ICHQ Implementation and Costs of High Quality EARLY CARE & EDUCATION

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Early Childhood Research Brief

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Measures of Implementation and Cost that Work Together to Support Quality in Early Care and Education Centers

Efforts to measure quality of early care and education (ECE) typically focus 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 classrooms and what it costs to support quality care.

The **Assessing the Implementation and Costs of High Quality Early Care and Education**, or **ICHQ** (pronounced I-check), project developed two sets of center-level measures that capture (1) **implementation** of activities that can support quality in ECE centers that serve children from birth to age 5 (not yet in kindergarten) and (2) the **costs** to provide care and services.

This brief, part of a series of research briefs presenting findings from a multi-case study, focuses on what we learned about the relationship between the two sets of measures and implications for how they can be used together to better understand how to support quality in ECE centers. The multi-case study helped us develop draft measures and explore how well they summarize implementation, estimate costs, and identify ways centers can achieve quality. The multi-case study included 30 ECE centers, 25 of which completed both implementation and cost data collection. The measures are being further tested and validated in a field test with a larger sample of centers in 2021.

A review of the ECE literature at the start of this project helped identify gaps in the current understanding of how centers can achieve quality in the care and education of young children. Although research identifies key features of high-quality ECE,

The ICHQ project focuses on implementation and cost measures within center-based ECE settings. A **center** refers to a specific physical location where ECE classroom-based services are provided to children birth to 5 years (not yet in kindergarten).

Key functions are five areas of center operations that contribute to high quality care. Each of five key functions are defined by a specific set of activities and practices that allows us to measure implementation and costs for each function distinctly. All ECE centers carry out the key functions to varying degrees to provide services to young children and their families.

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, 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.

centers may be able to achieve quality through different paths, depending on what structural features and practices are in place and how they are combined, implemented, and supported in a center. Previous cost studies in ECE show relationships between cost and quality, but the strength of the relationship varies.[1] This finding suggests that more fine-grained measures of cost may help to better understand what level of resources are needed and how best to use these resources to support quality.

The goal of ICHQ was to develop implementation and cost measures at the center level that can be used with measures of quality to examine the variations that make a difference in the experiences of children. The implementation and cost measures are framed around five key functions, or areas, of ECE center operations that contribute to high quality care. Each of the five key functions are defined by a specific set of activities and practices that allows us to measure implementation and costs for each function distinctly. All ECE centers carry out the key functions to varying degrees to provide services to young children and their families. More information about these key functions can be found in the ICHQ Conceptual Framework snapshot.

We created a separate implementation measure for each of the five key functions. In this brief, we focus on one of the ICHQ cost measures, cost per child care hour, which reflects the total cost to provide care for one child for one hour. This measure, calculated by dividing total annual costs by total hours of care provided during the same period, accounts for differences in centers' enrollment options and hours of care provided.

Implementation measures
(one score for each key function)

- **Structural Supports for Instruction and Caregiving**
- **Instructional Planning, Coordination, and Child Assessment**
- **Center Administration and Planning**
- **Workforce Development**
- **Child and Family Support**

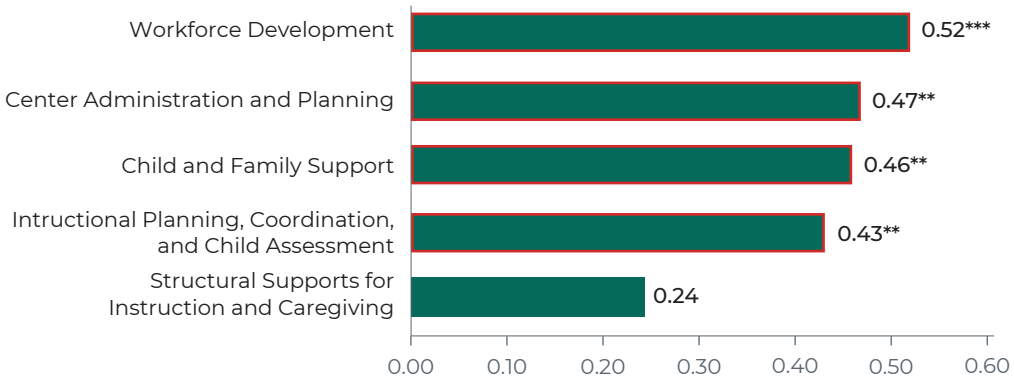
Cost measure

Cost per child care hour:
Cost to provide care for one child for one hour, calculated by dividing total annual cost of services by the total hours of care the center provided during that period

Implementation measure scores for the key functions are related to costs

To determine whether implementation and costs were related, we estimated correlations between the implementation measure score for each key function and cost per child care hour. We found positive, significant associations between four of the five key function implementation measure scores and cost per child care hour. This finding suggests that centers with stronger implementation of a key function, represented by a higher implementation measure score, tend to have higher costs overall. These relationships are expected and important in validating the ICHQ measures, as they suggest that the implementation and cost measures are targeting a common set of activities.

Correlation between implementation measures by key function and cost per child care hour



** Significant at the 0.05 level.
*** Significant at the 0.01 level.

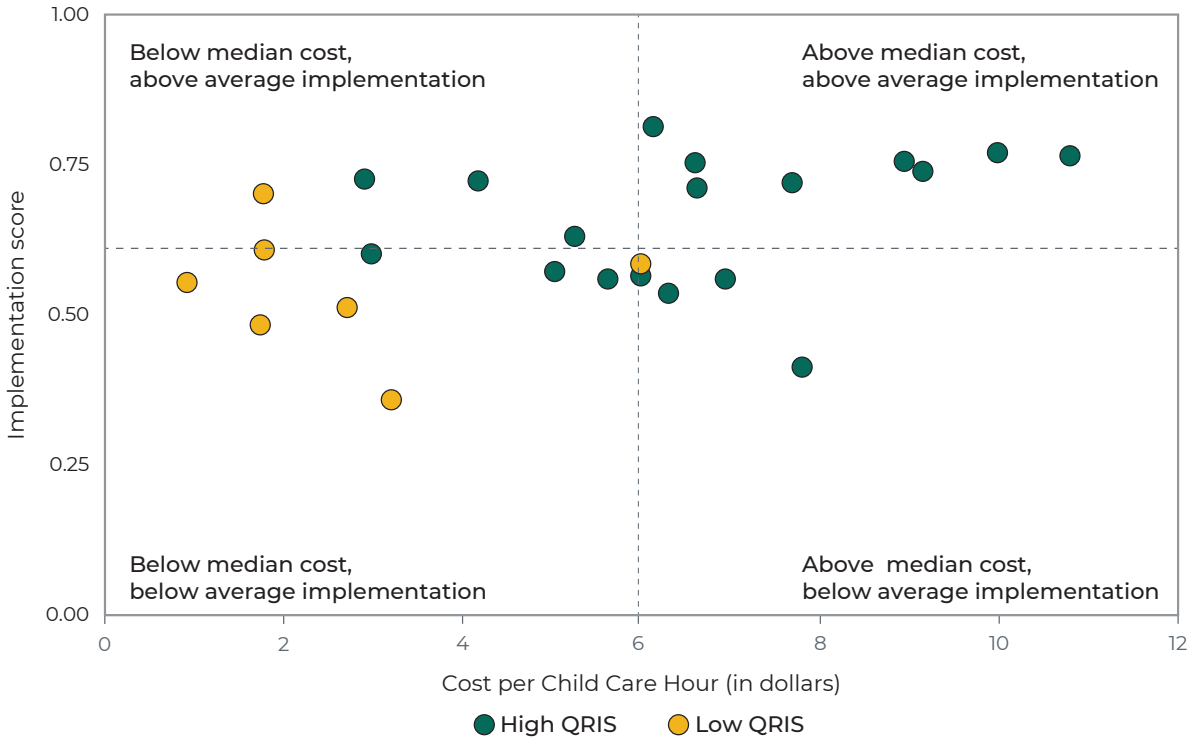
The correlations being moderate in strength (between 0.43 to 0.52) suggests that although implementation and costs are related, higher costs do not always mean higher implementation measure scores.

Although the correlation between the implementation measure score for the key function of Structural Supports for Instruction and Caregiving and the cost per child care hour is positive, it is not statistically significant and it is weaker than correlations with the other key functions. Because the implementation measure score for the Structural Supports for Instruction and Caregiving function reflects features (such as staff to child ratios, group size, and staff qualifications) that have been shown to be cost drivers in ECE settings,[1] we expected to see a stronger relationship between this implementation measure score and cost per child care hour. In a larger field test, we are re-examining and improving how we measure this function to capture more detail about structural features of care that translate to differences in costs across centers.

Using the ICHQ measures to understand how centers support quality

The ICHQ implementation and cost measures are related in expected ways and together can identify and clarify relationships with quality. To examine how implementation and costs vary by center quality, we created figures to show where centers fall in terms of scores on the implementation measures, cost per child care hour, and quality rating and improvement system (QRIS) level. In the figure below, we use QRIS ratings as a proxy for quality, with teal dots representing centers with high quality ratings and gold dots representing centers with low quality ratings. We categorized centers into high and low QRIS ratings based on the requirements for the different levels in each state.[2, 3]

Implementation measure scores and cost per child care hour for the Instructional Planning, Coordination, and Child Assessment function, by QRIS level



Note: Centers are categorized as having high or low QRIS ratings based on the requirements for the different rating levels in each of the three states in the multi-case study.

We see variation on the implementation measure scores and the cost per child care hour even among centers with similar QRIS rating levels. All centers with above median implementation and above median costs in the upper right quadrant are centers with high QRIS ratings. However, we also see high QRIS-rated centers in other panels. Particularly notable is that we see several high QRIS-rated centers with above median implementation measure scores but below median costs in the upper left quadrant, suggesting that ECE centers allocate their available resources in different ways to invest in implementation and achieve quality. These data suggest that the ICHQ implementation and cost measures are capturing information that is not fully captured by QRIS ratings, and that the ICHQ measures can contribute to a more complete understanding of the relationships among implementation, cost, and quality. There is some overlap in the constructs reflected in QRIS ratings and the implementation measures. However, the implementation measures capture more comprehensive detail about key functions than QRIS ratings do.[4]

Next steps for testing and using the ICHQ implementation and cost measures

Preliminary evidence suggests that the ICHQ measures are capturing variations in implementation and costs among centers and could inform supports for high quality ECE. Although the measures are not yet fully validated—meaning they have not been tested in a large, representative sample of centers to look at their relationship to center quality or children's outcomes—we are testing them in a field test in 2021 with a purposive sample of 80 centers in four states. Using data collected in the field test, we will refine the implementation and cost measures, assess their functionality and validity, and examine associations among implementation, cost, and quality.

The ICHQ measures have the potential to help a broad range of users in the ECE field better understand ways to achieve high quality in ECE centers. These insights can inform decisions about the level of resources needed and how best to use them across functions at the center level to deliver high quality ECE. Potential uses of the measures include the following:

- **Researchers** could use the measures to study a large sample of ECE centers to describe implementation and costs systematically and specify ways to improve quality, or as part of a cost-benefit analysis.
- **Federal and state administrators** could use the measures to examine a group of ECE centers within a state or across states to inform decisions about funding for quality improvement initiatives or setting subsidy rates.
- **Center directors and technical assistance providers** could use the measures to examine implementation and costs of quality within specific centers to understand and guide quality improvement or identify needs for technical assistance.

In addition, the ICHQ measures could help address questions about equity by providing more detailed information about implementation and costs that can be considered in efforts to ensure equal access to high quality ECE.

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] Kirby, G., P. Caronongan, A. Burwick, S. Monahan, D. Poznyak, T. Schulte, J. Lyskawa, and A. Kelly. (2022). Developing measures of the implementation and cost of high quality early care and education. OPRE Report 2022-04. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

[3] High QRIS generally includes the top one or two rating levels, depending on the total number of rating levels and the definitions of high quality set by each of the three states in the multi-case study. We excluded the first rating level from the low category in two of the three states because there was no assessment or gauge of quality made at entry. We also excluded middle rating levels in two of the states to get a better distinction between high and low quality based on the QRIS requirements.

[4] The implementation measures capture information about activities that, according to implementation science, form the core of effective implementation for any program or practice: (1) recruitment, hiring and selection of practitioners with the required skills and competencies; (2) selection and use of tools that clearly convey the key concepts, principles, procedures, and practices of an innovation; (3) training that delivers content knowledge to practitioners, (4) technical assistance (TA) or coaching that includes observation and feedback, and (5) a quality assurance (QA) and quality improvement (QI) process (Caronongan et al., 2016). These activities are measured, as applicable, within each of the key functions.

About the Project

OPRE sponsored the ICHQ project to create measures of implementation and costs of providing ECE services at cen¬ters 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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