April 2010

Issue Brief

Measuring the Quality of Developmental Services for Young Children: A New Approach

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ABSTRACT: Creating a new approach to performance measurement, UCLA researchers propose an initial set of measures that Medicaid and other agencies could use to track the delivery and quality of developmental services for young children. The Developmental Services Quality Performance Measurement (DSQPM) framework, which includes metrics at the individual, provider, county, health plan, and state levels, is implemented through seven discrete measures. The DSQPM measurement set is designed to capture key components of the service-delivery pathway that are typically necessary for screening, identifying, and referring young children who have or are at risk for developmental disabilities. When formally surveyed, a select group of state Medicaid and Maternal and Child Health agencies expressed interest in piloting the DSQPM measurement set. While this particular measurement framework is focused on early childhood health and development, the researchers' multilevel approach is generalizable to other health-related service pathways.

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INTRODUCTION

Health professionals, policymakers, and the public now recognize the lifelong impacts of children's early life experiences and the need to provide appropriate services so that they may ultimately reach their potential. But even as the rates of preventable health, behavioral, and developmental problems increase, studies document that many children are not receiving the services—including anticipatory guidance, developmental screening, and appropriate interventions—that they need (Halfon, Regalado et al. 2004; Olson, Inkelas et al. 2004; Sand, Silverstein et al. 2005; Mangione-Smith , DeCristofaro et al. 2007). Several reports have suggested that barriers to providing appropriate developmental services include not only impediments within particular practices but also system-level constraints such as insufficient referral resources (Halfon, Regalado et al. 2003; Fine and Mayer 2006).

The mission of The Commonwealth Fund is to promote a high performance health care system. The Fund carries out this mandate by supporting independent research on health care issues and making grants to improve health care practice and policy. Support for this research was provided by The Commonwealth Fund. The views presented here are those of the authors and not necessarily those of The Commonwealth Fund or its directors, officers, or staff.

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Commonwealth Fund pub. 1391
Vol. 84

One major hurdle has been the lack of rigorous quality measures. The commonly used HEDIS (Healthcare Effectiveness Data and Information Set) measures, for example, focus very broadly on whether children receive any well-child visits and immunizations but fail to assess the content, quality, and outcomes of the services provided. Such limitations hamper performance improvement efforts at the local, state, and national levels.

The federal government has led or participated in several efforts to improve health care quality and outcomes in Medicare for adults, but until the passage of the Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009, it had not done so for children. Under CHIPRA, it will allocate $225 million from 2009 to 2013 to create a major new quality initiative for children's health.

In particular, these funds aim to facilitate the development and dissemination of new child-specific health quality measures, help states to adopt the measures, establish a standardized reporting format for the states, and institute a mechanism so that states can monitor and improve the related service-delivery and system-level outcomes over time. Additionally, CHIPRA includes funds for a demonstration project, involving grants for up to 10 states and child health providers, to use and test child health quality measures and to promote the use of health information technology for children.

While the implementation of CHIPRA is likely to be influenced by the outcome of current health reform deliberations, as well as by quality measurement and improvement initiatives that result from other new legislation, we expect the main components of the CHIPRA quality effort to remain intact. To that end, it may be possible to work with CHIPRA Quality Demonstration grantees to use the DSQPM as one of the "new measures of child health" with which they may want to experiment.

Tracking and Improving the Quality of Developmental Services

To help jump-start the response to CHIPRA, the Secretary of Health and Human Services is likely to look to a number of past and current efforts to track the quality of developmental services:

- The Assuring Better Child Health and Development (ABCD) initiative, funded by the Commonwealth Fund and administered by the National Academy for State Health Policy (NASHP), is designed to assist states in improving the delivery of early developmental services to low-income children and their families (Berry, Krutz et al. 2008). Toward that end, NASHP has worked with 27 states and territories since 2000. Participating states have attempted to increase and track developmental screening through mechanisms such as changing state Medicaid policies and working directly with practices (Earls and Hay 2006; Kaye, May et al. 2006). Many of the tools for measuring quality developed under ABCD are now ready to be rendered more precise and uniform across communities.
- The Promoting Healthy Development Survey (PHDS) is administered to parents by mail, by telephone, online, or in pediatric offices to assess whether young children (3–48 months old) are receiving recommended preventive and developmental services. To date, more than 45,000 survey questionnaires have been collected by Medicaid agencies in 10 states. Components of the PHDS have also been incorporated into the American Academy of Pediatrics' National Survey of Early Childhood Health and into the Maternal and Child Health Bureau's National Survey of Children's Health (Bethell, Peck et al. 2001; Bethell, Reuland et al. 2005).
- The National Committee for Quality Assurance (NCQA) is engaged in a project supported by The Commonwealth Fund to measure child health outcomes and identify opportunities for building a corresponding infrastructure based on new and emerging technologies (Commonwealth Fund 2007). Three features

of the NCQA initiative deserve mention: 1) the consideration of a new approach that identifies several age-indexed indicators as part of a more comprehensive set of measures for well-child care; 2) a collaboration between NCQA and the Center for Health Care Strategies to help determine the utility of these measures for state government agencies (e.g., Medicaid); and 3) the possibility of incorporating these measures into HEDIS reporting for health plans (Scholle 2009).

While these efforts are helping to assess developmental health outcomes, there is still the need for a more uniform system of measuring and reporting the quality of children's developmental services across levels ranging from individuals to states.

Development of a Common Performance and Accountability Framework

The Developmental Services Quality Performance Measurement (DSQPM) project was launched in December 2006 by the UCLA Center for Healthier Children, Families & Communities with support from The Commonwealth Fund. The project's aim was to help Medicaid agencies (and their contracted health plans) track the delivery and quality of developmental services for young children. In that spirit, its three primary goals were to:

1. Help key stakeholders commit to measuring the quality of developmental services and to sharing responsibility and accountability.
2. Develop a framework for state Medicaid agencies and others to use for measuring the content and quality of early childhood developmental services and for improving outcomes.
3. Identify priority (core) measures that can be easily understood across the various sectors that constitute the early childhood system in most communities.

The DSQPM framework and core measures presented in this issue brief are the result of an iterative development and review process involving project staff and an advisory committee (see Appendix). After the initial measurement set was drafted, refined, and approved by the committee, it was vetted with state Maternal and Child Health and Medicaid administrators. Their feedback allowed the team to further refine the measures and to identify strategies for overcoming barriers to state-level implementation. The result is a lean and practical set of measures for assessing the quality of developmental services within the child health system.

The DSQPM approach also has implications for determining the effectiveness of current policies, for justifying or rejecting the augmentation of measurement efforts currently in place, and for establishing greater uniformity of measurement both across states and at multiple levels within states.

HOW THE PERFORMANCE MEASUREMENT FRAMEWORK WAS DEVELOPED

The DSQPM framework combined two complementary models for evaluating how services are organized and delivered. The first was Avedis Donabedian's approach to health care quality measurement, which links service-delivery structures and processes to their relevant outcomes. The second model, illustrated in Exhibit 1, links measures of performance at four

Exhibit 1. Performance Measurement Framework

Levels of Measurement	Measures		
	Structural	Process	Outcome
Individual			
Provider			
County Program or Health Plan			
State			

levels—individual, provider, county or health plan, and state—to assess how well the different levels of service delivery are aligned and integrated (McGlynn and Brook 2001; Aday 2005; Halfon, DuPlessis et al. 2007).

A Multilevel Pathway Approach

A service-delivery pathway simulates the sequence of steps and connections that are needed to appropriately address the developmental needs of a child. In their most simplified form, such pathways comprise the basic steps necessary for diagnosing or treating a medical condition within a particular health care setting. By contrast, more complex service-delivery pathways also specify the connections between the health care setting and other relevant entities—that is, they involve multiple settings and agencies—and the administrative authorizations that allow connections to occur in a timely manner.

The core measures ultimately developed and recommended by the project team embody such a "multilevel service-delivery pathway" approach, which aims to track the necessary steps involved in identifying children at risk, providing needed services, assessing the quality of services, and determining how these services influence outcomes. This approach also permits the assessment of how policies at different levels—say, the county or state—affect the provision and quality of the services.

After members of the advisory committee vetted the core measures, the UCLA-based team engaged the committee in a modified Delphi method—an iterative process for deriving consensus from a group of experts. This stage elicited systematic and quantifiable inputs that resulted in a third and final version of the core measures.

Survey of State Health Agencies

From March to May 2008 the project staff conducted an e-mail survey of 27 state health agencies to gain feedback on the potential utility of the DSQPM core measures. These states were selected because of their previous involvement in quality measurement and improvement efforts targeting young children. The survey, which had a response rate of 74 percent, also helped to identify strategies for, and state interest in, pilot-testing the DSQPM measures in a proposed Phase II of the project.

RESULTS: KEY PATHWAY, CORE MEASURES, AND STATE FEEDBACK

The Three DSQPM Pathways

The project team developed the following three measurement pathways:

1. *The Developmental Screening Pathway.* There is good evidence that screening leads to the early identification of developmental delays, which is critical to a child's ultimate well-being (Halfon, Regalado et al. 2004; Sices 2007; Marks, Hix-Small et al. 2009; Schonwald, Huntington et al. 2009). The set of seven measures that constitute the Screening Pathway (shown in Exhibit 2) aims to track and improve early childhood developmental screening systems so that children in need of services are identified early and referred for appropriate services.
2. *The Developmental Intervention Pathway for Early Literacy.* Literacy skills in young children serve as the foundation for later academic success (Whitehurst and Lonigan 2001; Kuo, Franke et al. 2004). Thus an early literacy intervention in the context of this DSQPM pathway is one that is provided to parents in a pediatric setting and that helps them get their children ready to read and write. The Intervention Pathway for Early Literacy aims to track and improve the use of such interventions, such as Reach Out and Read (High, LaGasse, et al. 2000; Mendelsohn, Mogilner, et al. 2001). This pathway provides opportunities for states to gain support from, and to help establish collaboration between, the early education and family support communities.
3. *The Developmental Anticipatory Guidance Pathway for capturing the delivery of Bright Futures priority areas.* Anticipatory guidance

Exhibit 2. The Seven Core Measures of the Screening Pathway

Levels	Structural Measures	Process Measures	Outcome Measures
Individual			*1. Child outcome:* % of children 12–24 months of age receiving a standardized developmental screen who measure positive for being at risk of developmental delay.
Provider		*2. Screen:* % of children 12–24 months of age who received a standardized developmental screen during a well-child visit in a pediatric setting.	
County Program or Health Plan		*3. Screen:* % of children 12–24 months of age in a Medicaid-contracted health plan who received a standardized developmental screen during a well-child visit.	
State	*5. Policy:* Does the state Medicaid agency have a policy that requires developmental screening with standardized tools at specific times or ages? *6. Reimbursement*: Does the state have a policy to incentivize developmental screening? Specifically, is developmental screening: - Coded and reimbursed separately when completed *as part of* a well-child care visit? - Coded and reimbursed separately when completed *outside of* a well-child care visit? - Incorporated as part of a pay-for-performance program or a provider incentive program? - Part of physician-recognition program (without payment implications)? *7. Measurement:* Does the state Medicaid agency have a required quality performance measure regarding the % of children that receive a developmental screen?	*4. Services:* % of children 12–24 months of age in the state who are receiving IDEA (Individuals with Disabilities Education Act) services.	

is considered an important component of well-child care because it provides an opportunity to advise parents on key child-rearing topics such as interaction with infants, variability in child temperament, sleep habits, promotion of literacy, and discipline (Schuster, Duan et al. 2000). In particular, the Anticipatory Guidance Pathway is based on the recently released third edition of the Bright Futures priority areas (Hagan, Shaw, and Duncan 2008)[a] and the expected transition to electronic medical records. With these new resources, tracking anticipatory guidance by priority area may become a feasible strategy for states seeking to improve the quality of developmental services.

Because the advisory committee considered the Developmental Screening Pathway to be the key measurement set, this was the only pathway presented in the survey of state Medicaid agencies and it is the only one discussed in detail in this issue brief. The other two were deemed to be optional ("stretch") pathways, feasible mostly for those states in a position to expand their measurement efforts.[b]

Core Measures of the Developmental Screening Pathway

The set of seven DSQPM measures in Exhibit 2 aims to track and improve early childhood developmental screening systems so that children in need of services are identified early and appropriately referred. Because some of the metrics and methods incorporated in the screening pathway already exist, the data collection burden for states and health plans is deemed to be lower than it would have been in the absence of such tools. For example, standards for developmental screening, including guidance on when to screen and on which instruments produce the most valid and reliable measures, are well established (American Academy of Pediatrics 2006). Other screening pathway metrics and methods developed by the project team, including preliminary specifications and recommended data collection procedures, are outlined in the full DSQPM report (Halfon, Stanley, and DuPlessis 2008).

State Feedback on the Screening Pathway

The e-mail survey of state Medicaid agencies focused on: 1) the state's current activities in tracking the provision and quality of developmental services to young children; 2) the feasibility and utility of collecting the seven DSQPM measures in the Screening Pathway; 3) the benefits and challenges of implementing the DSQPM Screening Pathway measures; and 4) the types of support and technical assistance that the state would need to pilot the measures. The states surveyed were participants in either the National Academy for State Health Policy's ABCD initiative (Berry, Krutz et al. 2008) or the School Readiness Indicators Project (Rhode Islands KIDS COUNT 2005). Of the 27 states targeted, 20 responded to the survey (74% response rate).[c]

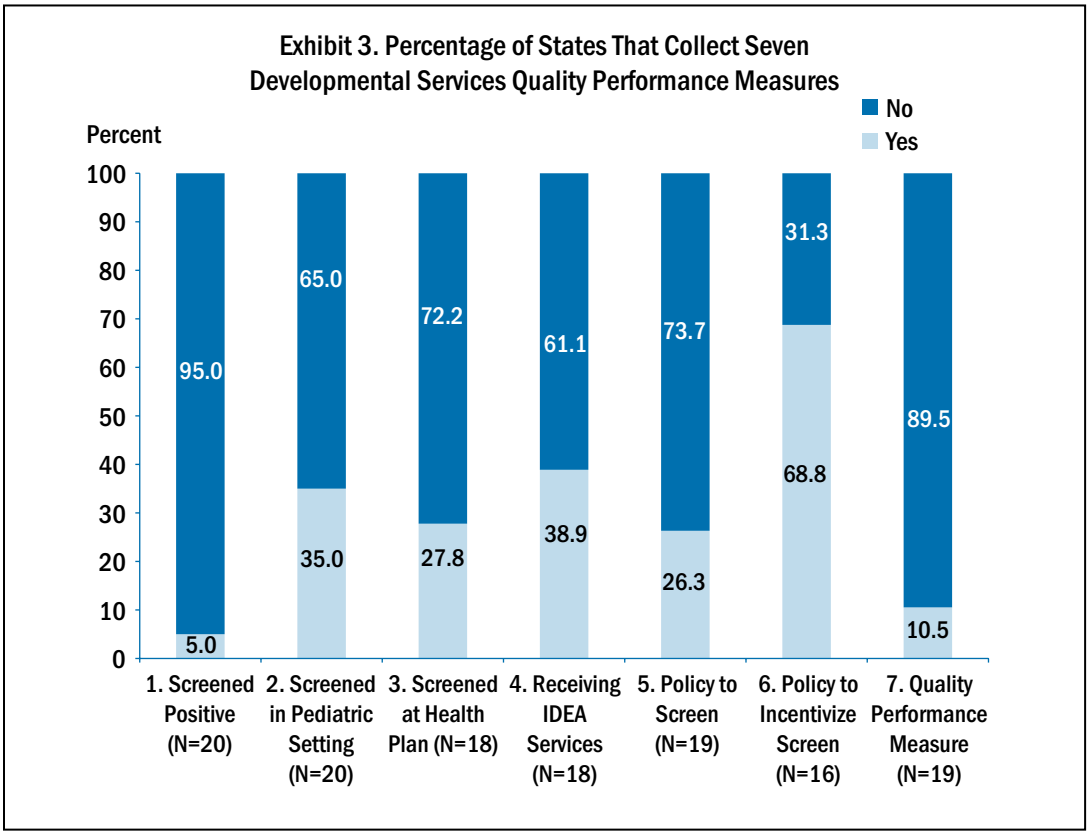
Three key lessons emerged from the survey. First, measuring developmental services is important to state Medicaid agencies, but the data and resources needed to enhance current measurement efforts are lacking or underdeveloped. Second, though a number of states expressed interest in piloting the DSQPM measures, they also noted the need for increased staff support as well as technical assistance with data-collection protocols and implementation of quality improvement activities. Third, while states generally found the measures in the Screening Pathway to potentially be very useful, most of them are not currently collecting these measures (Exhibit 3).

Open-ended comments solicited as part of the survey revealed state Medicaid agencies' enthusiastic interest in improving the quality of children's developmental services, but comments also revealed

[a] Bright Futures identifies topics, for discussion at each well-child visit, that generally fall into one of the following 10 thematic areas: child development, family support, mental health and emotional well-being, healthy nutrition, physical activity, healthy weight, oral health, healthy sexuality, safety and injury prevention, and community relationships and resources.

[b] For discussions of all three pathways, please request a copy of the full DSQPM report from Lisa Stanley at LisaStanley@mednet.ucla.edu.

[c] Arkansas, California, Colorado, Connecticut, Delaware, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, Ohio, Oklahoma, Oregon, Rhode Island, Vermont, Virginia, and the District of Columbia.



the challenges that these agencies face in implementing initiatives such as DSQPM. Respondents from several states suggested adding more measures to the Screening Pathway. This could provide additional information about the outcomes of the developmental screening and referral processes, they said, as well as allow them to examine regional variability in meeting demand for services and help them to more rationally allocate their own resources.

Respondents also noted ways in which the Screening Pathway's existing measures could help their state to advance policy or system improvements for developmental health services. For instance, the Screening Pathway would likely contribute to:

- supporting the statewide spread of the ABCD initiative;
- advancing system improvements for developmental health services by providing relevant data;
- comparing outcomes between states and highlighting the importance of goal-setting;
- demonstrating progress to those who authorize resources for developmental screening;
- fostering shared accountability and establishing best practices;
- encouraging states to systematically require all health insurance plans to incorporate developmental screening as a reimbursable service; and
- facilitating Medicaid's ability to implement standardized screening tools for its provider network.

Respondents were asked to identify barriers to collecting the DSQPM measures (Exhibit 4). Not surprisingly, resources and data availability were the most common barriers. Respondents also were asked to indicate their interest in participating in a Phase II pilot of the DSQPM measures. Nine out of the 20 said that their state would indeed be interested. Among those that indicated non-interest, the reasons most often mentioned were the costly nature of implementing such a pilot, the limitations of current data systems, and the lack of staff resources.

Exhibit 4. Biggest Barriers to Collecting DSQPM Measures in the Screening Pathway

	Frequency
Lack of staff resources	16
Duplication of other measurement initiatives in state	3
Incomplete/absent data sources	13
Lack of needed political support	5
Inadequate information technology	6
Inadequate access to existing data	8
Other	9

IMPLICATIONS

The DSQPM project's unique contribution to health care quality measurement is through its multilevel service-pathway approach, with indicators at the individual, provider, health plan, local-, county-, and state-agency levels. Targeting each level provides performance information that can be acted on by different stakeholders, used for different purposes, and applied to generate improvement strategies that, being broad-based, cross sector boundaries.

Provider-level measures are of interest to consumers, providers, and their contracting entities. This information can be used to generate "report cards" or similar quality ratings that facilitate informed selection of primary care providers. Providers themselves can use the information to improve workflow and performance in their specific practice settings. Accountable medical groups, health plans, and even state agencies can use these measures not only to monitor performance and track outcomes but also to incentivize providers to improve their performance (as targeted by indicators at the individual level).

Indicators at the local or health plan level provide a picture of population health status that is not otherwise available. Local-level measures give local leaders the opportunity to analyze performance differently than a state or federal agency and to interpret the information in the context of the issues, indicators, assets, and priorities that are of particular significance to those leaders and their constituents. For example, to know the average percentage of children screened by the entire state agency is of interest, but if the county in which one lives is far below that average, the mobilization of local leaders, health plans, and consumers to address that deficit will be considerably more probable when local-level performance data are available.

Local or health plan performance data are also likely to be of interest to state agencies, as the data can be used to evaluate contractual compliance and lead to initiatives to improve health care delivery and, ultimately, population health status. Given the American Recovery and Reinvestment Act's and health reform legislation's inclusion of population-level interventions aimed at disease prevention and health promotion, states are paying increased attention to these kinds of measures. Moreover, the launch of a major quality measurement initiative under CHIPRA, or under broader health reform legislation, creates an unprecedented opportunity to monitor and improve the quality of developmental health services for young children. This new initiative will undoubtedly renew concern for such services and focus greater attention on service delivery needs and outcomes.

Finally, and perhaps of greatest importance, performance assessment at the state level offers an evidence base that is often absent in decision-making. State-level data will be useful in informing political leaders and others charged with allocating scarce resources, many of whom are currently forced to make decisions with limited information about the effectiveness and impacts of policies and programs. Thus if a performance framework like the one developed in the DSQPM project were available in each state, policy makers in the states, as well as in the federal government, would have more (and comparable) data to better inform their choices.

CONCLUSIONS

Monitoring and improving the quality of children's health services has made slow progress, in large part because of a paucity of quality measures. The federal government has participated in several efforts for adults, but until the passage of CHIPRA it had not made a major effort to improve health care quality outcomes for children. Meanwhile, a number of privately funded initiatives have focused on improving the quality of developmental services for children; they include the Assuring Better Child Health and Development project, the Promoting Healthy Development Survey, and recent work by the National Committee for Quality Assurance. In spite of these important efforts, there is still a need for a more uniform system of measuring and reporting the quality of children's developmental services across levels ranging from individuals to states.

Toward that end, the DSQPM project has created a new pathways approach to performance measurement and proposed an initial set of measures that Medicaid agencies and others can use to track the delivery and quality of developmental services for young children. The performance measurement framework, implemented through seven discrete measures, is designed to capture key components of the service-delivery pathway that are typically necessary for screening, identifying, and referring young children who have, or are at risk for, developmental disabilities. By focusing on the entire pathway, the measurement set aims to ensure that services delivered to young children are of high quality and result in improved outcomes. When formally surveyed, a select group of state Medicaid and Maternal and Child Health representatives expressed interest in piloting the DSQPM measurement set, citing its alignment with their policies and strategic objectives to improve developmental services for young children.

Having been vetted, moreover, by national experts and state-level administrators who understand both the policy and practical implications of this effort, the DSQPM developmental screening measures are "shovel-ready" for piloting and further development. Utilizing the new authority and resources we expect as part of the ARRA and the larger health reform package, a Phase II of the DSQPM project could establish by 2011 a set of measures based on key functions of developmental services. Establishing this type of measurement system could, in the long run, help to build the data infrastructure necessary for routine measurement and reporting by encouraging local organizations and agencies to create secure portals for exchange of information across medical and non-medical sectors to facilitate optimal development outcomes.

The intermediate goals of a CHIPRA-supported DSQPM demonstration project would be to have: 1) the federal Maternal and Child Health Bureau incorporating the DSQPM measures into its national performance measures; 2) the Centers for Medicare & Medicaid Services promoting the use of the DSQPM measures under its National Quality Framework for Medicaid; and 3) the NCQA endorsing the DSQPM measures and eventually including them in the measures used by health plans.

We expect that the improvements resulting from the actions of any or all of these agencies will further drive innovation and enhancements in quality—and, by extension, in health information technology and exchange. More importantly, these efforts will chart a course for system and service improvement that will ultimately advance the health and well-being of young children and their families.

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Editorial support was provided by Steven J. Marcus.


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