nara National Association for Regulatory Administration

KEY QUALITY INDICATORS

A white paper to introduce the concepts and application of key quality indicators in human care regulatory environments

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CONSUMER PROTECTION THROUGH PREVENTION

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NARA White Paper on Quality Indicators

Overview

This paper introduces the concept and application of Quality Indicators in the Child Care and Early Education (CCEE) field. It begins by delineating how quality has historically been categorized into two dimensions: structural quality and process quality, as established in the research literature (Morgan, 1979; Peisner-Feinberg et al., 2001; Duncan, 2003). The paper then examines a range of models and systems to assess their effectiveness in achieving high-quality child care.

A central focus is the Theory of Regulatory Compliance, which offers a unifying framework for linking quality and regulatory compliance. This theory supports the development of a key indicator methodology that has been applied extensively across the United States and Canada (Fiene, 2019).

Building on this conceptual foundation, the paper highlights several systems that contribute to child care quality, including accreditation, professional development, training, technical assistance, Quality Rating and Improvement Systems (QRIS), and observational assessments such as the Environmental Rating Scales (ERS) (Fiene, 2022). Each of these systems is examined for its contribution to identifying key quality indicators.

Following this analysis, the paper introduces a consolidated Quality Indicators Tool that has evolved from these multiple systems (Fiene, 2024). The concluding section considers how this integrated approach to quality and compliance can be applied to other human service fields beyond early childhood care and education.

Introduction to the Theory and Methodology

Child care and early education (CCEE) quality has been defined in the research literature along a continuum between structural and process quality. Structural quality refers to countable, objective standards, while process quality reflects the more nuanced interpersonal dynamics between adults and children.

Structural quality is typically associated with licensing rules that safeguard children's health and safety in out-of-home care. Process quality, on the other hand, captures the nature of teacher-child interactions. These are often assessed through quality observation tools such as the Environmental Rating Scales (ERS), commonly used within Quality Rating and Improvement Systems (QRIS) (Peisner-Feinberg et al., 2001; Duncan, 2003).

Process quality is often considered the core of early childhood quality. It captures the intricate details of what happens in classrooms during individual and group interactions. This includes positive and engaging language, emotional climate, and opportunities for children to solve problems. Process quality emphasizes how well teachers facilitate these experiences, either through direct engagement or by arranging the learning environment to support them.

Structural quality refers to surrogate measures such as compliance with staff-child ratios, group sizes, or the number of regulatory violations. It does not typically assess emotional tone, instructional style, or classroom atmosphere. Occasionally, it may include aspects of curriculum, but its primary focus is on health and safety standards; those factors intended to prevent harm rather than promote enrichment. Enhancing the child's learning environment is primarily addressed through process quality.

From an organizational perspective, structural quality is most commonly found in licensing rules and regulations. Process quality, by contrast, is captured through tools such as the Environmental Rating Scales (ERS) or the Classroom Assessment Scoring System (CLASS). Although these tools were originally designed for standalone use, they are now more commonly embedded within broader quality initiatives. ERS is often used within QRIS, and CLASS is widely used in Head Start.

Structural and process quality are best understood as complementary. Structural quality provides a foundational layer, while process quality builds upon that base to support child development more holistically.

Another useful way to conceptualize quality is through the image of a spectrum. Structural and process quality can be placed at opposite ends of a continuum that reflects the range of quality interventions developed over the past 40 years. Interventions that align with structural quality include licensing, QRIS, Head Start Performance Standards, accreditation, and professional development systems. Process quality is primarily represented by tools such as ERS and CLASS.

This spectrum can be imagined as a prism: instead of separating light into colors, it separates the dimensions of quality into distinct intervention systems, each contributing in a different way to the overall goal of high-quality care.

The Original Model:

Gwen Morgan introduced the concept of a quality spectrum in a 1979 article published in Young Children (Morgan, 1979), which examined the components of child care quality. In that article, quality was categorized into two broad system types: regulatory and non-regulatory.

Regulatory components included licensing, contracting, best practices, credentialing, rate setting, and accreditation. Non-regulatory components included professional development and training systems, referral and resource agencies, advocacy organizations, and public education.

The Morgan Model was one of the earliest efforts to integrate these systems into a unified framework for understanding child care quality. Since its introduction, the model has expanded to include additional systems that have emerged over time, such as new accreditation frameworks, Quality Rating and Improvement Systems (QRIS), and statewide professional development and technical assistance initiatives—particularly those that use coaching or mentoring approaches.

The next section introduces a licensing and regulatory science framework that depicts the relationship between regulatory compliance and program quality.

Theory of Regulatory Compliance:

The Theory of Regulatory Compliance (TRC) (Fiene, 2019) marked a major breakthrough in how key indicators are conceptualized and applied in the licensing and monitoring of child care quality. It has been described as a paradigm shift that moved the licensing field and regulatory science away from a uniform monitoring approach toward a differential monitoring model (Fiene, 2025c,d). This transition enabled the development of the key indicator methodology, which made abbreviated inspections possible. Without TRC, the traditional model of uniform program monitoring might have remained the standard for conducting all child care inspections - but in practice, it proved insufficient.

Uniform monitoring was the dominant approach for licensing and oversight through the 1970s and 1980s. However, as evidence accumulated, it became clear that a more targeted method was needed. This shift laid the groundwork for the application of key indicators in a more nuanced and predictive way.

TRC serves as an overarching framework that explains how structural, and process quality interacts. One of its most important insights is the value of substantial compliance with structural quality rules. This was demonstrated through the identification of a ceiling effect when comparing structural and process quality across various systems, including licensing, Head Start, accreditation, and QRIS. Among these, licensing exhibited the most pronounced ceiling effect and, in some cases, a diminishing returns pattern when moving from substantial compliance to full 100 percent compliance. Although all structural systems showed similar tendencies, process quality followed a different pattern, typically a linear relationship with a normal data distribution. In contrast, structural quality data were non-linear and positively skewed. These contrasting patterns have been confirmed repeatedly in CCEE research over the past five decades.

As a result, TRC has helped reframe how licensing decisions are made. It recognizes that substantial compliance may be sufficient for issuing a full license, and in some cases, may be more predictive of program quality than full compliance. This perspective has also led to the use of abbreviated or targeted inspections that focus on key predictor rules and high-risk standards. This shift established the foundation for differential monitoring.

Importantly, differential monitoring allows quality indicators to be integrated into licensing and program oversight, something that was not easily achieved under uniform monitoring models. The structure and methodology of differential monitoring are described in the following section.

Differential Monitoring and the Key Indicator Methodology:

Recent policy studies (Freer & Fiene, 2023) confirm that quality indicators can be systematically identified and integrated into the licensing and regulatory framework. These indicators form the foundation of the differential monitoring model, serving as anchors for both structural and process quality.

Key indicators have repeatedly been shown to statistically predict overall compliance with the full set of rules, regulations, and standards through both ongoing research and analysis of key indicator system

effectiveness in states and provinces that have incorporated key indicator systems into their licensing programs. This predictive relationship has been repeatedly validated across systems such as licensing, QRIS, Head Start, accreditation, and ERS. It also supports the development of a new quality indicator scale that is based on the same statistical methodology but is applied to nonregulatory standards that measure quality in early childhood development and education using standardized quality measurement tools.

Originally developed for child care licensing (Fiene & Nixon, 1985), the key indicator methodology has since been successfully applied to the identification of key compliance indicators, key risk indicators, key performance indicators, and key quality indicators. It is essential that any use of this methodology follows the original framework outlined in Fiene's research and NARA's implementation guidelines.

Two methodological components are particularly critical: the weighting of rules and the dichotomization of data. These techniques represent intentional departures from conventional predictive models in the testing and measurement literature. When properly applied, they help mitigate or eliminate false positives and false negatives in licensing decisions, particularly when determining whether a facility should receive a license (Fiene, 2024).

From a statistical perspective, correlations between structural and process quality have occasionally been significant, but they are generally modest. This is largely due to differences in how the two types of data are structured and measured. Structural quality data tend to show a ceiling effect and a positively skewed distribution, whereas process quality typically follows a more linear relationship and exhibits a normal distribution. These distinct statistical profiles help explain why correlations between structural and process quality are often weak, even though each provides meaningful insight on its own.

A key factor underlying this divergence is the binary nature of structural quality measurement. Licensing rules are inherently dichotomous: a provider either complies with a given rule or does not. This yes/no structure limits the ability of structural data to capture variation in performance above the minimum threshold. Once compliance is achieved, there is no higher score available under the traditional model.

In contrast, process quality assessments use ordinal or interval scales to capture a broader continuum of performance from very low quality to exemplary practice. These tools can account for gradations in quality, such as partially met expectations, developing skills, or consistently high engagement. As a result, process quality tools are better equipped to differentiate among programs performing above the basic compliance level.

This difference in measurement design not only contributes to the ceiling effect in structural quality but also restricts its ability to meaningfully correlate with process quality across the full range of provider performance. Structural measures tend to group most providers at or near the top, making it difficult to distinguish between high and moderate performers. By contrast, process quality ratings offer a more nuanced and scalable view of practice.

Despite these limitations, both structural and process quality are generally effective at identifying the lowest-performing programs. Structural violations and poor-quality interactions tend to co-occur in these settings, reinforcing the value of using both types of data to flag high-risk environments

The Emergence of the Regulatory Compliance Scale:

Challenges in differentiating high-performing and average-performing programs prompted the development of a new structural quality metric: the Regulatory Compliance Scale (RCS) (Fiene, 2025b). This scale was introduced for two primary reasons. First, the RCS aligns with the Theory of Regulatory Compliance by emphasizing substantial compliance and incorporating a categorical scoring structure. Second, its ordinal format corresponds well with widely used process quality tools, which typically apply a 1–7 rating scale.

By establishing a categorical structure, the RCS enables structural quality to be analyzed on more equal footing with process quality from a statistical measurement standpoint. Pilot testing in several jurisdictions suggests that the RCS is a more effective comparative tool than traditional methods that rely solely on violation counts or frequency data drawn from rule, regulation, or standard compliance (Fiene, 2024).

While these ideas have been addressed individually in prior literature (Trivedi, 2015), this paper brings them together to demonstrate the broader impact of the Theory of Regulatory Compliance on both structural and process quality assessment. Future replication of these findings by research psychologists and regulatory scientists would support an important policy advancement: recognizing substantial compliance as a sufficient threshold for full licensure and embedding differential monitoring as a standard regulatory practice across the CCEE field.

To support such a shift, the ceiling effect associated with structural quality must be reliably replicated when compared to the more evenly distributed nature of process quality scores (Fiene, 2025d).

The Various Quality Systems: Accreditation, Professional Development, Training, & Technical Assistance, Quality Observations, and Quality Rating & Improvement Systems (QRIS), and the Development of a Quality Indicators Scale

The same methodology used to identify Key Compliance Indicators has also been applied to the identification of Key Quality Indicators, which are the focus of this section. This Key Indicator Methodology is adaptable to any system governed by rules, regulations, or standards. Its effectiveness has been demonstrated in child welfare (Fiene, 1987), foster care reviews (Stevens, Fiene, Blevins, & Salzer, 2020), and in the identification of Key Performance and Key Risk Indicators for the Head Start Monitoring System.

The first quality initiative examined is accreditation, which has evolved significantly in the child care and early education field. Some accreditation systems are based on expert consensus or literature review, while others rely on empirically validated research methods. This section focuses specifically on one

accreditation system developed using the key indicator approach discussed earlier (Fiene, 1995, 1996). The National Early Childhood Program Accreditation (NECPA) system was developed and field-tested in the early 1990s as a cost-effective, efficient alternative to existing models. Its standards overlapped with both the National Association for the Education of Young Children's (NAEYC) accreditation framework and the newly developed Caring for Our Children standards (AAP & APHA, 1992). In validation studies (Fiene, 1996), NECPA was found to be highly correlated with the more prominent NAEYC system.

The second major initiative involves professional development, training, and technical assistance systems, which have been implemented across all states using quality incentive funds from the Child Care Development Block Grant. Application of the key indicator methodology found that coaching and mentoring were more effective than traditional methods in improving teacher-child interactions (Fiene, 2002). As a result, many states have shifted from workshop-based training to a blended model emphasizing coaching and mentoring.

The third major quality initiative is the implementation of Quality Rating and Improvement Systems (QRIS) as a supplement to traditional licensing systems. QRIS has proven effective in improving both structural and, in many cases, process quality across participating states (Zellman & Fiene, 2012). Approximately half of all states have adopted QRIS as of this writing. Within QRIS frameworks, Key Quality Indicators (KQIs) have been developed, particularly in the domains of family engagement and communication (Fiene, 2014). These indicators are central to program scoring within QRIS systems. Programs that meet KQIs are statistically more likely to receive higher QRIS ratings, typically at Level 3 or 4.

The final initiative discussed is quality observation, typically conducted using Environmental Rating Scales (ERS) (Harms, Clifford, & Cryer, 2012). ERS tools are widely used in QRIS systems as well as in other quality measurement contexts. A research study was conducted to determine whether ERS data could yield identifiable Key Quality Indicators. The study found that subscales related to language exchange and reasoning skills between teachers and children served as strong predictors of overall ERS scores.

This leads to the current state of Key Quality Indicator development. Most recently, a new Key Quality Indicators tool and software application has been proposed (Fiene, 2025a). The tool integrates findings from the initiatives described above, combining structural and process quality metrics into a single platform intended to improve both efficiency and comprehensiveness. However, the tool is currently in beta testing and requires further empirical validation to determine its long-term utility in the CCEE field. If validated, it may reshape how structural and process quality are assessed: consolidating currently separate systems into a unified approach.

Conclusion and Expansion Beyond Child Care

Quality indicators have expanded the scope of program monitoring, moving the field from uniform monitoring to differential monitoring, and now toward integrated monitoring approaches that explicitly incorporate quality (Freer & Fiene, 2023). Historically, key indicator methodologies focused primarily on regulatory compliance, with quality dimensions often excluded from formal review processes. This has

changed with the identification of Key Quality Indicators (KQIs) drawn from accreditation systems, Quality Rating and Improvement Systems (QRIS), professional development and technical assistance initiatives, and observational tools such as the Environmental Rating Scales (ERS).

The resulting integrated monitoring model offers jurisdictions a promising framework for evaluating both structural and process quality in their inspection systems. It represents an opportunity to align compliance monitoring with broader goals related to service effectiveness and developmental outcomes, particularly in early childhood settings.

This paper aims to provide guidance on the research supporting KQIs and how these indicators can be used to predict overall quality across structural and process dimensions. While the examples are drawn from the Child Care and Early Education (CCEE) field, the underlying approach and methodology are applicable across a wide range of human service systems, including child residential and adult residential programs. Indeed, this methodology can be applied in any setting governed by rules, regulations, or standards as discussed earlier.

However, there are limitations to expanding the model into other human services contexts, particularly adult care. One significant challenge is the absence of established population-wide quality evaluation systems for older youth and adult service recipients. While evaluation methods do exist in these domains, they are often designed around the experience of the individual, assessing the quality of care received by a specific person rather than the overall performance of the service provider. This distinction complicates the development of system-wide Key Quality Indicators.

Additionally, it is inherently easier to define and measure growth and development in early childhood due to well-established developmental and educational milestones. In contrast, defining "quality" for adolescents, adults, or aging populations can be more subjective and variable. What constitutes meaningful progress or enrichment later in life is harder to quantify, and normative benchmarks are less universal.

Key Indicator Methodology itself is also relatively rare in adult care regulatory systems. This may be due in part to the historical concentration of quality indicator research and application within child care, as well as the more mature and standardized nature of child care regulation compared to systems serving adults. As a result, further research and development will likely be needed to adapt and expand the key indicator framework for adult populations. This may include the creation of tiered, provider-level quality assessment tools that go beyond individual outcomes to measure systemic performance.

If such tools can be developed and validated, the integration of quality indicators into adult care licensing systems could mirror the transformative impact seen in child care, enabling targeted monitoring, data-informed licensing decisions, and a stronger link between compliance and meaningful quality outcomes.

About the Author:

Dr Richard Fiene, a research psychologist, has spent his professional career in improving the quality of child care in various states, nationally, and internationally. He has done extensive research and

publishing on the key components in improving child care quality through an Early Childhood Program Quality Indicator Model (ECPQIM) of training, technical assistance, quality rating & improvement systems, professional development, mentoring/coaching, regulatory science, licensing, risk assessment, differential program monitoring, key indicators, and accreditation. His research has also made significant contributions in regulatory science related to measurement and monitoring systems, such as instrument-based program monitoring, differential monitoring, key indicator methodology for compliance and quality, and risk assessment methodology. In prevention science, his research has led to the identification of key Regulatory indicators that keep children healthy and safe while in out of home child care settings.

Dr Fiene is a Professor of Psychology (ret) (Penn State University) and founding director of the Capital Area Early Childhood Research and Training Institute. He is presently a Research Psychologist and Regulatory Prevention Scientist for the Research Institute for Key Indicators, an affiliated data laboratory with the Edna Bennett Pierce Prevention Research Center at the Pennsylvania State University.

Dr Fiene is regarded as a leading international researcher/scholar on human services licensing measurement and differential monitoring systems. His regulatory compliance law of diminishing returns has altered human services regulatory science and licensing measurement dramatically in thinking about how best to monitor and assess licensing rules and regulations through targeted and abbreviated inspections. The theory has also led to the issuing of human service licenses based on substantial regulatory compliance with all rules rather than full 100% regulatory compliance with all rules. This was a basic licensing and public policy paradigm shift which has impacted on regulatory administration.

His research has led to the following developments: identification of herding behavior of two year olds, spatial acquisition device in young children & four states of space, national early care and education quality indicators, mathematical model (Contact Hours) for determining adult child ratio compliance, solution to the trilemma (quality, affordability, and accessibility) in child care delivery services, Stepping Stones to Caring for Our Children, NECPA: National Early Childhood Program Accreditation, online coaching as a targeted and individualized learning platform, validation framework for early childhood licensing systems and quality rating & improvement systems, an Early Childhood Program Quality Improvement & Indicator Model for better public policy decision making, Caring for Our Children Basics, Abbreviated Program Monitoring Inspections, Validation Framework for Licensing, Generic Key Indicator Rules, Regulatory Compliance Scoring Scale, Regal Metrics, and has led to the development of statistical techniques for dealing with highly skewed, non-parametric data distributions in human services licensing and regulatory systems, such as data dichotomization.

Dr Fiene had a long career in academia and governmental service. He was a research psychologist and regulatory scientist during his tenure with the Commonwealth of Pennsylvania's Office of Children, Youth, and Families and the Office of Licensing and Regulatory Administration where he was the research director for both offices. In academia, he was a professor of psychology and human development at both the University of North Carolina and the Pennsylvania State University. At Penn State Harrisburg he was Department Head for both the psychology and human development programs during his tenure at the university.

At the national and international levels, Dr Fiene has been a senior research consultant to the National Association for Regulatory Administration, the Federal Office of Child Care, the Administration for Children and Families, and the Federal Department of Health and Human Services. His research has been disseminated in all 50 states and over 120 countries. In 2019, he was elected to the Early Childhood Exchange Leadership Initiative. He received the 2020 Distinguished Career Award from the Pennsylvania Association for the Education of Young Children. In 2023, his Key Indicator methodology for quality indicators received a Recognized Project of the Child Impact Initiative of the World Forum Foundation. Dr Fiene remains active in the regulatory prevention science and early childhood fields through the Edna Bennett Pierce Prevention Research Center at Penn State where he remains an affiliated faculty and a senior research psychologist. He has been a member of the American Psychological Society.

Contributors

A special thank you to Ronald Melusky and Dr. Sonya Stevens for their contributions to this white paper.

Ronald Melusky is a regulatory professional with over twenty years of experience in regulatory administration and oversight. His work focuses on advancing systems of differential monitoring and strengthening the integrity of human services through effective policy development and implementation.

Dr. Sonya Stevens serves as NARA's Project Manager and brings a wealth of experience to the role. Her previous positions have encompassed licensing consultation, administration of statewide practice improvement initiatives, management of research and methodologies, and analytics concerning child care and foster care licensing. A passionate advocate for data-driven policies, Dr. Stevens is dedicated to fostering robust collaborations and partnerships that enhance the quality of services within human care regulation.

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