can be found on the Aspen Institute Web site.[6]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

Perceived neighborhood safety is closely related to actual crime rates in the respondent's neighborhood.[2] Although a reduction in crime rates could reduce negative perceptions of safety, this possibility has not yet been tested.[7] (See indicator L2.)

- Other:

Positive household and individual level factors can mediate the negative effects of poor neighborhoods.[4]

Sources

[1] Early Childhood Longitudinal Study Kindergarten Cohort, Question HEQ.400. http://nces.ed.gov/ecls/

[2] Fick, A., Osofsky, J., & Lewis, M. (1997). Perceptions of violence: Children, parents and police officers. In J. Osofsky (Ed.), *Children in a violent society* (pp. 261-276). New York: The Guilford Press.

[3] Garbarino, J. (1992). *Children in danger: Coping with the consequences of community violence*. San Francisco: Jossey-Bass.

[4] Halle, T., Zaff, J., Calkins, J., & Margie, N. (2000). Part II: Reviewing the literature on contributing factors to school readiness. In *Background for community-level work on school readiness: A review of definitions, assessments and investment strategies*. Washington DC: Child Trends.

[5] Lipsey, M. W., & Wilson, D. B. (1993). The efficacy of psychological, education, and behavioral treatment. *American Psychologist, 48*(12), 1181-1209.

[6] *Measures for community research*. Retrieved June 20, 2002, from http://www.aspenmeasures.org/html/keyword_results.asp.

[7] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.) Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

P. Children achieve permanency.

1. Number and percentage of children under age 5 who have lived in foster care within the past year (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children under age 5 who have been placed into a living arrangement such as a nonrelative foster home, relative foster home (also known as "kinship care"), group home, institution, or preadoptive home, because a child protective services worker or a court decided they could not safely live at home. The percentage is calculated by dividing the number of children under age 5 in foster care by the total number of children under age 5.

Why is this indicator important?

Children are placed in foster care because a finding has been made under state law that it is not safe for them to remain in their parents' homes. Children are removed from the home for a variety of reasons such as neglect, abandonment, physical abuse, and sexual abuse. Foster care is an extreme intervention and only about 10 percent of reported maltreatment cases result in the removal of a child from the home. Young children are more likely to enter foster care and usually do so because neglect has occurred.

Studies have shown that children in foster care have more psychological, health, and educational problems than their counterparts not in foster care. [4,17,24] A wide range of family and parenting difficulties are associated with early foster care placement, and a wide and complex array of health and developmental problems are experienced by these children, who also may not receive the comprehensive health, early intervention, and family support services that they need.[18] Research suggests that foster care placements may lack stability, occur in the context of poverty, and have caregivers whose psychological well-being is poor.[7,8,17] One study found that more than 25 percent of children in foster care are living with a caregiver who reports high levels of aggravation and stress in the parenting role.[9] According to the only national study of 810 youth aging out of foster care, 38 percent were emotionally disturbed, 50 percent had used illegal drugs, and 25 percent were involved with the legal system.[6] Research on the effects of early foster care is limited, however, and hard to interpret. (See the section on "other concerns" below.)

Children in foster care also experience negative outcomes in school. They are less engaged in school,[15] perform worse academically,[16] on average are 1 year behind educationally,[14] and have lower educational attainment than their nonfoster care counterparts.[11] In addition, they are more likely to have been suspended or expelled from school.[15]

However, there may be benefits to foster care. Foster care can lead to a permanent home. According to the Adoption and Foster Care Analysis and Reporting System, most children who are adopted are adopted by their foster parents. Two recent studies based on small, localized samples found that being in foster care was associated with improved behavioral outcomes. A recent study in San Diego, California found that youth aged 7 to 12 who remained in foster care for at least 5 months and who did not reunify with their natural parents had fewer risky or negative behaviors 6 years later than youth who did reunify.[21] Similarly, a recent study of all young children entering foster care in a region of Connecticut found that the children's ability to meet "age and culturally appropriate standards of personal independence and social sufficiency" increased over 2 consecutive 6-month periods following placement.[13] Moreover, existing evidence suggests that children in the child welfare system are more likely to have their emotional and behavioral needs addressed.[15] This may be due to increased access to psychological or medical services. Children in foster care are also less likely to have skipped school than children living with a single parent in a low-poverty situation.[15]

Who else currently uses this indicator?

This indicator is tracked by national, state, and local agencies. Nationally, the *Child Trends Databank*, Children NOW, and the U.S. Department of Health and Human Services track this indicator.[5,23]

Additionally, every state's child welfare agency maintains records on foster care placements. (For California, this agency is the Department of Social Services.)[3] Several local policy and data efforts in California use this indicator and report it in their counties' community scorecards, as seen in Orange, Los Angeles, and Santa Barbara counties. Similarly, communities around the nation also track foster care rates (e.g., Greenville, South Carolina with its Community Planning Council of Greenville County).

What are the possible sources of data for this indicator?

The Adoption and Foster Care Analysis and Reporting System (AFCARS) collects national and state level data on foster care. It reports data for children in foster care under age 5. The system is administered by the Administration for Children and Families in the U.S. Department of Health and Human Services.

Additionally, data on foster care placements can be found in child protective services records for each state. In California, the Department of Social Services collects data on foster care placement,[1] which can be found online.[2]

Are there any key issues or concerns about the use of this indicator?

- Reliability/Validity:

Duplicate cases have been recorded in the AFCARS data and the state level data, resulting in double counting. However, the number of duplicate cases in the AFCARS data set has declined in recent years.

- Sensitivity to change:

Because relatively few programs have been designed to reduce the number of children in foster care over long periods of time, it is unclear how sensitive this indicator is to change over time.

However, one quasiexperimental study of a county-level project, the Alameda Project, designed to reduce long-term foster care by training foster care caseworkers showed an increase in the number of foster care children restored to their homes and a reduction in the number of children remaining in foster care.[19 20]

A state-level intervention, the Oregon Project, successfully implemented (or was in the process of implementing) permanent placements with biological or adoptive families for 90 percent of foster care children within 3 years.[10]

The rate of children in foster care (i.e., the number of children in foster care per 1,000 children under 18 years of age) has risen in the past 2 decades—from 4.2 per 1,000 in 1982 to 7.5 per 1,000 in 2000.[23]

- Cultural Issues:

Children from diverse backgrounds are overrepresented in foster care. As reported by the Children's Bureau, U.S. Department of Health and Human Services (January 2002), 39 percent of children in foster care are black non-Hispanic; 34 percent white non-Hispanic; 3 percent Native American /Alaskan and Asian/Pacific Islander, and 7 percent unknown. White children are 5 times more likely to be adopted than to stay in long-term foster care compared with black children, and 2.5 times as compared with Hispanic children.[22]

A 1999 document from the Family Resource Coalition of America suggests that the current treatment of children from diverse backgrounds continues to reflect racial bias because (1) the system responds more slowly to crisis with families from diverse backgrounds, (2) families from diverse backgrounds have less access to support services, and (3) children from families of diverse backgrounds receive less comprehensive services plans and maybe overrepresented in substitute services as a result.[12]

- Other concerns:

Note that research on foster care is limited (particularly for infants and young children), and therefore conclusions about implications for children's

development are hard to reach. It is difficult to distinguish outcomes that result from the maltreatment that precipitated the children's move into the foster care system from outcomes of foster care itself. For example, young children coming from environments of drug abuse may also have suffered from inadequate housing, poor nutrition, violence, and other hazards. Many infants who enter foster care at birth were born with the developmental risks associated with low birth weight and exposure to drugs. (See indicators A2, A3, and A5.) Some infants enter care after months in unsafe homes. If these children were left with their families, they might experience far worse consequences.

In addition, most research on foster care is cross-sectional, making it difficult to assess long-term results for individual children.

Sources

[1] California Department of Social Services, http://www.dss.cahwnet.gov/cdssweb

[2] California Department of Social Services, http://www.dss.cahwnet.gov/research/Children-s_405.htm

[3] California Department of Social Services. (2002). *CWS/CMS total children in supervised out-of-home placements by placement*. Retrieved July 25, 2002, from http://www.dss.cahwnet.gov/research/Children-s_405.htm

[4] Chernoff, R., Combs-Orme, T., Risley-Curtiss, C., & Heisler, A. (1994). Assessing the health status of children entering foster care. *Pediatrics, 93*, 594-601.

[5] Child Trends. (2002). *Child Trends Databank Indicator: Foster care*. Retrieved July 18, 2002, from http://www.childtrendsdatabank.org

[6] Cook, R. (1991). *A national evaluation of Title IV-E foster care independent living programs for youth: Phase 2 final report*. Rockville, MD: Westat.

[7] Ehrle, J., & Geen, R. (in press). *Kin and nonkin foster care: Findings from a national survey*. Washington, DC: The Urban Institute.

[8] Ehrle, J., Geen, R., & Clark, R. (2001). *Children cared for by relatives: Who are they and how are they faring?* (Assessing the New Federalism Policy Brief B-28). Washington, DC: The Urban Institute.

[9] Ehrle, J., & Moore, K. (1999). *Benchmarking child and family well-being measures in the NSAF* (National Survey of America's Families Methodology Report No. 6). Washington, DC: The Urban Institute.

[10] Emlen, A., Lahti, J., Downs, G., McKay, A., & Downs, S. (1977). *Overcoming barriers to planning for children in foster care*. Portland, OR: Regional Research Institute for Human Services, Portland State University.

[11] Festinger, T. (1994). *The foster children of California*. Sacramento, CA: The Children's Services Foundation.

[12] Haymes, M. V. d., & Medina, I. (1999, April 16, 1999). *Latino culture, child welfare and family support*. Retrieved July 2, 2002, from http://www.casanet.org/library/culture/latino-culture.htm

[13] Horowitz, S. M., & Balestracci, K. M. B. (2001). Foster care placement improves children's functioning. *Archives of pediatric and adolescent medicine, 155*, 1255-1260.

[14] Jones M., & Moses, B. (1984). *West Virginia's former foster children: Their experience and their lives as young adults*. New York: Child Welfare League.

[15] Kortenkamp, K., & Ehrle, J. (2002). *The well-being of children involved with the child welfare system: A national overview* (New Federalism, Series B: No. B-43). Washington, DC: The Urban Institute.

[16] Ohio Department of Human Services. (1987). *Children in out-of-home care*. Columbus, OH: Division of Children and Family Services.

[17] Pilowsky, D. (1995). Psychopathology among children placed in family foster care. *Psychiatric Services, 46*, 906-910.

[18] Silver, J., Amster, B., & Haecker, T. (Eds.). (1999). *Young children and foster care*. Baltimore: Paul H. Brookes Publishing Co.

[19] Stein, T. J., & Gambrill, E. D. (1976). *Decision making in foster care: A training manual*. Berkeley, CA: University Extension Publications.

[20] Stein, T. J., Gambrill, E. D., & Wiltse, K. T. (1978). *Children in foster homes: Achieving continuity of care*. New York: Praeger Publishers.

[21] Taussig, H. N., & Clyman, R. B. (2001). Children who return home from foster care: A 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics, 108*(1), 1-7.

[22] U.S. Department of Health and Human Services: Children's Bureau. (2001, June). *The AFCARS report: Interm FY 1999 estimates as of June 2001*, from http://www.acf.dhhs.gov/programs/cb/publications/afcars/june2001.pdf

[23] U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation. (2001). *Trends in the well-being of America's children & youth 2001*. Washington, D.C.: author.

[24] Zima, B., Bussing, R., Freeman, S., Yang, X., Belin, T., & Forness, S. (2000). Behavior problems, academic skills delays and school failure among school-aged children in foster care: Their relationship to placement characteristics. *Journal of Child and Family Studies, 9*, 87-103.

P. Children achieve permanency.

2. Number and percentage of children under age 5 in foster care who are placed into a permanent home (C)

Category: Outcome measure

What is the definition of this indicator?

This indicator refers to the number of children under 5 who have entered the foster care system and exited to a permanent home either with biological or adoptive families. These children entered the foster care system because a child protective services worker or a court decided they could not safely live at home.

The percentage is calculated by taking the number of children under age 5 with permanent placements in the foster care system and dividing it by the total number of children under age 5 in the foster care system.

Why is this indicator important?

Children are placed in foster care because a child protective services worker or court has decided that it is not safe for the child to remain at home due to a risk of maltreatment such as neglect and physical or sexual abuse. It is considered to be temporary solution. It is important to note that research on foster care is limited and therefore conclusions are difficult to reach.

One issue facing foster care is its ability to find permanent placements for children. Most children are in foster care for less than a year and according to 1999 data about 35 percent are in foster care less than 6 months. Younger children are less likely to be in foster care more than 6 months. Foster care is designed to have children enter the system, receive care and services, and leave the system.[16] However, one of the main issues facing the foster care system is its ability to get children out of foster care and into permanent placements.[7] Long term foster care can be expensive and is not the goal of foster care. The cost of maintaining a child in foster care is approximately $15,000 per year.[10,12] In addition, research suggests that finding a child a permanent home should be a child protective agency's primary objective and that children should not be allowed to remain in long-term foster care.[21] The longer a child stays in foster care, the less likely he or she is to leave the foster care system.[9,13,18] A small percentage of children age out of foster care. However most children return home or are placed into a permanent home and never return to the foster care system again.

Children in foster care experience many negative outcomes however, foster care may not be the cause of these outcomes. It is possible that a child's environment prior to foster care is the antecedent of these outcomes. Studies have shown that children in foster care have more delays than their non foster care counterparts in psychological, health, and educational outcomes.[2,20,26]

In addition, research suggests that foster care homes may lack security, may be in poverty, and may have caregivers with poor psychological stability.[5,17,20] One study found that over 25 percent of children in foster care are living with a highly aggravated caregiver as measured by a four-item scale.[6] According to the only national study of 810 youth aging out of foster care, 38 percent were emotionally disturbed, 50 percent had used illegal drugs, and 25 percent were involved with the legal system.[4] As mentioned before however, these outcomes cannot be directly connected to foster care. For example, young children coming from environments of drug abuse also suffer from inadequate housing, poor nutrition, violence, and other hazards. Many infants who enter foster care at birth have been born with the developmental risks associated with low birth weight and exposure to drugs, and some infants enter foster care after months in unsafe homes.

Children in foster care also experience negative outcomes in school. Foster care children are less engaged in school.[17] Research has shown that children living in foster care perform worse academically,[19] are on average one year behind educationally,[15] and have lower educational attainment then their non-foster care counterparts.[11] In addition, they are more likely to have been suspended or expelled from school.[17]

There are, however, benefits to foster care. Foster care can lead to a permanent home. According to the Adoption and Foster Care Analysis and Reporting System, most children who are adopted are adopted by their foster parents. Indeed some research indicates that foster care may have beneficial effects. Two recent studies based on small, localized samples found that being in foster care was associated with improved behavioral outcomes. A recent study in San Diego, California found that youths ages 7 to 12 who remained in foster care for at least five months and who did not reunify with their natural parents had fewer risky or negative behaviors six years later than youth who did reunify.[24] Similarly, a recent study of all young children entering foster care in a region of Connecticut found that the children's ability to meet "age and culturally appropriate standards of personal independence and social sufficiency" increased over two consecutive six-month periods following placement.[14] Moreover, existing evidence suggests that children in the child welfare system are more likely to have emotional and behavioral needs addressed.[17] This may be due to increased access to psychological or medical services. Children in foster care are also less likely to have skipped school than children living with a single parent in a low-poverty situation.[17]

<u>Who else currently uses this indicator?</u>

Every state's child welfare agency maintains records on foster care placements. Nationally, the Adoption and Foster Care Analysis and Reporting System (AFCARS) maintains national and state data on foster care. The system is part

of the Administration for Children and Families, U.S. Department of Health and Human Services.

Children Now collects county specific information on foster care for California.[3]

What are the possible sources of data for this indicator?

This indicator can be gathered from state agency data. Every state has a child welfare agency that keeps track of foster caregivers. State child welfare agency contact information can be found online.[25]

Foster care case information can also be found in child protective services records for each state. In California, the Department of Social Services tracks foster care cases.[1]

Are there any key issues or concerns about the use of this indicator?

- Sensitivity to change:

There have been relatively few programs designed to reduce the number of children in foster care. Evidence from two older programs is presented below.

The Alameda Project, which focused on the effective delivery of services to the client after entry into the foster care system, has been shown to successfully reduce the number of children in long-term foster care by training foster care caseworkers.[22] One study of the Alameda Project showed an increase in the number of foster care children restored to their homes and a reduction in the number of children remaining in foster care.[23]

Another intervention, the Oregon Project, looked to increase the number of foster care children in permanent placements, either by returning children to their biological families or placing them with adoptive families. The project successfully implemented permanent placements or was in the process of implementing permanent placement for 90 percent of its foster care children three years later.[8]

- Other:

The term “permanent home” does not necessarily mean a child’s biological family. Other forms of permanent home situations are adoptive families, or another living arrangement. This indicator may not be reflective of the outcome of having children remain with their families. Further, this indicator may not appropriately fall under the outcome of "Children remain with their families". Under federal law, the goal of social service agencies is to achieve permanency for abused and neglected children either by returning them to a safe home or by terminating parental rights and placing them with an adoptive home--which in an overwhelming percentage of the cases is their current foster home. By placing

this indicator under "Children remain with their families," a situation may be set up where a goal of social service agencies is to return children to unsafe homes.

Collecting this indicator by examining state records may be time consuming and costly. While it is the most accurate way of collecting this information, aggregate data must be generated from individual cases. Most agencies do not compute these numbers.

Sources

[1] California Department of Social Services, http://www.dss.cahwnet.gov/cdssweb

[2] Chernoff, R., Combs-Orme, T., Risley-Curtiss, C., & Heisler, A. (1994). Assessing the health status of children entering foster care. *Pediatrics, 93*, 594-601.

[3] Children Now, http://www.childrennow.org/california/rc-2001/county-pdf-list.htm

[4] Cook, R. (1991). *A national evaluation of Title IV-E foster care independent living programs for youth: Phase 2 final report*. Rockville, MD: Westat.

[5] Ehrle, J., Geen, R., & Clark, R. (2001). *Children cared for by relatives: Who are they and how are they faring?* (Assessing the New Federalism Policy Brief B-28). Washington, DC: The Urban Institute.

[6] Ehrle, J., & Moore, K. (1999). *Benchmarking child and family well-being measures in the NSAF* (National Survey of America's Families Methodology Report No. 6). Washington, DC: The Urban Institute.

[7] Emlen, A. (1976). *Barriers to planning for children in foster care* (Vol. 1). Portland, OR: Regional Research Institute for Human Services, Portland State University.

[8] Emlen, A., Lahti, J., Downs, G., McKay, A., & Downs, S. (1977). *Overcoming barriers to planning for children in foster care*. Portland, OR: Regional Research Institute for Human Services, Portland State University.

[9] Fanshel, D. (1971). The exit of children from foster care: An interim research report. *Child Welfare, 50*, 65-81.

[10] Fanshel, D., & Shinn, E. (1972). *Dollars and sense in the foster care of children*. New York: Columbia University Place.

[11] Festinger, T. (1994). *The foster children of California*. Sacramento, CA: The Children's Services Foundation.

[12] Forsythe, P. (1992). Homebuilders and family preservation. *Children and Youth Services Review, 14*, 37-47.

[13] Goerge, R. M. (1990). The reunification process in substitute care. *Social Service Review, 64*, 422-457.

[14] Horowitz, S. M., & Balestracci, K. M. B. (2001). Foster care placement improves children's functioning. *Archives of pediatric and adolescent medicine, 155*, 1255-1260.

[15] Jones M., & Moses, B. (1984). *West Virginia's former foster children: Their experience and their lives as young adults*. New York: Child Welfare League.

[16] Kadushin, A., & Martin, J. A. (1988). *Child welfare services* (4th ed.). New York: Macmillian.

[17] Kortenkamp, K., & Ehrle, J. (2002). *The well-being of children involved with the child welfare system: A national overview* (New Federalism, Series B: No. B-43). Washington, DC: The Urban Institute.

[18] Maas, H. S., & Engler, R. E. (1959). *Children in need of parents*. New York: Columbia University Press.

[19] Ohio Department of Human Services. (1987). *Children in out-of-home care*. Columbus, OH: Division of Children and Family Services.

[20] Pilowsky, D. (1995). Psychopathology among children placed in family foster care. *Psychiatric Services, 46*, 906-910.

[21] Rowe, J., & Lambert, L. (1973). *Children who wait*. London: Association of British Adoption and Fostering Agencies.

[22] Stein, T. J., & Gambrill, E. D. (1976). *Decision making in foster care: A training manual*. Berkeley, CA: University Extension Publications.

[23] Stein, T. J., Gambrill, E. D., & Wiltse, K. T. (1978). *Children in foster homes: Achieving continuity of care*. New York: Praeger Publishers.

[24] Taussig, H. N., & Clyman, R. B. (2001). Children who return home from foster care: A 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics, 108*(1), 1-7.

[25] U.S. Department of Health and Human Services, http://www.calib.com/naic/pubs/r_agency.htm

[26] Zima, B., Bussing, R., Freeman, S., Yang, X., Belin, T., & Forness, S. (2000). Behavior problems, academic skills delays and school failure among school-aged children in foster care: Their relationship to placement characteristics. *Journal of Child and Family Studies, 9*, 87-103.

Q. Increased accessibility of services/activities.

What is the definition of this outcome?

Increased accessibility of services/activities refers to ways in which programs and agencies providing health, education, social, and other services operate to make sure that all eligible children and families can fully access those services with ease.

Potential indicators include:

- Increased number of providers
- Increased number of service locations
- Increased percentage of the eligible population served
- Expanded eligibility for services (e.g., removal of financial barriers by raising eligibility to 2 or 3 times the poverty level)
- Provision of co-located services (e.g., multiple agencies providing services at a shared location)
- Provision of services in conveniently located places (e.g., schools)
- Provision of mobile services (e.g., mobile vans)
- Provision of home-based services
- Provision of transportation to services
- Provision of activities or services at reduced prices or free of charge
- Expansion of service hours or provision of scheduling flexible
- Increased outreach and public awareness of services
- Provision of services for special-needs population(s)
- Provision of services for underserved population(s).

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Increasing accessibility of services/activities will increase the opportunities for children and families to access and receive health, education, and social services when they need to, leading to better outcomes for children and their families.[7,10] Accessibility is influenced by public awareness of services, availability of services (e.g., hours and days of operation, location of services, number of providers dispensing services), transportation, the cultural competence of service providers, accommodations for people with special needs, and affordability (i.e., few or no restrictions on eligibility).

Alternative hours and days of operation provide children and families with more flexibility to access health, education, and social services in a timely manner. Changes in California's economy have made it more challenging for children and families to access services with traditional hours of operation (Monday through Friday, 9:00 AM to 5:00 PM). Parents working under strict

employment regulations or holding two jobs to support their families are not always able to receive services during traditional hours and days of operation. Agencies that can provide services on a Saturday or offer extended hours (e.g., an 8:00 PM closing day once a week) make it easier for children and families with inflexible work schedules to receive care, and communicate understanding and respect for families' needs.

Improved location and proximity of services alleviate barriers to access for children and families living in rural or remote areas.[3,7] Rural and remote areas lack the population base and resources to offer a wide variety of programs and providers. By co-locating programs and services, providing more home visitation programs, and/or having mobile vans to provide services, the needs of children and families can be better accommodated.

Removing transportation barriers can increase the likelihood that children and families are able to access services.[3,12] Studies show that lack of transportation often deters families from seeking services. Offering taxi vouchers, bus tokens, and other affordable transportation services, as well as having more home visitation programs, increases the likelihood that children and families can receive health, education, and social services as needed.[9]

Media advertising, community outreach, and case management of health, education, and social services increase families' awareness of programs and their participation in these programs. Families with limited English language skills may not be aware of services that are available to them. Lack of information or limited access to information and support networks can make "working the system" difficult. Having media campaigns (e.g., public awareness ads in different languages) or community outreach to children and families with limited English language skills heightens awareness of these programs and makes them more accessible.

Accessing different systems can be frustrating (e.g., bureaucratic barriers and the need to fill out different forms). Eligibility criteria for public programs are often confusing and contradictory. Increases in client retention, satisfaction,[4] motivation, and investment,[1] are associated with providing case management that matches individual social services professionals with specific families; these professionals then help the families navigate the social services systems and locate available resources in the community. Customizing programs to families' unique needs[2,11] has also been shown to have positive outcomes. All these improvements in accessibility are also associated with more positive goal-related outcomes for programs.[5,8]

Providing services to accommodate people with special needs alleviates barriers to accessing these services. Access may be physical such as finding accessible housing, offices, public buildings, recreation facilities, and other structures that are American Disability Act (ADA) compliant, and

nondiscriminating. For young children with disabilities, access also encompasses the social context of inclusion,[6] participation with their nondisabled peers in typical child care programs community-based programs (e.g., library programs, play groups, sports programs), and school-based programs.

Accessibility for diverse groups can be improved by offering culturally and linguistically appropriate services and materials.[6,7] Having staff who reflect the cultural and linguistic characteristics of a community increases access to programs and services by diverse groups. Translating forms, brochures, and other program materials intended for use by parents, caregivers, and children into different languages and/or providing interpreters also facilitate access for children and families. Doing so demonstrates to families that the program and its providers are aware of their needs and respect them. (See indicator S.)

Affordable services (few or no restrictions on eligibility) alleviate the financial burden for families who cannot otherwise afford the services. Poverty, unemployment, and reliance on public programs such as Medicaid, Medicare, and federal disability (SSI) affect access to health care and other services. Many families with young children struggle with low-paid employment without health care benefits. Many health care providers refuse to accept patients with medical coupons. Families in high-income brackets are the only ones that can afford to pay the full cost of quality child care.[13] Most low-income families can gain access only to early education services through federal- and state-subsidized programs (e.g., Head Start and state-funded preschools, child care vouchers from public assistance programs).

Who else currently uses this outcome?

The Forum on Child and Family Statistics-*America's Children: Key National Indicators of Well-Being, 2001 (*and previous versions) track this outcome.[3]

The Foundation Consortium for School Linked Services, established in 1991 to promote systems' change in California, has been funding programs, evaluation, and research that look at how systems that serve children and families might be improved (including improvements in accessibility) so that children and families have better outcomes.[5]

Several evaluations of comprehensive and school-linked service efforts have tracked the improvement of service delivery, including increased accessibility. For example, both the national evaluation of Even Start and the statewide evaluation of California's Healthy Start School-linked Service Initiative document the extent to which programs offer accessible services.[14]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the accessibility of services and supports.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how the programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Bos, J. M., Huston, A. C., Granger, R. C., Duncan, G. J., Brock, T. W., & McLoyd, V. C. (1999). *New hope for people with low incomes: Two-year restuls of a program to reduce poverty and reform welfare*. New York: Manpower Demonstration Research Corportation.

[2] Dolan-Mullen, P., DiClemente, C. C., Velasques, M. M., Timpson, S. C., Groff, J. Y., & Carbonari, J. P. (2000). Enhanced prenatal case management for low income smokers. *Tobacco Control, 9*(Supplement III), iii75-iii77.

[3] Federal Interagency Forum on Child and Family Statistics. (2002). *America's children: Key national indicators of well-being, 2002*. Washington, DC: Author.

[4] Fiene, J. I., & Taylor, P. A. (1993). Serving rural families of developmentally disabled children: A case management model. *Social Work, 36*(4), 323-327.

[5] The Foundation Consortium, http://www.foundationconsortium.com

[6] Golan, S., Shaver, D., Wagner, M., Wechsler, M., & Williamson, C. (1996). *From principles to action: Local implementation of California's Healthy Start school-linked services initiative*. Menlo Park, CA: SRI International.

[7] Holloway, F., & Carson, J. (1998). Intensive case management for the severely mentally ill: Controlled trial. *British Journal of Psychiatry, 172*, 19-22.

[8] Janko, S., & Peck, C. (1996). Re-envisioning the 21st century for children and families: The struggle for access, participation, and belonging. In E. J. Irwin (Ed.), *Putting children first: Visions for a brighter future for young children and their families*. Baltimore, MD: Paul Brookes Publishing Co.

[9] Levine, P., Richardson, M., Lishner, D., & Porter, A. (2001). Faces on the data: Access to health care for people with disabilities in rural America. In R. M. Moore (Ed.), *The hidden America: Social problems in rural America for the twenty-first century*. Pennsylvania: Susquehanna Press.

[10] McGroder, S., Zaslow, M., Moore, K. A., & LeMenestrel, S. M. (2000). *National Evaluation of Welfare-to-Work Strategies: Impacts on young children and their families two years after enrollment: Findings from the Child Outcomes Study*. Washington, DC: U.S. Department of Health and Human Services, U.S. Department of Education.

[11] Miller, C., Knox, V., Gennetian, L. A., Dodoo, M., Hunter, J. A., & Redcross, C. (2000). *Reforming welfare and rewarding work: Final report on the Minnesota Family Investment Program: Vol 1, effects on adults*. New York: Manpower Demonstration Research Corporation, Minnesota Department of Human Services.

[12] Olds, D. L., Henderson, C. R., & Kitzman, H. J. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *The Future of Children, 9*(1), 44-65.

[13] Strohl, N. (2002, Jan 18). *Recommendations on child care: California Working Families Policy Summit*, from http://www.childcarelaw.org/memoranda/recommendations_on_child_care.cfm

[14] U.S. Department of Health and Human Services. (2001, Jan 11). *Ancillary services to support welfare to work: Substance abuse*. Retrieved July 15, 2002, from http://aspe.os.dhhs.gov/hsp/isp/ancillary/sa.htm

R. Improved service delivery

What is the definition of this outcome?

Improved service delivery refers to providing health, mental health, social, child care, early child development, and family services and supports in ways that are more comprehensive, responsive, and effective than in the past.

Potential indicators include:

- Provision of training and technical assistance to program staff to improve the quality of services
- Increased family focus of services (e.g., addressing the needs of multiple family members)
- Improved facilities
- Increased attention to prevention-focused services/activities
- Parent/participant reports of satisfaction with content, quality, and family centeredness of delivered services
- Increased percentage of programs that meet standards for high program quality (e.g., an increased percentage of child care programs that are accredited; a high score on standardized measures of quality such as the Early Childhood Environment Rating Scale (ECERS)

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Traditional methods for addressing the risks that affect the lives of children have not been effective.[20,21] The consensus is growing that programs need to be restructured to effectively address complex problems (e.g., premature birth, poor health and nutrition, child abuse, family stress, inaccessible social and health services, lack of quality child care and early education programs).[4] Furthermore, there is a growing consensus about the ways in which services need to be improved to achieve greater and more sustainable outcomes for children and families.[7,12,14] This consensus calls for services to become more:

- Comprehensive
- Intensive and continuous
- Tailored to individual needs (flexible)
- Family-centered
- Focused on prevention and early intervention
- High-quality (well-trained staff and high program standards)
- Accessible (See Indicator Q.)
- Culturally competent (See Indicator S.)
- Integrated (coordinated and collaborative) (See indicator T.)
- Accountable for results (See indicator U.)

- Community-based (civic engagement) (See indicator V.)
- Cost-effective.

Research on home visiting has found that when programs have more of these qualities (i.e., more comprehensive, intensive, continuous, flexible, and responsive), they are more effective at promoting healthy child development and family functioning than programs with fewer of these qualities.[18,19,24] However, it is often quite difficult to establish and maintain programs with all of these qualities.

Services need to be more comprehensive so they can address the "whole" child. The Children's Defense Fund recommends that all child care and early education ensure that children have access to comprehensive services and that parents receive education and support services.[13] Services and activities need to address the needs of the whole child, his or her family's needs, and the needs of his or her community. The components of comprehensive service for young children include early childhood care and education, family support, and access to health and social services.[24] However, the majority of programs for young children tend to focus on a specific need or a narrow set of needs (e.g., health screenings), while not simultaneously addressing other important needs in other areas (e.g., access to child care, parent education or support services, other basic needs of families).[23] One way programs can strengthen their efforts is to examine whether the breadth of their services and activities are sufficient to bring about the types of improved child and family outcomes they hope to achieve.

Services need to be of sufficient intensity and duration. Some programs may provide a wide range of services but not offer them for a sufficient amount of time (e.g., one home visit) to affect child health and development positively. Home visiting studies suggest that families that receive more visits, and at a higher intensity, benefit more than families who receive fewer visits. A precise minimum threshold is unknown, but home visiting researchers have speculated that 4 visits,[18] 3 to 6 months of services,[6] or more than 6 months and 12 home visits[15] may be required before change can occur. Weekly home visits tend to be more effective than monthly home visits,[18] but they may be difficult to implement with consistency. Other reviews of a variety of early childhood educational and home visiting programs also suggest that child outcomes are often better for programs with a greater intensity of services and services that last longer.[3] Programs can strengthen their efforts by examining whether or not the intensity and duration of their services and activities are sufficient to bring about the types of improved child and family outcomes they intend.

Services need to be responsive to the needs of individual children and families. Programs need to take individuals' strengths and needs into consideration when providing services or other resources. Services need to be flexible to allow them to be tailored to the specific needs of children and families.[5] Services should be available at differing levels of intensity so that both families

who require only short-term minimal support or intervention and families who require long-term, intensive treatment or crisis-level services can be served appropriately.

Making services more family-centered will increase the likelihood of achieving and sustaining positive outcomes for children. A child's family is the most important influence on that child. To achieve better outcomes, parents and members of the extended family, if children are living with parents and relatives, should be actively involved in decision-making about services. A central goal of a family-centered approach is to create a trusting, supportive, and respectful relationship between families and service providers. Families and providers should work together to develop services and activities that are welcomed by families, support their independence, and strengthen their community ties.[23]

Providing support for the entire family can promote an improved environment for development of the child. Comprehensive programs have helped families in the areas of basic education (increased literacy and completion of General Equivalency Diplomas), parenting attitudes and skills, and involvement in children's learning and school activities.[24] Programs can examine to what extent they focus on families by looking at whom they serve, how they conduct intake assessments, and how they keep client records.[6] For example, are most of a program's clients families, are intake assessments focused on families, and does the record keeping system link together information from various family members?

Programs need to shift attention from remediation to early intervention and eventually prevention.[20,21] The current service system has been criticized for focusing on the needs of children and families in crisis rather than for preventing the problems in the first place.[16] Research on health, social, and education programs has found that primary prevention at an early age reduces intervention costs and helps more children achieve their potential at later ages.[2,8,25] Some programs focus on prevention by targeting specific outreach programs to those most at risk of what the program is trying to prevent.[6]

High-quality programs have a sufficient number of qualified and trained staff, high program standards, and appropriate facilities. Research has demonstrated the importance of having enough qualified and well-trained staff for achieving results. For example, Head Start centers are more effective at promoting positive child developmental outcomes when they have lower child to adult ratios, higher trained/educated staff, and more positive attitudes toward families than do centers without these characteristics.[1] Similar findings have also been found for child care centers.[26,27] Research on Early Head Start has demonstrated that children and parents benefited more at program sites that met quality standards than at those that did not.[22] The literature on family resource centers indicates that centers that provide more training to their staff about

subject matter related to particular services and general operations are more effective than centers that do not.[23] Evidence also indicates that programs that are required by funding sources to meet high quality standards do provide higher quality services than programs not required to meet such standards.[10]

The quality of early care and education programs is affected by their facilities. For example, unsafe and developmentally inappropriate classrooms, playgrounds, bathrooms, kitchens, or other parts of an early care or education program can severely limit the quality of that program.[5] Finding and developing facilities in which to provide high-quality comprehensive and integrated services can be extremely difficult. Such facilities need to allow for private interactions between staff and families, the housing of staff from multiple agencies, the comfortable congregation of families, child care services, and accommodations for parents and families with disabilities.[11] Many California Healthy Start School-Linked Service programs needed to build new facilities to house their programs near or on overcrowded school campuses.[13]

Who else currently uses this outcome?

The Foundation Consortium for School Linked Services, established in 1991 to promote systems change in California, has been promoting programs, evaluation, and research that look at how systems that serve children and families might be improved so that children and families can have better outcomes.[9]

Several evaluations of comprehensive and school-linked service efforts have tracked the improvement of service delivery. For example, both the national evaluation of Even Start and the statewide evaluation of California's Healthy Start School-linked Service Initiative documented the extent to which programs offered comprehensive, family-focused, and prevention-oriented services, and had well-trained staff.[11,17]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the quality of services and supports.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how the programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Abbott-Shim, M., Lambert, R., & McCarty, F. (2000). Structural model of Head Start classroom quality. *Early Childhood Research Quarterly, 15*(1), 115-134.

[2] Barnett, W. S. (2000). Economics of early childhood intervention. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 589-610). Baltimore, MD: Paul H. Brookes Publishing Company.

[3] Bryant, D. B., & Maxwell, K. (1997). The effectiveness of early intervention for disadvantaged children. In M. J. Guralnick (Ed.), *The effectivness of early intervention* (pp. 23-46). Baltimore, MD: Paul H. Brookes Publishing Company.

[4] Carnegie Task Force on Meeting the Needs of Our Young Children. (1994). *Starting points: Meeting the needs of our youngest children. The report of the task force on meting the needs of young children*. New York: The Carnegie Corporation of New York.

[5] Center for the Future of Children Staff. (1992). Analysis. In E. Behrman (Ed.), *The Future of Children: School-linked services* (Vol. 2(1), pp. 6-18): Center for the Future of Children, the David and Lucille Packard Foundation.

[6] Chynoweth, J., Philiber, S., & Oakley, M. (2000). *Systems change in California: Progress at the Millennium*. Sacramento, CA: The Foundatrion Consortium and Philiber Research Associates.

[7] Dunst, C. (1995). *Key Characteristics and Features of Community Based Family Support Programs*. Chicago, IL: Family Resource Coalition.

[8] Farran, D. C. (2000). Another decade of internvetion for children who are low income or disabled: Who do we know now? In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 510-548). Baltimore, MD: Paul H. Brookes Publishing Company.

[9] The Foundation Consortium, http://www.foundationconsortium.com

[10] Fuller, B., Chang, Y., Suzuki, S., & Kagan, S. (2001). *Childcare aid and quality for California families: Focusing on San Francisco and Santa Clara counties. Policy analyusis for California education* (Working Paper Series 02-1). Berkeley: University of California.

[11] Golan, S., Shaver, D., Wagner, M., Wechsler, M., & Williamson, C. (1996). *From principles to action: Local implementation of California's Healthy Start school-linked services initiative*. Menlo Park, CA: SRI International.

[12] Hooper-Briar, K., & Lawson, H. (1994). *Serving children, youth and families through interprofessional collaboration and service integration: A framework for action*. Oxford, OH: The Danforth Foundation and the Institute for Educational Renewal at Miami University.

[13] Hurd, T., Lerner, R., & Barton, C. (1999). Integrating services: Expanding partnerships to meet the needs of today's children and families. *Young Children, 54*, 74-100.

[14] Kagan, S., Goffin, S., Golub, S., & Pritchard, E. (1995). *Toward systematic reform: Service integration for young children and their families*. Leesburg, VA: National Center for Service Integration.

[15] MacLeod, J., & Nelson, G. (2000). Programs for the promotion of family wellness and the prevention of child maltreatment: A meta-analytic review. *Child Abuse & Neglect, 24*(9), 1127-1149.

[16] Melaville, A., & Blank, M. (1991). *What it takes*. Washington, DC: Education and Human Services Consortium.

[17] National Consensus Building Conference on School-Linked Integrated Service Systems. (1994). *Principles to link by: Integrating education, health, and human services for children, youth, and families: Systems that are community-based and school-linked*. Washington, DC: American Academy of Pediatrics.

[18] Olds, D. L., & Kitzman, H. (1993). Review of research on home visiting for pregnant women and parents of young children. In R. E. Behrman (Ed.), *The Future of Children: Home Visiting* (Vol. 3(3), pp. 53-92): Center of the Future of Children, the David and Lucille Packard Foundation.

[19] Ramey, C., & Ramey, S. (1993). Home visiting programs and the health and development of young children. In R. E. Behrman (Ed.), *The Future of Children: Home Visiting* (Vol. 3(3), pp. 129-139): Center of the Future of Children, the David and Lucille Packard Foundation.

[20] Schorr, L. (1997). *Common purpose, strengthening families and neighborhoods to rebuild America*. New York: Anchor Books, Doubleday.

[21] Schorr, L., & Schorr, D. (1988). *Within our reach: Breaking the cycle of disadvantage*. New York: Anchor Books.

[22] U.S. Department of Health and Human Services. (2001). *Building their futures: How early Head Start programs are enhancing the lives of infants and toddlers in low-income families: Summary report*. Washington, DC: Author.

[23] Waddell, B., Shannon, M., & Durr, R. (2001). *Using family resources centers to support California's young children and their families*. Los Angeles, CA: UCLA Center for Healtheri Children, Families and Communities.

[24] Weiss, H. (1993). Home visits: Necessary but not sufficient. In R. E. Behrman (Ed.), *The Future of Children: Home Visiting* (Vol. 3(3), pp. 113-128): Center of the Future of Children, the David and Lucille Packard Foundation.

[25] Werner, E. E. (2000). Protective factors and individual resilience. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 115-132). Baltimore, MD: Paul H. Brookes Publishing Company.

[26] Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America (Final Report: National child care staffing study)*. Oakland, CA: Child Care Employee Project.

[27] Whitebook, M., Howes, C., & Phillips, D. A. (1997). *NAEYC accreditation as a strategy for improving child care quality: An assessment by the National Center for the Early Childhood Work Force*. Washington, DC: National Center for Early Childhood Workforce.

S. Increased cultural competence.

What is the definition of this outcome?

The term "cultural competence" refers to services, supports, or other assistance that are conducted or provided in a manner that is responsive to the beliefs, interpersonal styles, attitudes, language, and behaviors of individuals from diverse backgrounds who are receiving services, and in a respectful manner that has the greatest likelihood of ensuring those individuals' maximum participation in the program.[1] First 5 California defines diversity as inclusiveness of children prenatally to 5 years of age, regardless of immigration status who: (1) are from different ethnic, linguistic, cultural, socioeconomic, religious, geographical, and/or other historically or currently underserved communities; or (2) have disabilities and other special needs.[1]

"…A culturally competent system of care reflects and responds to the communities it serves through its administrative policies and procedures, hiring practices, training and professional development, and the active participation of community members and consumers."[9]

Potential indicators include:

- Cultural diversity training for providers
- The provision of training and technical assistance to improve knowledge, attitudes, and skills of service providers to increase their capacity to work with children with disabilities and other special needs
- Service providers who are culturally and linguistically reflective of the community
- The provision of print, audiovisual, and electronic materials that are culturally and linguistically appropriate for communities being served and written at appropriate literacy levels
- The availability of adapted and specialized services and supports for children with special needs and their families
- Data collected and reported by ethnicity, language, age, gender, geographic areas, special needs populations, or other significant subgroups

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Culturally insensitive care and lack of appropriate treatment models have negative effects on populations of diverse background. Culturally inappropriate services have discouraged some populations from seeking traditional medical care and services through public health programs. In contrast, effective health programs acknowledge and incorporate the culture of

the people they serve. Service providers working in and serving diverse groups must understand the cultures of the communities that they serve, and must design and manage culturally competent programs that reflect those cultures. "…Providers must collaborate with culturally knowledgeable community members at every phase of program operation—design, implementation, and evaluation—administrators, providers, staff and clients work to enhance program integrity and clarify communication."[11]

In a recent volume about the science of early childhood and early childhood interventions, a National Academy of Sciences panel concluded that, "The importance of examining the design and implementation of early childhood policies and practices through a cultural lens cannot be overstated." (page 369).[23] The panel cautioned that the underlying assumptions of many early childhood programs about the need for changes in caregiving or parenting practices and about the desired outcomes can differ for different cultural groups, leading to interventions that could be "inappropriate or intrusive." This panel also noted that, "Thus, despite widespread consensus about its importance, the underlying science of cultural competence remains to be developed." There is, however, a growing body of literature relevant to issues of cultural competence.[4,7,8,10,12,20,21,22,25,26,29,30,31,32]

Cultural competence involves several factors or domains. These domains, although separate and discrete, are dynamic and interact with each other. These domains include:

- *Values and attitudes* that can affect mutual respect between providers and those served. For example, culturally competent systems/programs screen materials for offensive cultural ethnic or racial stereotypes, are aware and intervene when appropriate, on behalf of clients when organizations display culturally insensitive behaviors, are aware of the varying degrees of acculturation by persons into the dominant culture, and recognize how varying gender roles, religious, and other beliefs may influence participants' responses to services.
- *Content* that may be inappropriate for different groups. For example, programs that provide parenting services must guard against ethnocentric judgments that fail to consider the range of parenting practices that may be appropriate for different cultural groups.[9] In addition, programs need to individualize services to address cultural and linguistic diversity as well as the range of ability levels and behavioral and learning styles representative of California's children and families.[2]
- *Communication styles* that can differ because of language, culture, and literacy levels. Programs must be sensitive to these differences through staffing, practices, and policies. Materials and resources need to be congruent with the cultures, languages, and levels of literacy of the population being served.

- *Community/consumer participation* in the development, implementation, and evaluation of services and practices and program interventions that ensures that programs are addressing the needs of specific communities in effective ways. (See indicator V.) Community participation efforts should ensure that all diverse groups are actively engaged and have an equal voice in determining their needs and finding solutions.[2] Outreach activities should also connect with people and organizations that already have a strong relationship within the community.
- *Staffing* that reflects the linguistic and ethnic groups who live in the community being served.[14] Educational and caregiving settings that are similar in style, language, and approach to children's home environments are assumed, in most instances, to be the most beneficial.[18,24]
- *Training and professional development* that promote greater cultural competence through frequent training that expands staff knowledge about and appreciation of diverse cultures and groups.[11] Similarly, training and professional development needs to build capacity for working more effectively with children who vary in abilities, and in behavioral and learning styles.[2]

Attention to the background of recent immigrants is vital to understanding their needs. For example, the level of care or service may depend on whether the individual or family left their native country voluntarily or involuntarily; the extent of exposure to life-traumatizing events such as war, torture, or missing family members; and their legal status.[17]

The need to develop more culturally competent systems and programs intensifies as the U.S. population becomes more diverse.[18] By 2080 most Americans are projected to be from culturally and linguistically diverse populations.[3] By 2080, most Americans are expected to speak another language than English as their first language and to be of non-Anglo origin. California has already become a "majority-minority" state, with more than 50% of its population represented by culturally and linguistically diverse groups.[7] Whereas the U.S. population is becoming more diverse, the educators, social service, and health professionals in early intervention programs are most often white, college-educated women.[5,6,13,19] If these trends persist, early intervention professionals and families will increasingly encounter cultural, linguistic, racial, economic, and class differences.

As systems and programs shift to family-centered services, the need to work effectively with families from diverse backgrounds becomes more important.[14,27] Family-centered services promote a change in the relationship that service providers and other practitioners have with families. The family-centered approach strives for increased equity and balance of power.[18] "This approach has heightened the importance of skills related to working effectively and sensitively with families in partnership roles."[18]

Data for specific communities and populations need to be collected to identify disparities in access to, and quality of, services and supports experienced by children from diverse backgrounds. By identifying disparities and gaps in services and supports, those working with children can develop better informed decisions about policies and programs. Proposition 10 requires Commissions to use an outcome-based accountability system that should include: (1) conducting assessments that include assets, challenges, and gaps in communities and systems for specific groups and populations; (2) using assessment data to establish desired results to design program s that will remove disparities and attain desired results; (3) setting measurable objectives for increasing access and achieving equity; and (4) tracking progress on those objective using culturally and linguistically appropriate questions, instruments, and other research methods to collect relevant data form the populations and communities served; (5) using findings to inform policy making, funding decisions, and program refinement; and (6) disseminating information about the best and promising practices for the benefit of all children and their service providers. Questions on disabilities and other related issues should be included in surveys and other evaluation and research tools/instruments.[2]

Who else currently uses this outcome?

Several agencies have defined and tracked the availability of culturally competent services and supports; the agencies include the Office of Minority Health CLAS project (which developed national standards for culturally and linguistically appropriate services in health care),[23] Bendheim-Thomas Center for Research on Child Well-being (Princeton University), Center on Minority Research in Special Education, Alliance Project (Peabody College, Vanderbilt University), Bueno Center (University of Colorado, Boulder), Council of Latino Agencies (Washington, DC), Fiesta Educativa (Los Angeles), Indian Health Service (Tucson), National Multicultural Institute (Washington, DC), and Southern California Indian Center, Inc. (Fountain Valley, CA).

The California Children and Families Commission (First 5 California) has adopted a set of Equity Principles to guide its policy work and funding decisions. These principles can serve as guidelines to ensure that First 5 California funded-programs and services are culturally and linguistically competent and inclusive in serving children with disabilities and other special needs.[1,2]

The Foundation Consortium for School Linked Services, established in 1991 to promote systems change in California, has been promoting programs, evaluation, and research that look at how systems that serve children and families might be improved, including cultural competency, so that children and families might have better outcomes.[15]

Several evaluations of comprehensive and school-linked service efforts have tracked the improvement of service delivery, including cultural competence. For

example, both the national evaluation of Even Start and the statewide evaluation of California's Healthy Start School-linked Service Initiative document the culturally competent services and supports.[16,28]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the cultural competence of services and supports.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Advisory Committee on Diversity. (2001). *Glossary of terms*, from http://ccfc.ca.gov/PDF/DiversityComm/DivCommGlossary.pdf.

[2] Advisory Committee on Diversity. (2001). *Principles on equity*, from http://ccfc.ca.gov/PDF/DiversityComm/EquityPrinciples.pdf.

[3] Bacharach, S. (1990). *Education reform: Making sense of it all*. New York: Medina.

[4] Barrera, I., & Kramer, L. (1997). From monologues to skilled dialogues: Teaching the process of crafting culturally competent early childhood environments. In P. J. Winton, J. McCollum, & S. C. Catlett (Eds.), *Rethinking personnel preparation in early intervention: Issues, models, and strategies for faculty and trainers*. Baltimore, MD: Brookes.

[5] Bowman, B. T. (1990). Issues in recruitment, selection, and retention of early childhood teachers. In B. Spodek, & O. Saracho (Eds.), *Early childhood teacher preparation* (pp. 153-175). New York: Teachers College Press.

[6] Bricker, D. D., & Widerstrom, A. (1996). *Preparing personnel to work with infants and young children and their families: A team approach*. Baltimore, MD: Paul H. Brookes Publishing Co.

[7] Chavez, J. A. (1997). Preparing special education teachers and leaders for our diverse schools. *Division for Culurally and Linguistically Diverse Exceptional Learners (DDEL) News, 7*(2), 6.

[8] Coard, S., & Holden, W. (1998). The effect of racial and ethnic diversity on the delivery of mental health services in pediatric primary care. *Journal of Clinical Psychology in Medical Settings, 5*(3), 275-294.

[9] Cowan, P. A., Powell, D., & Cowan, C. P. (1998). Parenting intervetions: A family systems perspective. In I. E. Sigel, K. A. Renninger, & W. Damon (Eds.), *Handbook of child psychology* (pp. 3-72). New York: John Wiley and Sons.

[10] Cross, T. L., Bazron, B. J., Dennis, K. W., & Isaacs, M. R. (1989). *Towards a culturally competent system of care* (Vol. 1). Washington, DC: National Center for Technical Assistance Center for Children's Mental Health, Georgetown University Child Development Center.

[11] Department of Health and Human Services Bureau of Primary Health Care. (2000, Nov 9). *What is cultural competence?* Retrieved Jun 19, 2002, from http://www.bphc.hrsa.dhhs.gov:80/cc/7domains.htm

[12] Dhooper, S., & Tran, T. (1998). Understanding and responding to the health and mental health needs of Asian refugees. *Social Work in Health Care, 27*(4), 65-82.

[13] Division of Early Childhood (DEC). (1997b). *DEC Membership Report*. Reston, VA: Division of Early Childhood/Council for Exceptional Children.

[14] Dunst, C. J., Trivette, C. M., & Deal, A. G. (1988). *Enabling and empowering families: Principles and guidance for practice*. Cambridge, MA: Brookline Books.

[15] Foundation Consortium, www.foundationconsortium.org

[16] Golan, S., Shaver, D., Wagner, M., Wechsler, M., & Williamson, C. (1996). *From principles to action: Local implementation of California's Healthy Start school-linked services initiative*. Menlo Park, CA: SRI International.

[17] Goode, T. (1997). *Promoting cultural diversity and cultural competence in primary health care*. Washington, DC: Georgetown University, National Center for Cultural Competence.

[18] Hains, A., Lynch, E. W., & Winton, P. J. (October 2000). *Moving towards cross-cultural competence in lifelong personnel development: A review of the literature. CLAS Technical Report #3*, from http://www.clas.uiuc.edu/techreport/tech3.html

[19] Irvine, J. J. (1988). An analysis of the problem of dissappearing black educators. *The Elementary School Journal, 88*(55), 503-513.

[20] Lavizzo-Mourey, R. J., & MacKenzie, E. (1995). Cultural competence: An essential hybrid for delivering high quality care in the 1990s and beyond. *Transactions of the American and Clinical and Climatological Association, 107*, 226-237.

[21] Lin, K., & Cheung, F. (1999). Mental health issues for Asian Americans. *Psychiatric Services, 50*(6), 774-780.

[22] Musser-Granski, J., & Carrillo, D. (1997). The use of bilingual, bicultural paraprofessionals in mental health services: Issues for hiring, training, and supervision. *Community Mental Health Journal, 33*(1), 51-60.

[23] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[24] Phillips, C. B. (1993). *Early childhood reform: Innovative approaches to cultural and racialdiversity among families*. Alexandria, VA: National Association of State Boards of Education.

[25] Pumariega, A., & Glover, S. (1998). New developments in services delivery research for children, adolescents, and their families. *Advances in Clinical Child Psychology, 20*, 303-343.

[26] Ramirez, S., Lepage, K., Kratochwill, T., & Duffy, J. (1998). Multicultural issues in school-based consultation: Conceptual and research considerations. *Journal of School Psychology, 36*(4), 479-509.

[27] Shelton, T. L., & Stepanek, J. S. (1994). *Family-centered care for children needing specialized health and development services* (3rd ed.). Bethesda, MD: Association for the Care of Children's Health.

[28] St. Pierre, R., Gamese, B., Alamprese, J., Rimdzius, T., & Tao, F. (1998). *National Evaluation of the Even Start Family Literacy Program*. Washington, DC: U.S. Department of Education.

[29] U.S. Department of Health and Human Services (HHS) Office of Minority Health (OMH). (2000, Dec 22). *Assuring cultural competence in health care: Recommendations for national standards and an outcomes-focused research agenda*. Retrieved 247, 65, from http://www.omhrc.gov/CLAS/finalcultural1a.htm

[30] Vega, W., Kolody, B., Valle, J., & Hough, R. (1986). Depressive symptoms and their correlates among immigrant Mexican women in the United States. *Social Science & Medicine, 22*(6), 645-652.

[31] Whaley, A. (2001). Cultural mistrust and mental health services for African Americans: A review and meta-analysis. *Counseling Psychologist, 29*(4), 513-531.

[32] Zhou, M. (1997). Growing up American: The challenge confronting immigrant children and children of immigrants. *Annual Review of Sociology, 23*, 63-95.

T. Increased service integration.

What is the definition of this outcome?

Increased service integration refers to ways that programs and agencies providing health, education, social, and other services increase collaboration to systematically link and coordinate services to provide a seamless system of care for children and families.

Indicators include:

- Providing comprehensive services (a combination of health, educational, social, or emotional support services)
- Having written agreements (memos of understanding [MOUs]) with other agencies to facilitate referrals, data sharing, or service coordination
- Undertaking joint planning and decision-making among multiple agencies
- Participating in service teams composed of providers from multiple agencies and disciplines
- Increasing the number of providers with interdisciplinary training
- Seeking joint funding and/or pooling resources with other agencies
- Using a centralized registry or database across agencies to share information on program participants
- Advocating for policy change in collaboration with other agencies
- Reducing the amount of time families have to wait between the initial referral and receipt of services

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Increasing service integration for children will increase the probability that health, education, and social services providers can respond to their needs in a timely, coordinated, comprehensive, and cost-effective manner, leading to better outcomes for children. Traditional service delivery systems have been flawed by being fragmented, duplicative, and tied to categorical funding,[2] Also, research on current service systems indicates that new methods for servicing systems need to be implemented. Data collected on children's problems indicate four flaws in organized services for children: (1) a crisis-oriented system that does not prevent problems, (2) the compartmentalization of problems into rigid categories, (3) lack of communication among various agencies, and (4) the provision of specialized services that are not able to address the interconnected problems of children and their families[11]. A variety of health, education, and social services is offered to children and their families, but these services are not working together to provide better outcomes for children. Children's needs span traditional service domains (e.g., the health, education, and social services areas). Children who have developmental or behavioral

problems often have health problems as well. Addressing education or behavior problems and ignoring family or health problems is seldom effective.[1]

Integrating services for children and their families involves joint planning, services, and accountability. Service integration includes three components: (1) joint development and agreement on common goals and objectives, (2) shared responsibility for the attainment of goals, and (3) shared work to attain goals using the collaborators' expertise.[11] Studies show that when multiple agencies provide care for the same children and their families, but do not establish common goals, they tend to take less responsibility for their outcomes than when service agencies agree to common goals and objectives.[4] By working together on common goals, agencies can streamline eligibility systems to allow easier and quicker access to services.[8] Agencies also can share work by developing multiple agency: (1) intake and assessment systems; (2) confidentiality waivers; (3) common staff development; (4) case management coordination; (5) agreement on common outcomes to use for accountability;[10] and (6) partnerships to raise funds for joint services.[4] To make service integration work, collaboration needs to occur among agency administrators as well as front-line service providers.[4]

Integrating services has shown to be cost-effective.[6,7] Cross-agency collaboration and coordination such as using a centralized registry or database across agencies to share information on program participants can help reduce administrative costs.[6,7] Because integrated services often focus on primary prevention and early intervention, they can avert the costs associated with services for more complex and challenging problems.[6,7]

Who else currently uses this outcome?

The Foundation Consortium for School Linked Services, established in 1991 to promote systems' change in California, has been funding programs, evaluations, and research that look at how systems that serve children and families might be improved (including improvements in service integration) so that children and families might have better outcomes.[3]

Several evaluations of comprehensive and school-linked service efforts have tracked the improvement of service delivery, including increased service integration. For example, both the national evaluation of Even Start and the statewide evaluation of California's Healthy Start School-linked Service Initiative documented the extent to which programs offered accessible services.[5,9]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the integration of services.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Center for The Future of Children Staff. (1992). Analysis. *The Future of Children, 2*(1), 6-18.

[2] Chynoweth, J., Philiber, S., & Oakley, M. (2000). *Systems change in California: Progress at the Millennium*. Sacramento, CA: The Foundatrion Consortium and Philiber Research Associates.

[3] The Foundation Consortium, http://www.foundationconsortium.com

[4] Gardner, S. (1991). Failure by Fragmentation. *Equity and Choice, 6*(2), 4-12.

[5] Golan, S., Shaver, D., Wagner, M., Wechsler, M., & Williamson, C. (1996). *From principles to action: Local implementation of California's Healthy Start school-linked services initiative*. Menlo Park, CA: SRI International.

[6] Roberts, R., Akers, A., & Behl, D. (1996). Family level service coordinator within home visiting programs. *Topics in Early Childhood Special Education, 16*(3), 279-301.

[7] Roberts, R., Behl, D., & Akers, A. (1996). Community-level service coordinator within home visiting programs. *Topics in Early Childhood Special Education, 16*(3), 302-322.

[8] Roberts, R., Innocenti, M., & Goetze, L. (1999). Emerging issues from state level evaluation of early intervention programs. *Journal of Early Interventions, 22*, 152-163.

[9] St. Pierre, R., Gamese, B., Alamprese, J., Rimdzius, T., & Tao, F. (1998). *National Evaluation of the Even Start Family Literacy Program*. Washington, DC: U.S. Department of Education.

[10] U.S. Department of Education- American Education Research Association. (1995, April). *School-linked comprehensive services for children and families: What we know and what we need to know*, from http://www.ed.gov/pubs/Compre

[11] Wang, M., Haertel, G., & Walberg, H. (1994, September 28-Oct 2). *School-linked services: A research synthesis.* Paper presented at the Invitational conference on school-linked comprehensive services for children and families, Leesburg, VA.

U. Increased accountability of results

What is the definition of this outcome?

Increased accountability of results refers to identifying results to be achieved, linking strategies to achieve them, and tracking progress toward these results over time. Intended results include change to service delivery systems, as well as improved child and family outcomes.

Indicators include:

- Using a shared accountability system across agencies (e.g., using some common measures to assess results and examining findings jointly)
- Developing new data collection tools
- Conducting research on effective practices/integrated systems
- Using data to inform program refinements and future program funding.

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Information on results enhances community and agency capacity to judge and refine their efforts.[2,7] By using data on performance, programs can identify potential issues in outreach, utilization, quality, intensity, and effectiveness. This information can be used to adjust program activities or strategies. Results-based accountability can also help programs to better organize and plan their work. For example, it can help programs and funders see how well their strategies align with intended outcomes and indicate the location of gaps or duplication in the efforts being made.

Results-based accountability may provide an alternative way to still hold agencies responsible but one that also lets them have greater discretion about how to serve children and families.[2,4] The hope is that results-based accountability will reduce problems that schools, health care, social service agencies, and other human service agencies have because of rules that prevent them from being flexible and responsive to the needs of those they serve. Policy-makers and funders could be asked to focus on the goal of a program (e.g., to reduce the number of low-birth-weight babies) rather than creating programmatic or funding requirements that tend to interfere with a program's ability to respond to a wide range of urgent needs.

Agreement on desired results can facilitate cross-systems collaboration on behalf of children.[2,4] The desired results are those that will produce well-being for children, adults, families, or communities, and they cut across programs and agencies. For example, programs from different domains and perspectives can agree on a common result such as "children are ready for school." This

agreement can be leveraged into greater collaboration and more coordinated systems of care.[1,3]

Results-based accountability can demonstrate to funders and the public that investments are producing results.[2,4] Support for publicly funded programs is increasingly tied to service institutions' ability to demonstrate that they can accomplish their intended purpose.[5] Programs willing to be held accountable for results will have a greater chance of obtaining needed funding and other support. First 5 California and County Commissions are already being asked to answer questions such as "Are families better off? What difference does this funding make?"

Results-based accountability is a continuous process. The purpose of results-based accountability is to continually monitor the well-being of children, families, communities, and the systems that serve them so that more informed decisions can be made about programs and policies.[2,4,6,8] As programs and policies are modified, information about how these changes are affecting well-being needs to be gathered. Tools for using results accountability suggest that the following steps be taken: (1) examination of the baseline data on the result, (2) discussion of why the baseline looks the way it does, (3) identification of what more needs to be learned, (4) consideration of what strategies could be used, (5) creation of a work plan (and what partners need to be involved), (6) development of a system for monitoring performance and progress toward the shared result, and (7) use of the findings for creating a revised work plan.[2]

Results-based accountability efforts should maximize the use of available data and develop new data sources when necessary. Collecting data can be burdensome and resource-intensive. Therefore, every effort should be made not to duplicate data-collection efforts (e.g., using available data and creating safe ways to share data whenever possible). Sometimes it will be necessary to invest in the development of better indicators and research on unanswered questions. It may also be necessary to invest in a data infrastructure that collaborating agencies and parties can use to store, analyze, and produce reports in a timely and useful manner.[2]

<u>Who else currently uses this outcome?</u>

The use of outcome-based (or results-based) accountability is mandated by the Proposition 10 legislation. Therefore, all Proposition 10 County Commissions are involved in using an outcome-based approach.

The Foundation Consortium for School Linked Services, established in 1991 to promote systems' change in California, has been funding programs, evaluation, and research that look at how systems that serve children and families might be improved (including increased civic engagement) so that children and families might have better outcomes. The Consortium currently sponsors the Results for

Children Initiative that supports five Proposition 10 County Commissions in their use of results-based accountability and inclusive governance.[7]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the use of results-based accountability to inform program refinement, planning, and funding decisions.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Chynoweth, J., Philiber, S., & Oakley, M. (2000). *Systems change in California: Progress at the Millennium*. Sacramento, CA: The Foundatrion Consortium and Philiber Research Associates.

[2] Friedman, M. (2000). *Results accountability for Proposition 10 commissions: A planning guide for improving the well-being of young children and their families*. N. Halfon, E. Shulman, M. Shannon, and M. Hochstein (Eds.) Los Angeles, CA: UCLA Center for Healthier Children, Families and Communities.

[3] Gardner, S. (March 2000). *Changing the rules? County collaboratives' roles in improving outcomes for children and families*. Sacramento, CA: Foundation Consortium.

[4] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[5] Schorr, L., Farrow, F., Hornbeck, D., & Watson, S. (Fall 1994). *The case for shifting to results-based accountability with a start-up list of outcome measures with annotations*. Washington, DC: Center for the Study of Social Policy.

[6] Sutherland, C., McCroskey, J., & Halfon, N. (2001). The challenges of measuring the impact of Proposition 10. In N. Halfon, E. Shulman, & M. Hochstein (Eds.), *Building community systems for young children*. Los Angeles: UCLA Center for Healthier Children, Families and Communities.

[7] The Foundation Consortium. (2002, March 8). *What we do: Results for Children Initiative (RCI)*. Retrieved Aug 12, 2002, from http://www.foundationconsortium.org/site/shortcut/what/p10res.htm

[8] Young, N., Gardner, S., Coley, S., Schorr, L., & Bruner, C. (1994). *Making a difference: Moving to outcome based accountability for comprehensive service reforms (Research Brief 7)*. Des Moines, IA: National Center for Service Integration.

V. Increased civic engagement of program participants.

What is the definition of this outcome?

Increased civic engagement refers to activities and strategies that promote more meaningful involvement of program participants and other community residents in decision-making and community planning processes about improving the conditions for children and families.

Potential indicators include:

- Increasing public input (e.g., surveys, community hearings)
- Providing policy and advocacy training to program participants
- Increasing civic participation on policy boards
- Increasing volunteer support of agencies/services
- Increasing civic participation in formal and informal community associations
- Increasing family use of peer support groups.

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Engaging residents and local agencies can support better outcomes for children and families.[13] A study of the Boston Healthy Start program suggests that engaging black community residents was critical to developing an effective program that reduced infant mortality.[6] Other studies have found that engaging parents as decision-makers in educational program can lead to improved student academic achievement, reduced behavioral difficulties, and increased attendance.[3] Other research suggests that collaborations that engage residents have been able to positively affect certain kinds of community outcomes such as children's safety.[4]

Civic engagement in decision-making (also called "inclusive governance") ensures that the perspectives of those from diverse backgrounds are taken into account when making decisions that will affect them.[1] Inclusive governance ensures that people who are recipients of services, community residents, and service providers, as well as policy-makers and funders, are represented and heard during decision-making. Evaluations of civic engagement efforts have found that the inclusion of community residents and program participants in decision-making works better when it is formally included in the governance rules.[9]

Agencies funded to operate Head Start and Child Care programs are required to solicit feedback from parents through parent meetings and Parent Advisory Councils. A representative from each agency council is elected to serve on the

Head Start/Child Care Parent Policy Council which helps set guidelines for Head Start programs across the city.[12]

Civic engagement processes can help to identify needs and effective solutions more accurately. Consulting and involving community members in needs assessments, program design, and policymaking will increase the chances that they will be appropriate, effective, or sustained.[1] Community input on needs and solutions can be gathered using various methods, such as surveys, focus groups, town hall meetings, and community forums.[1]

System change efforts can be supported by community engagement in that process.[5] When local residents are involved in community discussions about improving the lives of children and families, they tend to focus more on results rather than rules. In addition, they emphasize the need for prevention-oriented activities rather than services for families in crisis. Civic engagement also helps programs tailor their services and approaches to the unique needs of specific communities.[8] By tailoring programs to specific communities, professional services can build on existing natural supports (e.g., extended family, clans, faith-based organizations, neighborhood associations), on which families prefer to rely.[4] To increase parent engagement, projects need to be more supportive of family needs and to establish genuine parent-professional partnerships.[11] Furthermore, increasing parenting skills and access to resources can increase parental involvement and diminish isolation.[6]

Evaluations of programs are more informative when "insiders" help to frame the evaluation questions and the implications of the results. Traditional evaluation theory requires that evaluations be conducted by people outside of a program to ensure a nonbiased view, but new theories of evaluation (Evaluation Utilization Theory) believe that involving "insiders" such as program participants and staff in the design and interpretation of program evaluations will increase the usefulness of the data and the likelihood that results will be used for program refinement.[7]

Civic engagement and inclusive governance require special outreach efforts. Extra effort must be taken to reach out to diverse groups that have historically been disenfranchised. To change who attends community or program meetings requires intention, resources, and commitment.[1] Programs and community efforts can reduce barriers to participation such as location and times of meetings, languages spoken at meetings, lack of child care, unfamiliarity with formal meeting processes (e.g., Robert's Rules of Order), and professional jargon. They can reach out to residents through surveys, focus groups, and meetings sponsored by people or organizations who have strong relationships with groups of community residents. In addition, outreach efforts can use places where people in the community already meet (e.g., churches). The governance structure can be designed to be inclusive (e.g., have a designated number of

positions for people representing specific perspectives, hold separate meetings with different groups).[1]

Who else currently uses this outcome?

The Civic Engagement Project for Children and Families is a collaboration of six sponsors interested in supporting strategies to engage a diverse public with the issues facing young children and their families. The project partnered with eight California Proposition 10 County Commissions to support and track civic engagement efforts.[2]

The Foundation Consortium for School Linked Services was established to promote systems change in California. The Consortium currently sponsors the Results for Children Initiative that supports five Proposition 10 County Commissions in their use of inclusive governance and results-based accountability.[10]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including changes in the inclusion of residents from diverse backgrounds in the planning and implementing of First 5 California-funded activities. Inclusion of residents from diverse backgrounds in meetings and governing bodies also can be documented from attendance data.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Chang, H., & Chynoweth, J. (2000). *Inclusive governance: A call to action*. What works policy brief. Sacramento, CA: Foundation Consortium.

[2] The Civic Engagement Project for Children and Families, http://216.36.197.193/

[3] Comer, J. (1998). The role of parents and the community in school reform. *Scientific American, 295*(5), 42-48.

[4] Farrow, F., & Gardner, S. (1999). *Citizens making decisions: Local governance making change*. What works policy brief. Washington, DC: Center for the Study of Social Policy.

[5] Mintrom, M. (2001). *Achieving quality early childhood education for all: Insights form the policy innovation diffusion research*. New York: The Foundation for Child Development.

[6] National Research Council, & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Committee on Integrating the Science of Early Childhood Development. J. P. Shonkoff & D. A. Phillips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[7] Quinn Patton, M. (1997). *Utilization focused evaluations*. Thousand Oaks, CA: Sage.

[8] Schorr, L. (1997). *Common purpose, strengthening families and neighborhoods to rebuild America*. New York: Anchor Books, Doubleday.

[9] The Center for Study of Social Policy. (1995). *Changing Governance to Achieve Better Results for Children and Families*. Washington, DC: Author.

[10] The Foundation Consortium. (2002, March 8). *What we do: Results for Children Initiative (RCI)*. Retrieved Aug 12, 2002, from http://www.foundationconsortium.org/site/shortcut/what/p10res.htm

[11] Turnbull, A. P., Turbiville, V., & Turnbull, H. R. (2000). Evolution of family-professional partnerships: Collective empowerment as the model for the early twenty-first century. In M. J. Guralnick (Ed.), *The effectriveness of early intervention* (pp. 630-650). Baltimore, MD: Paul H. Brookes Publishing Company.

[12] U.S. Department of Health and Human Services. (2002). *Policy Council Toolkit*. Retrieved Aug 14, 2002, from http://www.headstartinfo.org/infocenter/pol.htm

[13] Young, N., Gardner, S., Coley, S., Schorr, L., & Bruner, C. (1994). *Making a difference: Moving to outcome based accountability for comprehensive service reforms (Research Brief 7)*. Des Moines, IA: National Center for Service Integration.

W. Increased sustainability of First 5 California-funded programs.

What is the definition of this outcome?

Increased sustainability of First 5 California-funded programs refers to activities and strategies that promote the long-term continuation (i.e., 5 or more years) of those programs for children from birth to age 5 and their families.

Indicators could include:

- A program fund-raising plan for the current year and for at least 1 year into the future
- An increase in total funding for the program
- Percentage of First 5 funds, versus funds from other sources
- Percentage of funds from long-term sources, such as local tax levies.

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Strategies to increase funding for programs can ensure continuity in services that produce lasting benefits for children and families. Community programs that have access to ongoing "mainstream" funds can focus their efforts on delivering high-quality services.[3] Programs that establish early and ongoing efforts to identify alternative funding sources can flourish, even if initial funding is lost.[1] For example, rather than relying on temporary funding, well-designed community programs, with demonstrated results, can attract stable institutionalized funding streams, such as entitlements and tax-based funding.[3,9] Programs also can promote sustainability by leveraging additional funding through the private sector.[1] Central to the outcome of sustainability is having a clearly defined program plan, including provisions for ongoing funding and data demonstrating that the program meets its goals.[2,4]

Effective sustainability strategies encourage community engagement around issues of importance to children and families. Programs that are visible to and valued by the larger community are likely to be sustained.[2] To the extent that a program becomes embedded in a community, it can be identified by community leaders and stakeholders as a high funding priority.[2] Program plans that include in-kind contributions from community members can generate community involvement in important issues and advocacy for additional or future funding.[8,9] Likewise, programs that identify creative sources of funding are often those that collaborate extensively and share resources with other community services.[4] (See indicator V.)

Sustaining integrated service approaches requires special types of financing. Most federal and state funding streams continue to be categorical.[5] One of the first steps in implementing an integrated-service approach is developing or securing "glue money" that can be used for start-up planning, building shared information and service systems, and creating commitment among program line workers and administrators.[7] Proponents of integrated services point out that more federal and state funding sources should be designed to meld with other funding sources.

Sustainability of interagency collaboration and other systems change efforts requires efforts beyond financing. Finance changes must be accompanied by transformations in governance, technology, and attitudes and capacities of staff at all levels of the system.[7] A study with the first cohort of California Healthy Start sites found certain characteristics of collaboratives were related to sustainability. They included: (1) greater parental involvement in planning and implementation, as well as greater teacher involvement; (2) greater trust, joint-decision-making, and feelings of shared ownership among collaborative members; (3) more and better services (more comprehensive, integrated, accessible, family-centered, culturally competent, balanced between prevention and intervention, and high-quality services); and (4) having a coordinator who was full-time and who carried clout with the involved agencies.[6]

Who else currently uses this outcome?

Sustainability is being monitored in a variety of settings, including the California Healthy Start evaluation and numerous state and federal funding sources (e.g., Elementary Schools Counseling Grant). The Foundation Consortium and Philliber Research Associates interviewed California county executives and service site coordinators about their ability to receive funding from mainstream sources, rather than special or temporary funds.[3]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including efforts at sustaining First 5 California-funded activities and changes in systems brought about by these activities. Sustainability also could be monitored using program budgets.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations, interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Bruner, C. (1994). *Toward improved outcomes for children and families: A framework for measuring potential of comprehensive service strategies. Issues in developing comprehensive, community-based service systems occasional paper #8*. Falls Church, VA: National Center for Service Integration Clearinghouse, Child and Family Policy Center.

[2] Bruner, C. (2000). *Family service systems reform in Pennsylvania: An assessment of impact and opportunity. Issues in developing comprehensive, community-based service systems occasional paper #23*. Falls Church, VA: National Center for Service Integration Clearinghouse, Child and Family Policy Center.

[3] Chynoweth, J., Philiber, S., & Oakley, M. (2000). *Systems change in California: Progress at the Millennium*. Sacramento, CA: The Foundatrion Consortium and Philiber Research Associates.

[4] Farrow, F., & Joe, T. (1992). Financing school-linked, integrated services. *The Future of Children, 2*(1), 56-67.

[5] Gardner, S. (March 2000). *Changing the rules? County collaboratives' roles in improving outcomes for children and families*. Sacramento, CA: Foundation Consortium.

[6] Golan, S. (1997). *Sustaining school-linked services: Lessons from Healthy Start grantees. Prepared for the Foundation for School-Linked Services*. Menlo Park, CA: SRI International.

[7] Kirst, M. (1994). *School linked services: Appriasal, financing and future directions*. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania.

[8] Melaville, T. (1999). *Making a difference for children and families: The community approach. Policy brief*. Sacramento, CA: Foundation Consortium.

[9] Weiss, H., Woodrum, A., Lopez, M. E., & Kraemer, J. (1993). *Building villages to raise our children: From programs to service systems*. Cambridge, MA: Harvard Family Research Project.

X. Improvements in school readiness service system.

What is the definition of this outcome?

Service systems improvements can promote formal linkages between elementary schools and the community programs, and can serve children and families better before and during the early school years. Indicator could include:

- The number and of elementary schools with formal linkages to preschools, Head Start and Early Head Start programs, child-care centers, home visiting programs, and community resources
- The number and percentage of preschools with formal linkages to public and private elementary schools, child-care centers, home-visiting programs, and community resources.

Depending on the means by which these linkages are established, more specific indicators could include:

- The average number of contacts between school and early childhood program on behalf of each child
- The establishment of days for the parents and children to visit the elementary school the children will be attending
- The percent of parents receiving "Welcome to Kindergarten" information distributed by their early childhood program provider
- Record transfers (e.g., assessments, student work portfolios) between settings.

(Additional indicators may be identified when developing the Statewide Evaluation of First 5 California Programs and its School Readiness Initiative.)

Why is this outcome important?

Formal linkages between elementary schools and preschool and community services can aid children and families during the critical transition into kindergarten. The transition into kindergarten can be challenging and stressful for students and their families.[3,6,8,9,12,13] A lack of integration among the programs that serve these children can be confusing for families, particularly in terms of understanding eligibility for various services.[1] In contrast, schools, preschools, and care providers that are connected to each other and to other social services can respond efficiently to the individual needs of children who are making the transition.[2,5,12] Formal associations with local public schools can also offer access to services that are lacking in the preschool programs, such as early identification of special education needs.[13] Likewise, kindergarten teachers who have regular contact with students' previous caregivers and teachers can plan for continuity in the educational curriculum, ensuring early success in elementary school.[10,12] (See indicator K2.)

Formal linkages could improve the quality of education for young children by expanding professional development opportunities for preschool and elementary school teachers.[3] Connecting Head Start and child-care providers with public schools could shed light on the importance of preschool education and raise awareness about the need for well-trained preschool teachers with equitable salaries. Preschool teachers who are integrated into the public school infrastructure also could have access to colleges and universities, teacher certification programs, and technical assistance. In turn, elementary school teachers, some of whom lack specific expertise in early childhood education, could benefit from learning about the experiences of their colleagues in preschool settings. Teachers who are well-educated and supported are needed for students to be ready for school.

Partnerships between elementary schools and preschool services can help elementary schools maintain parent and family involvement practices that are associated with positive student outcomes.[3,4] Head Start and other preschool programs typically emphasize parent involvement to a greater extent than do most elementary schools. A partnership with preschools could help elementary schools to maintain vital relationships with families.

Who else currently uses this outcome?

In 1990, the National Education Goals Panel (NEGP) set its first goal as "all children will start school ready to learn," with a critical element being the concept of "ready schools"—schools also must be ready to receive all children.[12] The California Children & Families Commission (CCFC) translation of the NEGP concepts has resulted in a framework that identifies five "Essential and Coordinated Elements" of school readiness programs, including school capacity and program infrastructure and administration. The National Center for Early Development and Learning conducted a survey of early childhood state representatives and collected data on what states are doing to define and assess children's school readiness, including efforts to develop ready schools.[11] Previously, the Administration for Children, Youth, and Families sponsored a National Initiative on Transition from Preschool to Elementary School.[7]

What are the possible sources of data for this outcome?

SRI will develop evaluation tools (such as surveys and case study protocols) to assess changes in systems of care, including linkages between public schools, preschools, childcare centers, and other community resources.

Formative evaluations can support program refinement. Evaluators who are external to program staff can conduct formative evaluations of programs to determine how programs and activities are being implemented and to identify areas that could be improved. Such evaluations usually include observations,

interviews, focus groups, and document reviews. These evaluations should take into account the views of the program participants and staff, and knowledge about best practices from the research literature.

Sources

[1] Committee for Economic Development: Research and Policy Committee. (2002). *Preschool for all: Investing in a productive and just society*. New York: Author.

[2] Gallagher, J., Clayton, J., & Heinemeier, S. (2001). *Education for four-year olds: State initiatives. Executive summary*. Chapel Hill: University of North Carolina, FPG Child Development Center, National Center for Early Development & Learning.

[3] Hinkle, D. (2000). *School involvement in early childhood*. Jessup, MD: U.S. Department of Education, Office of Educational Research and Improvement.

[4] Jordan, C., Evangelina, O., & Averett, A. (2001). *Emerging issues in school, family, & community connections. Annual Synthesis*. Austin, TX: National Center for Family & Community Connections with Schools, Southwest Educational Development Laboratory.

[5] Kagan, S. (1995). *By the bucket: Achieving results for young children*, from http://www.nga.org/cda/files/IB1995BUCKET.pdf

[6] Kraft-Sayre, M., & Pianta, R. (2000). *Enhancing the transition to kindergarten*. Charlottesville: University of Virginia, National Center for Early Development & Learning.

[7] Love, J. M., Logue, M. E., Trudeau, J. V., & Thayer, K. (1992). *Transitions to kindergarten in American schools: Final report of the National Transition Study*. Washington, DC: U.S. Department of Education.

[8] Pianta, R., & Cox, M. (1999). *The transition to kindergarten*. Baltimore, MD: Paul H. Brookes Publishing Company.

[9] Pianta, R., & Sayre, M. (2002). *The transition to kindergarten: Building links among families, schools and communities*. Baltimore, MD: Paul H. Brookes Publishing Company.

[10] Rimm-Kaughman, S., Pianta, R., & Cox, M. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly, 15*(2), 147-166.

[11] Saluja, G., Scott-Little, C., & Clifford, R. M. (2000). Readiness for school: A survey of state policies and definitions. *Early Childhood Research and Practice, 2*(2).

[12] Shore, R. (1998). *Ready schools. A report of the Goal 1 Readiness Schools Research Group*. Washington, DC: National Education Goals Panel.

[13] Vecchiotti, S. (2001). *Kindergarten: The overlooked school year*. New York: Foundation for Child Development.

APPENDIX

APPENDIX
FIRST 5 CALIFORNIA

As you can see from the new name and logo the California Children & Families Commission (CCFC) has adopted "First 5 California" as our new overarching school readiness identity.

A good name is easily identifiable, memorable, and gives an idea of what an organization does. We believe that the name First 5 California conveys the importance of the first 5 years of life—the period during which a child's brain develops most dramatically. Coupled with the work of the CCFC, the name First 5 California will help the public understand the CCFC's overall purpose .

To have a statewide presence, the CCFC must help ensure that all of the programs and services implemented under the Proposition 10 mantle are viewed as part of a cohesive body. In particular, the School Readiness Initiative is a centerpiece of the CCFC's work. Our goal is to ensure that the combined School Readiness Initiative efforts of the State Commission and partner County Commissions will be easily identified with the new name and logo.

The new name will be used in all Commission public education efforts, on any printed materials developed, and, over time, may become the primary identity of the organization. For the time being, the CCFC will retain its formal organizational name, a practice that is common among government organizations. For instance, the North Carolina Partnership for Children runs "Smart Start," and here in California, the Healthy Families Program is run by the Managed Risk Medical Insurance Board (MRMIB). We hope that First 5 California will unify the many different elements of the CCFC and convey a sense of continuity, connection, and cooperation among them.

FIRST 5 CALIFORNIA (PROPOSITION 10) FACTS AT A GLANCE

What is First 5 California (Proposition 10)?

In November 1998, voters passed the California Children and Families Act, an initiative that added a 50¢-per-pack tax on cigarettes to fund education, health, child care, and other programs to promote early childhood development—from prenatal to age 5. In 2001, approximately $687 million was collected from the tax. First 5 California (Proposition 10) was designed to address the lack of public funding and support for early childhood development in the wake of a growing body of scientific evidence that indicates that the emotional, physical, social, and developmental environments to which children are exposed have profound effects on their ability to reach their greatest potential in school and in life.

How does it work?

Children and Family Commissions at the state level and in each of California's 58 counties are carrying out the work of the initiative.

The California Children & Families Commission (CCFC) is the leadership agency and statewide coordinator for the California Children and Families Act. The CCFC provides oversight, training, and assistance to the County Commissions and education statewide in regard to the importance of early childhood development. In addition, the CCFC administers 20 percent of the overall revenue to offer technical assistance to County Commissions; to conduct research on, and evaluations of, the best policies and practices for young children; and to develop education, infrastructure, and training programs for parents, child-care providers, and other professionals.

The bulk of the Proposition 10 funds—80 percent—go directly to the County Commissions. The County Commissions must develop strategic plans that are consistent with CCFC guidelines on funding local child-development programs and services, but they also have maximum flexibility in tailoring funding and programs to local needs. Some CCFC requirements for County Commissions include obtaining broad public input and submitting audits on spending to the CCFC.

Proposition 10 mandates that each Commission form at least one advisory committee to provide expertise and support. The State Commission has established an Advisory Committee on Diversity, charged with helping to ensure that statewide First 5 California programs meet the needs of California's ethnically, linguistically, and culturally diverse population, and of children with special needs and disabilities.

How are Commissioners chosen?

The CCFC's member commission is made up of seven members appointed by the Governor, the Speaker of the Assembly, and the Senate Rules Committee. The Secretary for Education and the Secretary of the Health and Human Services Agency (or their designees) serve as ex-officio members. Each county Board of Supervisors appoints a five to nine member Commission, including a member of the Board of Supervisors and two members from among those who manage county functions (e.g., behavioral health services, social services, tobacco prevention and treatment services). The remaining members can be drawn from county functions or organizations that work in the early childhood development arena (e.g., child-care resource or referral agencies, community-based organizations, school districts, and medical, pediatric, or obstetric associations).