
ECPQIM
WEBINARS
Richard Fiene PhD

HUMAN SERVICES LICENSING MEASUREMENT, REGULATORY COMPLIANCE AND PROGRAM MONITORING SYSTEMS: ECPQI2M5©/DMLMA©

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THIS PRESENTATION CONTAINS ALL THE LATEST RESEARCH AND HISTORICAL RESEARCH RELATED TO ECPQIM AND DMLMA. IT PROVIDES THE HISTORICAL CONTEXT FROM ECPQIM1 THROUGH ECPQIM5. THERE ARE EXAMPLES PROVIDED THROUGHOUT THE SLIDES. ECPQI2M© HAS GONE THROUGH 5 MAJOR REVISIONS STARTING BACK IN THE LATE 1970'S TO EARLY 1980'S. THIS MOST RECENT GENERATION (5TH) PROVIDES THE MOST REFINED ALGORITHMS FOR BUILDING AN EFFECTIVE AND EFFICIENT PROGRAM MONITORING SYSTEM. ECPQI2M© IS A COMPREHENSIVE APPROACH TO PROGRAM MONITORING TAKING INTO ACCOUNT THE FOLLOWING SYSTEMS: LICENSING, QRIS, PROFESSIONAL DEVELOPMENT, ACCREDITATION, CHILD DEVELOPMENT OUTCOMES, PROGRAM QUALITY INITIATIVES, TECHNICAL ASSISTANCE/TRAINING, AND MENTORING. These are the essential slides and lecture notes for NARA Licensing Measurement and Systems course that is offered through their NARA Licensing Curriculum. Readers will be able to review these slides and gain an excellent knowledge base to the state of the art when it comes to early care and education licensing measurement, regulatory compliance, and differential monitoring systems. This is a self-contained course format which is self-paced for the reader/participant. It is suggested that the reader consultant the NARA and RIKI respective websites which are listed on the second to last slide for the overview to each lecture and the relevant handouts for each class. Although the examples are from early care and education, the methodologies are applicable throughout the human services field and actually in any regulatory field. They are truly very generic from a structural point of view.

This is the logo for the partnership between NARA and RIKI for the future development and implementation of differential monitoring, risk assessment, and key indicators for licensing and quality. This partnership was formed in August 2015 with an agreement between the two organizations. I mention this because it is important for the participant to understand that this is a very focused presentation exploring differential monitoring which is an approach within licensing measurement and program monitoring in general. There will be particular elements of licensing measurement that will not be addressed in this current version which was addressed in earlier versions of this slide deck, such as inter-rater reliability and caseload standards. These particular issues are addressed in other NARA webinars and courses. The focus of this presentation is squarely on differential monitoring and its effectiveness and efficiency as an innovative generic monitoring approach.

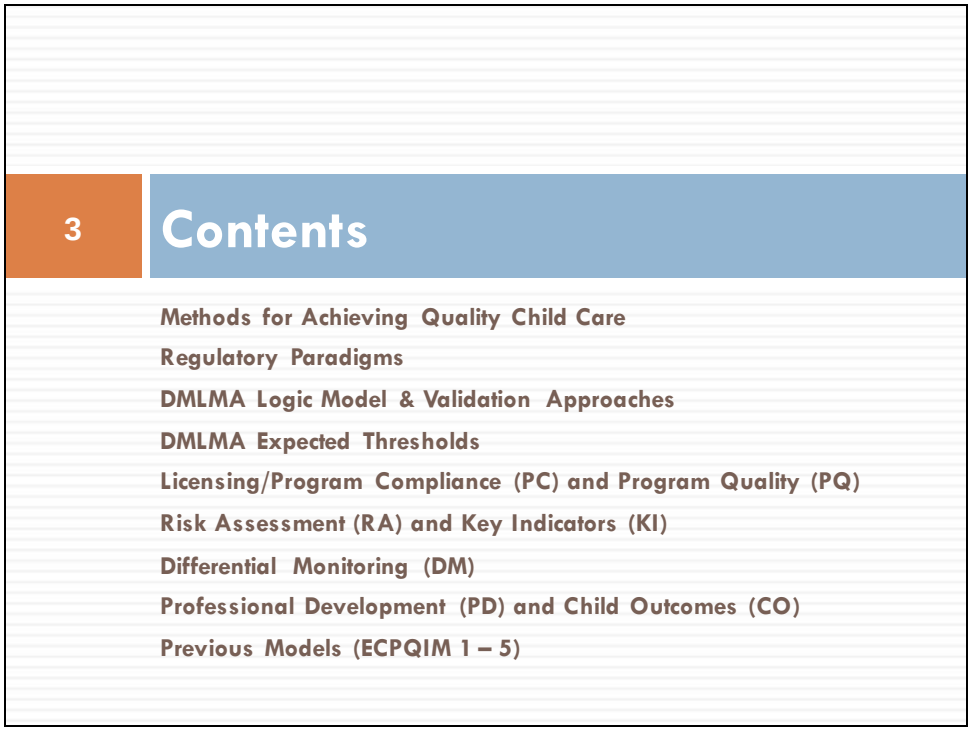
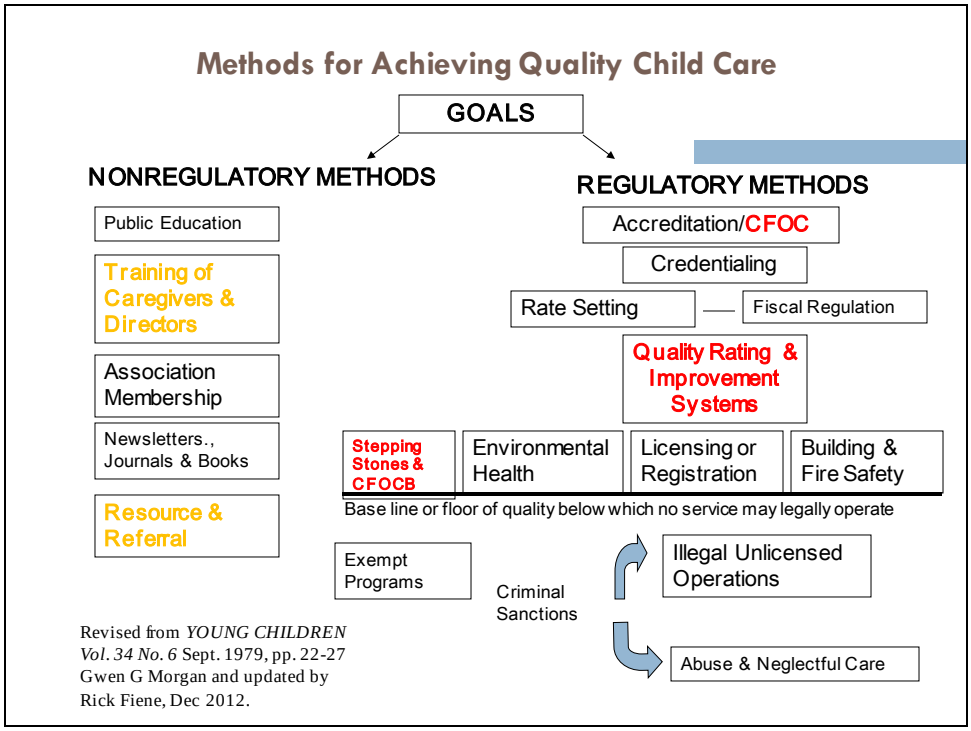


TABLE OF CONTENTS DELINEATING ALL ASPECTS OF DIFFERENTIAL MONITORING. THE THEORETICAL ASPECTS OF ECPQIM ARE GIVEN IN THE INITIAL SLIDES WITH THE DETAILS PROVIDED IN THE LATER SLIDES. THIS SLIDE DECK ALONG WITH THE RIKI NOTES BLOG AND PUBLICATIONS PAGES ON THE RIKI WEBSITE WILL PROVIDE THE PARTICIPANT WITH ALL THE BACKGROUND DETAILS NEEDED FOR UNDERSTANDING THE DIFFERENTIAL MONITORING APPROACH (DMLMA) AND THE EARLY CHILHOOD PROGRAM QUALITY IMPROVEMENT AND INDICATOR MODEL (ECPOIM)



Methods for Achieving Quality Child Care by Gwen Morgan really depicts the key regulatory and non-regulatory methods for improving child care quality. I have used this conceptual framework in my design of the Early Childhood Program Quality Indicator Model (ECPQIM) over its four generational development starting back in 1985 with IPM/ICS and most recently with DMLMA (2012). The reader should pay particular attention to the new items added to the model since they add more structure and depth to it. Not all of these are even possible but should be given consideration based upon the resources in a particular state.

Achieving Quality Child Care

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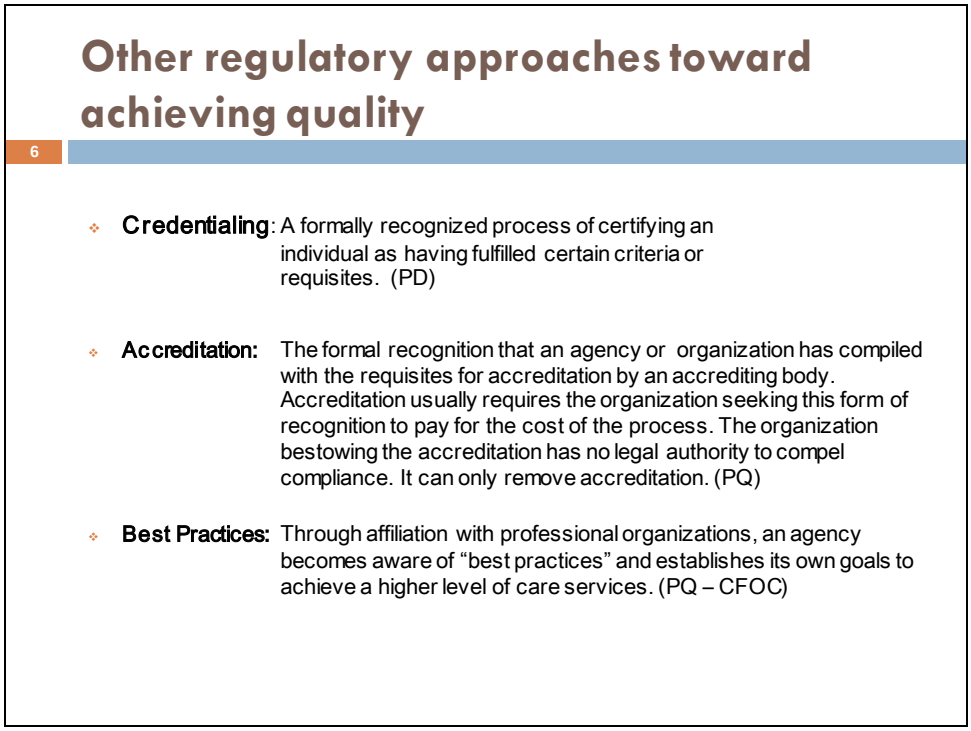
- Quality care is achieved by both regulatory and non-regulatory approaches. However, licensing provides the threshold or floor of quality below which no program should be permitted to operate.

THE MOST EFFECTIVE WAY OF IMPROVING QUALITY CARE IS BY COMBINING REGULATORY WITH NON REGULATORY APPROACHES. THE OTHER IMPORTANT COMPONENT IS THAT LICENSING PROVIDES THE THRESHOLD TO QUALITY; IT IS NOT SUFFICIENT FOR ENSURING QUALITY BY ITSELF, ONE NEEDS OTHER PROGRAM QUALITY INITIATIVES FOR THAT TO HAPPEN, SUCH AS QRIS, PROFESSIONAL DEVELOPMENT, EARLY LEARNING SYSTEMS, ETC….



ADDITIONAL REGULATORY APPROACHES THAT HELP TO ENHANCE A QUALITY PROGRAM. ALL OF THE ABOVE SHOULD BE ENCOURAGED IN STATES. I WOULD ALSO ADD A MORE RECENT PROGRAM QUALITY INITIATIVE: EARLY LEARNING SYSTEMS (ELS) TO THE LIST UNDER "BEST PRACTICES".

Non-regulatory approaches to achieving quality care in human services facilities or programs

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- Consultation
- Consumer Education
- Peer Support Associations
- Professional Organizations
- Resource and Referral
- Technical Assistance
- Mentoring/Coaching
- Training-Staff Development

EXAMPLES OF NON REGULATORY APPROACHES. ALL THESE NON REGULATORY APPROACHES WILL HELP TO ENHANCE THE EFFECTS IN ESTABLISHING A HIGH QUALITY PROGRAM. THESE SHOULD BE COUPLED WITH THE REGULATORY APPROACHES OUTLINED IN EARLIER SLIDES.

Regulatory Compliance Law of Diminishing Returns

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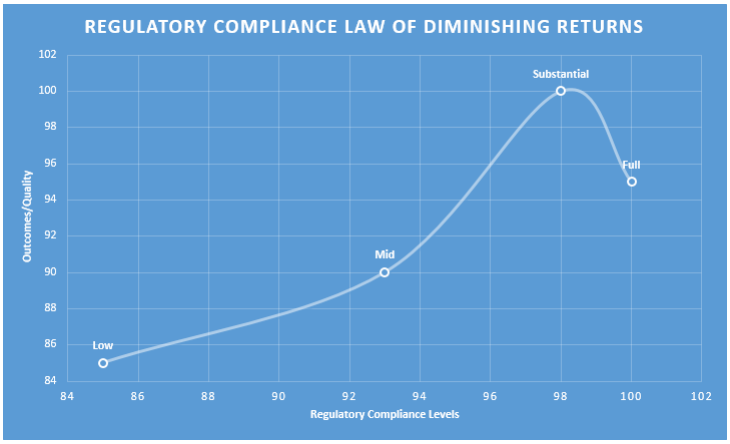

The Regulatory Compliance Law of Diminishing Returns is the driver for differential monitoring by clearly demonstrating that focusing on specific standards either through a risk assessment or predictive key indicator methodology is the most cost effective and efficient approach to licensing, monitoring and program quality enhancements. This theory predicts that moving from low to mid to substantial regulatory compliance results in significant increases in quality outcomes. However, in moving from substantial to full regulatory compliance produces either a plateau effect or a decrease in quality outcomes. Please consult the Regulatory Compliance Modeling Technical Research Note which builds the context around this theory and how to mitigate its effects.

Boxplots of ERS and NC Scores

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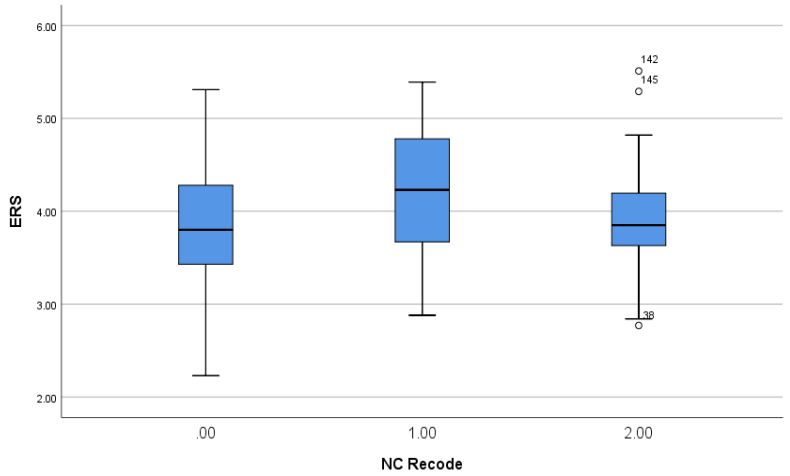
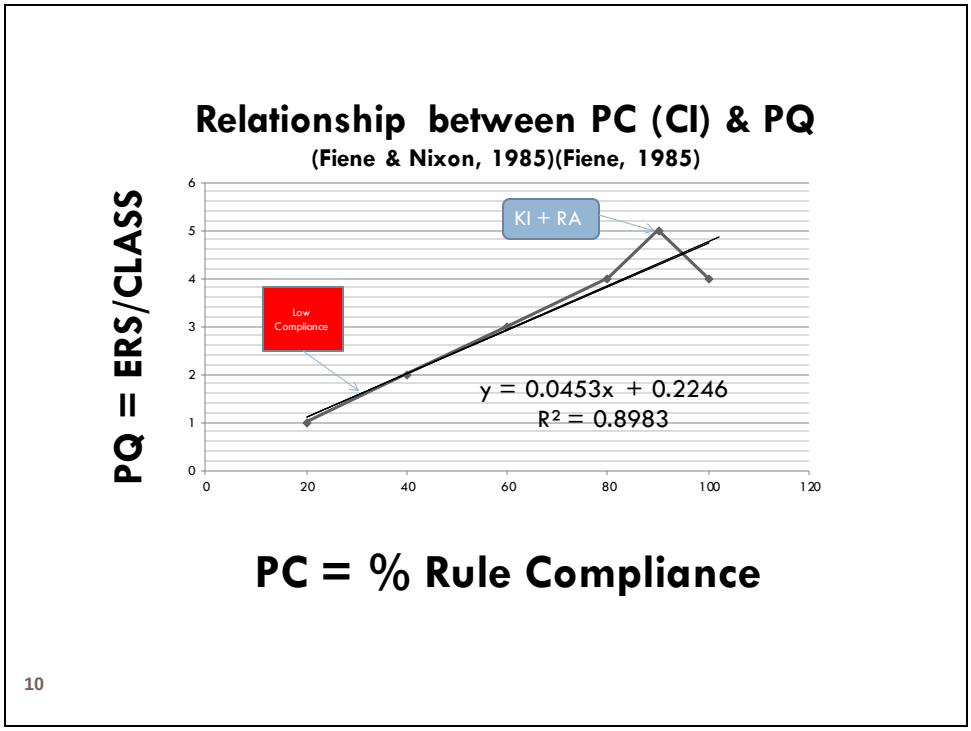


This figure provides data from a jurisdiction that supports the Regulatory Compliance Law of Diminishing Returns in which ERS – Environment Rating Scale scores are compared to Full compliance (00), substantial compliance (1.00), and low compliance (2.00) scores (NC Scores). Please note the increase from low regulatory compliance to substantial regulatory compliance, but the noted decrease in moving from substantial to full regulatory compliance.



Prior to the 1970's most licensing reviews were done with long narratives explaining the results of monitoring reviews. By the early 1980's Instrument Based Program Monitoring began to take root and a quantitative data driven approach was introduced. At the same time program quality tools, such as the Early Childhood Environmental Rating Scale (ECERS) and the Child Development Program Evaluation Scale (CDPES) were being introduced. TCO – Theory of Compliance Outcome/Regulatory Compliance was proposed which suggested a curvilinear relationship between PC and PQ or a plateau effect on PQ as PC went from substantial to full compliance with rules. This was a significant finding which really led to the development of the Key Indicator and Risk Assessment Methodologies. Without this relationship there probably would have been no need for either key indicators or risk assessment because full (100%) compliance would have been the goal of regulatory compliance. The question with this theory is does it apply to regulatory compliance in general where a curvilinear relationship would be observed with any sets of rules and regulations? This would have far reaching implications because the research literature appears to be geared to a linear relationship between compliance with rules and outcomes related to compliance with these same rules; or absolutely no relationship between rules and outcomes as the de-regulation advocates seem to suggest.

Regulatory Compliance (RC) Levels (PC) By Program Quality Scores

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Licensing Buckets	Regulatory Compliance Legend	Compliance Levels	Number of Programs Assessed	ERS Average Scores
0	Full	0 Violations	82	4.07
1	Substantial	1-2 Violations	69	4.28
2	Mediocre	3-10 Violations	163	4.17
3	Low	11+ Violations	71	3.93

These data are taken from a validation study completed in the state of Washington during 2020 comparing regulatory compliance with program quality scores on the ERS. Please note the plateau effect in moving from substantial to full compliance. This result is consistent with other validation studies that have been conducted in Pennsylvania, Georgia, and in Head Start.

Comparing HSPS Violations with CLASS Scores (Fiene, 2013c)

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HSPS/CM Violations	IS	ES	CO	Number/Percent
0 (Full Compliance)	3.03	5.99	5.59	75/19%
1-2 (Substantial Compliance)	**3.15**	5.93	5.50	135/35%
3-8 (Mid-Compliance)	2.87	5.85	5.37	143/40%
9-19 (Lower Compliance)	2.65	5.71	5.32	28/6%
20-25 (Lowest Compliance)	2.56	5.52	4.93	3/1%
Significance	**F = 4.92; p < .001**	**F = 4.918; p < .001**	**F = 4.174; p < .003**	

CM Violations = Compliance Measure Violations (lower score = higher compliance)(higher score = lower compliance)

IS = Average CLASS IS (Instructional Support) Score

ES = Average CLASS ES (Emotional Support) Score

CO = Average CLASS CO (Classroom Organization) Score

#/% = Number of programs and Percent of programs at each level of compliance

These data from the Head Start study (Fiene, 2013c – see the list of references at the end of these slides for the specific citation for the study) shows clearly the plateau effect with IS/CLASS and compliance with Head Start Performance Standards. The results of this study with the other two scales not showing this plateau effect demonstrates the strength of the HSPS when compared to Licensing Standards. This is an actual example of the previous slide's relationship between a program compliance (PC) measure and a program quality (PQ) measure.

PC & PQ Comparison of CC and PK (Fiene, 2013e)

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PC = Child Care Licensing Compliance	PQ = Pre-K Program Licensing Compliance
Licensing / ECERS-R	**Licensing / ECERS-R**
100 / 3.40 Full Compliance	100 / 4.88 Full Compliance
99 / 4.35 Substantial Compliance	99 / 4.13
98 / 3.89 Substantial Compliance	98 / 4.38 Substantial Compliance
97 / 3.15	97 / 3.99
96 / 3.16 Mediocre Compliance	96 / 4.36
95 / 3.53	95 / 4.60
90 / 2.56	90 / 3.43 Medium Compliance
80 / 2.38 Low Compliance	80 / 2.56 Low Compliance

These data clearly demonstrate that by having higher standards (Pre-K (PK) programs)/(PQ) the plateau effect can be minimized or removed. This is a major revision to TRC – Theory of Regulatory Compliance. For 30 years the plateau effect has existed, this could be a way to change this effect. The next several slides are all taken from the same Fiene, 2013e study – see the references at the end of the slides for the specific citation to this study.

Impact of PK on ECERS

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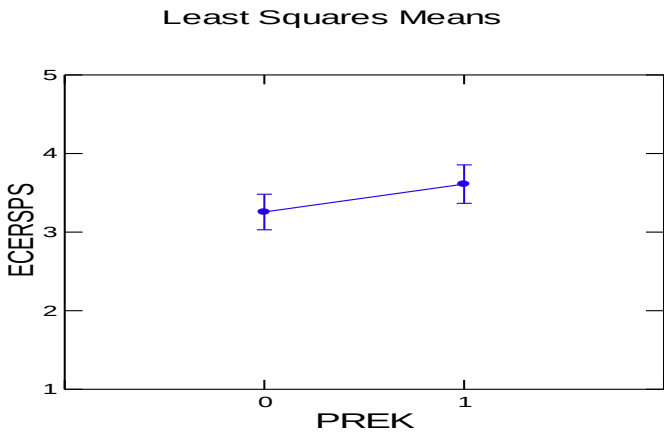

This graphic demonstrates the positive impact that higher standards can have on all programs impacted by high quality program such as Pre-K ($F = 4.464$; $p < .04$). Will the same thing happen with QRIS? Means = Pre-K (3.60); PS (3.26). 1 = Pre-K; 0 = no-Pre-K.

ECERS PRE-K & Licensing Scores

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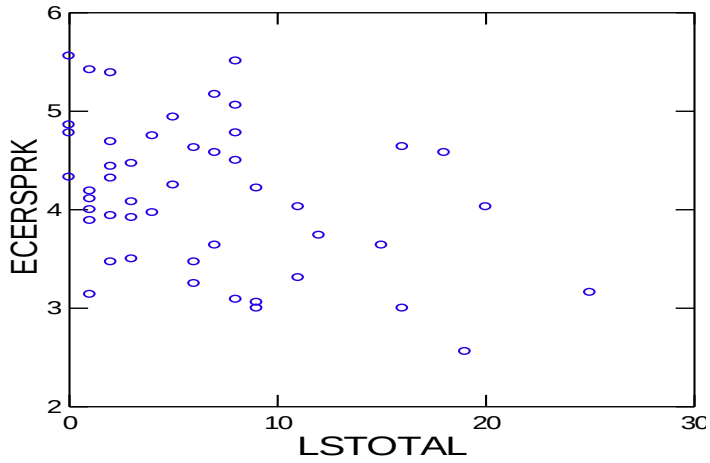

This slide shows the relationship between ECERS and Licensing Scores with the 100% Compliant programs scoring the highest on the ECERS. This scatterplot is what is expected in the relationship between program compliance and program quality scores. The correlation representing these data is -.60 which is significant at the .0001 level.

ECERS Child Care & Licensing Scores

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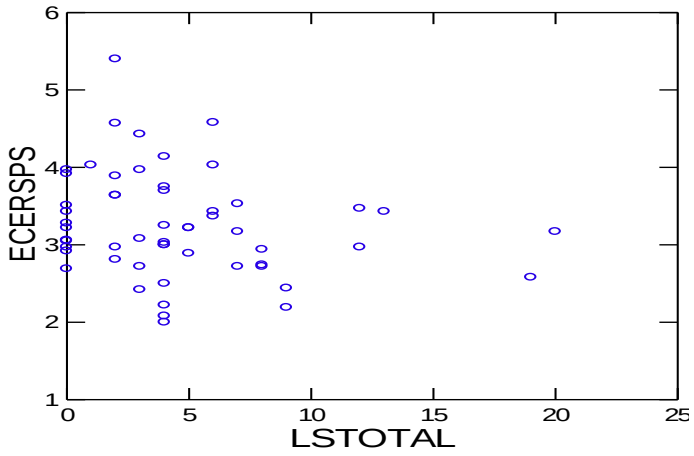

Please note the limited variation in the data, the restricted range and that the 100% licensing compliance programs are not scoring the highest on the ECERS. These are the major problems with licensing data over the past 30 years. The data indicate that the highest scoring programs on the ECERS are in substantial but not full compliance with the licensing rules. It was data sets like this that led me to propose TCO.

ECERS PRE-K Distribution

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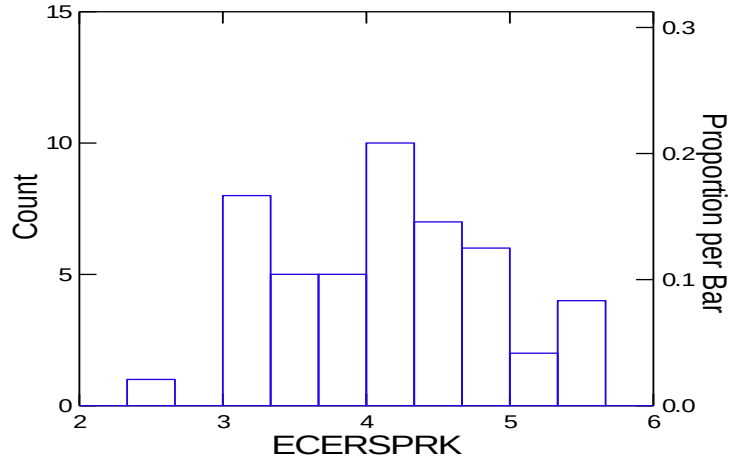

This slide shows how more evenly distributed the ECERS data base is in comparison to the licensing data. This is what is expected with an ECERS data set.

ECERS Child Care Distribution

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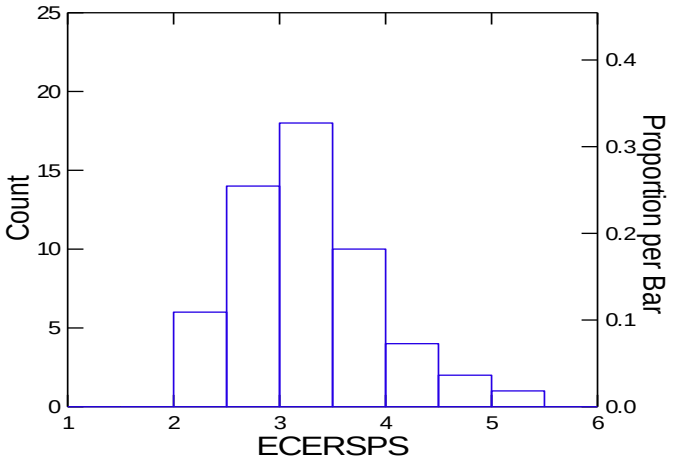

This slide clearly demonstrates the lower scores on the ECERS for child care/preschool programs (Georgia term for child care). There is not as much variation or dispersion in the data set as should be with an assessment tool that is generally normally distributed.

Licensing Scores for PRE-K

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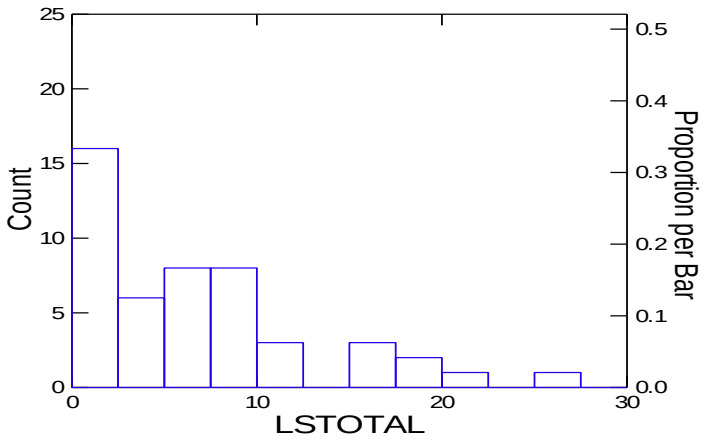

This slide clearly demonstrates the greater variance in the licensing data base with the Pre-K programs. Also note the large number of fully compliant programs.

Licensing Scores for Child Care

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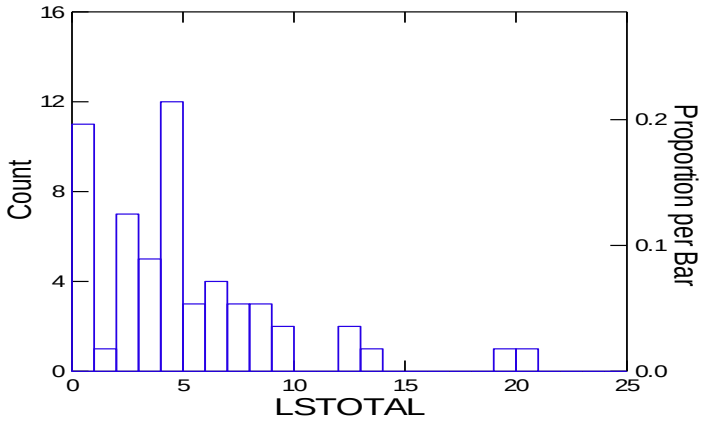
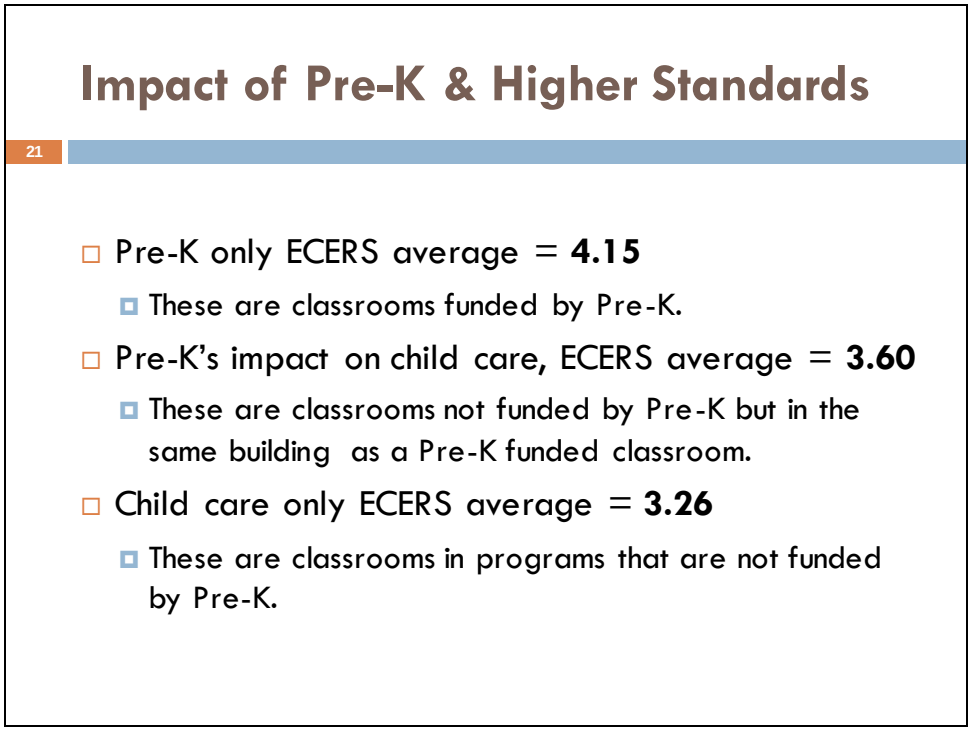
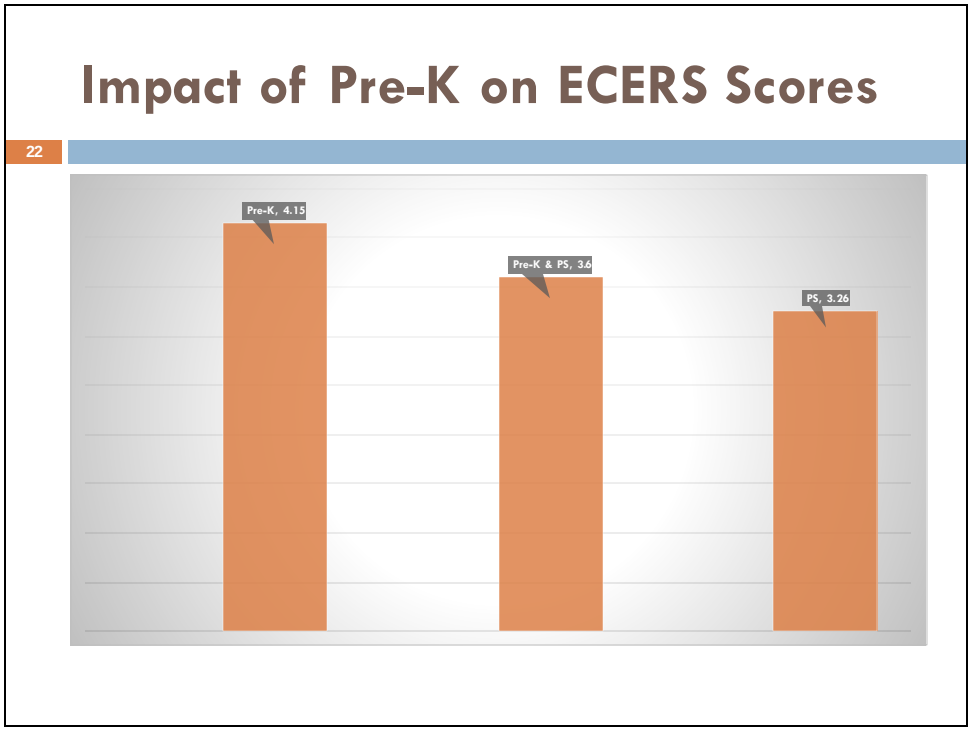


This slide shows how extremely skewed the licensing score data are with child care/preschool programs. Skewed data present many problems by introducing mediocre programs along side highly functioning programs when data are dichotomized. This is addressed more fully in later slides.



This slide dramatically shows the impact that higher standards as reflected in a Pre-K program can have on regular child care classrooms.



This graphic shows the impact that a high quality program such as Pre-K can have on all classrooms in a program. Not only do the Pre-K classrooms benefit but there is a spill over effect to those classrooms in the same building. The child care/preschool only (PS) child care programs had the lowest average scores on the ECERS.

CC w/ & w/o Pre-K with ECERS Scores

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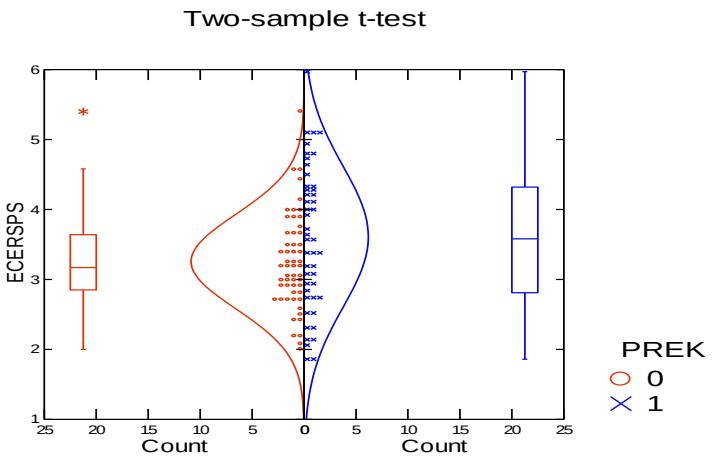
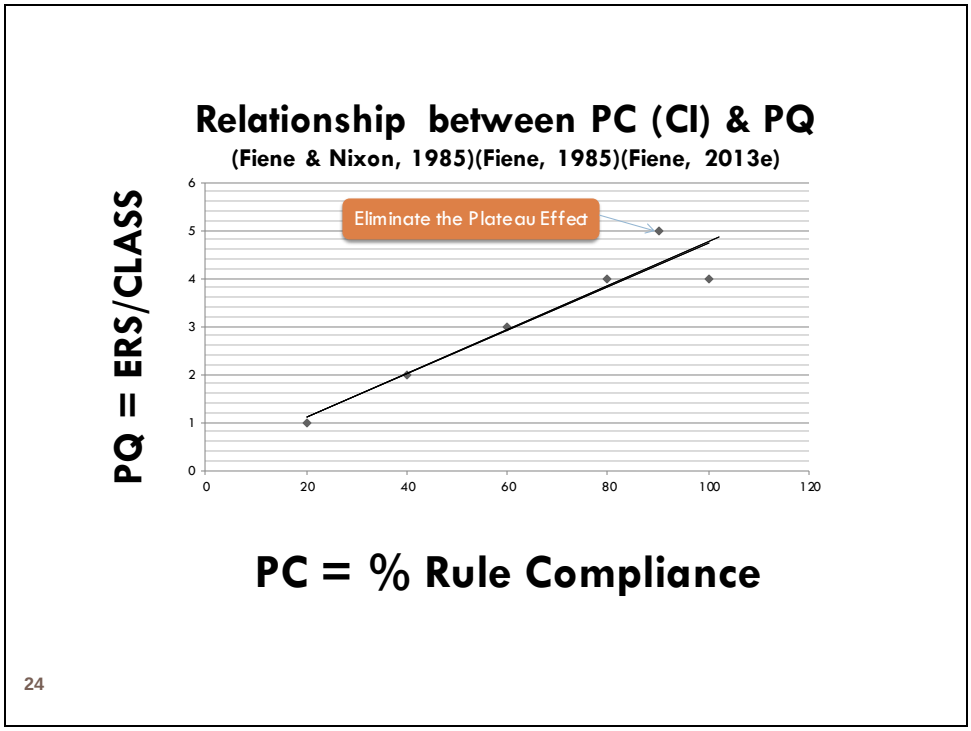
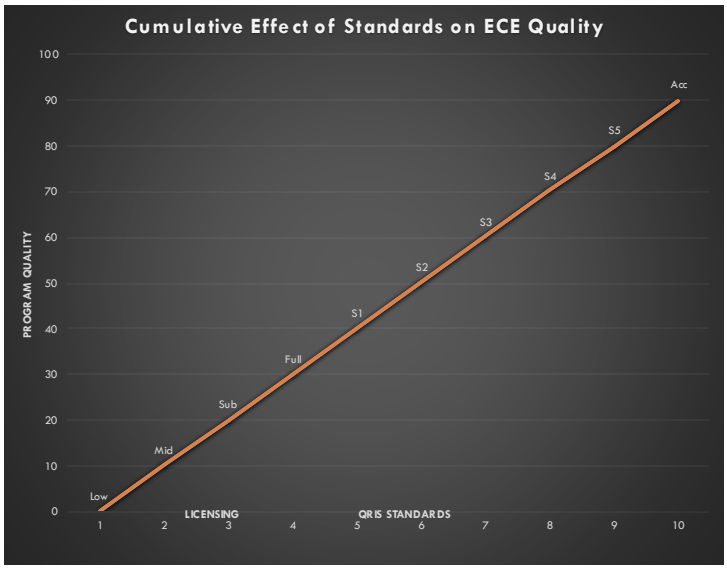


This side by side graphic shows the impact of Pre-K classrooms on child care in general related to ECERS scores. CC w/Pre-K classrooms present in building = 3.60 on ECERS. CC w/o Pre-K classrooms present in building = 3.26 on ECERS. This is a statistically significant difference $p < .04$. Also note how the Pre-K impacts the kurtosis and skewness of the data.



Hopefully by using more normally distributed data from QRIS and PK systems which have higher standards than what is usual in licensing rules/regulations, we will be able to eliminate the plateau effect that has existed in the licensing research literature for over 30 years. This has been the goal of the ECPQIM model. See the Regulatory Compliance Modeling Technical Research Note for additional details about this approach.



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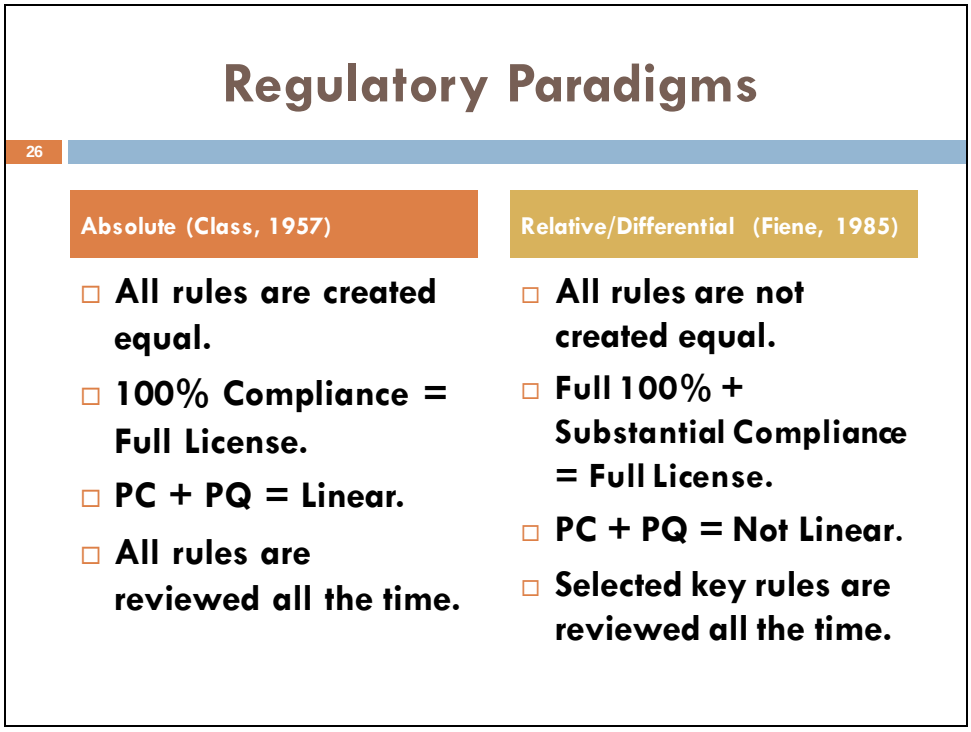
This graphic depicts how licensing and quality standards can build upon one another in a linear fashion especially once the regulatory compliance law of diminishing returns is dealt with constructively through the infusion of higher quality standards as demonstrated in the previous slides. This relationship can be expressed in the following equation: TECO = .20RC + .30PQ + .50PD, where TECO = Theory of Early Childhood Outcomes, RC = Regulatory Compliance, PQ = QRIS, and PD = Professional Development/Staffing. Legend: Low = Low regulatory compliance with rules, Mid = Middle regulatory compliance with rules, Sub = Substantial regulatory compliance with rules, and Full = Full regulatory compliance with rules. S1 through S5 corresponds to increasing Star levels which denote an increase in quality standards. Acc = Accreditation by a national accrediting body. All this levels should have an additive effect. This graphic is a mathematical display of an earlier slide that depicts a Program Quality Model developed by Gwen Morgan.



Based upon the results of the previous slides, an alternate regulatory paradigm was proposed which went counter to the prevailing regulatory paradigm at the time. The two paradigms had some very stark differences in how rules/regulations were viewed and reviewed. Hopefully over time with the impact of QRIS systems and their higher standards this will have a positive impact and the two paradigms differences will not be as stark. This is the ultimate goal of ECPQIM. Also, see the RIKI Main/Introduction webpage where two research notes/papers build upon the regulatory paradigms above and delineate several additional key elements.

Regulatory Compliance Program Monitoring & Quality Matrix

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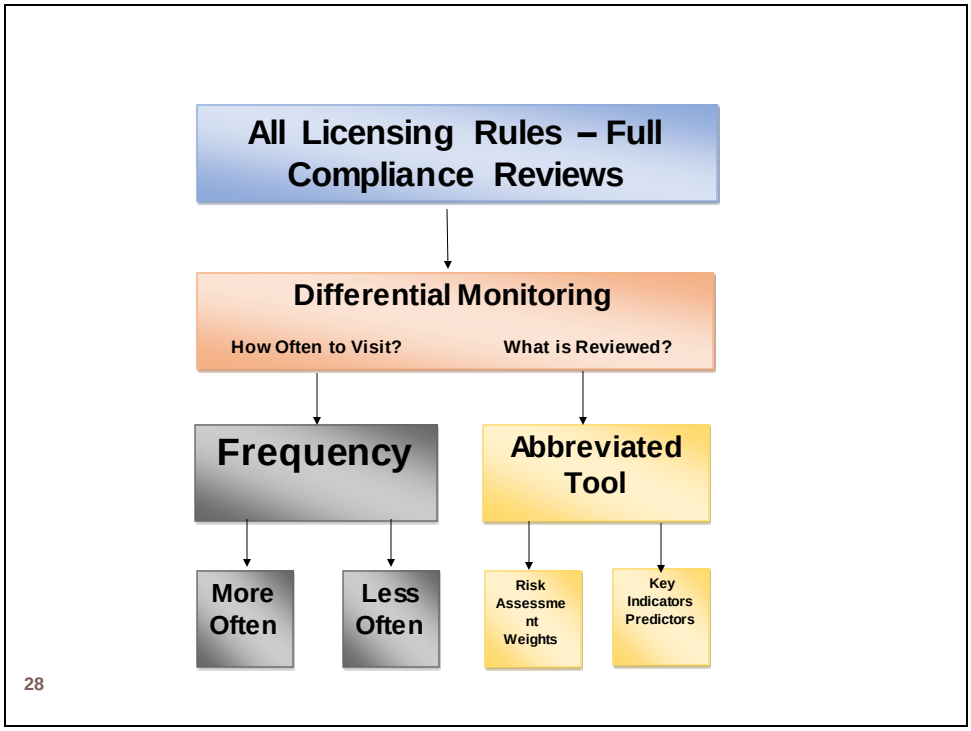
Relative	Area	Absolute
Substantial	Paradigm	Monolithic
Differential	Paradigm	Full/comprehensive
Rules not created equal	Paradigm	Rules created equal
Program quality	Paradigm	Regulatory compliance
Strength based	Paradigm	Deficit based
Formative	Paradigm	Summative
100 through 0	Paradigm	100 or 0
QRIS	Paradigm	Licensing
Non-linear	Paradigm	Linear
Do things well	Paradigm/RC-PQ	Do no harm
Partial	Paradigm/RC-PQ	Full
Soft data	RC-PQ	Hard data
Process quality	RC-PQ	Structural quality
Open system	RC-PQ	Closed system
Indicators	RC-PQ	Rules
Ordinal measurement	RC-PQ	Nominal measurement
No ceiling effect	RC-PQ	Ceiling effect
Enabler	RC-PQ	Gatekeeper
Performance based	RC-PQ	Risk based

The above matrix builds off a 2022 *Journal of Regulatory Science* article (Fiene, 2022) dealing with program monitoring and the regulatory compliance-program quality continuum. This matrix expands the key elements and shows more of the overlap between the program monitoring and the continuum. For additional clarification of the items listed in the above matrix, please see the above cited article (https://journals.tdl.org/regsci/index.php/regsci/article/view/239).



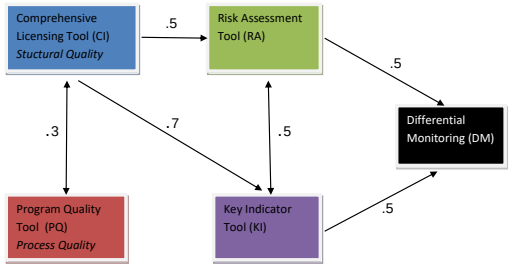
This graphic depicts the Differential Monitoring Model (Fiene, 2013/2014). This graphic was first introduced in the Office of Child Care National Center of Child Care Quality's Licensing Brief on Monitoring Strategies: Differential Monitoring, Risk Assessment and Key Indicators (2015). Subsequent research on differential monitoring clearly demonstrates that "What is reviewed?" Is far more important to focus on then "How often to visit?" In fact, in one study completed in Vermont "less often visiting" correlated with a drop off in regulatory compliance. A more prudent public policy would be ***utilizing an abbreviated tool more often*** which would combine the best aspects of differential monitoring in a very targeted approach.

DIFFERENTIAL MONITORING LOGIC MODEL & ALGORITHM (DMLMA©) (Fiene, 2012): A 4th Generation ECPQIM – Early Childhood Program Quality Indicator Model

CI x PQ => RA + KI => DM + PD => CO

Definitions of Key Elements:

CI = Comprehensive Licensing Tool (Health and Safety)(***Caring for Our Children***)
PQ = ***ECERS-R, FDCRS-R, CLASS, CDPES*** (Caregiver/Child Interactions/Classroom Environment)
RA = Risk Assessment, (High Risk Rules)(***Stepping Stones***)
KI = Key Indicators (Predictor Rules)***(13 Key Indicators of Quality Child Care***)
DM = Differential Monitoring, (How often to visit and what to review)
PD = Professional Development/Technical Assistance/Training
CO = Child Outcomes (See Next Slide for PD and CO Key Elements)



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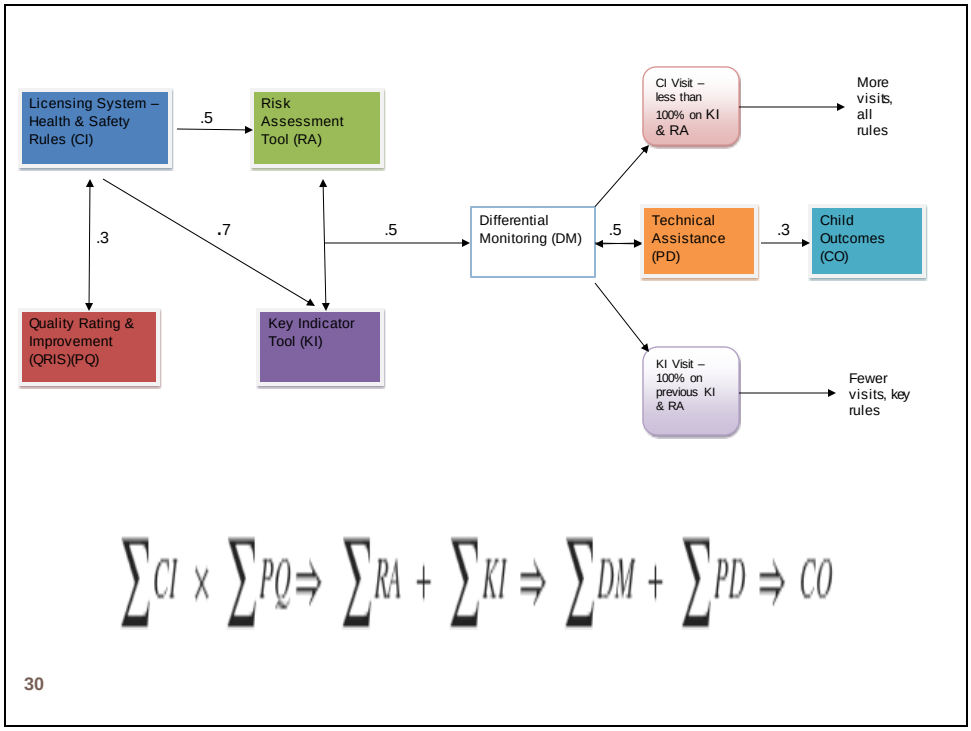
The DMLMA, the 4th generation of ECPQIM, unifies within a single program monitoring systems design the various key elements that impact on early care and education program quality. Generally this portion of the model is used with state agencies in describing how they can change their overall program monitoring system from an absolute, one size fits all to a relative/differential approach to monitoring. Risk assessment and key indicators are key elements of this model.



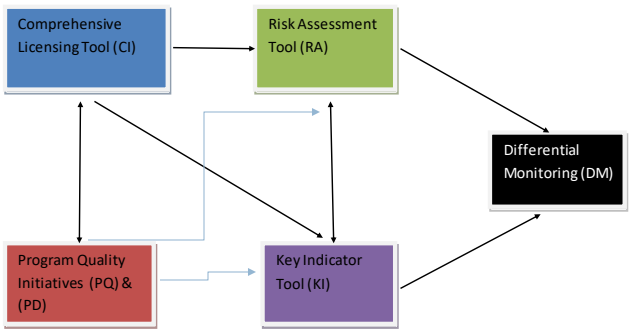
This is the full DMLMA model that includes professional development and child outcomes. Examples of all these key elements/components can be found in the upcoming slides. It is the best model for tying inputs, processes to outcomes/results.

DIFFERENTIAL MONITORING LOGIC MODEL & ALGORITHM (DMLMA©) (Fiene, 2014): A 4th Generation ECPQIM – Early Childhood Program Quality Indicator Model

CI x PQ(PD) => RA + KI => DM => CO

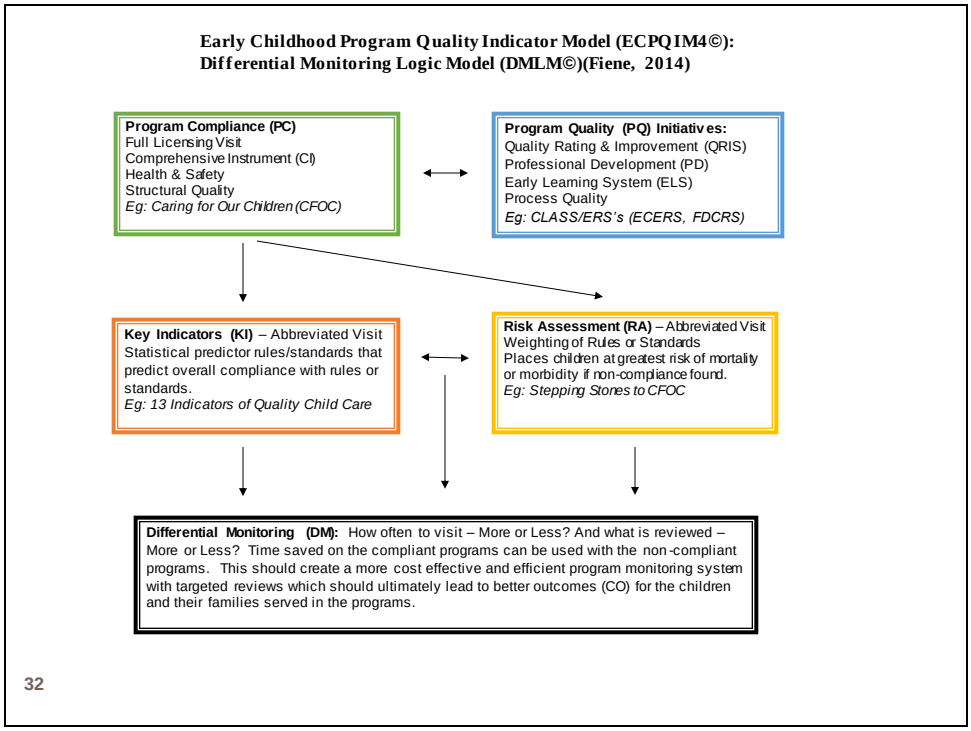
Definitions of Key Elements:

CI = Comprehensive Licensing Tool (Health and Safety)(***Caring for Our Children***)(Structural Quality)
PQ = Program Quality Initiatives ***(ECERS-R, FDCRS-R, CLASS, CDPES, QRIS, Accreditation)*** (Process Quality)
PD = Program Quality Initiatives (cont) - Professional Development/Technical Assistance/Training
RA = Risk Assessment, (High Risk Rules/Standards)(***Stepping Stones***)
KI = Key Indicators (Predictor Rules/Standards)***(13 Key Indicators of Quality Child Care***)
DM = Differential Monitoring, (How often to visit and what to review)
CO = Child Outcomes (Developmental, Health, & Safety Outcomes)



31

The DMLMA, the 4th generation of ECPQIM, unifies within a single program monitoring systems design the various key elements that impact on early care and education program quality. Generally this portion of the model is used with state agencies in describing how they can change their overall program monitoring system from an absolute, one size fits all to a relative/differential approach to monitoring. Risk assessment and key indicators are key elements of this model. Recently DMLMA has been attempted with QRIS systems with limited results. In this version of the model, PD has been to the Program Quality Initiatives box rather than having it as a separate component.



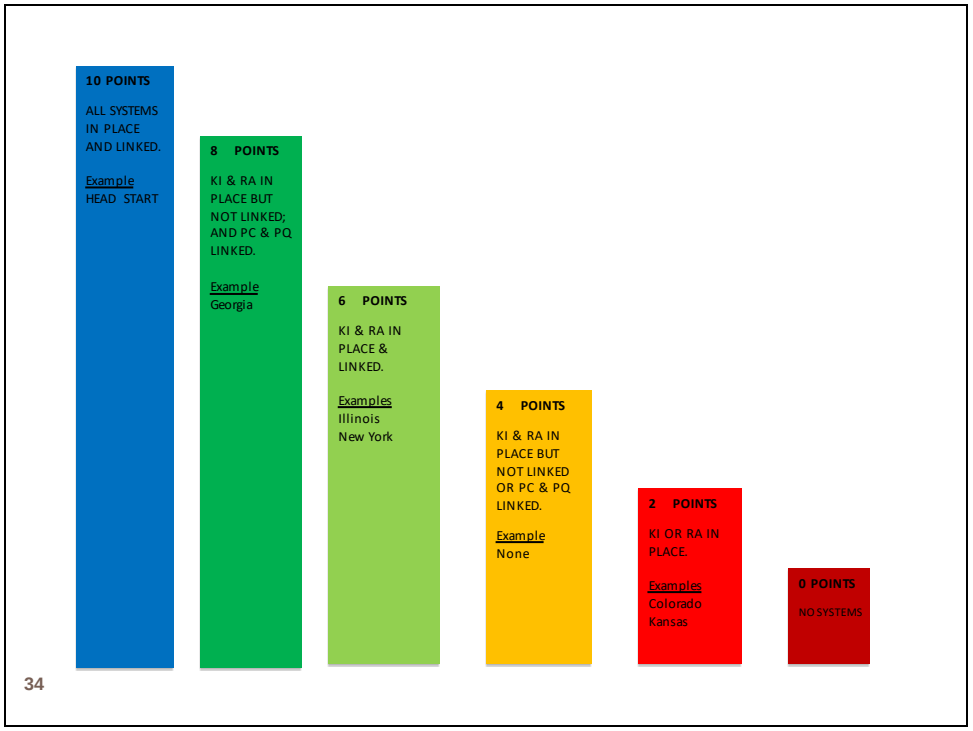
This graphic updates the ECPQIM4©:DMLM© with additional information that has been gathered on the methodologies and the model in the past year or two. This graphic shows all the potential interactions. In actual state agency implementation the number of interactions will vary and not contain all those present in this graphic. See examples from Head Start, Georgia, Kansas, New York, and Illinois. See paper on the ECPQIM/DMLM examples.

Differential Monitoring Scoring Protocol (DMSP)©

Score	Systems Present
0	No systems in place.
2	KI or RA in place and not linked.
4	(KI & RA in place but not linked) or (PC + PQ are linked).
6	(KI & RA in place) & (KI + RA are linked).
8	(KI & RA in place but not linked) & ((PC + PQ) are linked).
10	All systems in place and linked.

33

This graphic provides a scoring protocol for the differential monitoring logic model on the previous slide. It is a means towards quantification which will lend itself to comparing the various approaches to differential monitoring. This could be a useful measure for future research in determining which differential monitoring approach works best. Is having all systems in place so much effective than only having KI or RA in place. Obviously having all systems in place will be much more costly than just having KI or RA in place.



This is a graphic display of the previous slide with national and state examples provided.

Differential Monitoring Scoring Protocol (DMSP)©
Point Assignment

Score	Systems Present and Point Assignment
0	No systems in place.
2	(KI (1)) & (KI -> DM (1)) or ((RA (1)) & (RA -> DM (1))
4	(PC + PQ (4)) or (KI (1) & (KI -> DM (1)) & (RA (1) & (RA -> DM (1))
6	(KI + RA -> DM (4)) & (KI (1)) & (RA (1))
8	(KI (2) & RA (2)) & (PC + PQ (4)).
10	(KI + RA -> DM (4)) & (KI (1)) & (RA (1)) & (PC + PQ (4))

KI (Key Indicators); RA (Risk Assessment); PC (Program Compliance/Licensing); PQ (Program Quality Initiatives; DM (Differential Monitoring).

35

This table provides the point assignment algorithms for the systems that are present from the previous slide.

SYSTEMS (pts)	MODEL	GA	NY	HS	IL	KS	CO
KI (1)	1	-	1	1	1	1	1
RA (1)	1	1	1	1	1	-	-
KI + RA -> DM (4) KI + RA (2)	4	2	4	4	4		
PC + PQ (4)	4	4	-	4	-	-	-
KI -> DM (1)						1	1
RA -> DM (1)		1				-	-
TOTAL (10)	10	8	6	10	6	2	2

36

This table shows actual data from a national organization (HS = Head Start) and several state agencies: Ga = Georgia; NY = New York; IL = Illinois; KS = Kansas; and CO = Colorado. KI = Key Indicators; RA = Risk Assessment; DM = Differential Monitoring; PC = Program Compliance/Licensing; PQ = Program Quality Initiatives.

ECE Regulatory Compliance Scale

37

- **7 = 0 Violations. 100% regulatory compliance, Full Compliance with all rules/regulations.**
- **5 = 1-3 Violations. Substantial regulatory compliance with all rules/regulations.**
- **3 = 4-9 Violations. Mediocre regulatory compliance with all rules/regulations.**
- **1 = 10+ Violations. Non-Optimal/Low regulatory compliance with all rules/regulations.**

This proposed ECE Regulatory Compliance Scale should help the regulatory administration field in making comparisons to the various quality initiatives that have been created in the early are and education field. It also helps statistically in taking regulatory compliance data distributions that have been terribly skewed in the past and making the data distribution a bit more normally distributed. The hope is that states begin to use this scale in helping to make licensing decisions.

Regulatory Compliance Scale (RCS)

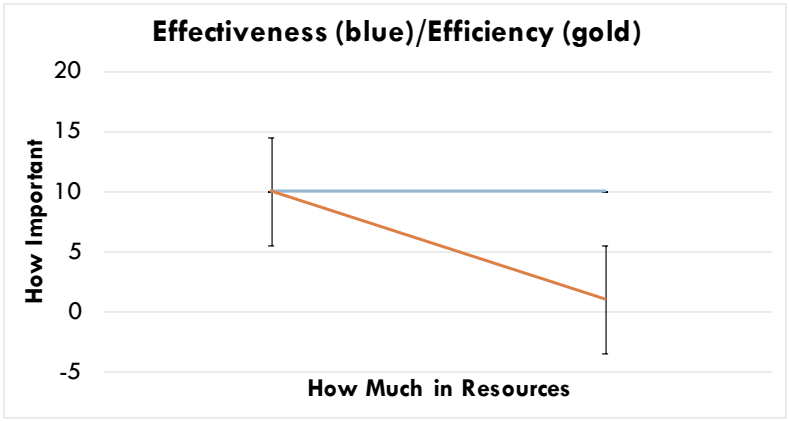
38

Regulatory Compliance Scale Levels	Definitions & Compliance Levels	Number of Rule Violations
7	Full 100% Compliance	0 Violations
5	Substantial Compliance	1-3 Violations
3	Mediocre Compliance	4-9 Violations
1	Low/Non-Optimal Compliance	10+ Violations

This chart presents the proposed ECE Regulatory Compliance Scale (RCS)(Fiene, 2022).

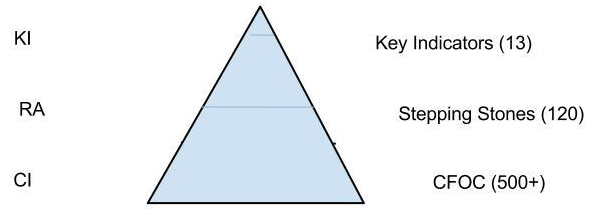
Program Monitoring Effectiveness/Efficiency Relationship

39



The blue line represents effectiveness while the gold line represents efficiency. PC/CI and PQ are examples of systems that deal with effectiveness. They measure compliance with standards in general. KI, RA, DM are examples of systems that deal with efficiency. Monitoring in a shorter time, getting things done more quickly, in an abbreviated fashion. In any system you want the overall system to be effective. If there are sufficient or abundant resources then efficiency is not important. Efficiency becomes very important when resources become scarce.

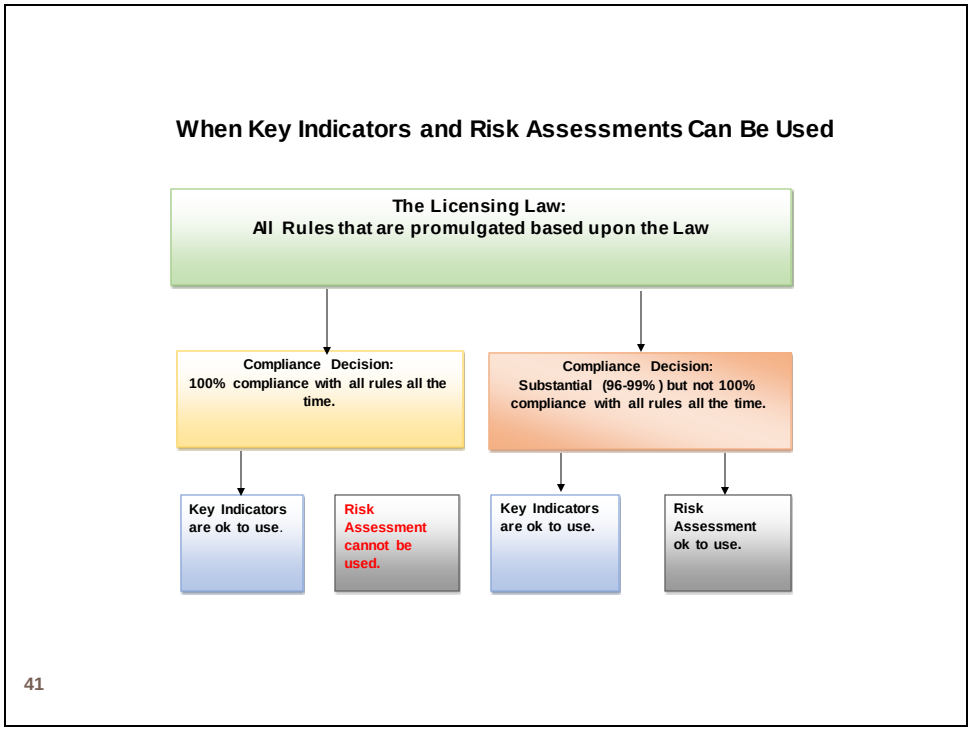
Relationship of Key Indicators (KI), Stepping Stones (RA), and Caring for Our Children (CFOC)(CI)



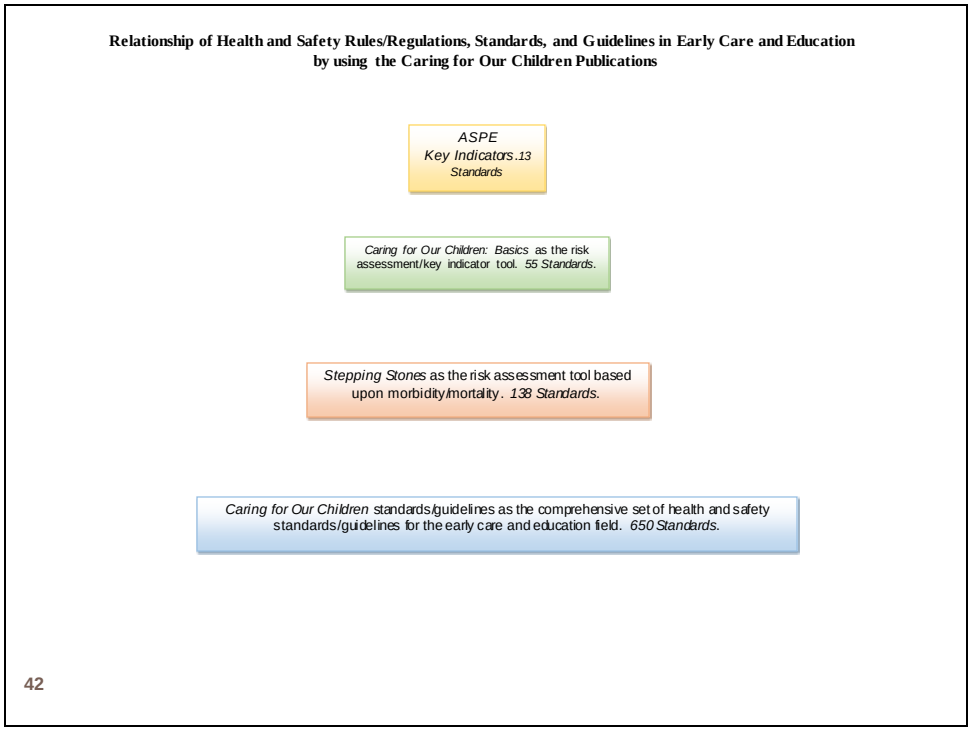
The above diagram depicts the relationship amongst KI, RA, and CI in which the full set of rules is represented by CFOC - Caring for Our Children, followed by RA which are the most critical rules represented by Stepping Stones, and finally the predictive rules represented by the 13 Key Quality Indicators.

40

A graphic depiction of the relationship amongst the Comprehensive Instrument (CI)(PC) as represented by Caring for Our Children (CFOC), Risk Assessment (RA) tool as represented by Stepping Stones, and Key Indicators (KI) as represented by the 13 Indicators of Quality Child Care. It depicts the movement from assessing all rules/regulations/standards to a fewer number having the greatest risk of morbidity/mortality for children to the fewest number of predictor rules.



This graphic shows when key indicators and risk assessments can be used based upon the licensing law in a specific state. Pay particular note to when risk assessment cannot be used, this is important to keep in mind. Always remember that key indicator rules are predictor rules while risk assessment rules place children are greatest risk of mortality or morbidity but are not predictor rules. Risk assessment rules are generally always in compliance while key indicator rules usually show moderate compliance levels.



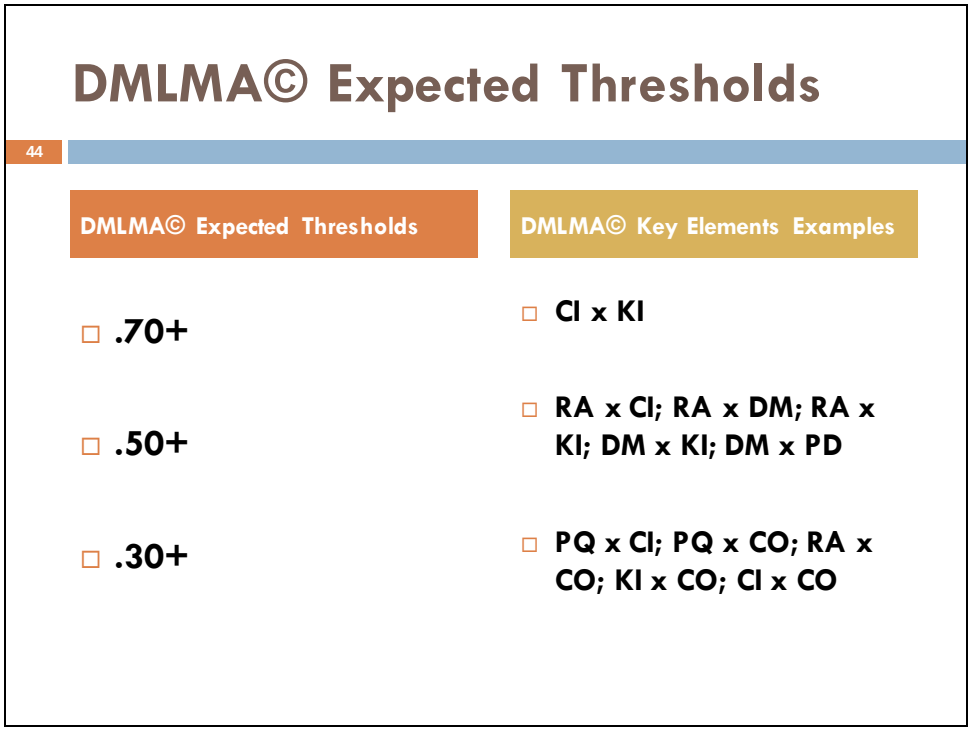
This graphic demonstrates how ***Caring for Our Children: Basics*** fits into the pyramid presented two slides ago regarding comprehensive instruments, risk assessment, and key indicator tools. ***Caring for Our Children: Basics*** is a very important addition to how we address a national model for standards development. This graphic also demonstrates the importance of all the ***Caring for Our Children*** publications.

Validation Approaches (Zellman & Fiene, 2012)

43

- **First Approach (Standards)**
  - **CI x *Caring for Our Children/Stepping Stones/13 Key Indicators of Quality Child Care***
- **Second Approach (Measures)**
  - **CI x RA + KI x DM**
- **Third Approach (Outputs)**
  - **PQ x CI**
- **Fourth Approach (Outcomes)**
  - **CO = PD + PQ + CI + RA + KI**

This is a critical link in tying the DMLMA to Validation. Without validation one does not know if the system is behaving as it was originally intended. Validation gives us the ability to determine this by utilizing four approaches to validation as delineated by ***Zellman and Fiene in their 2012 OPRE Research Brief*** on the topic.



In order to validate the various key elements of the DMLMA model, there are expected correlational thresholds that should be attained when data are compared from the various data systems.

DMLMA Expected Thresholds Matrix*

45

	PQ	RA	KI	DM	PD	CO
CI	0.3	0.5	0.7	0.5	0.5	NS
PQ				0.3	0.3	NS
RA			0.5	0.5	0.5	0.3
KI				0.5	0.5	0.3
DM					0.5	
PD						0.4

An alternate depiction of the DMLMA Expected Thresholds in a Correlational Matrix with all inter-correlations.

* This chart depicts the updated inter-correlations based upon the latest research analyzing the relationship between CI (PC), PQ and CO.

Interpretation of Inter-Correlations

46

- Based upon recent research, the relationships between H&S (CI)(PC) and QRIS (PQ) standards and Child Outcomes (CO) is difficult to find significance.
- The relationship between Professional Development (PD) and staff interactions with Child Outcomes (CO) appear to be the significant relationship that should be explored as a Quality Intervention.
- If we want to explore H&S and QRIS standards significant relationships we may need to look at children's health & safety outcomes.

These are some considerations in interpreting the chart on the previous slide. To measure the overall impact of H&S and QRIS standards we may have been looking for the wrong outcome related to young children. Possibly we need to look at children's health & safety outcomes rather than developmental outcomes.

A Validation Study: State Example (Fiene, 2013e)

47

Validation Approach/Research Question	CCC Actual (Expected*)		FCC Actual (Expected)
1 STANDARDS/Key Indicators	VALIDATED		VALIDATED
KI x CR	.49 (.50+)		.57 (.50+)
KI x LS	.78 (.70+)		.87 (.70+)
2 MEASURES/Core Rules/ACDW	VALIDATED		VALIDATED
CR x LS	.69 (.50+)		.74 (.50+)
CR x ACDW	.76 (.50+)		.70 (.50+)
3 OUTPUTS/Program Quality	VALIDATED		NOT VALIDATED
ECERS-R/PK x LS	.37 (.30+)	FDCRS x LS	.19 (.30+)
ECERS-R/PS x LS	.29 (.30+)		------
ECERS-R/PK x CR	.53 (.30+)	FDCRS x CR	.17 (.30+)
ECERS-R/PS x CR	.34 (.30+)		------

*See below for the expected r values for the *DMLMA©* thresholds which indicate the desired correlations between the various tools.

DMLMA© Thresholds:

High correlations (.70+) = LS x KI.

Moderate correlations (.50+) = LS x CR; CR x ACDW; CR x KI;KI x ACDW.

Lower correlations (.30+) = PQ x LS; PQ x CR; PQ x KI.

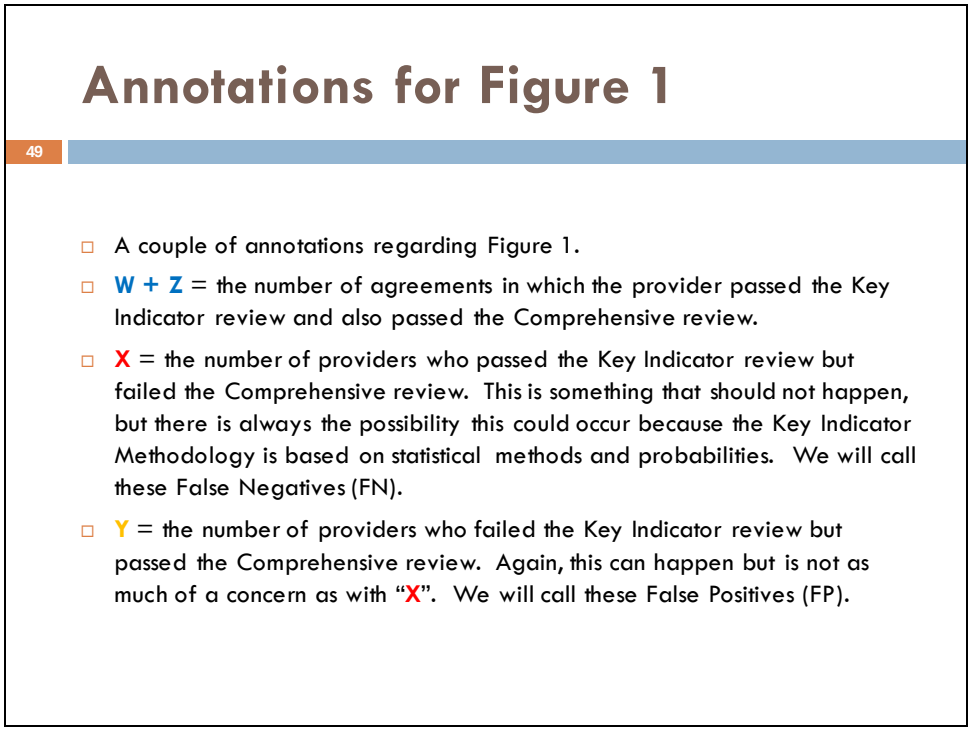
These are the actual results from a state (Georgia) in which their Core Rules (CR) system of differential monitoring was validated.

Validation of Key Indicator Systems

48

Figure 1	Providers who fail the Key Indicator review	Providers who pass the Key Indicator review	Row Totals
Providers who fail the Comprehensive review	W	X	
Providers who pass the Comprehensive Review	Y	Z	
Column Totals			Grand Total

This matrix provides the means for validating the Key Indicator System by comparing the key indicator scores with the comprehensive scores for each provider. Validation studies have been completed in several jurisdictions with very promising results in that the correlation between independent validation of key indicators with comprehensive tool scores were highly correlated. These studies were very important in moving forward with the differential monitoring approach.



Explanations of the cells from Figure 1. Pay particular attention to the differences between false positives and false negatives. The false negatives challenge the effectiveness of the approach while the false positives challenge the efficiency of the approach.

National Validation Data

50

Figure 2	Providers who fail the Key Indicator review	Providers who pass the Key Indicator review	Row Total
Providers who fail the Comprehensive review	25	1	26
Providers who pass the Comprehensive Review	7	17	24
Column Total	32	18	50

National sample validation data taken from the Head Start Key Indicator (HSKI-C) system.

Formula for Agreement Ratio

51

- To determine the agreement ratio, we use the following formula:

$$\frac{A}{A + D}$$

- Where A = Agreements and D = Disagreements.
- Based upon Figure 2, A + D = 42 which is the number of agreements; while the number of disagreements is represented by B = 1 and C = 7 for a total of 8 disagreements. Putting the numbers into the above formula:

$$\frac{42}{42 + 8}$$

Or

.84 = Agreement Ratio

- The False Positives (FP) ratio is .14 and the False Negatives (FN) ratio is .02. Once we have all the ratios we can use the ranges in Figure 3 to determine if we can validate the Key Indicator System. The FP ratio is not used in Figure 3 but is part of the Agreement Ratio.

The calculations for the Agreement Ratio formula and the False Positives and False Negatives Ratios.

Thresholds for Validating Key Indicators for Licensing Rules

52

Agreement Ratio Range	False Negative Range	Decision
(1.00) – (.90)	.05+	Validated
(.89) – (.85)	.10 - .06	Borderline
(.84) – (.00)	.11 or more	Not Validated

The ranges for making decisions on validation for the Agreement and False Negative Ratios. The goal is to eliminate false negatives which has basically been done by utilizing population rather than sampling data and having programs in full compliance with all rules.

Differential Monitoring Model

53

- **Key Elements**
  - **Program Compliance (PC)** generally represented by a state's child care licensing health & safety system or at the national level by ***Caring for Our Children***.
  - **Program Quality (PQ)** generally represented by a state's QRIS, or at the national level by Accreditation (***NAEYC, NECPA), Head Start Performance Standards, Environmental Rating Scales, CLASS,*** etc..
  - **Risk Assessment (RA)** generally represented by a state's most critical rules in which children are at risk of mortality or morbidity, or at the national level by ***Stepping Stones.***

This slide begins to list the key elements of the Differential Monitoring Model: program compliance, program quality, risk assessment, key indicators, professional development, and child outcomes. The last three are found on the following slide.

Differential Monitoring Model (cont)

54

- **Key elements (continued)**
  - **Key Indicators (KI)** generally represented by a state's abbreviated tool of statistically predictive rules or at the national level by ***13 Indicators of Quality Child Care*** and ***NACCRRA's We CAN Do Better Reports.***
  - **Professional Development (PD)** generally represented by a state's technical assistance/training/professional development system for staff.
  - **Child Outcomes (CO)** generally represented by a state's ***Early Learning Network Standards.***

This slide continues the listing of key elements of the Differential Monitoring Model.

Differential Monitoring Benefits

55

- **Differential Monitoring (DM)** benefits to the state are the following:
  - Systematic way of tying distinct state systems together into a cost effective & efficient unified valid & reliable logic model and algorithm.
  - Empirical way of reallocating limited monitoring resources to those providers who need it most.
  - Data driven to determine how often to visit programs and what to review, in other words, should a comprehensive or abbreviated review be completed.

This slide presents the benefits of the Differential Monitoring Model. Differential monitoring is basically abbreviated or targeted program monitoring inspections/reviews which focus on key predictor rules/regulations/standards and highly rated risk rules being monitored on a more regular way.

Program Compliance/Licensing (CI)(PC)

56

- **These are the comprehensive set of rules, regulations or standards for a specific service type.**
- ***Caring for Our Children (CFOC)* is an example.**
- ***Head Start Performance Standards* is an example.**
- **Program meets national child care benchmarks from NACCRRA's *We CAN Do Better* Report.**
- **No complaints registered with program.**
- **Substantial to full compliance with all rules.**

The Program Compliance/Licensing (PC), Comprehensive Instrument (CI) key element of the DMLMA model. This is the essential foundation for any program quality system.

Advantages of Instrument Based Program Monitoring (IPM)

57

- Cost Savings
- Improved Program Performance
- Improved Regulatory Climate
- Improved Information for Policy and Financial Decisions
- Quantitative Approach
- State Comparisons

The advantages to moving from case notes to IPM which is more data driven and quantitative.

State Example of Violation Data (Fiene, 2013d)

58

Violation Data in Centers and Homes by Regional Location

Region	Centers		Homes	
	Violations*	Number	Violations*	Number
1	9.30	109	2.42	117
2	8.32	191	4.63	120
3	5.31	121	3.94	138
4	5.57	61	3.02	125

* = *Average (Means)*

Violation Data in Centers and Homes by Type of Licensing Inspection

License Type	Centers		Homes	
	Violations*	Number	Violations*	Number
Initial	7.44	36	3.35	20
Renewal	7.07	368	3.53	469
Amendment	9.51	55	4.00	2
Correction	6.71	14	3.00	8
Temporary	11.22	9	4.00	1

* = *Average (Mean)*

This example is taken from the NARA Kansas study. This is an example of the type of analyses a state can do with an Instrument based Program Monitoring system. This is a good example of data utilization in helping to inform public policy formulation.

Head Start: Content Area Correlations (Fiene, 2013c)

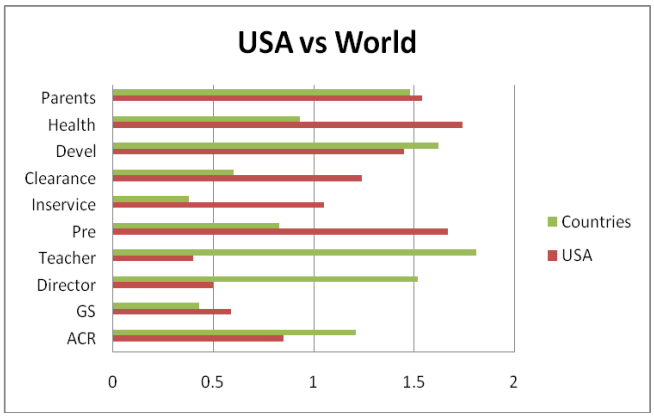
59

		CHS	ERSEA	FCE	FIS	GOV	SYS
CDE		.33**	.26**	.06ns	.14**	.13*	.33**
CHS			.29**	.18**	.09ns	.25**	.51**
ERSEA				.15**	.10*	.27**	.38**
FCE					.01ns	.17**	.23**
FIS						.13*	.23**
GOV							.38**

CORRELATIONS AMONGST THE VARIOUS HEAD START PERFORMANCE STANDARDS MONITORING PROTOCOL CONTENT AREAS.

International Study of Child Care Rules (Fiene, 2013a)

60



International study published in ICEP using the NACCRRA protocol.

International Study Benchmarks

61

Benchmark	Countries	USA	Significance
ACR (R1)	1.1220	0.8462	not significant
GS (R2)	0.4063	0.5865	not significant
Director (R3)	**1.5625**	0.5000	t = 7.100; p < .0001
Teacher (R4)	**1.6563**	0.4038	t = 7.632; p < .0001
Preservice (R5)	0.9375	**1.6731**	t = 4.989; p < .001
Inservice (R6)	0.6563	**1.0481**	t = 2.534; p < .02
Clearances (R7)	0.6094	**1.2404**	t = 3.705; p < .01
Development (R8)	1.6406	1.4519	not significant
Health (R9)	0.9844	**1.7404**	t = 6.157; p < .0001
Parent (R10)	1.5000	1.5385	not significant

Parent = Parent Involvement (R10)

Health = Health and safety recommendations (R9)

Development = Six developmental domains (R8)

Clearances = Background check (R7)

Inservice = 24 hours of ongoing training (R6)

Preservice = Initial orientation training (R5)

Teacher = Lead teacher has CDA or Associate degree (R4)

Director = Directors have bachelor's degree (R3)

GS = Group size NAEYC Accreditation Standards met (R2)

ACR = Staff child ratios NAEYC Accreditation Standards met (R1)

Additional details from that study – listing the specific benchmarks which is influenced by key indicator research.

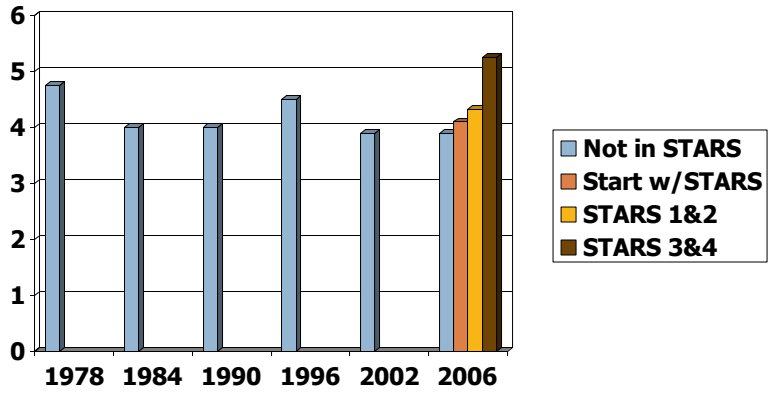
Program Quality (PQ)

62

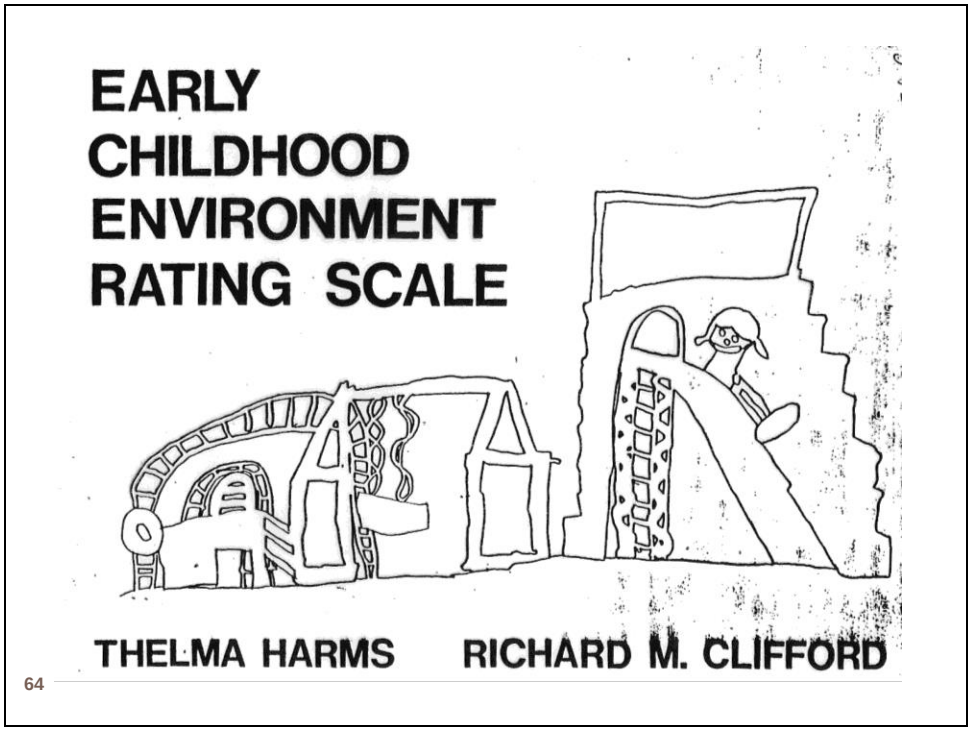
- Generally Quality Rating and Improvement Systems (QRIS) and/or Accreditation systems either used separately or together.
- Program has attained at least a 5 on the various ERS's or an equivalent score on the CLASS.
- Program has moved through all the star levels within a five year timeframe.
- Percent of programs that participate.
- Generally PQ builds upon PC/Licensing system.

The Program Quality (PQ) key element builds upon the PC key element adding specific process quality variables that may not be contained in the PC key element where there is more emphasis on the structural quality variables related to health and safety.

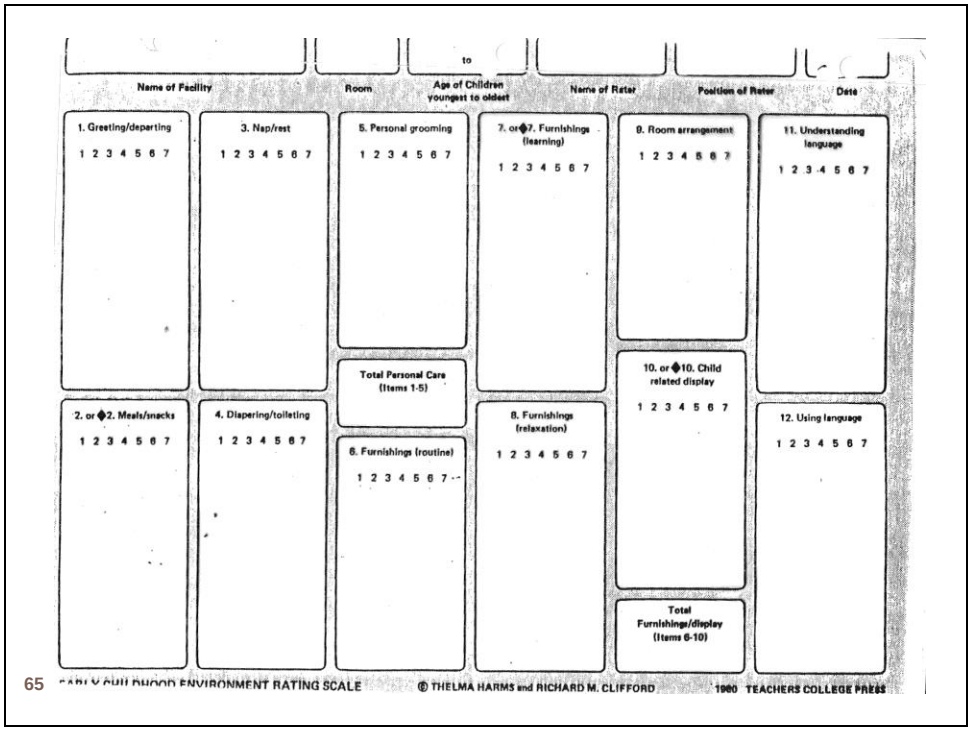
Keystone STARS ECERS Comparisons to Previous Early Childhood Quality Studies (Barnard, Smith, Fiene & Swanson (2006))



These analyses compare Keystone STARS QRIS to previous early childhood quality studies completed in Pennsylvania.



ECERS – program quality tool used in the Early Childhood Quality Study in Pennsylvania in 2002.



ECERS Score sheet. Please note the rating scale format (1-7 Likert scale) which is very different from licensing scoresheets where a compliance vs non-compliance scoring system is used. However, in 2022 a Regulatory Compliance Scale has been proposed which builds upon a similar 1-7 Likert scale for licensing scores.

ECERS/FDCRS By Type of Setting (Fiene, etal (2002)

66

Head Start	4.9
Preschool	4.3
Child Care Centers	3.9
Group Child Care Homes	4.1
Family Child Care Homes	3.9
Relative/Neighbor Care	3.7

Data from the ECPQ study showing the average quality scores as measured by the ERS's for each of the setting types in homes and centers.

ECERS Distribution By Type of Service—Head Start (HS), Child Care Center (CC), Preschool (PS)

67

	HS	CC	PS
Minimal (3.99 or less)	8%	62%	35%
Adequate (4.00-4.99)	46%	23%	44%
Good (5.00 or higher)	46%	15%	21%

ECPQ 2002 Study looking at the percentage of programs in various forms of center based care and what level of quality the programs were performing at. Head Start was significantly higher than either child care centers or preschool programs.

ECERS/FDCRS and Education of the Provider

68

- High School Diploma (24%) 3.8
- Some College (24%) 4.1
- Associate's Degree (17%) 4.2
- Bachelor's Degree (31%) 4.3
- Master's Degree (4%) 4.7

ECPQ study 2002 looking at the relationship between the education of the provider and the overall environmental quality of their respective classrooms as measured by the ERS's.

NECPA/ERS's/QRIS (Fiene, 1996)

69

	STAR 1	STAR 2	STAR 1 and 2 Combined	STAR 3	STAR 4
NECPA Score (without Infant/Toddler Section	n = 21 Mean = 647.04 Range: 408.99 to 887.54 s.d.: 163.79	n = 4 Mean: 648.1 Range: 365.84 to 881.93 s.d.: .220.87	n = 25 Mean: 647.21 Range: 365.84 to 887.54 s.d.: .168.69	n = 2 Mean: 824.27 Range: 789.13 to 859.40 s.d.: .49.69	n = 23 Mean: 752.93 Range: 427.36 to 894.32 s.d.: 132.12
ECERS-R Score	n = 20 Mean: 3.92 Range: 2.40 to 5.68 s.d.: .97	n = 4 Mean: 3.52 Range: 3.45 to 3.66 s.d.: .094	n = 24 Mean: 3.86 Range: 2.40 to 5.68 s.d.: .896	n = 2 Mean: 5.67 Range: 5.45 to 5.88 s.d.: .304	n = 23 Mean: 5.35 Range: 2.95 to 6.36 s.d.: ..867
NECPA Score (Infant/Toddler Only)	n = 6 Mean: 83.50 Range: 59 to 138 s.d.: 30.81	n = 1 Mean: 79.0	n = 7 Mean: 82.86 Range: 59.0 to 138.0 s.d.: 28.17	n = 0	n = 7 Mean: 134.0 Range: 102.0 to 163.0 s.d.: 21.66
ITERS-R	n = 9 Mean: 3.72 Range: 2.81 to 5.22 s.d.: .706	n = 1 Mean: 5.01	n = 10 Mean: 3.85 Range: 2.81 to 5.22 s.d.:.781	n = 1 Mean: 4.29	n = 12 Mean: 5.15 Range: 3.21 to 6.39 s.d.: .821

This study compared accreditation scores (NECPA: National Early Childhood Program Accreditation) to program quality scores (ERS) to QRIS (Keystone STARS) scores. Remember that NECPA's system is based upon the key indicator methodology. This was a significant study demonstrating the efficacy of the NECPA system when compared to QRIS and ERS data.

PC/PQ Conceptual Similarities

70

- **100% Compliance with child care health & safety rules = QRIS Block System.**
- **Substantial but not 100% Compliance with child care health & safety rules = QRIS Point System.**
- **Both Licensing (PC) and QRIS (PQ) use rules/standards to measure compliance. Licensing rules are more structural quality while QRIS standards have a balance between structural and process quality.**

There are certain conceptual similarities between licensing (PC)(CI) and program quality (PQ) in how overall decision making occurs with the specific rules or standards. Full (100%) compliance with child care health and safety rules is equivalent to a QRIS block system in which a provider must meet all standards for a particular star level. Substantial compliance (less than 100%) with child care health and safety rules is equivalent to a QRIS point system in which substantial but not full compliance with all the standards will attain a star level.

Determining Compliance

71

- **Risk assessment**
- –Identify requirements where violations pose a greater risk to children, e.g., serious or critical standards
- –Distinguish levels of regulatory compliance
- –Determine enforcement actions based on categories of violation
- –*Stepping Stones to Caring for Our Children is an example of risk assessment (AAP/APHA/NRC, 2013)*
- **Key indicators**
- –Identify a subset of regulations from an existing set of regulations that statistically predict compliance with the entire set of regulations
- –Based on work of Dr. Richard Fiene (2002) – 13 indicators of quality
- –"Predictor rules"

National Center on Child Care Quality Improvement, Office of Child Care

This slide is taken from an Office of Child Care's National Center on Child Care Quality Improvement presentation at the NARA Licensing Seminar, October 2013.

Risk Assessment (RA)

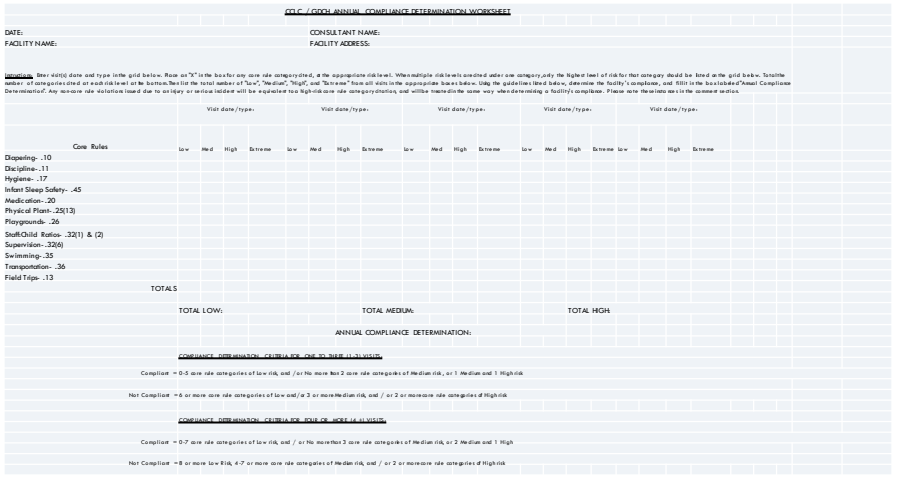
72

- **Risk Assessment (RA) are those rules which place children at greatest risk of mortality or morbidity.**
- ***Stepping Stones* is example of Risk Assessment Tool and Approach.**
- **When Risk Assessment (RA) and Key Indicators (KI) described in next slide are used together, most cost effective and efficient approach to program monitoring.**
- **100% compliance with RA rules.**

Risk Assessment (RA) key element helps us to focus on those most important rules/regulations/standards that place children at most risk for mortality or morbidity. Generally these rules are always in compliance, there is very little non-compliance; however, they are so important, in a program monitoring visit they always need to be checked in order to maintain the safety of the children. Always remember that risk assessment rules are not predictor rules; key indicator rules are the predictor rules. By reviewing risk assessment rules in every monitoring visit insures children's safety but it does not predict overall regulatory compliance.

State Example of Risk Assessment Tool

73



CCLC / GDCH ANNUAL COMPLIANCE DETERMINATION WORKSHEET

DATE: CONSULTANT NAME:

FACILITY NAME: FACILITY ADDRESS:

Instructions: Enter visit(s) date and type in the grid below. Place an "X" in the box for any core rule category cited, at the appropriate risk level. When multiple risk levels are cited under one category, only the highest level of risk for that category should be listed on the grid below. Total the number of categories cited at each risk level at the bottom. Refer to the total number of "Low", "Medium", "High", and "Extreme" from all visits in the appropriate boxes below. Using the guidelines listed below, determine the facility's compliance, and fill in the box labeled "Annual Compliance Determination". Any non-core rule violations issued due to an injury or serious incident will be equivalent to a high-risk core rule category citation, and will be treated in the same way when determining a facility's compliance. Please note the details/specifics in the comment section.

Core Rules	Visit date/type:				Visit date/type:				Visit date/type:				Visit date/type:				Visit date/type:			
	Low	Med	High	Extreme	Low	Med	High	Extreme	Low	Med	High	Extreme	Low	Med	High	Extreme	Low	Med	High	Extreme
Diapering- .10																				
Discipline-.11																				
Hygiene- .17																				
Infant Sleep Safety- .45																				
Medication-.20																				
Physical Plant-.25(13)																				
Playground-.26																				
Staff/Child Ratios- .32(1) & (2)																				
Supervision-.32(6)																				
Swimming-.35																				
Transportation- .36																				
Field Trips- .13																				
TOTALS																				

TOTAL LOW: TOTAL MEDIUM: TOTAL HIGH

ANNUAL COMPLIANCE DETERMINATION:

COMPLIANCE DETERMINATION CRITERIA FOR ONE TO THREE (1-3) VISITS:

Compliant = 0-5 core rule categories of Low risk, and / or No more than 2 core rule categories of Medium risk, or 1 Medium and 1 High risk

Not Compliant = 6 or more core rule categories of Low and/or 3 or more Medium risk, and / or 2 or more core rule categories of High risk

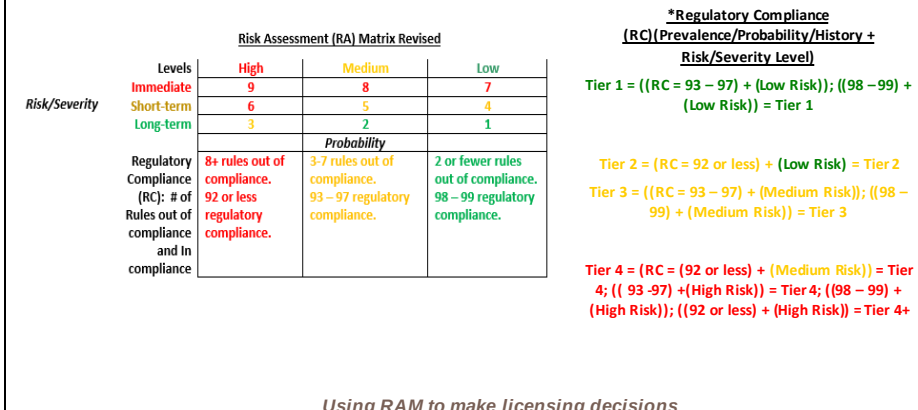
COMPLIANCE DETERMINATION CRITERIA FOR FOUR OR MORE (4-6) VISITS:

Compliant = 0-7 core rule categories of Low risk, and / or No more than 3 core rule categories of Medium risk, or 2 Medium and 1 High

Not Compliant = 8 or more Low Risk, 4-7 or more core rule categories of Medium risk, and / or 2 or more core rule categories of High risk

Georgia's example of RA with their core rules.

Risk Assessment Matrix (RAM)



Risk Assessment (RA) Matrix Revised

	Levels	High	Medium	Low
Risk/Severity	Immediate	9	8	7
	Short-term	6	5	4
	Long-term	3	2	1
			Probability	
	Regulatory Compliance (RC): # of Rules out of compliance and In compliance	8+ rules out of compliance. 92 or less regulatory compliance.	3-7 rules out of compliance. 93 – 97 regulatory compliance.	2 or fewer rules out of compliance. 98 – 99 regulatory compliance.

***Regulatory Compliance (RC)(Prevalence/Probability/History + Risk/Severity Level)**

Tier 1 = ((RC = 93 – 97) + (Low Risk)); ((98 –99) + (Low Risk)) = Tier 1

Tier 2 = (RC = 92 or less) + (Low Risk) = Tier 2

Tier 3 = ((RC = 93 – 97) + (Medium Risk)); ((98 – 99) + (Medium Risk)) = Tier 3

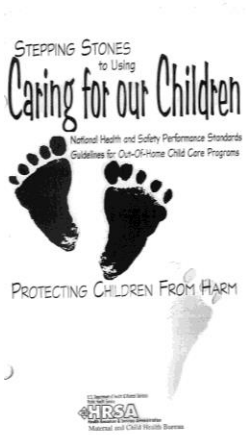
Tier 4 = (RC = (92 or less) + (Medium Risk)) = Tier 4; ((93 -97) +(High Risk)) = Tier 4; ((98 – 99) + (High Risk)); ((92 or less) + (High Risk)) = Tier 4+

Using RAM to make licensing decisions

This is an example of using the RAM for making licensing decisions. This example is from the state of Washington. The model was validated in 2020. This is an excellent example of how the risk assessment methodology can be used effectively to make licensing decisions. See either the RIKI Publications page or the NARA Key Indicator page for the Washington State Validation Study.

RA Example = Stepping Stones

75



Best example of a RA at the national level. These are the CFOC standards that place children at greatest risk of morbidity or mortality. It is a great place for jurisdictions to start their review of their individual standards/rules/regulations.

13 Key Indicators/Stepping Stones Crosswalk with State Rules Template

76

13 Indicators/Stepping Stones Standard	State Licensing Rule	Analysis	Analysis Clarification	Recommendation	Next Steps

This is a template that can be used by states to crosswalk their ECE Rules to the ***13 key indicators of quality and Stepping Stones*** to determine where potential gaps and risk factors exist within their rules. This approach has been used in Washington and Georgia and an abbreviated version in Oregon.

Key Indicators (KI)(Fiene & Nixon, 1985)

77

- **Key Indicators are predictor rules that statistically predict overall compliance with all rules.**
- ***13 Indicators of Quality Child Care* is an example of this approach.**
- **Most effective if KI are used with the Risk Assessment (RA) approach described on the previous slide.**
- **Must be 100% compliance with key indicator rules.**

Key Indicators (KI) key element are those key rules/regulations/standards that focus a licensing inspection or monitoring visit in order to save time because you are reviewing such a small number of rules/regulations/standards. Key indicator rules are predictor rules in that they statistically predict overall regulatory compliance with the full set of comprehensive rules. Please see the Saskatchewan Validation Study which validated the key indicator approach on either the RIKI Publications page or the NARA Key Indicator page.

Advantages of Key Indicators

78

- **Quality of Licensing is maintained.**
- **Balance between program compliance and quality.**
- **Cost savings.**
- **Predictor rules can be tied to child outcomes.**

Pluses for using a KI approach. The KI approach is never intended to sub-plant the comprehensive set of rules/regulations/standards.

Pre-Requisites for Key Indicators

79

- **Licensing rules must be well written, comprehensive, and measurable.**
- **There must be a measurement tool in place to standardize the application and interpretation of the rules.**
- **At least one year's data should be collected.**

Some pre-requisites to consider. In order to be able to generate key indicators these pre-requisites are important in order to have the necessary sample of quantitative, empirical data. If these pre-requisites are not in place, it will be difficult if not impossible to generate key indicators rules.

How to Develop Key Indicators

80

- **Collect data from 100-200 providers that represent the overall delivery system in the state.**
- **Collect violation data from this sample and sort into high (top 25%) and low (bottom 25%) compliant groups.**
- **Statistical predictor rules based upon individual compliance.**
- **Add additional rules.**
- **Add random rules.**

Outline for developing KI if a sample of programs is to be used. If population data are used the methodology becomes simpler and more robust. These steps should be followed as closely as possible. We have found that state agencies have not followed the methodology as tightly as possible and sometimes have referred to key indicators when in reality they had developed a risk assessment tool.

Criteria for Using Key Indicators

81

- The facility had:
  - A regular license for the previous two years
  - The same director for the last 18 months
  - No verified complaints within the past 12 months
  - The operator has corrected all regulatory violations citied within 12 months prior to inspection
  - A full inspection must be conducted at least every third year
  - Not had a capacity increase of more than 10 percent since last full inspection
  - A profile that does not reveal a pattern of repeated or cyclical violations
  - No negative sanction issued within the past 3 years

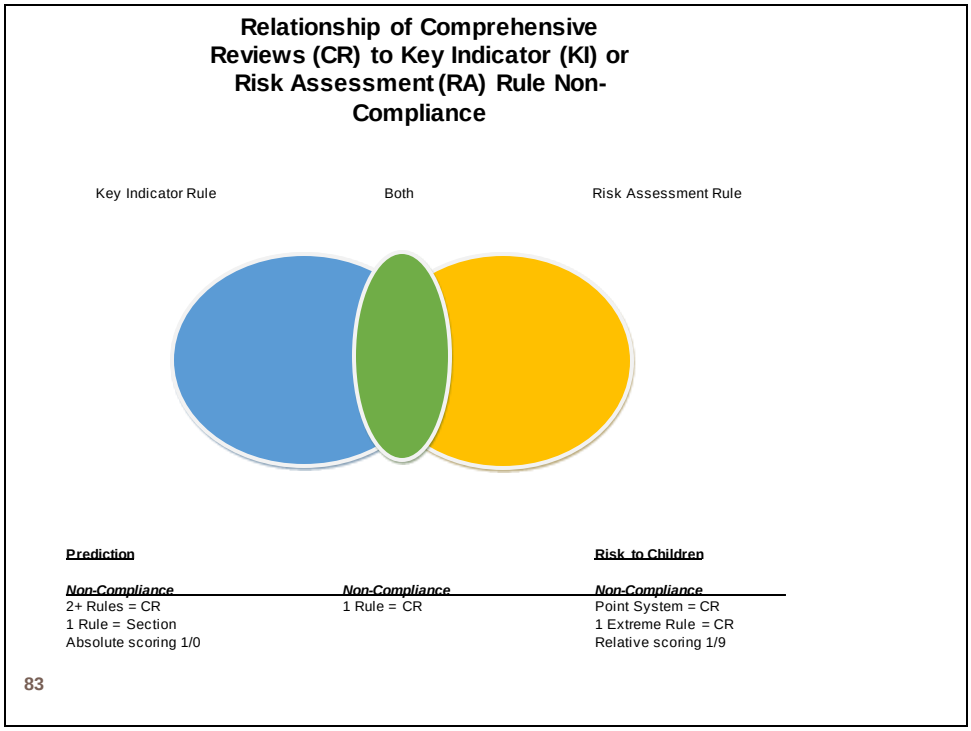
Some of the criteria that can be considered for using Key Indicators Rules once they are generated. These are examples taken from state's actual key indicator policies. These criteria would need to be in place for any program to be eligible for a key indicator abbreviated inspection review.

Key Indicator Systems Summary

82

1980 - 2010	2011+
Time savings only.	Time and cost savings.
Child care mostly.	All services.
Child care benchmarking.	Benchmarks in all services.
Substantial compliance.	CC national benchmarks.
Safeguards.	Safeguards.
Tied to outcomes study.	Tied to outcomes study.
Adult residential – PA.	National benchmarks.
Child residential – PA.	Inter-National benchmarks.
Risk assessment/weighting.	Risk assessment/DMLMA.

Short historical perspective on Key Indicators over the decades. Things have expanded over the years.



This graphic shows the relationship amongst comprehensive reviews, key indicators, and risk assessment rules. Only key indicator rules predict non-compliance while risk assessment rules are based upon relative risk a child is placed in because of non-compliance.

KIM (Key Indicator Matrix) and RAM (Risk Assessment Matrix) Matrices Integration Into One Platform

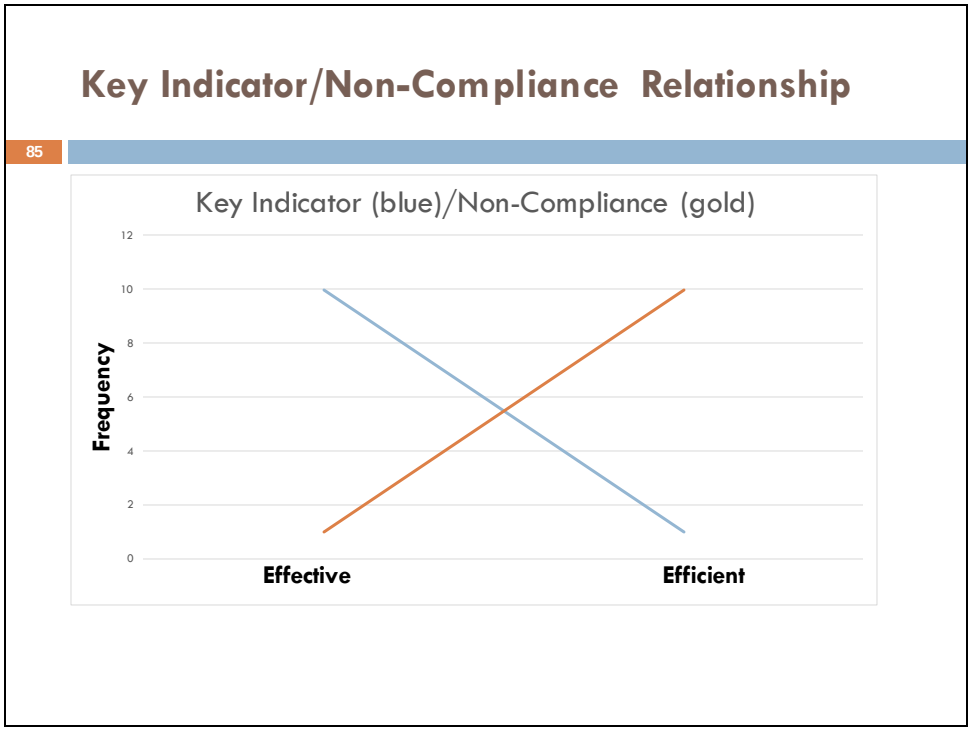
84

KIM	Low Group	High Group		Severity:
Compliance	1	2	3	Low
Non-Compliance	4	5	5	Medium
	7	8	9	High
Prevalence:	Low	Medium	High	RAM

This technical research note will integrate the Key Indicator Matrix (KIM) and the Risk Assessment Matrix (RAM) into one platform to clearly demonstrate their statistical modeling overlap. Key Indicators deal with the ability to predict overall compliance or performance based on existing data. Risk Assessment Indicators do not predict but determine a risk score based upon prevalence and severity measures. Their purposes are different but when integrated together the two matrices are a powerful tool in determining the health of the measured entity.

The above matrix integrates the two matrices of KIM and RAM and shows that KIM scores are generally at the lower end of risk but having sufficient prevalence when it comes to non-compliance. RAM scores have a larger variance and are most concerning at the higher end of the continuum

With more and more states beginning to integrate KIM and RAM into one platform it is necessary to show how the two approaches overlap and are different from each other. The important take away is that key indicator rules generally have a moderate level of non-compliance while risk assessment rules which are highly risky to children are always in compliance with very little to no non-compliance.



The blue line is the number of key indicators that are included in the abbreviated tool. As the number of indicators increase the chances of non-compliance decrease more the system becomes less efficient. With fewer indicators, there is an increase in possible non-compliance although the specific indicators are better predictors. The gold line is the non-compliance with all the rules/regulations and is most effective when the greater number of key indicators are used. Decreasing the number of key indicators by having very stringent phi coefficients/p-values increases the chances of finding additional non-compliance because less significant indicators are not included in the abbreviated tool. A more general way of thinking about this is when Effectiveness > Efficiency and when Efficiency > Effectiveness the regulatory compliance system is out of balance. What a state agency wants is when Effectiveness = Efficiency or as close as possible because than the regulatory compliance system is in balance.

Key Indicator Formula Matrix

86

Use data from this matrix in the formula on the next slide in order to determine the phi coefficients.

	Providers In Compliance with specific standard	*Programs Out Of Compliance with specific standard*	*Row Total*
High Group = top 25%	***A***	***B***	***Y***
Low Group = bottom 25%	**C**	**D**	***Z***
Column Total	***W***	***X***	**Grand Total**

This is the data collection and organization phase for generating the key indicators.

Key Indicator Matrix Expectations

87

- **A + D > B + C**
- **A + D** = 100% is the best expectation possible.
- If **C** has a large percentage of hits, it increases the chances of other areas of non-compliance (False positives).
- If **B** has a large percentage of hits, the predictive validity drops off considerably (False negatives). This can be eliminated by using 100% compliance for the High Group.

This slide provides further explanation to the 2 x 2 matrix on the previous slide regarding expectations related to data distributions. These can become major concerns for state administrators as they consider using a key indicator approach.

Key Indicator Statistical Methodology

88

$$\phi = (A)(D) - (B)(C) \div \sqrt{(W)(X)(Y)(Z)}$$

A = High Group + Programs in Compliance on Specific Compliance Measure.
B = High Group + Programs out of Compliance on Specific Compliance Measure.
C = Low Group + Programs in Compliance on Specific Compliance Measure.
D = Low Group + Programs out of Compliance on Specific Compliance Measure.

W = Total Number of Programs in Compliance on Specific Compliance Measure.
X = Total Number of Programs out of Compliance on Specific Compliance Measure.
Y = Total Number of Programs in High Group.
Z = Total Number of Programs in Low Group.

Formula used to generate the Key Indicators.

Theory of Regulatory Compliance Algorithm (Fiene KIS Algorithm)

89

- 1) ΣR = C
- 2) Review C history x 3 yrs
- 3) NC + C = CI
- 4) If CI = 100 -> KI
- 5) If KI > 0 -> CI or if C < 100 -> CI
- 6) If RA (NC% > 0) -> CI
- 7) KI + RA = DM
- 8) KI = ((A)(D)) - ((B)(E)) / sqrt ((W)(X)(Y)(Z))
- 9) RA = ΣR1 + ΣR2 + ΣR3 + ….. ΣRn / N
- 10) (TRC = 99%) + (ϕ = 100%)
- 11) (CI < 100) + (CIPQ = 100) -> KI (10% CI) + RA (10-20% CI) + KIQP (5-10% of CIPQ) -> OU

The algorithm to be used for the statistical analyses in determining which rules become key indicator rules.

Legend:

90

- R = Rules/Regulations/Standards
- C = Compliance with Rules/Regulations/Standards
- NC = Non-Compliance with Rules/Regulations/Standards
- CI = Comprehensive Instrument for determining Compliance
- ϕ = Null
- KI = Key Indicators; KI >= .26+ Include; KI <= .25 Null, do not include
- RA = Risk Assessment
- ΣR1 = Specific Rule on Likert Risk Assessment Scale (1-8; 1 = low risk, 8 = high risk)
- N = Number of Stakeholders
- DM = Differential Monitoring
- TRC = Theory of Regulatory Compliance

Definitions provided for the algorithm on the previous page.

Legend (cont)

91

- CIPQ = Comprehensive Instrument Program Quality
- KIPQ = Key Indicators Program Quality
- OU = Outcomes
- A = High Group + Programs in Compliance on Specific Compliance Measure (R1…Rn).
- B = High Group + Programs out of Compliance on Specific Compliance Measure (R1…Rn).
- E= Low Group + Programs in Compliance on Specific Compliance Measure (R1…Rn).
- D = Low Group + Programs out of Compliance on Specific Compliance Measure (R1…Rn).
- W = Total Number of Programs in Compliance on Specific Compliance Measure (R1…Rn).
- X = Total Number of Programs out of Compliance on Specific Compliance Measure (R1…Rn).
- Y = Total Number of Programs in High Group (ΣR = 98+).
- Z = Total Number of Programs in Low Group (ΣR <= 97).
- High Group = Top 25% of Programs in Compliance with all Compliance Measures (ΣR).
- Low Group = Bottom 25% of Programs in Compliance with all Compliance Measures (ΣR).

Definitions provided for the algorithm on the previous page.

Key Indicator Coefficient Ranges

92

KI Coefficient Range	Characteristic of Indicator	Decision
(+1.00) – (+.26)	Good Predictor - Licensing	Include
(+1.00) – (+.76)	*Good Predictor – QRIS*	*Include*
(+.25) – (-.25)	Unpredictable - Licensing	Do not Include
(+.75) – (-.25)	*Unpredictable - QRIS*	*Do not Include*
(-.26) – (-1.00)	Terrible Predictor	Do not Include

This is the decision making chart for what gets included as Key Indicators in both Licensing and Program Quality QRIS systems.

Examples of Key Indicator Applications

93

- Health and Safety Licensing Key Indicators planned or implemented in the following states and provinces: Pennsylvania, Kansas, California, Illinois, Indiana, West Virginia, Michigan, Ontario, British Columbia, Saskatchewan, Montana, Oregon, Washington, New York, Maine, Texas.
- Stepping Stones Key Indicators
- Office of Head Start Key Indicators.
- Accreditation Key Indicators – NECPA – National Early Childhood Program Accreditation.
- Environmental Rating Scale Key Indicators – Centers.
- Environmental Rating Scale Key Indicators – Homes.
- Caregiver Interaction Scale Key Indicators.
- Quality Rating & Improvement System Key Indicators – QualiStar.
- Footnote: Child & Adult Residential Care Key Indicators.
- Footnote: Cruising Industry in general and Royal Caribbean in particular.

These are examples of key indicator applications but not only with health & safety licensing in various states and the 13 Key Indicators of quality child care, but also from the office of head start, accreditation, ERS, CIS, potential development in QRIS and other human services, such as child and adult residential.

Examples of Health & Safety Key Indicators

(Fiene, 2002a, 2003, 2007, 2013, 2014)

94

- Program is hazard free in-door and out-doors.
- Adequate supervision of children is present.
- Qualified staff.
- CPR/First Aid training for staff.
- Hazardous materials are inaccessible to children.
- Staff orientation and training.
- Criminal Record Checks.
- Ongoing monitoring of program
- Child immunizations

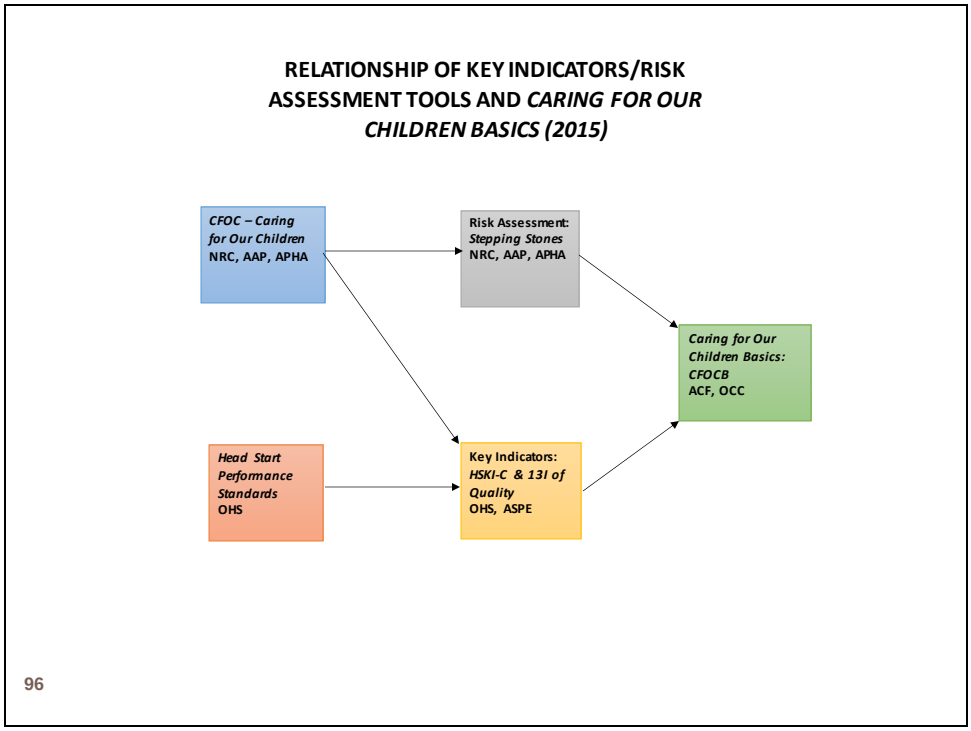
These are examples taken from several data bases of Key Indicators generated at the state and national levels. What is still remarkable to me is the consistency over the years in which the key indicators have not changed much from the original list published back in 1985 in the ***Child Care Quarterly article.***

Caring for Our Children Basics (2015)

95

- Stepping Stones 3 (2013)
- Senate Bill 1086 (2014)
- Notice for Proposed Rule Making to Amend CCDF Regulations (2013)
- 27 Indicators from Head Start Program Standards (2014)
- 15 Key Indicators from Stepping Stones 3 (Fiene)(2013)
- 77 Observable Health and Safety Standards for Early Care and Education Providers from Caring for Our Children (Alkon)(2014)

CFOC:B (Caring for Our Children: Basics) is potentially the contents of the monitoring tool that the OCC will be using to monitor compliance with CCDBG/CCDF starting in 2015. This would fit into the ECPQIM4/DMLMA graphic as presented earlier and provides a tool for the implementation science side of the equation as it relates to the public policy/translational research intersection. CFOC:B is as significant a document as Developmentally Appropriate Practices when it was published by NAEYC back in the 1970's. CFOC:B is the logical conclusion of ECPQIM when key indicators and risk assessment methodologies are combined together at the national level.



Legend:

NRC = National Resource Center for Health and Safety in Child Care

AAP = American Academy of Pediatrics

APHA = American Public Health Association

OHS = Office of Head Start

ACF = Administration for Children and Families

OCC = Office of Child Care

ASPE = Assistant Secretary's Office for Planning and Evaluation

13I = *Thirteen Indicators of Quality Child Care* (2002), ASPE

HSKI-C = Head Start Key Indicators (2013)

Stepping Stones = Stepping Stones to Caring for Our Children (2013), NRC, AAP, APHA

* Other tools, standards and legislation comprise *CFOCB (2015)*; this graphic only shows the relationship between *CFOCB* and Key Indicators and Risk Assessment Tools

Federal Legislation

97

- In the House of Representatives, U. S., September 15, 2014. Resolved, That the bill from the Senate (S. 1086) entitled "An Act to reauthorize and improve the Child Care and Development Block Grant Act of 1990, and for other purposes.", do pass with the following
- SECTION 1. SHORT TITLE. 1 This Act may be cited as the "Child Care and Development Block Grant Act of 2014".

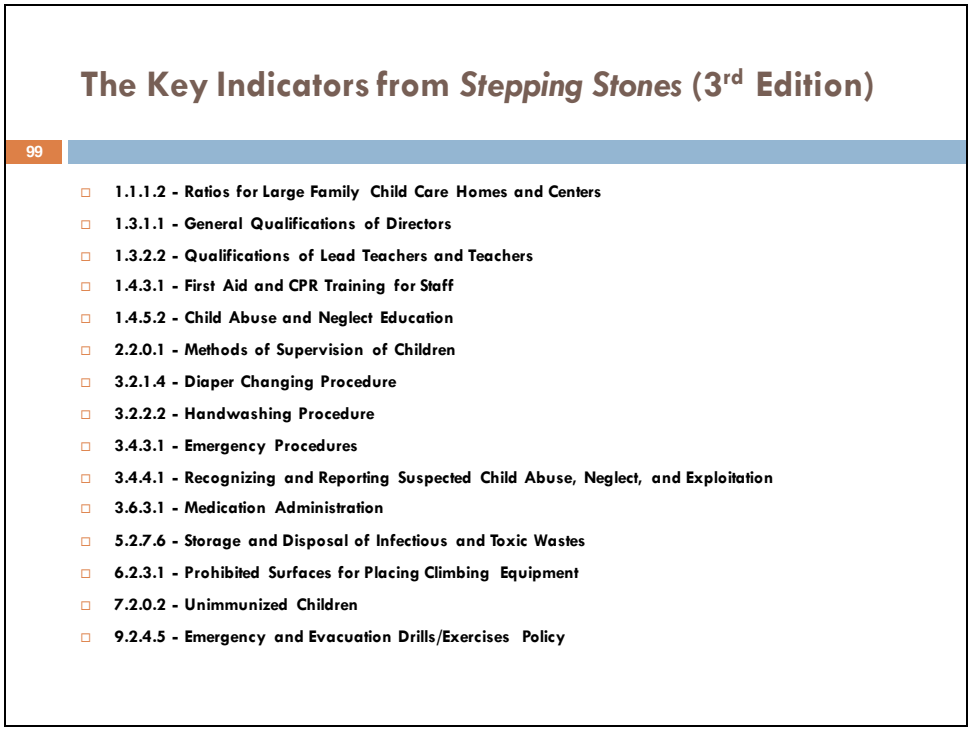
This is the front page of the Child Care Development Block Grant Re-Authorization bill. A major change in how child care program quality and monitoring would be addressed. Differential Monitoring was listed in the legislation as a potential monitoring strategy for states.

QRIS Key Indicators – CO. QualiStar

98

- **The program provides opportunities for staff and families to get to know one another.**
- **Families receive information on their child's progress on a regular basis, using a formal mechanism such as a report or parent conference.**
- **Families are included in planning and decision making for the program.**

These are the key indicators for a QRIS – Colorado QualiStar, first time done. All the key indicators are taken from the Family partnerships standards. Study and analysis done in 2014.



Key Indicators for Stepping Stones 3rd Edition. The Fiene 13 indicators updated for the latest version of Stepping Stones.

Development of Head Start Key Indicators

100

- Interest in streamlining the monitoring protocol – Tri-Annual Reviews.
- Selected a representative sample from the overall Head Start data base.
- The Head Start monitoring system is an excellent candidate for developing key indicators and differential monitoring system:
  - Highly developed data system to track provider compliance history.
  - Well written, comprehensive standards.
  - Monitoring Protocols in place for collecting data.
  - Risk assessment system in use.
  - Program quality (CLASS) data collected.
- Example of a national system using key indicators.
- Head Start has all the key elements present from the Differential Monitoring Model as presented earlier.

An outline of how the HSKI – Head Start Key Indicators was developed.

Head Start Key Indicators (Fiene, 2013c)

101

CM	Phi	ES	CO	IS	Total Violations
CDP4.1	.28***	.10*	ns	ns	.30***
CHS1.1	.39***	.15**	.16**	ns	.39***
CHS1.2	.33***	.18**	.15**	.10*	.36***
CHS2.1	.49***	.18**	.15**	ns	.54***
CHS3.10	.39***	.11*	.11*	ns	.24***
PRG2.1	.31***	.11*	ns	ns	.46***
SYS2.1	.47***	.15**	.16**	.14**	.55***
SYS3.4	.58***	.13*	.10*	ns	.36***

* ***P < .05***
- ** ***p < .01***

*** ***p< .001***

THESE ARE THE STATISTICALLY GENERATED HEAD START KEY INDICATORS FROM A 2012-13 STUDY.

Head Start Key Indicators Sample Content

102

CDE4.1	The program hires teachers who have the required qualifications, training, and experience.	1304.52(f), 645A(h)(1), 648A(a)(3)(B)(i), 648A(a)(3)(B)(ii), 648A(a)(3)(B)(iii)
CHS1.1	The program engages parents in obtaining from a health care professional a determination of whether each child is up to date on a schedule of primary and preventive health care (including dental) and assists parents in bringing their children up to date when necessary and keeping their children up to date as required.	1304.20(a)(1)(ii), 1304.20(a)(1)(ii)(A), 1304.20(a)(1)(ii)(B)
CHS1.2	The program ensures that each child with a known, observable, or suspected health, oral health, or developmental problem receives follow-up and further testing, examination, and treatment from a licensed or certified health care professional.	1304.20(a)(1)(iii), 1304.20(a)(1)(iv), 1304.20(c)(3)(ii)
CHS2.1	The program, in collaboration with each child's parent, performs or obtains the required linguistically and age-appropriate screenings to identify concerns regarding children within 45 calendar days of entry into the program, obtains guidance on how to use the screening results, and uses multiple sources of information to make appropriate referrals.	1304.20(a)(2), 1304.20(b)(1), 1304.20(b)(2), 1304.20(b)(3)
CHS3.10	Maintenance, repair, safety of facility and equipment	1304.53(a)(7)
PG2.1	Members of the governing body and the Policy Council receive appropriate training and technical assistance to ensure that members understand information they receive and can provide effective oversight of, make appropriate decisions for, and participate in programs of the Head Start agency.	642(d)(3)
SYS2.1	The program established and regularly implements a process of ongoing monitoring of its operations and services, including delegate agencies, in order to ensure compliance with Federal regulations, adherence to its own program procedures, and progress towards the goals developed through its Self-Assessment process.	1304.51(i)(2), 641A(g)(3)
SYS3.4	Prior to employing an individual, the program obtains a: Federal, State, or Tribal criminal record check covering all jurisdictions where the program provides Head Start services to children; Federal, State, or Tribal criminal record check as required by the law of the jurisdiction where the program provides Head Start services; Criminal record check as otherwise required by Federal law	648A(g)(3)(A), 648A(g)(3)(B), 648A(g)(3)(C)

Actual content of the HSKI-C.

HSKI-C Monitoring Protocol

103

- Administration for Children and Families
- U. S. Department of Health and Human Services
- Office of Head Start
- Head Start Key Indicator-Compliant (HSKI-C) Monitoring Protocol for 2015
- September 8, 2014

The HSKI-C is Head Start's new program monitoring approach in their Aligned/Differential Monitoring System. This is really a major game changer because Head Start is a very large national program impacting 100,000's of children and their families.

Conceptual Similarities Between Licensing & QRIS and Key Indicator Methodology

104

- **100% Compliance with child care health & safety rules = QRIS Block System.** ***Cannot use Key Indicators.***
- **Substantial but not 100% Compliance with child care health & safety rules = QRIS Point.** ***Can use Key Indicators.***
- **Both Licensing and QRIS use rules/standards to measure compliance. Licensing rules are more structural quality while QRIS standards have a balance between structural and process quality. Both rules and standards can be used within the Key Indicator methodology.**

There are certain conceptual similarities between licensing (PC)(CI) and program quality (PQ) in how overall decision making occurs with the specific rules or standards. Full (100%) compliance with child care health and safety rules is equivalent to a QRIS block system in which a provider must meet all standards for a particular star level. Substantial compliance (less than 100%) with child care health and safety rules is equivalent to a QRIS point system in which substantial but not full compliance with all the standards will attain a star level.

Other Examples of Key Indicators

105

- **CIS**
  - Item 5 – Excited about Teaching
  - Item 7- Enjoys Children
  - Item 12 – Enthusiastic
- **FDCRS**
  - Item 4 – Indoor Space Arrangement
  - Items 14b, 15b, 16 – Language
  - Item 18 – Eye hand Coordination
- **ECERS**
  - Item 16 – Children Communicating
  - Item 31 – Discipline

These are specific key indicators generated from CIS, FDCRS, and ECERS. For the first time, the ECERS Item 16 had a perfect phi = 1.00 taken within two separate samples with Pennsylvania data (ECPQ1, 2002; ECPQ2, 2006).

Key Indicator (KI) Formula Matrix for ECERS Item 16 – Children Communicating

106

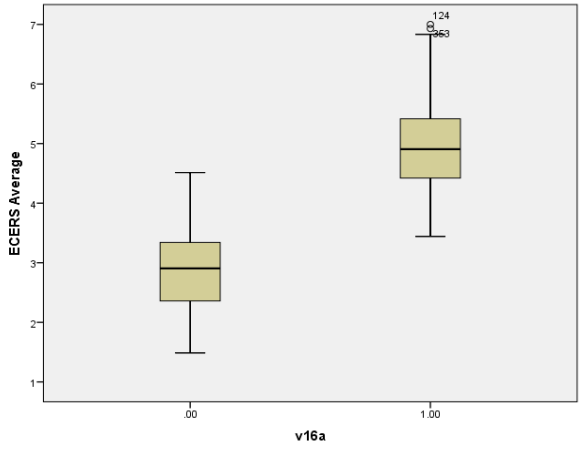
These data are taken from a 2002 Program Quality Study (Fiene, et al) completed in Pennsylvania. The phi coefficient was 1.00. The first time this has occurred in generating key indicators. It was replicated in a 2006 QRIS – Keystone STARS Evaluation.

	Providers with a 5 or higher on Item 16	*Programs with a 3 or less on Item 16*	*Row Total*
High Group – 5.00+	***117***	***0***	***117***
Low Group – 3.00 or less	**0**	**35**	***35***
Column Total	***117***	***35***	**152**

This is an actual example taken from the ECERS in which key indicators were developed. With Item 16 the phi coefficient was a perfect +1.00 which is unusual to ever obtain. This occurred in two separate studies, in 2002 and 2006. When normally distributed data are used as is the case with ERS's, it is more likely to obtain much higher phi coefficients because of the dichotomization and sorting of data.

Box Plot of ECERS Item 16

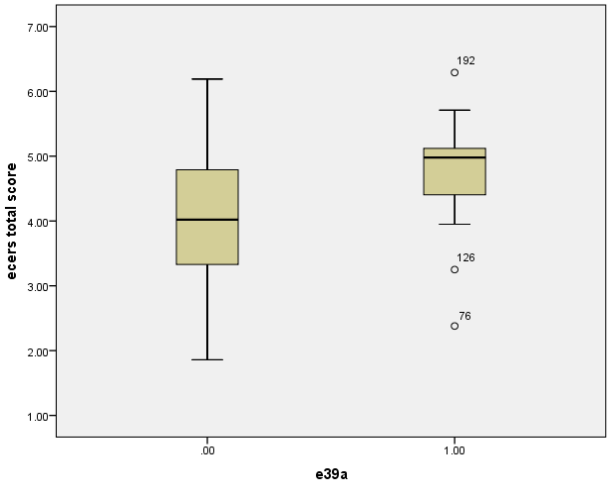
107



This is a box plot of ECERS Item 16 which clearly depicts why this item is such a good key indicator being able to predict high compliance (5+) when a program is in compliance (5+) with this item. The phi coefficient is +1.00. Item v16a (0 = 3 or less; 1 = 5+).

Box Plot of ECERS Item 39

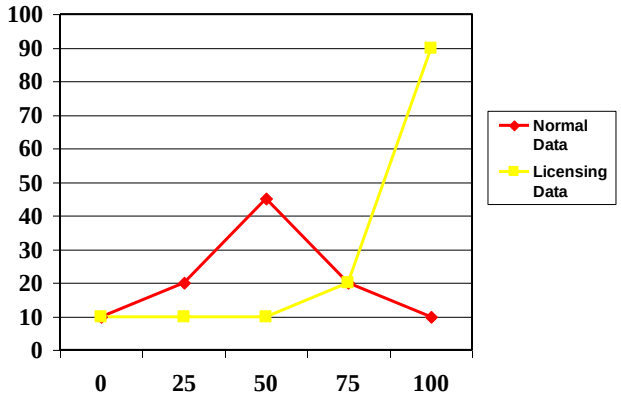
108



This is a box plot of ECERS item 39 which has a phi that is non-significant and you can see why with the overlap between when a program is in compliance (5+) with Item 39 and when it is out of compliance (3 or less). This item does not predict very well when it comes to distinguishing between high compliance (5+) and low compliance (3 or less) because several programs that were out of compliance (3 or less) on this item fell within the range of the high group (5+). Item e39a (0 = 3 or less; 1 = 5+)

Normal & Skewed Data

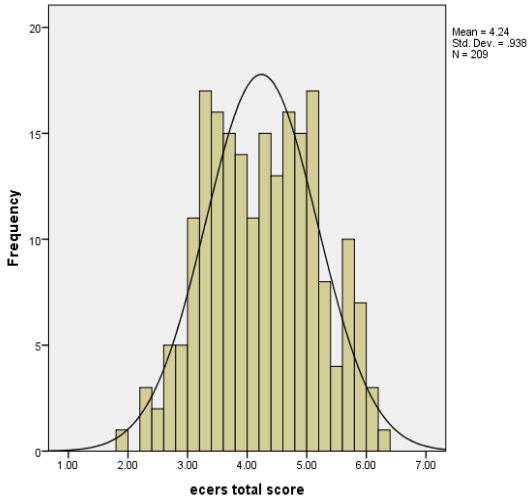
109



The data distributions for normally and skewed data sets. PQ data such as ERS are more normally distributed while licensing data are more skewed. This is a very important distinction because skewed data provides more challenges both statistically and from a policy stand point. These challenges will be explained in the subsequent slides.

ECERS Total Scores

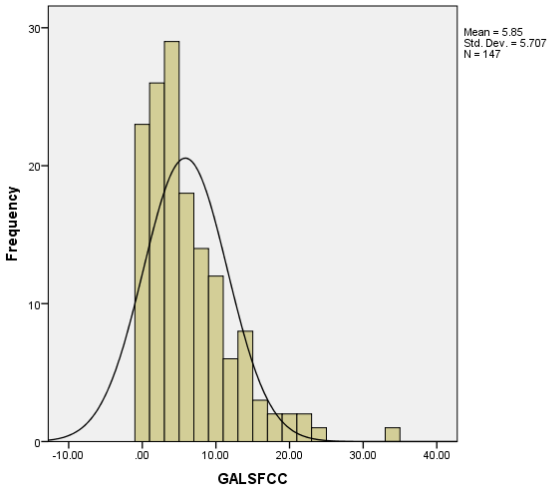
110



ECERS data show a more normally distributed curve than what one finds with licensing data.

State's Family CC Home Licensing

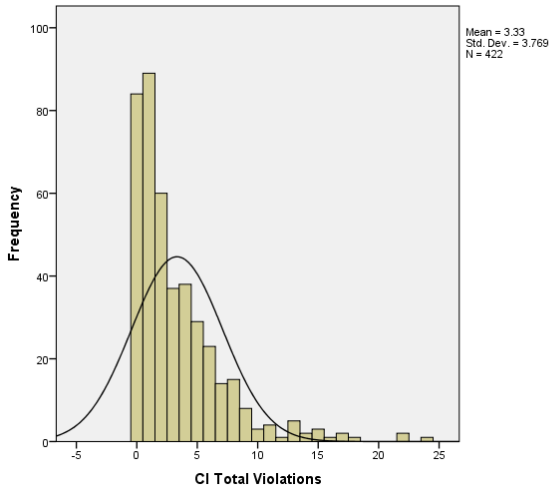
111



A state's family child care home licensing data which depicts the classic skewness of data always present in licensing data in general.

Head Start Performance Standards

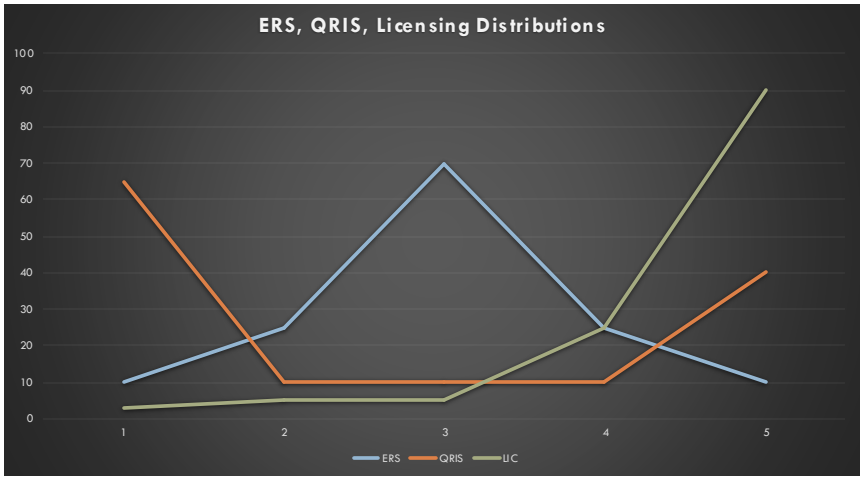
112



This graphic shows how even HSPS – Head Start Performance Standards compliance data are skewed in a similar fashion as state licensing data.

ERS, QRIS, Licensing Comparisons

113



The graph depicts the potential data distributions found in ERS, QRIS, and Licensing scoring systems. The data distribution that is preferred is the normally distributed ERS data example. Both the QRIS and licensing data distributions lend themselves to dichotomization of the data. There are two potential enhancements that may help to reduce the need for dichotomization of the data through the introduction of quality standards within rules/regulations as proposed in the beginning slides of this presentation and the newly proposed Regulatory Compliance Scale also introduced in the earlier slides. Both help to more normally distribute the regulatory compliance data set and reduce the skewness of the data distribution.

Dichotomization & Skewed Data

114

- When data are extremely skewed as is the case with licensing data, dichotomization of data is warranted.
- Skewed licensing data has a strong possibility of introducing very mediocre programs into the high group which will make it difficult to always identify the best programs.
- It is much easier to identify problem programs in a skewed data distribution.

This slide begins to address the many shortcomings of licensing data because of its skewness. This is a major concern because by introducing mediocre programs into the high group, it will create both false positive and negatives in the decision making process. A solution to this problem is to increase the level of the standards (have higher standards) which will help to normalize the data distribution and act as a better discriminator of the best programs. This has naturally occurred in ECE with the introduction of Pre-K and QRIS systems at the state level. Will we need to see over time if this normalization of the data distribution continues to occur.

Differential Monitoring Options

115

- **•Reward good compliance:**
- –Abbreviated inspection – if no serious violations, for a period of time
- –Fewer full compliance reviews if compliance record is strong
- **•Response to non-compliance:**
- –Additional monitoring visits
- –Technical assistance

- **•The number of core rule categories cited and the assigned risk level determines the annual compliance level. (Georgia)**

- **•Determine how often particular rules are included in inspections. Rules that pose the most risk of harm to children if violated are reviewed during all inspections. (Virginia)**

National Center on Child Care Quality Improvement, Office of Child Care

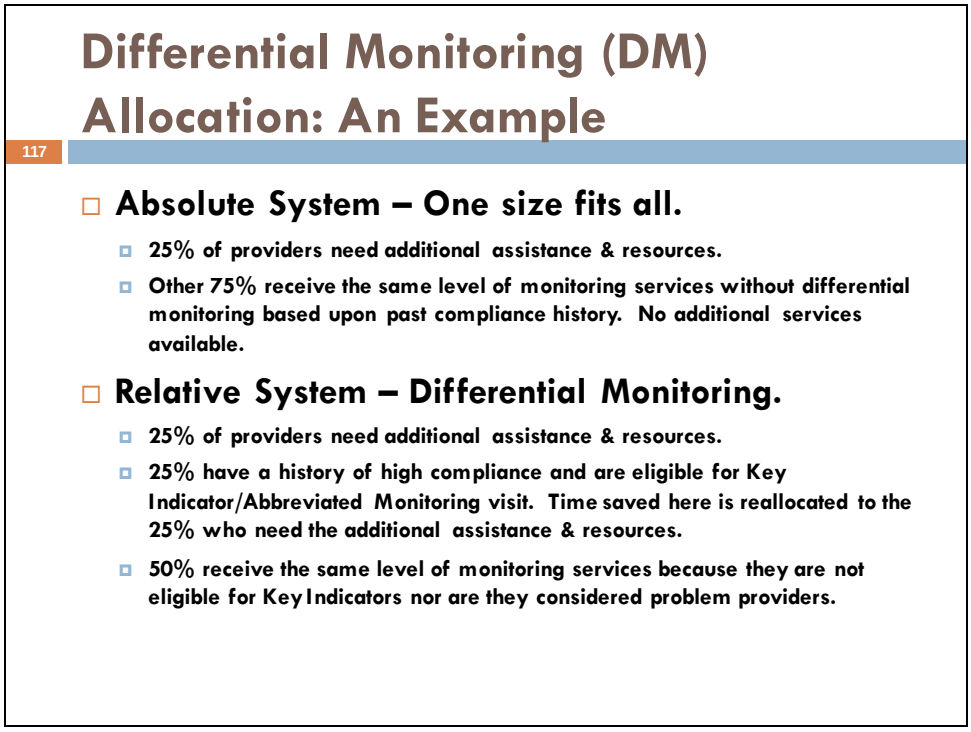
This slide is taken from an Office of Child Care's National Center on Child Care Quality Improvement presentation at the NARA Licensing Seminar, October 2013.

Provider Outcomes to Determine Differential Monitoring (DM)

116

- **Fully licensed – substantial/full compliance.**
- **Potentially accredited (NAEYC/NECPA).**
- **Highest star rating.**
- **Cost effective and efficient delivery system.**
- **Little turnover of staff and director.**
- **Fully enrolled.**
- **Fund surplus.**
- ***The above results determine the number of times to visit & what to review and resources allocated.***

These are the Provider Outcomes (PO) that help to determine how to deploy Differential Monitoring (DM). Differential monitoring in the use of abbreviated assessments is only intended to be used with programs that have had a history of sustained excellence. Again remembering that it is what is reviewed is more important than the frequency. Less is more when it comes to the number of rules reviewed, but less is not more when it comes to the number of visits. The same number of visits should be maintained while looking at the key predictor rules.



This is a hypothetical example demonstrating the differences between an absolute and relative system (Differential Monitoring) to program monitoring. In the absolute system, no consideration is given to compliance histories and all providers receive the same monitoring services although 25% of them really need additional assistance and resources. In the relative system (Differential Monitoring) consideration is given to compliance histories and on this basis a certain percentage receive a Key Indicator/Abbreviated Monitoring Visits which results in time savings. This is then applied to the providers who need additional assistance and resources. This is a cost neutral approach in which time & resources are reallocated from high compliant providers to low compliant providers.

Monitoring Tools

118

- **• 26 States use differential monitoring**
- – Increased from 11 States in 2005
- **• Most States report using abbreviated compliance forms**
- **• Nearly all States provide technical assistance during monitoring activities**
- – 45 percent report assisting facilities to improve quality beyond licensing regulations

National Center on Child Care Quality Improvement, Office of Child Care

This slide is taken from an Office of Child Care's National Center on Child Care Quality Improvement presentation at the NARA Licensing Seminar, October 2013. These data are very similar in the 2017 edition of this report. Based upon the number of requests coming into NARA, these numbers will likely go up significantly in the next Licensing Report.

Program Monitoring Questions?

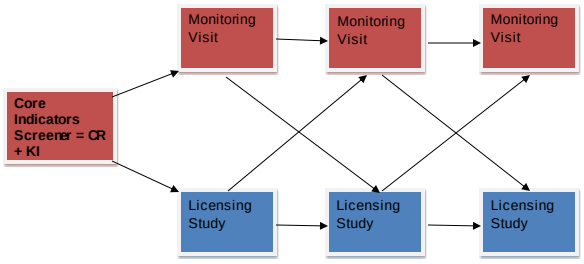
119

- Generalist versus Specialists Assessors.
- General (SS3) versus Special Standards (Licensing, QRIS, HSPS).
- How Key Indicators can be used?
  - KI = Generalists.
  - CI = Specialists.
- Based upon approach from previous slide, discussion should be generalist + specialist rather than generalist or specialist.

This slide poses some critical questions about what and who and how we monitoring programs. Are generalists better than specialists? Are general standards better than specific standards for each service type? Do we generate key indicators for each specific program area and use the key indicators as a screening tool? Or should the discussion be generalist + specialist rather than generalist or specialist?

Differential Monitoring (DM) Example (Fiene, 2013e)

120



Compliance Decisions:

Core Indicators = *Core Rules + Key Indicators – this becomes a screening tool to determine if a program receives a LS or MV visit.*
Core Indicators (100%) = *the next visit is a Monitoring Visit.. Every 3-4 years a full Licensing Study is conducted.*
Core Indicators (not100%) = *The next visit is a Licensing Study where all rules are reviewed.*
Compliance = *96%+ with all rules which indicates substantial to full compliance with all rules and 100% with Core Indicators. The next visit is a Monitoring Visit.*
Non-compliance = *less than 96% with all rules which indicates lower compliance with all rules. The next visit is a Licensing Study..*

This is a state example (Georgia) in how the differential monitoring model can be used.

Math Model for Computing ACR (Fiene, 1979)

121

- CH = (NC (TH+TO)) / 2) / (1/TA)

- Where:
  - CH = Contact Hours
  - NC = total number of children on the maximum enrollment day.
  - TO = total number of hours the center is open.
  - TH = total number of hours at full enrollment.
  - TA = total number of teaching staff.

The staff-child ratio question is a very critical item when it comes to monitoring child care facilities. However, it has eluded proper measurement because of inadequate or time-consuming measures. Past methods have tried the direct approach of dividing the total number of children by the total number of teachers. This works, but does not give the overall day illustration; therefore it is only good as an incredibly gross measure. There have been discussions revolving around the dichotomous points of view of the states and the federal role in enforcing the various principles. Once it is decided what the ratios will be, how will compliance with the ratios be measured? This is a new theoretical model for computing adult-child ratios that is not time-consuming and provides accurate information in an extremely concise fashion. With this new approach, all a day care monitor needs to do is ask six questions of the provider. Then put the data into a formula to find if the program is within compliance or not. The six basic questions are as follows: 1) When does your first staff member (teaching) arrive? 2) When does your last staff member (teaching) leave? 3) What is the number of teaching staff? 4) What is the total number of children present on your maximum enrollment day? What are their ages? Which staff members are assigned to each age group (if there is vertical grouping)? 5) When does your last child arrive? 6) When does your first child leave (if vertical grouping, give breakdown according to age)?

Professional Development (PD)

(Fiene, 1995, Fiene, etal, 1998)

122

- All staff have CDA or degrees in ECE.
- Director has BA in ECE.
- All staff take 24 hours of in-service training/yr.
- Mentoring of staff occurs.
- Training/PD fund for all staff.
- Professional development/training/technical assistance (PD) linked to Differential Monitoring (DM) results.

Professional Development (PD) key element listing some of the most important success indicators and the essential linkage between the professional development and the differential monitoring systems.

PENNSTATE

Capital Area Early Childhood Training Institute

Prevention Research Center for the Promotion of Human Development

123

Mentoring

Individualized, on-site support to help child care staff implement the knowledge and skills they are receiving in classroom instruction.

Benefits:

- **Building relationships.**
- **Effecting long term change in best practices.**
- **Providing a support system.**

CAECTI Mentoring Programs. An innovative coaching program designed and implemented by the institute throughout south central Pennsylvania.

Relationship between Child Care Income and Quality Measures (Fiene, 2002b)

124

Correlations

		ITERS	ARNETT	KIDI	BLOOM	DIR16
ITERS	Pearson Correlation	1.000	.599**	.107	.368*	.661**
	Sig. (2-tailed)	.	.000	.568	.038	.000
	N	49	45	31	32	37
ARNETT	Pearson Correlation	.599**	1.000	.108	.507**	.483**
	Sig. (2-tailed)	.000	.	.578	.004	.004
	N	45	46	29	30	34
KIDI	Pearson Correlation	.107	.108	1.000	-.035	.311
	Sig. (2-tailed)	.568	.578	.	.851	.130
	N	31	29	32	32	25
BLOOM	Pearson Correlation	.368*	.507**	-.035	1.000	.451*
	Sig. (2-tailed)	.038	.004	.851	.	.021
	N	32	30	32	33	26
DIR16	Pearson Correlation	.661**	.483**	.311	.451*	1.000
	Sig. (2-tailed)	.000	.004	.130	.021	.
	N	37	34	25	26	39

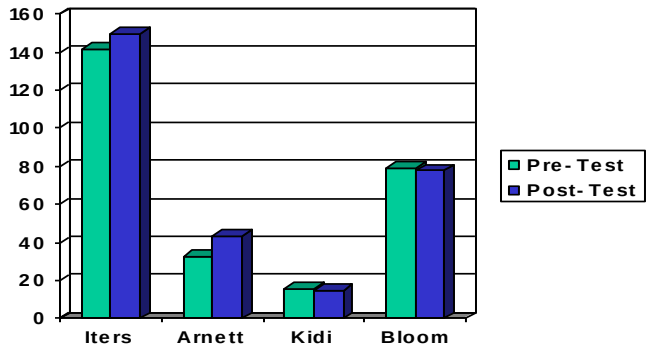
**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

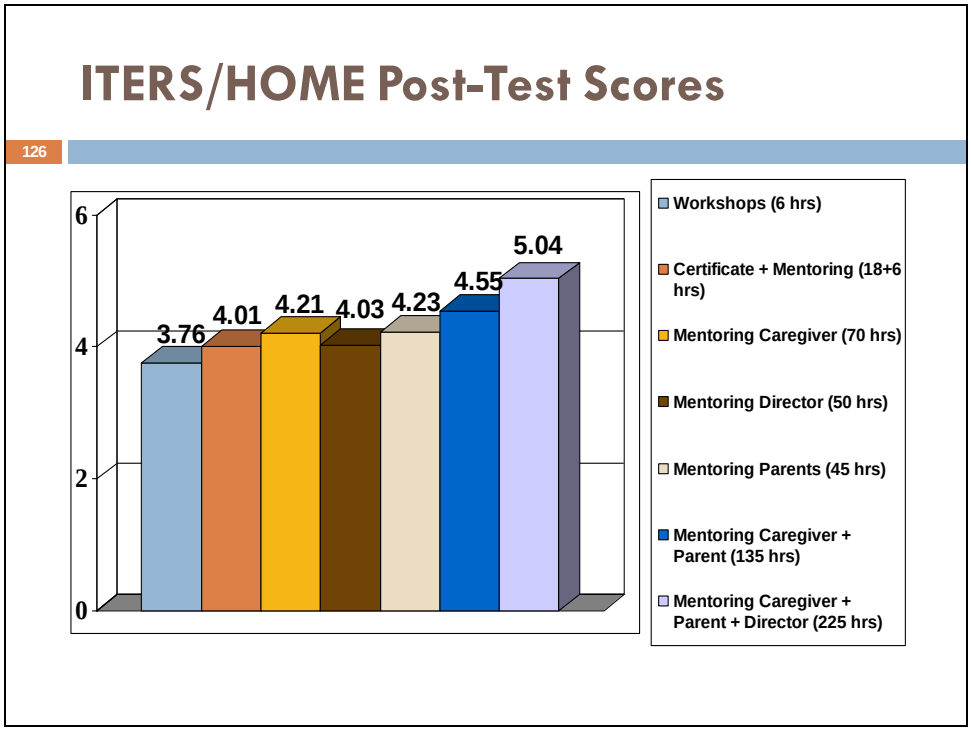
These results are from an infant toddler teacher mentoring program demonstrating the relationship between program quality scores and teacher salaries.

Infant-Toddler Teacher Mentoring

125



These are the results from an infant toddler teacher mentoring program evaluation completed at Penn State University in 2001-2002 showing the positive gains on several program quality scales.



Graphical depiction of various mentoring (coaching) interventions. Obviously the more mentoring/coaching hours in the model produce the greatest gains but these are also the most costly programs.

Child Outcomes (CO)

127

- **Health and safety:**
  - **Immunizations (95%+).**
  - **Child well-being (90% of key indicators).**
- **Developmental Outcomes:**
  - **Social (90% meeting developmental benchmarks).**
  - **Emotional (90% meeting developmental benchmarks).**
  - **Cognitive (90% meeting developmental benchmarks).**
  - **Gross and fine motor (90% meeting developmental benchmarks).**

This is the ultimate outcome, why we are working in the field. To produce positive outcomes for the children we serve. This is just a sampling of key success indicators for young children. We must be careful in targeting our interventions that are going to map to specific outcomes. Licensing maps well to the health and safety outcomes but not so much to the developmental outcomes; while Early Learning Systems or professional development systems would be a better match to developmental outcomes.

Correlation of Accreditation, Licensing, & Training with Child Outcomes

128

	Quality	Training	Accreditation	Licensing
	ECERS	EWECS/CCECD	NECPA/NAEYC	SS
Slosson	.23*	.33*/.34*	.29*/.30*	.19
CBI-INT	.25*	.15/.14	.41*/.21*	.08
TELD	.09	.28*/.22*	.31*/.35*	.22*
ALI	.44*	.01/.11	.13/.04	.06
PBQ	.37*	.32*/.23*	.44*/.40*	.29*
CBI-SOC	.26*	.21*/.20*	.19/.23*	.18

- $p < .05$
- Kontos & Fiene (1987).

These are the results of a child development outcome study comparing child development scales to quality measures, training measures, accreditation measures, and licensing measures.

Key Element ECPQIM/DMLMA Publication Summary

129

- **PC** = *Caring for Our Children (AAP/APHA/NRC, 2012).*
- **PQ** = *National Early Childhood Program Accreditation (NECPA)(Fiene, 1996).*
- **RA** = *Stepping Stones (NRC, 2013).*
- **KI** = *13 Indicators of Quality Child Care (Fiene, 2002a).*
- **DM** = *International Child Care & Education Policy (Fiene, 2013a).*
- **PD** = *Infant Caregiver Mentoring (Fiene, 2002b).*
- **CO** = *Quality in Child Care: The Pennsylvania Study Kontos & Fiene, 1997).*

Summary of various publications that are good examples of each of the key elements in the EQPQIM/DMLMA model either written by myself or others. Also see RIKI Website, CCEERC Website, and Google Scholar Website for additional examples.

Outstanding Issues

130

- **Process versus Structural Quality Indicators**
- **Input/Processes versus Output/Outcomes**
- **Impact of Pre-K and QRIS on Licensing**
- **Inter-rater reliability still is a big issue contributing to inconsistent data collection.**

Some of the outstanding issues that will need to be addressed in the next 5-10 years within early care and education program monitoring. These issues are from my 4 opinion papers (August-September 2014).

Methodological Issues & Findings

131

- The need for states to routinely conduct reliability testing is vitally important to make sure that their licensing staff/inspectors are consistently measuring rules.
- The balancing between program compliance and program quality.
- Determining the most effective and efficient threshold is critical because as one becomes more efficient a loss of effectiveness does occur which can lead to an increase in false positives and negatives.
- Dichotomization of data is warranted with regulatory compliance and is recommended as a statistical technique.
- The Fiene Coefficient has to be increased from .25 to .40 with a p value of .0001 in order to deal with the increasing use of population data from state systems.
- 100% compliance needs to be employed in determining the upper end (High Compliance Group) of the 25/50/25 data distribution.
- False negatives will nullify the use of a rule as a key indicator.

These methodological issues are taken from a re-draft of the NARA Licensing Curriculum chapter on Licensing Measurement, Regulatory Compliance and System and the latest data analyses with population data from state licensing systems.

Lessons Learned

132

- We have learned how to deal more effectively with very skewed data through dichotomization grouping of a high versus a low compliant groups.
- Risk assessment only focuses on compliance and high risk rules which generally are always in compliance.
- Key indicators focus on high and low compliance differences with these rules generally being somewhere in the middle range, not in compliance the majority of the time nor out of compliance the majority of the time.
- It continues to be a fact that all rules are not created equal nor are they administered equally.
- Most recently we have seen that when higher standards are applied, especially with Pre-K initiatives, this goes a long way in helping to discriminate the top performers from the mediocre performers.

These lessons learned are taken from a re-draft of the NARA Licensing Curriculum chapter on Licensing Measurement, Regulatory Compliance and Systems.

Future Research

133

- The crucial need for future research in the human services licensing and regulatory compliance area is for validation studies of the above approaches, Key Indicators and Risk Assessment methodologies to make certain that they are working as they should. Studies have been completed in Washington state and the Province of Saskatchewan.
- Another validation study is needed regarding the relationship between program compliance and program quality. This is such an important finding about the plateau of program quality scores with increasing regulatory compliance as one moves from substantial compliance with all rules to full compliance with all rules. Pilot testing has occurred in both the states of Indiana & Washington and the same is still true.
- A clear delineation needs to occur to establish appropriate thresholds for the number of key indicator/predictor rules that provide a balance between efficiency and effectiveness that can diminish the number of false positives and especially false negatives.

These future research studies are taken from a re-draft of the NARA Licensing Curriculum chapter on Licensing Measurement, Regulatory Compliance and Systems. These studies have been completed in 2020 and are available on the RIKI and NARA Websites. An additional study should be the validation of the Regulatory Compliance Scale introduced in the earlier slides of this slide deck. It provides a more logical formatting for measuring regulatory compliance and then using those results for making licensing decisions. Another important study should be conducted comparing frequency of monitoring visits and what is actually reviewed during the monitoring visits.

Concluding Thoughts

134

- The relationship between regulatory compliance and quality is not linear.
- Regulatory compliance has difficulty in distinguishing the best programs from the mediocre programs.
- Regulatory compliance is very effective at identifying the worse programs.
- There still is the need to balance regulatory compliance with quality indicators.
- There is the need to validate differential monitoring approaches, such as risk assessment and key indicators.
- What is the ideal threshold for the number of key indicator/predictor rules so that we can maintain a balance of program monitoring effectiveness and efficiency.
- Risk assessment rules are usually in compliance because they place children at such risk of mortality or morbidity.
- More recent risk assessment systems have two components: severity and probability of occurrence.
- Key indicator/predictor rules are not usually in compliance but are not out of compliance a great deal.
- What is it about key indicator/predictor rules that make them so effective in discriminating between high and low performing programs.
- Licensing data are very skewed and because of this there is the need to dichotomize the data.
- There is very little variance in licensing data with generally only 20 rules separating the top compliant programs from the lowest compliant programs.

The relationship between regulatory compliance and quality is not linear.

Regulatory compliance has difficulty in distinguishing the best programs from the mediocre programs.

Regulatory compliance is very effective at identifying the worse programs.

There still is the need to balance regulatory compliance with quality indicators.

There is the need to validate differential monitoring approaches, such as risk assessment and key indicators.

What is the ideal threshold for the number of key indicator/predictor rules so that we can maintain a balance of program monitoring effectiveness and efficiency.

Risk assessment rules are usually in compliance because they place children at such risk of mortality or morbidity.

More recent risk assessment systems have two components: severity and probability of occurrence.

Key indicator/predictor rules are not usually in compliance but are not out of compliance a great deal.

What is it about key indicator/predictor rules that make them so effective in discriminating between high and low performing programs.

Licensing data are very skewed and because of this there is the need to dichotomize the data.

There is very little variance in licensing data with generally only 20 rules separating the top compliant programs from the lowest compliant programs.

The majority of programs (60%+) are in substantial or full compliance with rules.

There is a balance between being effective and efficient that needs to be identified because as the system becomes more efficient it becomes less effective.

As a system becomes more efficient it also can produce additional false positives and negatives which results in lessened effectiveness in program monitoring.

Higher standards (as applied through Pre-K or QRIS) help to distinguish between the best and mediocre programs.

Caring for Our Children Basics is a major step forward for the ECE field in establishing national standards.

ASPE and OCC have published two very important papers on program monitoring which provides best practices and states that have successfully used the various methodologies.

Key indicators represent 10% of all rules; risk assessment represent 20% of all rules.

Core Indicators

135

- Childhood Immunizations (PC)
- Director & Teacher Qualifications (PC, PQ)
- Mentoring/Coaching (PQ/PD)
- Family Engagement (PQ)
- Social-Emotional & Language Learning/Competencies (ELS, PD)

Based upon my key indicator research in licensing (PC), quality rating and improvement systems (QRIS)(PQ), and professional development (PD) areas, these are the three key indicators that form a core set of indicators that drive ECE program quality. These are the most critical standards to have in place when it comes to program quality and where we should be targeting our resources. See the Fiene Scale of Early Childhood Program Quality in the next slide that operationalizes these indicators into a program monitoring tool.

Fiene Scale of RC+PQ Key Indicators

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ECERCPQ Score Sheet and Scale (*Fiene©2020*)

Total ECERCPQ Score = (1 + 2) + (3) + (4 + 5 +6) + (7 + 8 + 9 +10) + (11) - (12) - (13)

ECERCPQ = Σ ((Ã + Ã) + (%) + (ñ + ñ + ñ) + (ñ + ñ + ñ + ñ) + (%)) - Σ ((ñ) - (ñ))

Standards	Scoring	Scale	Score
1	Average Number of Teachers	A	
2	Average Number of Teachers	A	
3	Percent	B	%
4	Types of Activities	D	
5	Types of Opportunities	D	
6	Types of Activities	D	
7	Number of Positive Observations	©	
8	Number of Positive Observations	©	
9	Number of Positive Observations	©	
10	Number of Positive Observations	©	
11	Percent	E	%
12	Violations	E	
13	Number	E	

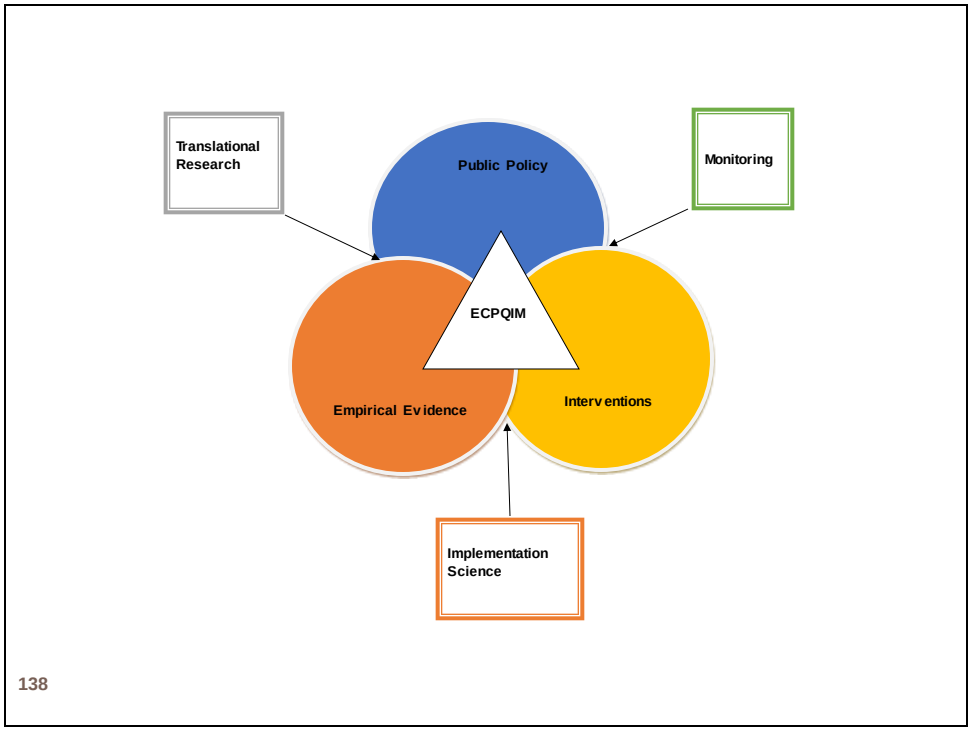
The Fiene Scale is based upon the Core Indicators from the previous slide.

Legend for Fiene Scale

137

- 1) The number of ECE AA and BA teachers? (A)
- 2) The number of ECE in-service ECE coaching or reflective supervision opportunities engaged in by ECE teachers? (A)
- 3) There is a developmentally appropriate curriculum that is individually based upon the developmental assessments of each child in the respective ECE classroom. (B)
- 4) The program provides opportunities for staff and families to get to know one another. (D)
- 5) Families receive information on their child's progress on a regular basis, using a formal mechanism such as a report or parent conference. (D)
- 6) Families are included in planning and decision making for the program. (D)
- 7) Teachers encourage children to communicate. (C)
- 8) Teachers use language to develop reasoning skills. (C)
- 9) Teachers listen attentively when children speak. (C)
- 10) Teachers speak warmly to children. (C)
- 11 - 13) Children's immunizations are up to date, the program is a hazard free environment, and there is proper supervision at all times. (E)

This legend gives the detail to the specific standards/requirements/rules/regulations that are the core key indicators from regulatory compliance and program quality.



Scientific Underpinnings for ECPQIM: Early Childhood Program Quality Indicator Model. This graphic shows the potential intersections amongst translational research, implementation science, and monitoring by the key concepts of public policy, empirical evidence, and interventions. It then depicts how ECPQIM fits at the heart of these intersections in identifying the key indicators in each of these areas. We will need to have discussions with other researchers about this schematic and see if it resonates with them or if I am missing something.

Early Childhood Program Quality Indicator Model (ECPQIM) Evolution

139

- Nixon Veto of Comprehensive Child Development Bill 1971. (ECPQIM0)
- FIDCR Moratorium 1981. (ECPQIM1)
- Reagan Block Grant Formula 1983. (ECPQIM1)
- CCDBG enacted 1991. (ECPQIM2)
- Caring for Our Children (CFOC) 1st Edition 1993. (ECPQIM2)
- Stepping Stones 1st Edition 1995. (ECPQIM2)
- Child Care Development Fund (CCDF) enacted 2001. (ECPQIM3)
- Child Care Aware First Report Card 2007. (ECPQIM3)
- OPRE/ACF Validation Brief 2012. (ECPQIM4)
- Differential Monitoring Logic Model (DMLMA) 2012-13. (ECPQIM4)
- CCDBG Bill, CCDF Rule, CFOC-Basics, OCC/ASPE Papers 2013-15 (ECPQIM4+5), Regulatory Compliance Scale, Fiene Scale.

The relationship between public policy major events and the evolution of ECPQIM over its five generations. The various editions of ECPQIM reflect the emphasis of a strong Federal presence to a reduced Federal presence with an increased state presence. ECPQIM1 went from a strong Federal presence to a strong state presence. ECPQIM2-3 saw a strong state presence while ECPQIM4-5 saw a return of a balanced Federal and state presence and a better balance between regulatory compliance indicators and quality performance indicators.

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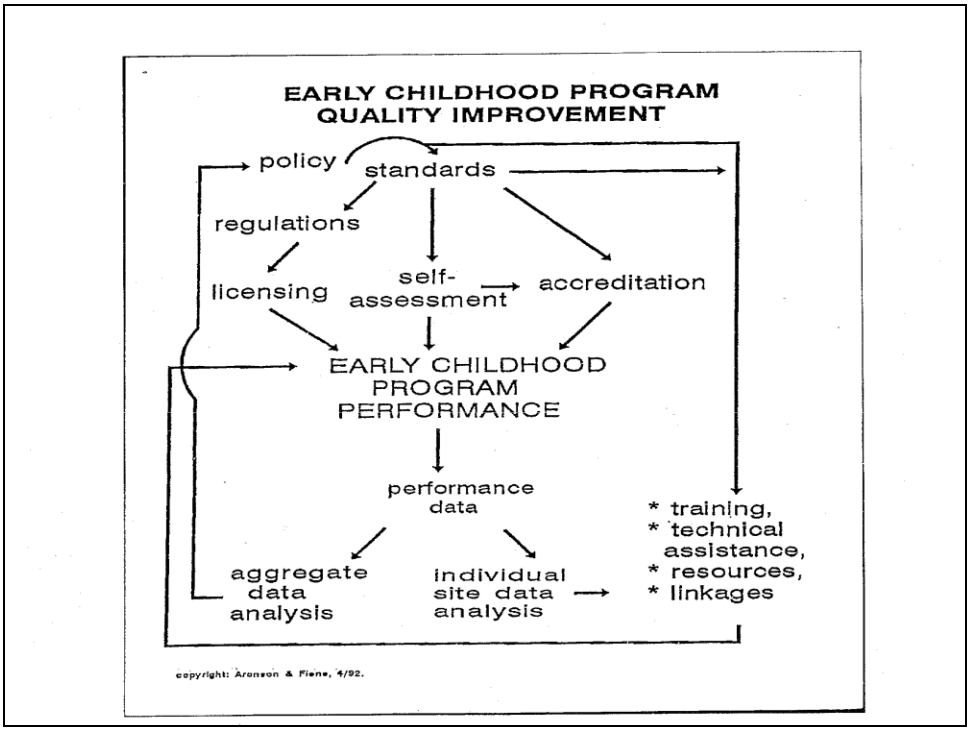
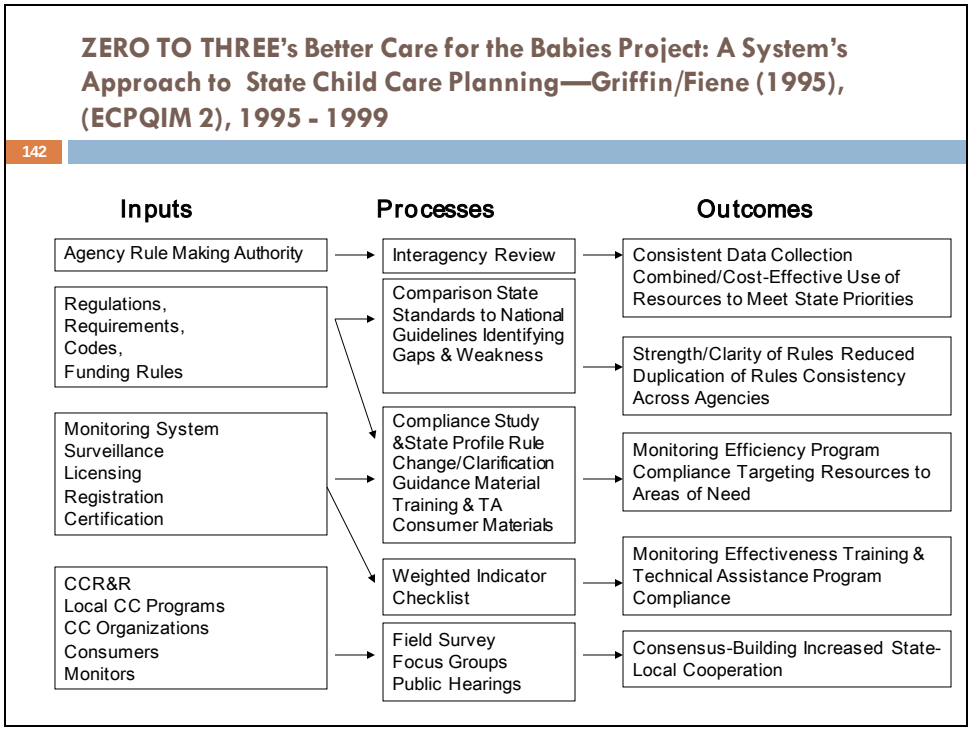
ECPQIM 1- 5 Graphics

The following graphics represent the previous generations of ECPQIM 1-5 beginning in 1975 up to the present model (ECPQIM5, 2022).

Listing the previous generations of the Early Childhood Program Quality Indicator Model - ECPQIM Model.



ECPQIM 0/1 – 1975-1994 – this was the initial model that Sue Aronson and I developed. Moves program monitoring from a qualitative approach to a quantitative approach.



ECPQIM 2 – 1995-1999 – Abbey Griffin and I expanded ECPQIM1 that took into account policy evaluation and planning at the state level. This version also put the model into a more systems orientation with Inputs, Processes and Outcomes.

Early Childhood Program Quality Indicator Model 3--Fiene & Kroh, (2000)

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CO + PO = (PD + PC + PQ)/PM

Where:

CO = Child Outcomes

PO = Provider Outcomes

PD = Professional Development

PC = Program Compliance/Licensing

PQ = Program Quality/QRIS

PM = Program Monitoring

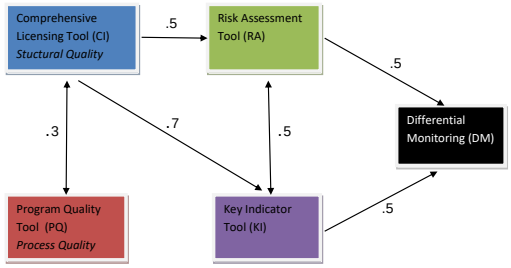
ECPQIM 3 – 2000-2011 – this generation placed greater emphasis on PD – State Professional Development Systems; and QRIS – Quality Rating and Improvement Systems which did not exist when ECPQIM1 was created and proposed.

DIFFERENTIAL MONITORING LOGIC MODEL & ALGORITHM (DMLMA©) (Fiene, 2012): A 4th Generation ECPQIM – Early Childhood Program Quality Indicator Model

CI x PQ => RA + KI => DM + PD => CO

Definitions of Key Elements:

CI = Comprehensive Licensing Tool (Health and Safety)(***Caring for Our Children***)
PQ = ***ECERS-R, FDCRS-R, CLASS, CDPES*** (Caregiver/Child Interactions/Classroom Environment)
RA = Risk Assessment, (High Risk Rules)(***Stepping Stones***)
KI = Key Indicators (Predictor Rules)***(13 Key Indicators of Quality Child Care***)
DM = Differential Monitoring, (How often to visit and what to review)
PD = Professional Development/Technical Assistance/Training
CO = Child Outcomes (See Next Slide for PD and CO Key Elements)



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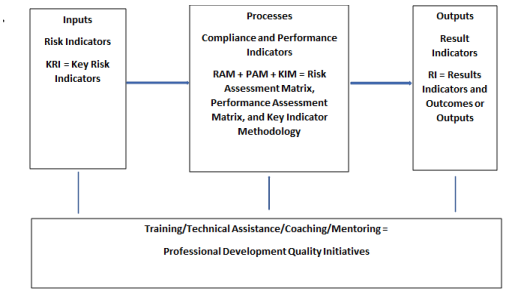
ECPQIM4/4+, DMLMA (4th generation of ECPQIM), unifies within a single program monitoring systems design the various key elements that impact on early care and education program quality. Generally this portion of the model is used with state agencies in describing how they can change their overall program monitoring system from an absolute, one size fits all to a relative/differential approach to monitoring. Risk assessment and key indicators are key elements of this model. It also introduces the need for doing validation studies for all the components and key elements based upon the ***OPRE Research Brief on Validation*** by Zellman & Fiene (2012).

ECPQIM5: Early Childhood Program Quality Improvement/Indicator Model Version 5



ECPQIM5 combines the best aspects of Model 2 and 4 into one overall approach. Quality Indicators are given a great deal of emphasis, more so than in previous editions. Regulatory Compliance indicators and Quality Performance indicators are now fully integrated in this new edition. In 2022, the best example of this model being applied is the Head Start Grantee Performance Management System (GPMS). Hopefully, the GPMS will be pilot tested in 2022-23 to determine its efficacy. Several papers are available on the RIKI Publications page for the interested reader.

Early Childhood Program Quality Improvement and Indicator Models (ECPQI2M0–5©)

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ECPQI2M0© 1972 – 1974. Regional Model; EMIS (Fiene, 1975).

ECPQI2M1©: 1975 – 1994. Qualitative to Quantitative; focus on reliability; data utilization; distinctions between program monitoring and evaluation; Key Indicators, Weighted Rules, & principles of licensing instrument design introduced. (Fiene, 1981; Fiene & Nixon, 1985).

ECPQI2M2©: 1995 – 1999. Policy Evaluation and Regulatory Systems Planning added to model. (Griffin & Fiene, 1995).

ECPQI2M3©: 2000 – 2011. Inferential Inspections & Risk Assessment added to model. (Fiene & Kroh, 2000).

ECPQI2M4/4+©: 2012 – 2021. Validation with expected Thresholds & Differential Monitoring added; Quality Indicators introduced. (Fiene, 2012, 2013b, 2015).

ECPQI2M5: 2022 – present. Full integration of compliance and performance indicators (Fiene, 2022).

ECPQI2M0-5©: Summary timeline and key elements of the 5 generations of ECPQI2M© along with my graduate studies (Dr. Frank Palmer) and pilot testing at a regional level. From this DM, KI, RA developed over time as indicated in the timeframes.

Theory of Regulatory Compliance and Early Childhood Outcomes Algorithms

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- **Theory of Early Childhood Outcomes**
  - **ECO = Σ (.50PD +.30PQ + .20PC)**
- **Theory of Regulatory Compliance**
  - **RC = DM (KI/RA) > CI (PQ/CO)**

Theories of regulatory compliance and early childhood outcomes algorithms. PD = professional development; PQ = program quality; PC = program compliance. DM = differential monitoring; KI = key indicators; RA = risk assessment; CI = comprehensive inspections; CO = child outcomes. These theories have been and are continuing to be proven in the past 5 years via replication studies. The latest studies demonstrate the positive relationships between PC and PQ (QRIS, PD, PreK) as well as validating DM as a more cost effective and efficient monitoring model.

RELATED PUBLICATIONS AND REPORTS

148

- Barnard, Smith, Fiene, Swanson (2006). Evaluation of Pennsylvania's Keystone STARS Quality Rating and Improvement System, Pittsburgh: Pennsylvania, Office of Child Development.
- Class (1957). Licensing, unpublished manuscript, USC: University of Southern California.
- Fiene (2013a). A comparison of international child care and US child care using the Child Care Aware– NACCRRA (National Association of Child Care Resource and Referral Agencies) child care benchmarks, *International Journal of Child Care and Education Policy, 7(1),* 1-15.
- Fiene (2013b). *Differential monitoring logic model and algorithm.* Middletown: Pennsylvania, Research Institute for Key Indicators.
- Fiene (2013c). Head Start Key Indicators. Middletown: Pennsylvania, Research Institute for Key Indicators.
- Fiene (2013d). Kansas Child Care Key Indicators. Middletown: Pennsylvania, Research Institute for Key Indicators.
- Fiene (2013e). Validation of Georgia's core rule differential monitoring system. Middletown: Pennsylvania, Research Institute for Key Indicators.
- Fiene (2007). Child Development Program Evaluation & Caregiver Observation Scale, in T Halle (Ed.), *Early Care and Education Quality Measures Compendium*, Washington, D.C.: Child Trends.
- Fiene (2003). Licensing related indicators of quality child care, *Child Care Bulletin*, Winter 2002-2003, pps 12-13.
- Fiene (2002a). *Thirteen indicators of quality child care: Research update.* Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services.
- Fiene (2002b). Improving child care quality through an infant caregiver mentoring project, *Child and Youth Care Forum, 31*(2), 75-83.

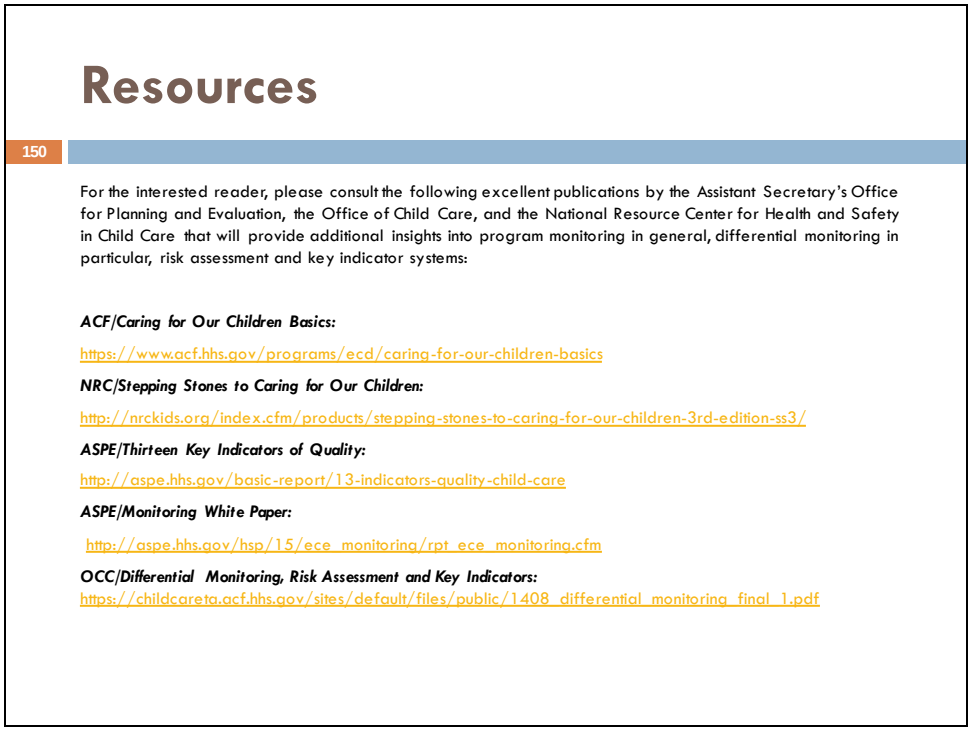
Related publications that I thought would be helpful for the reader to follow up with to gain more information about many of the concepts presented in this powerpoint. For more in-depth reading, the second to last slide provides links to the majority of the most important ECPQIM publications.

RELATED PUBLICATIONS AND REPORTS (cont)

149

- Fiene, Iutcovich, Johnson, & Koppel (1998). Child day care quality linked to opportunities for professional development: An applied community psychology example. *Community Psychologist, 31*(1), 10-11.
- Fiene (1996). Using a statistical-indicator methodology for accreditation, in *NAEYC Accreditation: A Decade of Learning and the Years Ahead*, S. Bredekamp & B. Willer, editors, Washington, D.C.: National Association for the Education of Young Children.
- Fiene (1995). Utilizing a statewide training system to improve child day care quality: The other system in a program quality improvement model. *Child Welfare*, Volume LXXIV, #6, November-December, 1189-1201.
- Fiene (1985). Measuring the effectiveness of regulations, *New England Journal of Human Services, 5*(2), 38-39.
- Fiene (1981). A new tool for day care monitoring introduced by children's consortium, *Evaluation Practice, 1*(2), 10-11.
- Fiene, Greenberg, Bergsten, Carl, Fegley, & Gibbons (2002). *The Pennsylvania early childhood quality settings study*, Harrisburg, Pennsylvania: Governor's Task Force on Early Care and Education.
- Fiene & Kroh (2000). Licensing Measurement and Systems, *NARA Licensing Curriculum*. Washington, D.C.: National Association for Regulatory Administration.
- Fiene & Nixon (1985). Instrument based program monitoring and the indicator checklist for child care, *Child Care Quarterly, 14*(3), 198-214.
- Griffin & Fiene (1995). *A systematic approach to policy planning and quality improvement for child care: A technical manual for state administrators.* Washington, D.C.: National Center for Clinical Infant Programs-Zero to Three.
- Kontos & Fiene (1987). Child care quality, compliance with regulations, and children's development: The Pennsylvania Study, in *Quality in Child Care: What Does Research Tell Us?*, Phillips, editor, Washington, D.C.: National Association for the Education of Young Children.
- Zellman, G. L. and Fiene, R. (2012). *Validation of Quality Rating and Improvement Systems for Early Care and Education and School-Age Care,* Research-to-Policy, Research-to-Practice Brief OPRE 2012. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services

Additional publications. These are bit older and give the historical perspective with the exception of the Zellman & Fiene (2012) Research Brief. Please go to the RIKI Publications webpage for an expanded selected publications list (https://rikinstitute.com/publications/).



Resources that I think are very important published by the Federal government and National Centers.

For Additional Information:

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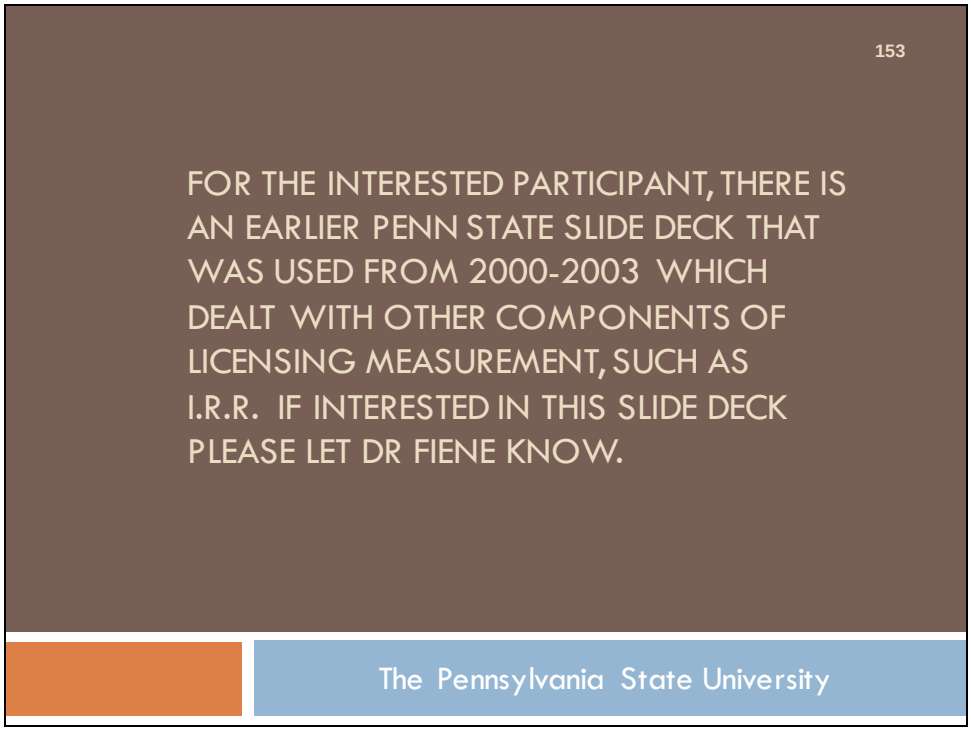
Websites:

RIKInstitute.com or https://www.naralicensing.org/key-indicators

Go to these websites for additional research reports about the slides in this document as well as the NARA Licensing Measurement course.

For getting in touch with Dr Fiene, seeing all the publications that support ECPQIM, especially this fifth (5^{th}) generational approach to program monitoring. Go to the websites for additional information and examples.

The logo representing the new partnership between NARA and RIKI from 2021-26.



There are slides and lecture notes that were used with the first edition of the licensing measurement and systems chapter as part of the NARA Licensing Curriculum and were used from 2000-2003. After this, the previous slides in this slide deck have been used for presentations and ultimately for the second edition of the licensing measurement and systems chapter.