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Moving to Outcomes

Approaches to Incorporating Child Assessments into State Early Childhood Quality Rating and Improvement Systems

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Summary

In recent years, quality rating and improvement systems (QRISs) have become an increasingly popular policy tool to improve quality in early care and education (ECE) settings and have been adopted in many localities and states. QRISs incorporate ratings based on multicomponent assessments designed to make the quality of early care and education programs transparent and easily understood. Most also include feedback and technical assistance and offer incentives to both motivate and support quality improvement. The ultimate goal of QRISs is to raise the quality of care provided in ECE settings; these higher-quality settings are expected to improve child functioning across a range of domains, including school readiness. QRIS logic models focus on one set of inputs to child development—various dimensions of ECE quality—with the goal of improving system outcomes, namely, child cognitive, social, emotional, and physical development.

Yet although improved child outcomes are the ultimate goal, QRISs rarely directly assess children’s developmental outcomes to determine if the system itself is improving child functioning, nor do they require child assessments for the purpose of evaluating specific programs. This is largely because it is costly to accurately measure child functioning and difficult to identify the contribution of any given ECE setting to a particular child’s developmental trajectory. Despite these challenges, it is important that QRISs incorporate child assessments to at least some extent, because they can help to improve practice.

The purpose of this paper is to identify options for states to consider for incorporating child assessments into the design, implementation, and evaluation of their QRISs or other quality improvement efforts. Our analysis draws on decades of research regarding the measurement of child development and the methods available for measuring the contribution of child care and early learning settings to children’s developmental trajectories. We also reference new research documenting the approaches taken in other states to include measures of child development in their QRISs and lessons learned from those experiences.

In this summary, we briefly review the motivation for QRISs and highlight some of the key challenges encountered in assessing young children and using assessment data. We then present five approaches for incorporating child assessments into state ECE quality improvement (QI) efforts. The approaches differ in terms of purpose, who conducts the assessment, and the sort of design needed to ensure that the resulting child assessment data can be used in a meaningful way. We conclude by offering guidance regarding the use of the five strategies based on our assessment of the overall strengths and weaknesses and the potential benefit relative to the cost of each approach.
The Ultimate Goal of State QRISs Is Improving Child Functioning

Research findings point to the importance of the period from birth to school entry for children’s development and demonstrate that higher-quality care, defined in various ways, predicts positive developmental gains for children. Recent work has attempted to better understand how quality operates to improve child outcomes by deconstructing quality and focusing on the importance of dosage, thresholds, and quality features in promoting improved child outcomes. However, the ECE experienced by many children is not of sufficiently high quality to achieve the potential developmental benefits, and some care may even be harmful. Despite the evidence pointing to the need for improved ECE quality, there has been little policy response until the last decade. Three factors have propelled the development and implementation of QRISs in recent years:

- **Continuing gaps in quality in existing ECE programs.** Despite the evidence showing the benefits of high-quality care, the ECE experienced by many children do not meet quality benchmarks, often falling far short of even “good” care. Concerns about poor-quality care have been exacerbated by a policy focus in recent years on students’ academic achievement. In particular, the K–12 accountability provisions in the No Child Left Behind (NCLB) Act of 2001 (Public Law [P. L.] 107-110) have led K–12 leaders to focus on the limited skills that many children bring to kindergarten. They argue that K–12 actors should not be expected to meet rigorous standards for students’ progress in elementary school when so many enter kindergarten unprepared to learn.

- **The inability of the current ECE system to promote uniformly high quality.** Although much care is licensed, licensing represents a fairly low standard for quality, focused as it is on the adequacy and safety of the physical environment. In recent years, in response to fiscal constraints, even these minimal requirements are less likely to be monitored. Some publicly funded programs must adhere to higher quality standards, but for many providers, there is little pressure to focus on quality.

- **Features of the market for ECE that limit the consumption of high-quality services.** Research finds that parents are not very good at evaluating the quality of care settings, consistently rating program quality far higher than trained assessors do. In addition, the limited availability of care in many locations and for key age groups (particularly infants) provides ready clients for most providers, even those who do not offer high-quality services. The high cost of quality care and limited public funding to subsidize the cost of ECE programs for low-income families further constrain the demand for high-quality care.

Given these issues, policymakers and the public have turned to QRISs as a mechanism to improve ECE quality, starting with the first system launched in 1998 in Oklahoma. QRISs are essentially accountability systems centered around quality ratings that are designed to improve ECE quality by defining quality standards, making program quality transparent, and providing supports for quality improvement. Although consistent with accountability efforts in K–12 education, QRISs differ in a key way in their almost exclusive focus on inputs into caregiving and caregiving processes rather than on outcomes of the process, which for K–12 accountability systems are measures of student performance on standardized assessments. QRISs have proved popular with state legislatures in recent years because they represent a conceptually
straightforward way to improve quality that appeals both to child advocates—because of the promise of support for improvements—and to those who support market-based solutions—because QRISs incentivize improvement. Indeed, the number of states that are implementing some form of rating system, including system pilots, has increased from 14 in early 2006 to 35 as of early 2011.

There are, of course, good reasons why QRISs focus on the input side of the logic model: The use of child assessments to improve programs or assess how well QRISs are working presents many challenges, including young children’s limited attention spans, uneven skills development, and discomfort with strangers and strange situations. One effect of these challenges is that reliability (i.e., consistent measurement) is more difficult to achieve. Validity is also an issue; validity is attached not to measures but to the use of a specific instrument in a specific context. Often, assessments used in QRISs were designed for use in low-stakes settings such as research studies and program self-assessments. But QRISs increasingly represent high-stakes settings, where the outcomes of assessments affect public ratings, reimbursement rates, and the availability of technical assistance.

The choice of which child assessment tool to use depends on the purpose of the assessments and the way in which the resulting data are to be used. Child assessments may be formal or informal and may take a number of forms, including standardized assessments, home inventories, portfolios, running records, and observation in the course of children’s regular activities. They are generally understood to have three basic purposes: screening individual children for possible handicapping conditions, supporting and improving teaching and learning, and evaluating interventions. Because screening individual children for handicapping conditions is not a program-related issue, we do not discuss screening in detail. Assessments for improving practice are designed to determine how well children are learning so that interactions with children, curricula, and other interventions can be modified to better meet children’s learning needs, at the levels of the individual child, the classroom, and the program. These assessments may be formal or informal. Key to these assessments is the establishment of a plan for using the data that are collected to actually improve programs and interventions. Assessments used for evaluation must meet a higher standard: They should be imbedded in a rigorous research design that increases the likelihood of finding effects, if they exist, to the greatest extent possible. In selecting instruments to use, it also is critical to select tools and use them in ways that meet the guidelines for reliability and validity.

Given these assessment challenges, QRIS designs consistently have focused on measuring inputs to quality rather than outputs such as children’s level of school readiness, literacy, or numeracy or noncognitive skills such as self-regulation or the ability to follow instructions or get along with peers. This input focus was considered a necessary concession to the reality that the performance and longer-term outcomes of young children are difficult and costly to measure and that measures of these attributes are less reliable and less accurate than those for older children. Yet advocates understood that the ultimate goal of these systems was to improve children’s functioning through the provision of higher-quality ECE programs.
There Are Multiple Approaches for Incorporating Child Assessments into State QI Efforts

As QRISs have developed and been refined over time, assessments of child developmental outcomes have increasingly found their way into QRISs, although they generally are designed to improve inputs to care by clarifying children's progress in developing key skills. Efforts to use child assessments as outcomes that contribute to a determination about how well a QRIS is working are relatively rare. To frame our discussion, we define five strategies for using assessments of child functioning to improve ECE quality, three of which are predicated on the existence of a QRIS.

Table S.1 summarizes the purpose of each approach and its relationship to a QRIS. The strategies are arrayed in Table S.1, from those that focus on assessments of child functioning at the micro level—the developmental progress of an individual child or group of children in a classroom—to those that have a macro focus—the performance of the QRIS at the state level or the effect of a specific ECE program or the larger ECE system on children's growth trajectories at the state level. Given the different purposes of these assessments, the assessment tools used and the technical requirements involved in the process are likely to be quite different. Our review of each strategy considers current use in state systems, lessons learned from prior experience, the resources required for implementing the strategy, the benefits of the approach, and possible barriers to success and strategies for mitigation of these barriers. In brief, the five approaches are as follows:

• With Approach A, labeled Caregiver/Teacher- or Program-Driven Assessments to Improve Practice, individual caregivers or teachers are trained as part of their formal education or ongoing professional development to use developmentally appropriate assessments to evaluate each child in his or her care. Program leadership may aggregate the assessment results to the classroom or program level to improve practice and identify needs for professional development or other quality enhancements. This approach does not assume a formal link to a QRIS but rather that the use of child assessments is part of standard practice as taught in teacher preparation programs or other professional development programs and as reinforced through provider supervision. The practice of using child assessments is currently endorsed in the National Association for the Education of Young Children (NAEYC) accreditation standards for ECE programs and postsecondary ECE teacher preparation programs and included in some ECE program regulations (e.g., Head Start and California Title 5 programs). Data from California suggest that most center-based teachers rely on some form of child assessments to inform their work with children. Expected benefits include the enhanced ability of caregivers and teachers to provide individualized support to the children in their group, the early detection of developmental delays, better-informed parents who engage in developmentally supportive at-home activities, and data to inform staff development and program improvement. To be effective, caregivers and teachers must be well trained in the use of child assessments and

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1 As noted above, we focus on the use of child assessments for purposes of supporting and improving teaching and learning and for evaluating interventions. Thus, we do not focus on their use as a tool to screen for developmental delays or other handicapping conditions, although some rating systems consider whether assessments are used for screening purposes in measuring program quality.
in communicating results to parents. Program administrators also need to be able to use the assessment results to identify needs for staff development and program improvement.

- **Approach B**, labeled **QRIS-Required Caregiver/Teacher Assessments to Improve Practice**, has the same purpose as Approach A, but it has an explicit link to a QRIS. In this approach, a QRIS rating element requires the demonstrated use of assessments of child functioning to inform the approach a caregiver or teacher takes with an individual child, as well as efforts to improve program quality through professional development, technical assistance, or other strategies. Eleven of the 26 QRISs recently catalogued incorporate an indicator regarding the use of child assessments into the rating criteria for center-based

### Table 5.1
**Five Approaches to Incorporating Assessments of Child Functioning into State QI Efforts**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description and Purpose</th>
<th>Focus</th>
<th>Relationship to QRIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Caregiver/Teacher- or Program-Driven Assessments to Improve Practice</td>
<td>Expectation of use of child assessments by caregivers/teachers to inform caregiving and instructional practice with individual children and to identify needs for staff professional development and other program quality enhancements</td>
<td>Individual child Assess developmental progress Apply differentiated instruction Classroom/group or program Identify areas for improved practice</td>
<td>Not explicitly incorporated into QRIS; can be focus of best practice in teacher preparation programs, ongoing professional development, and provider supervision; can be a requirement of licensing, program regulation, or accreditation</td>
</tr>
<tr>
<td>B: QRIS-Required Caregiver/Teacher Assessments to Improve Practice</td>
<td>QRIS requires demonstrated use of child assessments by caregivers/teachers to inform caregiving and instructional practice with individual children and to identify needs for staff professional development and other program quality enhancements</td>
<td>Same as Approach A</td>
<td>QRIS rating element specifically assesses this component alone or in combination with other related practice elements</td>
</tr>
<tr>
<td>C: Independent Measurement of Child Outcomes to Assess Programs</td>
<td>Independent assessors measure changes in child functioning at the classroom/group or program level to assess program effects on child development or to assess the effectiveness of technical assistance or other interventions</td>
<td>Classroom/group or program Estimate value added Assess technical assistance effectiveness or other interventions</td>
<td>QRIS rating element is based on estimates of effects at the classroom/group or program level</td>
</tr>
<tr>
<td>D: Independent Measurement of Child Outcomes to Assess QRIS Validity</td>
<td>Independent assessors measure changes in child functioning to validate QRIS design (i.e., to determine if higher QRIS ratings are associated with better child developmental outcomes)</td>
<td>Statewide QRIS Assess validity of the rating portion of QRIS</td>
<td>Part of (one-time or periodic) QRIS evaluation</td>
</tr>
<tr>
<td>E: Independent Measurement of Child Outcomes to Evaluate Specific ECE Programs or the Broader ECE System</td>
<td>Independent assessors measure child functioning to evaluate causal effects of specific ECE programs or groups of programs on child developmental outcomes at the state level</td>
<td>Statewide ECE system or specific programs in system Estimate causal effects of ECE programs</td>
<td>Part of QRIS (ongoing) quality assurance processes or, when no QRIS exists, part of evaluation of state ECE system</td>
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</table>

**SOURCE:** Authors' analysis.
programs, whereas eight systems included such an indicator in its rating criteria for family child care homes. However, most systems do not include the use of assessments in their rating criteria for the lower tiers of their rating systems. The expected benefits are similar to those in Approach A, although the tie to the QRIS may increase compliance with the practice; caregivers and teachers may also be more effective in their use of assessments if the QRIS emphasizes the quality of implementation.

- For Approach C, labeled Independent Measurement of Child Outcomes to Assess Programs, the link between the QRIS and child developmental outcomes is even more explicit. In this case, the measurement of changes over time in child functioning at the classroom, group, or center level can be either an additional quality element incorporated into the rating system or a supplement to the information summarized in the QRIS rating. The appeal of this approach is that instead of relying solely on measured inputs to capture ECE program quality and calculate ratings, there is the potential to capture the outcome of interest—ECE program effects on child functioning—and to use the results when rating programs. At the same time, use of such data from three- and four-year-olds to hold individuals (here, caregivers or teachers) accountable has been deemed inappropriate because of reliability and validity concerns when assessing young children. Although this approach has not been used in QRISs to date, it is used in K–12 education, often as part of high-stakes accountability systems. In particular, value-added modeling (VAM) is a method that has quickly gained favor in the K–12 context for isolating the contributions of teachers or schools to student performance. Although VAM has many supporters, it remains controversial because of numerous methodological issues that have yet to be resolved, including the sensitivity of value-added measures to various controls for student characteristics and classroom peers and the reliability of value-added measures over time—issues that would likely be compounded with other issues unique to the ECE context. Since individual children in ECE programs would need to be assessed by independent assessors, it is also very resource-intensive.

- Approach D, labeled Independent Measurement of Child Outcomes to Assess QRIS Validity, collects child assessment data to address macro-level questions, in this case, the validity of the rating portion of the QRIS. For QRISs, the logic model asserts that higher-quality care will be associated with better child outcomes. Therefore, one important piece of validation evidence concerns whether higher program ratings, which are largely based on program inputs, are positively correlated with better child performance, the ultimate QRIS outcome. The required methods for this approach are complex and subject to various threats to validity, but there are strategies to minimize those concerns such as ensuring sufficient funding for the required sample sizes and the collection of relevant child and family background characteristics. The ability to base the QRIS validation design on a sample of programs and children means that it can be a cost-effective investment in the quality of the QRIS. To date, two states (Colorado and Missouri) have conducted such validation studies with mixed findings, and three other states (Indiana, Minnesota, and Virginia) have plans to implement this approach.

- Approach E, labeled Independent Measurement of Child Outcomes to Evaluate Specific ECE Programs or the Broader ECE System, also takes a macro perspective, but it differs from Approach D in using rigorous methods that enable an assessment of the causal effects of a statewide ECE program or group of programs on child developmental outcomes. To date, eight states have used a regression discontinuity design (a quasi-
experimental method that is appropriate when an ECE program has a strict age-of-entry requirement) to measure the effect of participating one year in their state preschool program on cognitive measures of school readiness. These evaluations have been conducted without reference to any statewide QRIS, but an evaluation using an experimental design or a quasi-experimental method could be a required QRIS component for determining at one point in time or on an ongoing basis if an ECE program or the ECE system as a whole is achieving its objectives of promoting strong child growth across a range of developmental domains. As in Approach D, this type of evaluation can be implemented with a sample of children and therefore is also a cost-effective way to bring accountability to ECE programs.

Policymakers Should Employ a Combination of Approaches

Our analysis of each of the five approaches, leads us to offer the guidance summarized in Table S.2 regarding the use of each of the strategies.

Table 5.2
Guidance for Incorporating Child Assessments into State QI Efforts

<table>
<thead>
<tr>
<th>Approach</th>
<th>Guidance</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>A: Caregiver/Teacher- or Program-Driven Assessments to Improve Practice</td>
<td>Implement either Approach A or Approach B, depending on whether a state-level QRIS has been implemented:</td>
<td>Consistent with good ECE practice</td>
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<td></td>
<td>If no QRIS exists, adopt Approach A; consider reinforcing through licensing, regulation, or accreditation if not already part of these mechanisms</td>
<td>Important potential benefits in terms of practice and program improvement for relatively low incremental cost</td>
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<td></td>
<td>If a QRIS exists, adopt Approach B</td>
<td></td>
</tr>
<tr>
<td>B: QRIS-Required Caregiver/ Teacher Assessments to Improve Practice</td>
<td></td>
<td>Greater likelihood of use and appropriate use of assessments than with Approach A</td>
</tr>
<tr>
<td>C: Independent Measurement of Child Outcomes to Assess Programs</td>
<td>If considering adopting this approach as part of a QRIS, proceed with caution</td>
<td>Methodology is complex and not sufficiently developed for high-stakes use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costly to implement for uncertain gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feasibility and value for cost could be tested on a pilot basis</td>
</tr>
<tr>
<td>D: Independent Measurement of Child Outcomes to Assess QRIS Validity</td>
<td>Implement this approach when piloting a QRIS and periodically once the QRIS is implemented at scale (especially following major QRIS revisions)</td>
<td>Important to assess validity of the QRIS at the pilot stage and to reevaluate validity as the system matures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methodology is complex but periodic implementation means high return on investment</td>
</tr>
<tr>
<td>E: Independent Measurement of Child Outcomes to Evaluate Specific ECE Programs or the Broader ECE System</td>
<td>Implement this approach periodically (e.g., on a routine schedule or following major policy changes) regardless of whether a QRIS exists</td>
<td>Evidence of system effects can justify spending and guide quality improvement efforts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methodology is complex, but periodic implementation means high return on investment</td>
</tr>
</tbody>
</table>

SOURCE: Authors’ analysis.
Promote the use of child assessments by ECE caregivers and teachers to improve practice either as part of a QRIS (Approach B) or through other mechanisms (Approach A). We suggest that all teachers and programs collect the child assessment data prescribed by Approaches A and B and that programs or states implement one or the other approach depending on whether the state has a QRIS. Key to effective use of both approaches is the provision of professional development that helps staff identify which measures are most appropriate for which purposes and teaches them how to use data from their assessments to improve practice. Our guidance stems from recognition that it is good practice for caregivers and teachers to use child assessments to shape their interactions with individual children in the classroom and to identify areas for program improvement; this approach is also endorsed by the NAEYC in its standards for accrediting ECE programs and postsecondary ECE teacher preparation programs. The use of child assessments in this manner has the potential to promote more effective individualized care and instruction on the part of caregivers and teachers and to provide program administrators with important information to guide professional development efforts and other quality improvement initiatives. The potential for widespread benefits from effective use of child assessments can be weighed against what we expect would be a relatively small incremental cost given the already widespread use of assessments, although costs would be higher if current practice does not include the needed professional development supports to ensure that assessments are used effectively to improve teaching and learning.

Undertake a QRIS validation study (Approach D) when piloting the implementation of a QRIS and repeat it periodically once the QRIS is implemented at scale. By validating the quality rating portion of a QRIS, Approach D can be a cost-effective investment in a state’s QI efforts. We suggest that this approach be employed in the implementation pilot phase of a QRIS, assuming that there is such a phase, as that phase represents an opportune time in which to identify any weaknesses in the ability of a QRIS to measure meaningful differences in ECE program quality that matter for child outcomes. Incorporating a QRIS validation component into a pilot phase will ensure that needed refinements to the QRIS can be introduced before taking the system to scale. This will reduce the need to make changes in the QRIS structure once it is fully implemented. We further suggest that a QRIS validation study be repeated periodically (e.g., every five to ten years) or following major changes to a QRIS. This will ensure the continuing relevance of the QRIS given changes in the population of children served by ECE programs, the nature of ECE programs themselves, and other developments in the ECE field.

Implement a statewide, periodic evaluation of specific ECE programs or the broader ECE system (Approach E) regardless of whether a QRIS exists. Child assessments can be a critical addition to evaluation efforts that examine a range of program attributes. By using available cost-effective quasi-experimental methods, evaluators can determine if an ECE program (or the ECE system as a whole) is achieving its objectives of promoting strong child development across a range of domains. Approach E, especially when applied to ECE programs supported with public funding, fulfills a need for accountability, as part of either a QRIS or other state QI efforts. Favorable findings can be used to justify current spending or even to expand a successful program. Unfavorable results can be used to motivate policy changes such as modifications to an ineffective program. We suggest that such validation studies be conducted periodically, either to monitor the effect of a major policy change on an ECE program or to ensure that a program that performed well in the past continues to be effective.
Proceed with caution if considering a QRIS rating component that is based on estimates of a program’s effect on child developmental outcomes (Approach C). Although the goal of measuring the effect of participating in a specific ECE classroom or program on child developmental outcomes and incorporating the results into a program’s QRIS rating has merit, the available methods—short of an experimental design—are not sufficiently well developed to justify the cost of large-scale implementation or implementation in high-stakes contexts. Moreover, the reduced reliability and validity of measures of the performance of children under age five make this high-stakes use highly questionable. The K–12 sector has experienced a number of challenges in using methods such as VAM to make inferences about the contribution of a specific teacher, classroom, or school to a child’s developmental trajectory. These challenges would be compounded in attempting to use such methods in the ECE context given the tender age of the children involved and the challenges in assessing their performance in a reliable and valid manner. If a state is considering incorporation of this approach into its QRIS, we suggest that the process begin with a pilot phase to assess feasibility, cost, and return on investment. Given experiences with VAM in the K–12 context, a number of challenges will need to be overcome before Approach C is likely to be a cost-effective tool for incorporating child outcomes into a QRIS.

In sum, although QRISs have gained currency as input-focused accountability systems, the focus on inputs does not preclude efforts to get to the outcome of interest: child cognitive, social, emotional, and physical functioning. This paper describes valuable and feasible approaches for incorporating assessments of child functioning into QRISs or QI efforts for ECE programs more generally as a means of improving instruction and assessing program and system validity and performance. Some approaches take a micro perspective, and others have a macro focus. Some are predicated on having a QRIS in place, and others can be implemented without one. Our guidance illustrates that multiple approaches can be used given their varied and complementary purposes. At the same time, some of these approaches raise methodological concerns that must be dealt with and that may override the potential benefits. Ultimately, policymakers at the state level need to determine the mix of strategies that will be most beneficial given the context of the ECE system in their state, the resources available, and the anticipated returns.