

Early Childhood Research Brief

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Measuring Implementation to Understand Supports for Quality in Early Care and Education Centers

Measuring quality in early care and education (ECE) centers is often focused on children’s experiences in the classroom. ECE researchers, federal and state administrators, and center directors are increasingly interested in understanding how decisions made at the center level can support what happens in the classroom.

In the **Assessing the Implementation and Costs of High Quality Early Care and Education**, or **ICHQ** (pronounced I-check), project we set out to develop two sets of center-level measures to capture (1) implementation of activities that can support quality in ECE centers serving children from birth to age 5 (not yet in kindergarten) and (2) the costs to provide care and services. **Implementation measures** summarize what a center does to support quality, including the combination of structural features (for example, teacher–child ratios, group size, and staff qualifications) and adopted practices (for example, use of a published curriculum or child assessment tool), as well as how features and practices are supported. **Cost measures** estimate the amount and allocation of resources needed to support the ECE services a center provides, including how staff use their time. By summarizing how services are provided, how center resources are used, and the associated costs of care and services, the combined ICHQ implementation and cost measures will help center administrators and policymakers connect decisions about day-to-day operations to the larger question of how to allocate limited resources to provide high quality ECE.

This brief, part of a [series of research briefs](#) presenting findings from a multi-case study of

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The **ICHQ implementation measures** summarize structural features and adopted practices that a center has in place, and how they carry them out to support quality in providing care for children birth to age 5. ▲
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30 ECE centers, describes the implementation measures. The multi-case study helped us develop draft measures and



explore how well they are working to summarize implementation, estimate costs, and identify ways centers can achieve quality. The measures are being further tested and validated in a field test with a larger sample of centers in 2021.

Implementation measures summarize *what* a center does to support quality and *how* features and practices are supported and implemented

The implementation measures reflect structural features and practices of high quality ECE centers, based on the ECE literature and expert input.¹ We also drew on implementation science principles to identify specific activities (for example, approach to selection and hiring staff, use of evidence-based tools, and type and frequency of training and coaching) that are needed to ensure that intended features and practices are carried out effectively to achieve positive outcomes.

Implementation science studies programs and practices that achieve their intended outcomes to identify programmatic and practitioner factors that are important for successful implementation.

—Berkel et al. 2011²; Fixsen et al. 2005³

We created implementation measures for each of five key functions, or areas, of ECE center operations that contribute to high quality care. All ECE centers carry out the key functions to varying degrees to provide services to young children and their fam-

ilies. Each of the five key functions is defined by a specific set of activities and practices that can support quality and each key function has specific costs. Below, we summarize examples of what goes into the implementation measure of each key function.

Five key functions of center operations

Key functions	Example activities
 <p>Structural Supports for Instruction and Caregiving</p>	<ul style="list-style-type: none"> • Average staff-child ratios and group sizes for infants, toddlers, and preschoolers, documented by classroom • The center’s goals for ratios and group sizes, standards on which they are based, and the center’s general ability to achieve them for different age groups • Whether the center has sufficient equipment, materials, and outdoor play space • The highest level of education that teachers and directors have earned, the percentage of teachers with ECE coursework, and the percentage of teachers with a Child Development Associate (CDA) certification • The center’s policies and practices to retain teachers and staff
 <p>Instructional Planning, Coordination, and Child Assessment</p>	<ul style="list-style-type: none"> • Intentional use of a curriculum for preschool children and any related training for teachers • Whether teachers have paid lesson-planning time; how much time they receive and how often they receive it • Whether a center uses developmental screening and child assessments; which tools are used; and whether and how teachers draw upon information from assessments to guide instruction • How a center formally provides primary caregivers information about their children’s learning and development
 <p>Center Administration and Planning</p>	<ul style="list-style-type: none"> • Structural and procedural supports and policies that affect a center’s ability to address staff or child needs • Whether centers create strategic plans, who participates, and whether and how planning sessions include regular discussions about quality assurance or improvement efforts • Whether administrators have developed formal goals for a center; what the goals are for center-wide activities, teacher development, children’s learning, and support for families • How often administrators review progress on goals, and whether and how center leadership and staff use data to track progress • Whether and how oversight boards and parent councils contribute to a center’s operations
 <p>Workforce Development</p>	<ul style="list-style-type: none"> • Protocols for hiring, training, and coaching teaching staff and for interviewing lead teachers • How a center sets priorities for teacher training and professional development; whether a center prioritizes children’s developmental needs, classroom instruction and management, staff development, or other topics • Supports that a center provides to staff for training and professional development, such as paid time to pursue these activities or financial assistance • Whether and how a center uses classroom observations to support teaching practice
 <p>Child and Family Support</p>	<ul style="list-style-type: none"> • Availability of health screenings, therapy, counseling and family support services, social services, adult education programs, or other services or supports outside the classroom • The number of services a center provides access to through referral or direct provision; how many services center staff or other entities provide; and whether the center incurs costs to provide these services • How center staff identify which children or families may need services; who determines the potential need; and whether or how a center tracks services received

Implementation measures reflect the level of implementation for each key function

We developed implementation measures for each of the five key functions by collecting descriptive, objective center-level information through a semi-structured interview with the center director and/or the person most knowledgeable about the educational program in the center. We coded interview responses and assigned values to each item to create an item score. Item-level scores reflect the level of implementation, ranging from the absence of particular features or practices—such as no child assessments or developmental screenings—to increasingly stronger implementation. For example, a center that provided teacher training on curriculum more frequently or connected a larger number of families or children with social service supports received higher scores than centers that did less of these activities.

The implementation measure for each key function is calculated based on the average of the item scores for that key function. Each key function measure ranges from 0 to 1 with higher scores indicating stronger structural features of care, intentional practices associated with high quality ECE, and attention to procedures and practices common to programs that produce positive outcomes. For example, in the Instructional Planning,

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Item scoring example:

Frequency of curriculum training for teaching staff

- 0 = No curriculum or no training is provided
 - 1 = Just occasionally (once a year or as needed)
 - 2 = Just initially (upon initial curriculum implementation or during new staff orientation)
 - 3 = Occasionally and initially
 - 4 = Monthly or quarterly
 - 5 = Monthly and initially ▲
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Coordination, and Child Assessment key function, a center that has a formally developed curriculum and provides staff training on the curriculum through the developer or an approved trainer will have a score closer to 1.

Using the implementation measures

The implementation measures create a portrait of what centers do to support quality and how they do it. With this information, center administrators, researchers, and policymakers can examine how operations and practices at ECE centers relate to costs and quality. A deeper understanding of this relationship, in turn, can help administrators at the center, state, and federal levels develop specific plans to enhance the quality of ECE. For example, the ICHQ measures can help map out a quality improvement strategy that addresses a center's gaps in implementation and fits a center's resources. Independently of cost measures, the implementation measures provide broadly useful information about center services and practices that could be used to identify needs for technical assistance, or help address gaps in policy or funding for specific types of quality enhancements.

Endnotes

¹ Caronongan, P., G. Kirby, K. Boller, E. Modlin, and J. Lyskawa. "Assessing the Implementation and Cost of High Quality Early Care and Education: A Review of Literature." OPRE Report #2016-31. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research and Evaluation, 2016.

² Berkel, C., A. M. Mauricio, E. Schoenfelder, and I. N. Sandler. "Putting the Pieces Together: An Integrated Model of Program Implementation." *Prevention Science*, vol. 12, no. 1, 2011, pp. 23–33.

³ Fixsen, D. L., S. F. Naoom, K. A. Blase, R. M. Friedman, and F. Wallace. "Implementation Research: A Synthesis of the Literature." Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231), 2005.

About the Project

OPRE sponsored the ICHQ project to create measures of implementation and costs of providing ECE services at centers for children from birth to age 5. The project produced measures to examine how differences in what a center does and how resources are used influence quality. Products include a [literature review](#) and a [methods paper](#) that describes how we developed draft measures through a multi-case study.

This brief is part of a [series of research briefs](#) summarizing findings from the ICHQ multi-case study that collected data from 30 ECE centers between October 2017 and June 2018 to develop draft measures. Subsequent products from the ICHQ project will describe findings from a 2021 field test in which we are testing and validating the measures in a purposive sample of 80 centers in four states and will further specify uses of the measures for research and practice.

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