

EARLY CHILDHOOD HIGHLIGHTS

Child

TRENDS.

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QUICK FACTS

Indicators generally fall into two categories:

CHILD WELL-BEING INDICATORS

These indicators are direct measures of development and well-being among young children. A few examples are:

- Presence of fine motor skills, such as ability to grasp a pencil or cut with scissors
- Healthy weight
- Recognizes sounds and letters
- Size of vocabulary
- Frequency of pro-social behaviors such as sharing, helping, and cooperation¹⁹
- Frequency of aggressive behaviors such as hitting or kicking

CONTEXTUAL INDICATORS

These indicators describe family, school, and community influences on healthy child development. Examples include:

- Parent's level of education
- Parent's language skills
- Family poverty status
- Number of books in the home
- Family structure
- Availability of and participation in high-quality early care and education

Early Childhood Indicators: Making the Most of Measurement

By David Murphey, Ph.D.

Over the past 30 years, a movement has been growing to use a discrete set of measures, or indicators, to better monitor the development, health, and well-being of children. These data can help inform planning, set goals, track progress, and hold programs accountable for improving children's lives and well-being.^{1,2} Child well-being in the states can be measured by a variety of indicators, such as percent of low-weight births, the rate of infant mortality in the community, and achievement test scores.³ Indicators can be used by states to help make plans, for example, for building new schools, hospitals, and roads, and to make funding decisions about programs and services that can address identified needs.

States have become increasingly reliant upon child well-being indicators to identify needs and guide implementation of policies and programs that address the needs of at-risk children and families.⁴ Without defined, objective measures of need or success, it is difficult, if not impossible, to answer basic questions about the effects of early childhood policies, programs and services. Moreover, taxpayers and other stakeholders rightly expect accountability from those responsible for implementing reforms. As a result, states are increasingly using indicators to identify areas that need attention, and to measure the success of their early childhood initiatives. Early childhood indicators can provide point-in-time information, and trends over time, related to specific aspects of child well-being, and can be used to inform policymakers about either the need for intervention, or the apparent effects (or lack thereof) of reform efforts. Although states' use of indicators to guide policy planning and decisions is growing, there are both appropriate and inappropriate ways to use indicators for such purposes, a few of which are highlighted in this brief.

Background

The movement to develop and refine measures of child well-being grew out of the social indicators movement of the 1970s.⁵ Initially, indicators of child well-being focused on children's health and education, and their



QUICK FACTS

INDICATORS OF COMMUNITY RISK FACTORS & RESOURCES:

Indicators used for this purpose identify particular communities at risk for adverse outcomes, and the programs and services states and communities have in place to address needs.

INDICATORS OF DISTRESS/NEED

These indicators focus on health and development attributes that put young children at risk. A few examples are:

- Percent of children under the age of 5 in families with incomes below 100% or 200% of the federal poverty level
- Percent of children born to young and single mothers
- Percent of births to mothers with less than a high school degree
- Percent of infants with low birth weight
- Infant mortality rate

INDICATORS OF COMMUNITY RESOURCES

These indicators reflect the capacity or status of programs that are designed to address the needs of at-risk children and families. Examples include:

- Percent of care settings that are high quality
- Percent of children enrolled in pre-k, Head Start, or Early Head Start
- Percent of at-risk mothers participating in home visiting programs
- Percent of children screened for developmental delays
- Percent of families enrolled in family literacy programs

families' economic status, but have since evolved to include children's social and emotional development.⁶ Child well-being indicators are particularly helpful when planning, implementing, or assessing states' reform efforts, and can help answer questions such as, "Did this initiative make a difference?" Accordingly, a number of states have embedded indicators into their early childhood efforts. For example, a key recommendation of South Carolina's First Steps to School Readiness Vision 2013 initiative is to create state-level indicators to measure the implications of the state's collective investment in young children.⁷ Similarly, the Early Childhood Colorado Framework specifies distinct, measurable early care and education indicators that allow the state to track progress towards meeting goals for children's education, health, and well-being.⁸

Federal initiatives, such as the states' Early Childhood Comprehensive Systems (ECCS) grants funded by the Maternal and Child Health Bureau, have used indicators as a means for measuring success across areas such as health, early education, and family support. The philanthropic community has also supported states in identifying and embedding indicators in their efforts to promote school readiness and child well-being, such as the 17-state School Readiness Indicators Initiative,⁹ and the BUILD Initiative.¹⁰

Appropriate Uses of Indicators

Population Measures of Well-Being. Population-based, aggregate measures of well-being describe children-in-total, and include indicators such as rate of low birth weight, the percent of young children in high-quality care settings, or the percent of preschool children who are read to every day by their parents.¹ These measures indicate the proportion of young children who are (or are not) thriving. When indicators are tracked over time, their rise or fall can capture the attention of the public or policymakers. Moreover, indicators can provide yardsticks of the success of public policy efforts. For example, in the late 1990s Rhode Island responded to high rates of lead poisoning in children by greatly expanding screening efforts, and within a relatively few years was able to cut those rates by more than half.¹¹

¹ Strictly speaking, the latter two examples are measures of children's "settings," not direct measures of their well-being. However, where there exists strong evidence that links such contextual features with improved child outcomes, they may be considered as "proxy" indicators of child well-being.





QUICK FACTS

MEASURES TO ASSESS SYSTEM REFORM INITIATIVES

Indicators used to measure early childhood systems fall into two categories, depending on how the data are used: to measure *efficiency* or *effectiveness*.²⁰

MEASURING EARLY CHILDHOOD SYSTEM EFFICIENCY

Examples include:

- Increased data linkages & information sharing among partners and agencies
- Increased capacity of home visiting, early care and education, and/or parent education programs
- Increased inter-agency coordination and improved distribution mechanisms for parent information about state and local services

MEASURING EARLY CHILDHOOD SYSTEM EFFECTIVENESS

Examples include:

- Percent of children enrolled in public preschool, Head Start, Early Head Start, or other high-quality early care and education programs
- Percent of children with special needs receiving consistent early care and education services and supports
- Third grade reading scores or other standardized assessments

Mapping Community Distress and Resources. A community assessment identifies populations at greater or lesser risk for adverse outcomes, according to a select number of indicators. By mapping the pockets of greatest risk or need in a community, states and communities can better direct programs and resources. For example, Pennsylvania’s Office of Child Development and Early Learning identified seven county-level economic, family, and education risk indicators, such as the percent of families with children younger than five living below the poverty level, and the percent of children scoring below the proficient level in state third-grade reading assessments. These risk indicators were mapped against data on the availability of high quality early childhood programs in each county. The District of Columbia’s Office of Early Childhood Education recently completed a similar mapping of “risk” and “reach” indicators, by ward and Zip code.¹² The pairing of risk indicators and access data can help identify areas of unmet need and can inform decisions about how to target resources more efficiently and equitably.

The process of assessing community risk levels is also a growing trend among federally-funded state grant programs.¹³ For example, the recently approved federal Home Visiting initiative requires states to identify communities with the highest risk of poor maternal and child health outcomes, as measured by a number of selected indicators.¹⁴

Measures to Assess System-Reform Initiatives. State early childhood systems are comprised of networks of programs and services provided to children and families, such as child care, work supports, early education, health care, and others. Since these programs and services often span multiple state agencies and departments, many states have efforts underway to improve coordination. While random assignment experiments are generally seen as the gold standard for assessing impacts, experimental studies of system-reform initiatives are difficult and costly. However, to track the success of these efforts, a set of well-chosen indicators can be used provisionally to gauge both the effectiveness and the efficiency of such systems.

Measuring the *efficiency* of systems typically includes looking at aspects such as financing, governance, partnering strategies, and other infrastructure components.¹⁵ By tracking the efficiency of the system, state policymakers can better diagnose gaps and redundancies, which may lead to more effective use of state dollars and better services provided to children and families.





QUICK FACTS

STATE EARLY CHILDHOOD COMPREHENSIVE SYSTEMS INITIATIVES (ECCS)

Forty-seven states have ECCS initiatives underway that track progress across multiple indicators related to the domains identified below. A few examples of indicators states might track are listed for each domain:²¹

HEALTH:

- Percent of mothers who are breastfeeding their infants at 6 months of age.

SPECIAL NEEDS

- Percent of special needs children birth to 3 years who receive Part C Early Intervention Services.
- Percent of special needs children ages 3 to 5 enrolled in early childhood Part B Preschool special education programs.

SOCIAL-EMOTIONAL DEVELOPMENT

- Rate of substantiated cases of child abuse and neglect for children birth to age 6.
- Rate of children under age 6 who are expelled due to behavior problems.

EARLY CARE AND EDUCATION

- Percent of early childhood educators with specified training or credentials

FAMILY SUPPORT AND PARENTING

- Indicators in this area are emerging, but may include aspects related to family structure, family time, parental health, and other areas of family well-being.

To address questions of *effectiveness*, states can measure children’s contexts and outcomes, such as the percent of children enrolled in high quality early care and education programs, percent of children receiving health and developmental screenings and services, retention rates in grades K-3, and so on.¹⁶ For policymakers and the public, it is the effectiveness measures that constitute the bottom-line of success for reform efforts aiming to improve child well-being.

When states track indicators before, during, and after an initiative, they can make a plausible case for the role their efforts played in influencing trends. Of course, true cause-and-effect relationships are difficult to establish. From the point of view of policymakers and the public, however, it is often persuasive to show that there was a clear association between the implementation of a new initiative and subsequent positive change on one or more indicators.

Misuses of Indicators

Confusing Measures of Funding with Child Well-being Indicators. A common error is to confuse indicators of child well-being with measures of funding. “More dollars spent” may or may not be an important component of a reform initiative, yet it does not measure whether children or their families are any better off. For that matter, even measures of program quality, while vitally important, do not provide a direct measure of child well-being. The assumption is that quality makes a difference, but only direct measures of child well-being (e.g., attainment of specific skills) can assess the effect of quality on child well-being.ⁱⁱ

Confusing Measures of Performance with Indicators. A second misuse is to confuse indicators with measures of program or agency performance or service delivery. “More units of service delivered,” or “greater collaboration” may be important accomplishments, but they say nothing about whether child or family well-being has improved.

Confusing Population Indicators with Program Accountability. Indicators are based on data gathered for an entire population (e.g., children ages birth to five), not just from the clients of any one program or agency. Therefore, agency accountability should not be made

ⁱⁱ Missouri recently released results of a study that provided empirical evidence that childcare settings rated higher in quality were associated with a number of improved school readiness outcomes for participating children. Thornburg, K. R., Hawks, J. S., and Fuger, K. L. (October, 2009). The Missouri Quality Rating System School Readiness Study. Columbia, MO: Center for Family Policy & Research.





QUICK FACTS

17-STATE SCHOOL READINESS INDICATORS INITIATIVE

This 2005 initiative to improve school readiness was a collaborative effort between national experts and leaders in 17 states. The following are examples of indicators states committed to tracking.²²

READY CHILDREN

Percent of kindergarten students with moderate to serious difficulty following directions.

READY FAMILIES

Percent of births to mothers with less than a 12th grade education.

READY COMMUNITIES

Percent of infants and toddlers in poverty enrolled in Early Head Start.

HEALTH

Percent of children under age 6 without health insurance.

EARLY CARE AND EDUCATION

Percent of eligible children under 6 receiving child care subsidies.

READY SCHOOLS

Average teacher/child ratio in K-1 classrooms.

conditional on population indicator data. While agencies may bear a degree of responsibility for positive or negative indicator trends, their contribution is rarely, if ever, exclusive. Agencies or programs are indeed accountable for seeing that *their clients* make gains on appropriately chosen well-being measures. However, these are properly considered *performance measures*, as distinct from *indicators*.¹⁷

Considerations for Selecting and Interpreting Indicators

Some indicators are more effective than others. Good indicators clearly signal their importance, specifically measure child well-being, are based on trustworthy data, are valid and reliable, and are responsive to change.¹⁸

Signal Importance. The most effective indicators clearly communicate to the general public why they are important, and how they are logically tied to the goals of the initiative. For example, the rate of teen pregnancy would be an important statistic for efforts designed to help adolescents avoid negative reproductive health outcomes. Or, the percent of parents who regularly read to their child would inform efforts designed to promote parent-child book reading.

Measure Child Well-Being. Strong indicators are related to child well-being; they are not measures of program or agency operation or functionality. It is important to make clear distinctions between indicators of child well-being (measures of behavior, health, and development), and other measures—such as measures of quality, financing, or system performance.

Are Created from Trustworthy Data Sources. Strong indicators are derived from complete and accurate data that are collected consistently, frequently, and from a credible data source. Knowing the percent of children in state-funded preschool programs only every five years will not be helpful in making decisions about funding. Additionally, the methods used to collect the data (e.g., self-report versus direct observation, sample versus universe) need to be carefully considered in interpreting the data.

Are Reliable “Proxies.” If there are no direct measures of the results that are desired, then select indicators that support the desired result as closely as possible. For example, indicators of infant health and development could include percent low birth weight, rate of





ABOUT THE EARLY CHILDHOOD HIGHLIGHTS SERIES:

The **Early Childhood Highlights** series is intended to provide snapshots of the latest research on early childhood released by Child Trends and other leading researchers working on young children’s issues. Child Trends is a national nonprofit, nonpartisan research center that studies children at all stages of development. Our mission is to improve outcomes for children by providing research, data, and analysis to the people and institutions whose decisions and actions affect children, including program providers, the policy community, researchers and educators, and the media. Each brief summarizes a particular area of research based on longer academic paper(s). More detailed information and additional resources are available from Child Trends. This brief was supported by the Birth to Five Policy Alliance and the Irving Harris foundation.

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maternal smoking during pregnancy, mean Apgar scores (an assessment of newborn viability), and rates of exposure to toxic substances during infancy. Collectively these indicators provide a good proxy for the level of infants’ health risk-- better than for example- parent’s marital status or education level.

Are Consistent Over Time. An indicator set is frequently revised to make it more sensitive to the shorter- and longer-term results of the initiative. However, to monitor trends over time, consistency in what is measured is also important.

Are Selected Carefully. Indicators are more effective when they can reflect the cumulative effect of the reform initiative, to the degree possible. Often the rationale behind comprehensive reform initiatives is that piecemeal efforts are less effective than coordinated ones. Realistically, it is challenging to tackle everything at once. Identifying the areas that are most likely to see results if there is a change in the current operations of the system, and the indicators most closely associated with that change, will be more effective than focusing on indicators that may only be minimally impacted by the initiative, or that will respond only over a very long term.

Avoid Attributing “Cause-and-Effect” to Indicators. Indicators can be used to help assess the effects of an initiative, but caution is needed before attributing positive or negative results to any one program or factor, or even to the collective effort. Stakeholders are advised to consider alternative explanations, such as conducting a formal outcomes evaluation, and to share credit, or develop strategies for problem-solving, broadly.





ENDNOTES

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