

EXECUTIVE SUMMARY

States and communities have adopted Quality Rating and Improvements Systems (QRIS) as a tool to promote, measure, and monitor the quality of early child care programs. The primary goal of a QRIS is to improve quality across a range of child care programs, with the intent of providing positive experiences for all children. The fundamental design decision then is to define and measure quality.

States and localities have used the information and knowledge that is available from research, program administrator’s experiences, and key stakeholders to design systems they hope are valid and meaningful in defining quality for providers, parents, and children alike. At this time, information about the components to include in a QRIS, in what combination, and at what cut-points per level is lacking. In an environment in which adoption, implementation, and refinement of QRIS are moving quickly but the research base to inform decision-making is slim, the Office of Planning, Research, and Evaluation (OPRE), within the Administration for Children and Families, initiated the Child Care Quality Rating Systems (QRS) Assessment project.

This report, produced as part of the QRS Assessment, presents findings from an exploratory analysis of administrative data from three QRIS, which examines the prevalence of quality components across providers and how they function in relation to observed quality. As QRIS enters its second decade, it is clear there has been a growing sophistication in data collection, providing opportunities for in-depth analysis of distinctive QRIS as well as cross-QRIS analysis. This analysis is developmental in nature; the findings are tenable within the limitations and scope, but should be interpreted with caution and are not confirmatory. The larger contribution of this work ties back to the intent of the Assessment project as a whole—to contribute to and build avenues for future analysis that can support a growing body of research that will inform decision making.

A. Study Methodology

The objective of this work focuses on exploratory analysis to inform development and practice related to QRIS standards and ratings. The analysis builds on the categorization of quality categories that was developed in the Compendium of Quality Rating Systems and Evaluations (Tout et al. 2010), which identified 13 categories that capture the range of components used by QRIS to define quality within the rating structure (Exhibit ES.1).

Exhibit ES.1. Thirteen Categories of Quality Components Used by 26 QRIS

Licensing compliance	Family partnerships
Ratio and group size	Administration and management
Health and safety	Cultural and linguistic diversity
Curriculum	Accreditation
Environment	Provisions for special needs
Child assessment	Community involvement
Staff qualifications	

Source: Compendium of Quality Rating Systems and Evaluations (Tout et al. 2010), produced as part of the QRS Assessment project.

Study Methods. We selected three QRIS for inclusion in the secondary data analysis based on criteria defining data coverage, access, and documentation. These are: Florida, Miami-Dade; Illinois; and Tennessee. A summary of characteristics of these QRIS and the sample sizes of child care centers used in the analysis is presented in Table ES.1. Within a site, we focused on centers that

served children birth through five years. We did not include centers serving only school-age children. Data came from three sources: (1) QRIS rating administrative databases, (2) professional development registries, and (3) observation databases.

Table ES.1. Summary Characteristics of QRIS Included in Secondary Data Analysis

	Miami-Dade, Florida	Illinois	Tennessee
QRIS name	Quality Counts	Quality Counts	Star-Quality Child Care Program
Oversight agency	Early Learning Coalition of Miami-Dade/Monroe	Illinois Department of Human Services	Tennessee Department of Human Services
Year of full implementation	2008	2007	2001
Number of rating levels	5	4	3
Structure of rating levels	Combination	Building Block	Combination
Validity period of rating level	Initial: 2 years Subsequent: 13 months	1 year	1 year
Voluntary	Yes	Yes	Yes; all licensed providers must participate in Report Card program but progression beyond the Report Card is voluntary
Providers included in the analysis	Center-based including participating Head Start programs	Center-based including participating Head Start programs	Center-based, including Head Start programs, that voluntarily participate beyond the Report Card program
Analysis time period	October 2008–September 2010	April 2008–August 2010	October 2009–September 2010
Sample size	253 ^a	350	1,369

Source: Compendium of Quality Rating Systems and Evaluations (Tout et al. 2010); secondary data analysis conducted as part of the QRS Assessment project.

^a As the newest QRIS included in the analysis, 137 of the 253 centers had initial baseline ratings that are re-evaluated after 2 years..

Research Topics and Analytic Methods. Using the defined Compendium quality categories as an analysis framework, the secondary data analysis examined the following four research topics:

1. *Examining quality rating components across QRIS* (through univariate analyses--means, ranges, percentages--of the individual components)
2. *Examining differences in quality rating components between quality rating levels and for certain types of centers* (through bivariate analyses such as tests of significance)

3. **Exploring the unique contribution of each quality rating component on observed quality** (through multivariate analyses employing regression models with observed quality as the outcome and the quality rating components as explanatory variables)
4. **Describing patterns of quality** (through univariate descriptive analyses to develop quality profiles based on select quality components meeting particular thresholds)

The research questions themselves evolved and were refined over time, adapting to the coverage and detail of available data, and challenges to defining variables across systems. Nonetheless, two fundamental concepts remained in place throughout the process and distinguish this analysis from other work that has been conducted to date: (1) development and use of a common metric across QRIS for defining variables within the quality categories, and (2) use of a “not evaluated” category within a component to capture whether the evaluation of a quality component has bearing on the measurement of quality.

Analytic Approach. Using the framework of the quality components as defined in the Compendium and the parameters presented by the administrative data available, we specified the quality component variables, quality outcome (observed quality), and a categorization for the rating levels to form the basis for the analysis.

- **Quality rating components.** We created common measures across the QRIS, generally one variable for 10 of the 13 quality component categories identified in the Compendium. Where possible, we retained the continuous numeric values for maximum variability in conducting univariate and bivariate analyses and then created binary variables for use in the multivariate analysis.
- **Observed quality.** Observed quality (as measured by the Early Childhood Environment Rating Scales [ERS]) can be found as a quality component in many QRIS. The analysis was limited to existing data collected by QRIS. Observed quality as represented by the ERS is used in this analysis to examine the correlation and association of all other quality rating components to observed environment quality scores as an objective measure of quality.
- **Quality rating levels.** The three sites vary in the number of quality level ratings they assign. A grouping of levels across the sites was of interest in order to examine patterns in the prevalence of quality components within and between levels across the QRIS. We collapsed the rating levels from each of the three QRIS into three groups—base, middle, and high.

Limitations. The use of administrative data and the selection of a small number of select QRIS have some inherent limitations: (1) the data were not collected as part of a study designed to answer specific research questions relevant to QRIS quality measurement design and refinement, and (2) the findings are not representative of QRIS beyond those included in the analysis. Other limitations stem from analytic decisions that were made to accomplish a cross-QRIS analysis: (1) these analyses pertain to center-based care only, and (2) in defining and modeling quality components across QRIS, site-specific components may be muted. That is, the cross-QRIS quality components are often summative in nature, capturing multiple site-specific QRIS indicators within a broader measure.

We address the research topics from a descriptive perspective with exploratory findings that are correlational in nature. The findings from this analysis are not confirmatory in defining the components to measure to maximize state or county resources and still achieve reliable and valid overall quality ratings. In time, these findings in combination with other current and future work will

contribute to a body of research that can be used to make specific programmatic and policy-relevant decisions.

B. Quality Components: Descriptions Across Three QRIS

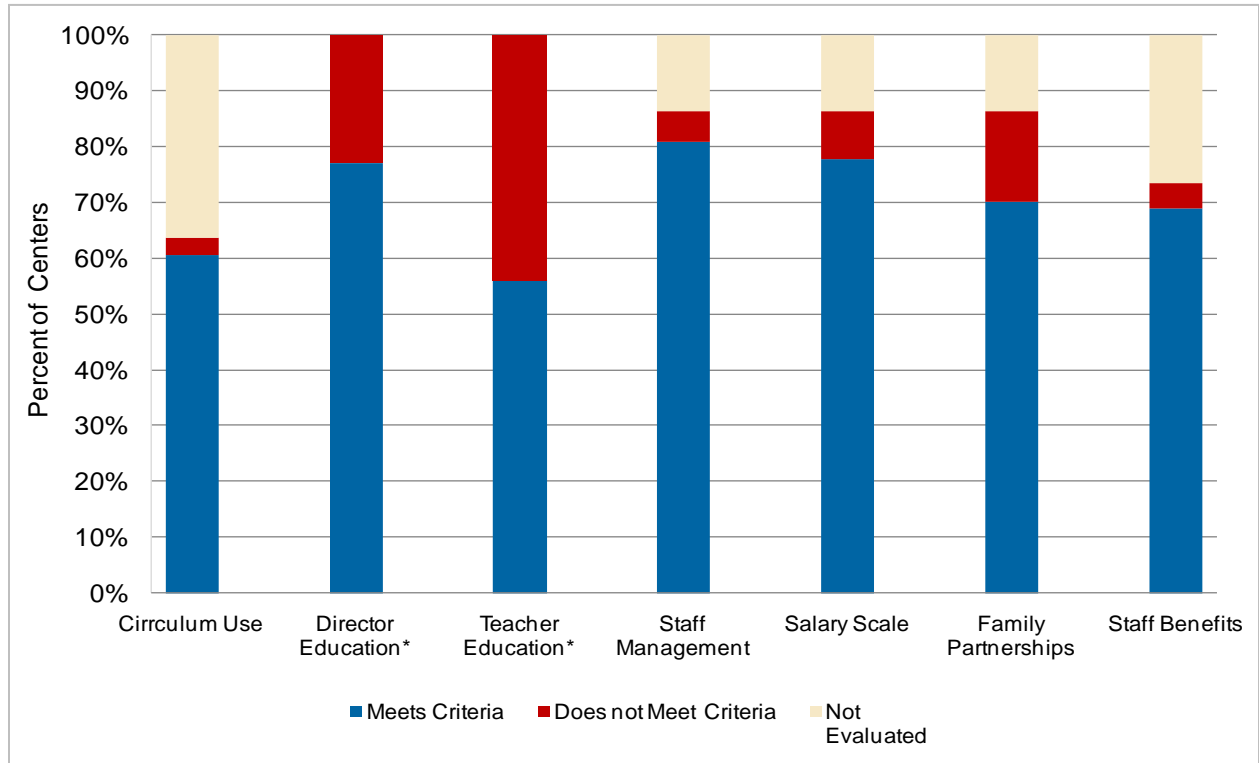
This descriptive analysis examines the emphasis states place on each quality component in the QRIS rating process and their prevalence across the three QRIS. The analysis addresses the following questions:

- What quality rating components are typically included (and, therefore, are measured or evaluated) in the rating process across QRIS?
- What is the prevalence of quality rating components as measured on a common metric across QRIS? For example, what percentage of center providers meet each quality rating component (e.g., curriculum use)?
- How does the prevalence of quality rating components differ between the base and highest quality rating levels across QRIS?

Key Findings:

- Seven quality components are demonstrated by more than half of all center-based providers across the three QRIS (Figure ES.1). They are:
 - Use of a curriculum based on early learning guidelines or standards
 - Director with some college or higher level of education
 - Majority (50 percent or more) of teaching staff that have some college or higher level of education
 - Implementation of staff management practices (such as staff meetings, annual staff performance evaluations, orientation, or staff development plans)
 - Use of a salary scale that differentiates pay by an individual's education, training, or experience
 - Implementation of the full range of family partnership activities specified by the QRIS
 - Offering of the full range of staff benefits specified by the QRIS
- Four components reflecting the degree to which providers individualize services to meet the needs of children and families are not often evaluated—more than 50 percent of centers across the three QRIS are not evaluated on these components. They are (1) conducting child assessment and screening, (2) use of child assessment results to guide planning, (3) communicating with families in their home language, and (4) planning for children with special needs (Figure ES.2).
- Center-based providers at the high rating level have observed quality and the presence of quality components that are higher, on average, than those at the base level (Figure ES.3). For example, the average combined ERS score (ECERS-R+ITERS-R) for providers at the high level is 5.1 compared to 3.3 for providers at the base level.

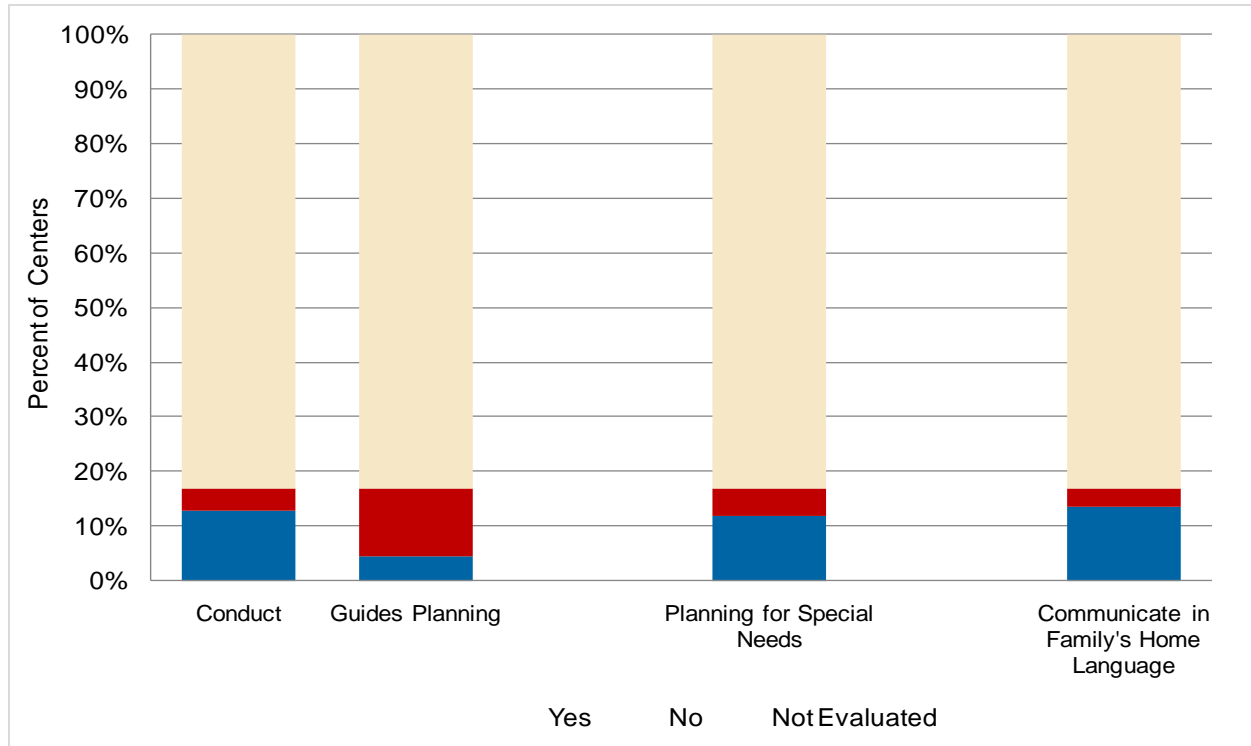
Figure ES.1. Quality Components Demonstrated by Center- Based Providers



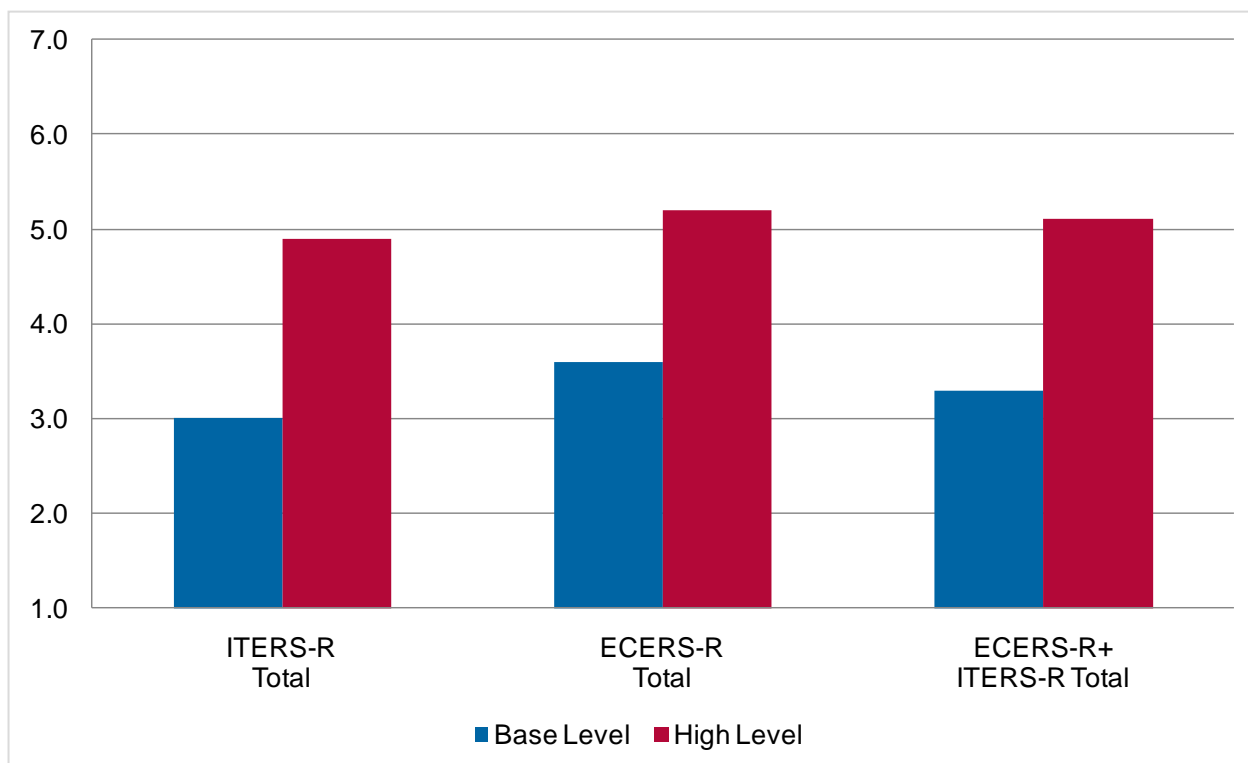
Source: Analysis of data from Illinois, Miami-Dade, Florida and Tennessee conducted as part of the QRS Assessment project.

*Percentage with education of some college or higher.

Figure ES.2. Individualization Quality Components Across Three QRIS



Source: Analysis of data from Illinois, Miami-Dade, Florida and Tennessee conducted as part of the QRS Assessment project.

Figure ES.3. Individualization Quality Components Across Three QRIS

Source: Analysis of data from Illinois, Miami-Dade, Florida and Tennessee conducted as part of the QRS Assessment project.

C. Quality Components: Differences Between Rating Levels and Types of Centers

We use bivariate analyses to explore the following:

- How does the prevalence of quality rating components differ between quality rating levels within each QRIS?
- What similarities exist by quality rating level in the prevalence of quality rating components across QRIS?
- What is the prevalence of quality rating components by different types of centers (such as Head Start status or accreditation status)?

Key Findings:

- Centers within each rating level are generally distinct in the prevalence of quality rating components. On average, centers in the middle level demonstrate quality components at higher rates than those at the base, and centers at the highest level demonstrate quality components at higher rates than those in the middle.
- There are some differences between the two states in these patterns, however. With few exceptions, centers consistently demonstrate increasing rates in each of the quality components from one of the three levels (base, middle, high) to the next in Tennessee. In Miami-Dade, a number of quality components demonstrate a significant difference from only one level to the next, rather than between each of the three levels.

- The prevalence of quality components among centers at the same rating levels but in different QRIS is not entirely the same, but the differences that do exist tend to be smaller at the highest level (with the notable exception of teacher education). Licensing standards, subsidy reimbursement policies, professional development systems and supports, and simply the longevity of the QRIS, influence the prevalence of quality components at each rating level such that significant differences exist between Miami-Dade and Tennessee.
- Head Start programs generally do not differ from other centers participating in the QRIS in Miami-Dade in ERS scores. They are, however, more likely to have in place quality components that include individualization practices (such as those around curriculum, child assessment, planning for children with special needs, and communicating with families in their home language). Head Start programs are also more likely than other centers to have directors and teaching staff with some college or more, to demonstrate all family partnership strategies specified by the QRIS, and to use a differentiated salary scale.
- Accredited centers are more likely to demonstrate many of the quality components over non-accredited centers. However, accredited centers do not generally differ from other centers in the education levels of directors or teaching staff. Accredited centers have higher ERS scores, on average, than other centers and are more likely to be at the highest rating level.

D. Unique Contributions of Quality Components in Predicting Observed Quality

Through multivariate analyses, we examine the unique contribution of each quality rating component in predicting observed environment quality, as measured by the ERS, to answer the following questions:

- What is the association between each quality rating component and observed quality when all other components are held constant?
- What patterns in these associations are present across different ERS scales and different QRIS?

Key Findings:

- Across sites and different specifications of the ERS outcome, the use of a differentiated salary scale and accreditation status were consistently associated with higher scores (Table ES.2). Centers with differentiated salary scales were found to have higher ERS scores compared to centers that do not offer a similar benefit. Accredited centers were consistently found to have higher ERS scores than those not accredited.
 - These associations do not indicate that certain quality components cause higher ERS scores or vice versa.
 - The unique contribution of these two components may reflect characteristics not observed or not directly measured such as motivation, or time and resources that can also influence the presence of other quality initiatives overall.

Table ES.2. Results of OLS Regressions of Quality Rating Components Among Center- based Providers with Average ECERS- R+ITERS- R Total Scores, by Cross- Site and Site- Specific Models

	Cross-site model		Florida, Miami-Dade				Tennessee	
	Coefficient	SE	Cross-site common components		Individualization components		Coefficient	SE
			Coefficient	SE	Coefficient	SE		
Constant	2.63	0.11***	2.54	0.20***	2.52	0.20***	4.04	0.15***
Curriculum-staff training (vs. not all staff)								
All teaching staff	0.05	0.08	-0.05	0.11	-0.08	0.11	0.17	0.12
Some teaching staff	-0.14	0.11	0.01	0.19	0.02	0.19	-0.10	0.15
Not evaluated	0.13	0.08					0.23	0.12+
Child-to-staff ratio (3-year-old - 8:1 or lower)	0.12	0.04**	0.08	0.10	0.08	0.10	0.12	0.04**
Teacher education (vs. less than 25 percent)								
50 percent or greater with some college or higher	0.25	0.08**	0.21	0.12+	0.20	0.12+	0.35	0.12**
25 to 50 percent with some college or higher	0.12	0.08	0.09	0.10	0.10	0.10	0.23	0.13+
Director education (some college or higher vs. less)	0.03	0.06	0.05	0.10	0.03	0.10	0.04	0.08
Family partnerships (all vs. less than all)	0.12	0.06+	0.19	0.12	-0.01	0.16	0.12	0.07+
Staff management	0.06	0.10	0.25	0.22	0.25	0.22	-0.10	0.14
Salary scale	0.41	0.09***	0.44	0.12***	0.39	0.13**	0.43	0.12***
Accredited center	0.34	0.06***	0.33	0.09***	0.32	0.09***	0.36	0.07***
Individualization; assessment, planning for special needs, family communication (vs. two or less)								
More than half	0.18	0.11+			0.31	0.15*		
Not evaluated	1.49	0.12***						
R-square	0.51		0.30		0.31		0.12	
Adjusted R-square	0.50		0.27		0.28		0.11	
Number of centers	1327		227		227		1100	

Source: Analysis of data from Miami-Dade, Florida and Tennessee conducted as part of the QRS Assessment project.

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

- Three other components—teacher education, child-to-staff ratios, and family partnerships—demonstrated unique contributions across models, but not consistently and not at the level of significance seen for the salary scale and accreditation components.

The differences in ERS scores associated with individual quality components were all less than half a point in magnitude. Half a point is equivalent to the difference in ERS scores between a level one and level two provider in Florida, Miami-Dade and Tennessee. Within the context of QRIS as currently designed, the largest estimated difference in ERS scores associated with any of the components is smaller than what the systems would require to move up one quality rating level.

E. Quality Profiles: Patterns in Quality Components

The influence on quality and, in turn, child outcomes may best be accounted for by considering more than one component at a time. We begin to explore a composite view, describing the patterns for a subset of cross-QRIS quality components across two QRIS (Florida, Miami-Dade and Tennessee), by addressing the following questions:

- What is the prevalence of centers demonstrating select components on the high end of quality?
- How might centers be categorized into profiles of quality based on the number and combination of quality components that demonstrate significant associations with observed quality?
- Do the profiles map to existing rating levels in each of the two QRIS in ways that create distinctions in quality?

We selected five quality components from which to build profiles of providers in the two QRIS. Four components—use of a differentiated salary scale, family partnership strategies, teacher education levels, and child-to-staff ratios—consistently or frequently demonstrated unique contributions in predicting observed quality in the multivariate analysis. We add observed quality (the ERS score) back as a component, rather than an outcome, to contribute to the profiles since the learning environment is often included as a rating component in QRIS. In general, these five components are among those that are commonly included in rating systems and therefore are relevant to a broader set of QRIS.

Key Findings:

Based on five selected quality components and associated thresholds, centers in two QRIS fall into seven distinct quality profiles. The profiles are differentiated by (1) the number of quality components that meet the thresholds (that is, one to five), (2) ability of the center to meet the learning environment threshold of a combined ERS score of 5.0 or higher, and (3) ability to meet the requirements of both the family partnership component and use of a differentiated salary scale.

- The most prevalent profile, in which 27 percent of centers fall, is the one in which all five quality component thresholds are met (Table ES.3). This suggests that for nearly three-quarters of the centers, these five quality components and associated thresholds are sufficiently demanding, demonstrated by the variation in centers meeting different numbers and combinations of the thresholds.

- The next most common profile demonstrates mixed components. The 24 percent of centers in this profile did not meet the learning environment threshold, but have the pairing of the family partnership and salary scale components (Table ES.3). They may also meet the threshold for one other component (either teacher education or child-to-staff ratio, but not both).
- Very few centers—only three percent—do not meet any of the five quality component thresholds (Table ES.3).
- The overall quality rating levels assigned to centers in each of the two QRIS map to the profiles such that providers assigned to the higher quality profiles have higher rating levels, and vice versa (Tables ES.4 and ES.5). This suggests that the five components and the associated thresholds may indeed be similar drivers in creating distinctions in quality across different QRIS.

Table ES.3. Quality Profiles Across Two QRIS

Profile	Description	Number of Threshold Components	ERS Meet Threshold	Percentage of Centers	
A	Maximizing quality	All components meet threshold	5	Yes	27.1
B	High operational quality	ERS not meet threshold, all others do	4	No	17.0
C	High center environment	ERS meet threshold as well as at least family partnerships and salary scale	3 - 4	Yes	13.2
D	High observed quality plus	ERS meet threshold and have at least one other component, but lack the family partnership-salary scale combination	2 - 4	Yes	3.7
E	Mixed center environment	ERS not meet threshold but have at least family partnerships and salary scale	2 - 3	No	24.4
F	Lower observed quality plus	ERS not meet threshold but have at least one component, but lack the family partnership-salary scale combination	1 - 3	No	11.4
G	Base quality	No components meet thresholds	0	No	3.2
Number of centers					1,334

Source: Analysis of data from Florida, Miami-Dade and Tennessee conducted as part of the QRS Assessment project.

Table ES.4. Percentage of Centers at Each Quality Profile by Rating Level, Miami- Dade

		Level 1	Level 2	Level 3	Level 4	Level 5	Number of Centers
A	Maximizing quality	0.0	0.0	0.0	0.0	0.0	0
B	High operational quality	0.0	0.0	0.9	1.3	0.4	6
C	High center environment	0.0	0.0	0.0	0.9	1.3	5
D	High observed quality plus	0.0	0.0	0.0	0.4	0.0	1
E	Mixed center environment	0.0	8.1	26.9	17.5	3.4	131
F	Lower observed quality plus	2.1	11.5	9.8	1.3	0.4	59
G	Base quality	5.1	6.4	2.1	0.0	0.0	32
Number of centers		17	61	93	50	13	234

Source: Analysis of data from Miami-Dade, Florida as part of the QRS Assessment project.

Note: Shaded cells indicate the highest concentration of providers for each quality profile.

Table ES.5. Percentage of Centers at Each Quality Profile by Rating Level, Tennessee

		Level 1	Level 2	Level 3	Number of Centers
A	Maximizing quality	0.0	0.1	32.8	362
B	High operational quality	0.0	0.8	19.3	221
C	High center environment	0.0	1.4	14.2	171
D	High observed quality plus	0.0	2.5	1.9	48
E	Mixed center environment	0.1	7.4	10.2	194
F	Lower observed quality plus	0.8	5.5	2.2	93
G	Base quality	0.8	0.2	0.0	11
Number of centers		19	195	886	1100

Source: Analysis of data from Tennessee as part of the QRS Assessment project.

Note: Shaded cells indicate the highest concentration of providers for each quality profile.

F. Future Directions for Research

This analysis covered a number of topics related to quality measurement through use of existing administrative data from a small and select number of QRIS. As a descriptive, exploratory analysis it provides useful and interesting information, but it also identifies areas in need of further research to add both context and evidence.

Programs in the QRIS. An important issue in the evaluation of QRIS as well as the interpretation of any research and evaluation is which centers select into voluntary QRIS. Specifically, do centers that are high quality based on the definition of the QRIS choose to participate at a higher rate than those that may be rated as low quality? QRIS stakeholders and evaluators need to further explore and understand the characteristics of programs that participate in QRIS and those that do not in order to fully examine changes in quality and, ultimately, changes in child outcomes that may be associated with QRIS.

Patterns in quality improvement. Based on data collected from a cross-section of child care centers in a few, select QRIS it appears that there are distinctions between the base, middle, and high rating levels in that providers at the higher rating levels are more likely to demonstrate the quality components examined than those at the lower levels. What we cannot determine from this analysis, however, is whether and how these components have changed for providers over time. That is, we cannot assess the degree to which this snapshot of providers by level may be an indication of patterns that have persisted or evolved over time.

Rating levels. We find more similar proportions of centers meeting quality components when we compare centers at the *highest* rating level in the two sites (except for teacher education), building on the findings in a companion qualitative report that QRIS requirements are more similar at the highest level (Caronongan et al. 2011). This may provide some confidence in the face validity of QRIS indicators and suggest that they are implemented with some consistency across QRIS. (Though we stress that these findings are based on just two QRIS.) This also supports the importance of continuing to conduct validation studies of QRIS with a focus on the highest level, at least to start, and an examination of child outcomes as well as other indicators such as parent satisfaction and service to low-income children.

Quality components. Critical to decisions of design and refinement of QRIS are issues related to which quality components to measure and in what combination. This analysis provides some suggestive findings from two QRIS. Overall, the patterns of findings in this analysis confirm the importance of domains long considered predictors of quality (such as teacher education, child-to-staff ratios, and salary). The findings also support the inclusion of other domains with a smaller evidence base in early childhood, such as the use of family partnership strategies and of practices that promote the individualization of services for children and families. These findings can help structure an agenda for next steps in both research and, potentially practice, through further examination of the resources necessary for quality improvement, measurement refinement of particular components, and definition to emerging components. The larger contribution of this work may be the introduction of a framework for using a common metric across QRIS that can be used in future evaluations to continue building knowledge in this area.

Quality outcomes. Lastly, but most importantly, the field needs to continue building knowledge to better understand how the ERS are related to the other components of quality that are measured in QRIS, as well as to continue to seek other outcome measures that capture the dimensions of quality most closely linked with child outcomes.