Achieving Quality Child Care

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.

Other regulatory approaches toward achieving quality

- **Credentialed**: A formally recognized process of certifying an individual as having fulfilled certain criteria or requisites. (PD)
- **Purchase of service contracts**: Regulation by contract in which performance standards are imposed as a contractual obligation. (PQ - QRIS)
- **Accreditation**: The formal recognition that an agency or organization has complied with the requisites for accreditation by an accrediting body. Accreditation usually requires the organization seeking this form of recognition to pay for the cost of the process. The organization bestowing the accreditation has no legal authority to compel compliance. It can only remove accreditation. (PQ)
- **Best Practices**: Through affiliation with professional organizations, an agency becomes aware of “best practices” and establishes its own goals to achieve a higher level of care services. (PQ – CFOC)
Non-regulatory approaches to achieving quality care in human services facilities or programs

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

Boxplots of ERS and NC Scores

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

<table>
<thead>
<tr>
<th>HSPS/CLASS Violations</th>
<th>JS</th>
<th>SE</th>
<th>CS</th>
<th>Number/Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (Full Compliance)</td>
<td>2.83</td>
<td>0.59</td>
<td>3.24</td>
<td>76.74%</td>
</tr>
<tr>
<td>1-2 (Substantial Compliance)</td>
<td>3.19</td>
<td>0.73</td>
<td>3.00</td>
<td>13.13%</td>
</tr>
<tr>
<td>3-4 (Mid Compliance)</td>
<td>3.87</td>
<td>0.86</td>
<td>3.87</td>
<td>14.35%</td>
</tr>
<tr>
<td>5-9 (Low Compliance)</td>
<td>4.65</td>
<td>0.71</td>
<td>3.23</td>
<td>20.81%</td>
</tr>
<tr>
<td>10-19 (Lower Compliance)</td>
<td>5.32</td>
<td>0.59</td>
<td>3.19</td>
<td>3.19%</td>
</tr>
</tbody>
</table>

Significance
- F = 4.92; p < .001
- F = 4.918; p < .001
- F = 4.174; p < .003

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

<table>
<thead>
<tr>
<th>PC = Child Care Licensing Compliance</th>
<th>PQ = Pre-K Program Licensing Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensing / ECERS-R</td>
<td>Licensing / ECERS-R</td>
</tr>
<tr>
<td>100 / 3.40 Full Compliance</td>
<td>100 / 4.88 Full Compliance</td>
</tr>
<tr>
<td>99 / 4.35</td>
<td>99 / 4.13</td>
</tr>
<tr>
<td>98 / 3.89 Substantial Compliance</td>
<td>98 / 4.38 Substantial Compliance</td>
</tr>
<tr>
<td>97 / 3.15</td>
<td>97 / 3.99</td>
</tr>
<tr>
<td>96 / 3.16</td>
<td>96 / 4.36</td>
</tr>
<tr>
<td>95 / 3.53</td>
<td>95 / 4.60</td>
</tr>
<tr>
<td>90 / 2.56 Medium Compliance</td>
<td>90 / 3.43 Medium Compliance</td>
</tr>
<tr>
<td>80 / 2.38 Low Compliance</td>
<td>80 / 2.56 Low Compliance</td>
</tr>
</tbody>
</table>
Impact of PK on ECERS

Least Squares Means

ECERS PRE-K & Licensing Scores

ECERS PRE-K Distribution

Licensing Scores for PRE-K
Licensing Scores for Child Care

- Proportion per Bar
- Count

Impact of Pre-K & Higher Standards

- Pre-K only ECERS average = 4.15
- These are classrooms funded by Pre-K.
- Pre-K’s impact on child care, ECERS average = 3.60
- These are classrooms not funded by Pre-K but in the same building as a Pre-K funded classroom.
- Child care only ECERS average = 3.26
- These are classrooms in programs that are not funded by Pre-K.

Impact of Pre-K on ECERS Scores

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

Two-sample t-test

Relationship between PC (CI) & PQ

PC = % Rule Compliance

Cumulative Effect of Standards on ECE Quality
Regulatory Paradigms

Absolute (Class, 1957)
- All rules are created equal.
- 100% Compliance = Full License.
- PC + PQ = Linear.
- All rules are reviewed all the time.

Relative/Differential (Fiene, 1985)
- All rules are not created equal.
- Substantial Compliance = Full License.
- PC + PQ = Not Linear.
- Selected key rules are reviewed all the time.


\[ CI \times PQ \Rightarrow RA + KI \Rightarrow DM + PD \Rightarrow CO \]

Definitions of key elements:
- CI: Comprehensive Visit – Health & Safety Outcomes
- RA: Risk Assessment – High Risk Rules
- KI: Key Indicator – Statistically Significant Rule Indicators of Quality Child Care
- DM: Differential Monitoring
- PD: Professional Development/Technical Assistance/Training
- CO: Child Outcomes

Early Childhood Program Quality Indicator Model (ECPQIM4©) (Fiene, 2014): Differential Monitoring Logic Model (DMLMA©): Full Licensing System

Program Compliance (PC)
- Full Licensing Visit
- Comprehensive Visit
- Risk Assessment

Key Indicators (KI)
- Abbreviated Visit
- Fewer visits, smaller sample size
- Fewer visits in “less compliant” programs

Risk Assessment (RA)
- Risk Assessment Tool
- Fewer visits in “more compliant” programs
### Differential Monitoring Scoring Protocol (DMSP)©

#### Score Systems Present

<table>
<thead>
<tr>
<th>Score</th>
<th>Systems Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No systems in place.</td>
</tr>
<tr>
<td>2</td>
<td>KI or RA in place and not linked.</td>
</tr>
<tr>
<td>4</td>
<td>(KI &amp; RA in place but not linked) or (PC + PQ are linked).</td>
</tr>
<tr>
<td>6</td>
<td>(KI &amp; RA in place) &amp; (KI + RA are linked).</td>
</tr>
<tr>
<td>8</td>
<td>(KI &amp; RA in place but not linked) &amp; (PC + PQ) are linked.</td>
</tr>
<tr>
<td>10</td>
<td>All systems in place and linked.</td>
</tr>
</tbody>
</table>

#### Differential Monitoring Scoring Protocol (DMSP)©

#### Point Assignment

<table>
<thead>
<tr>
<th>Score</th>
<th>Systems Present and Point Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No systems in place.</td>
</tr>
<tr>
<td>2</td>
<td>(KI (1)) &amp; (KI-&gt;DM (1)) or ((RA (1)) &amp; (RA-&gt;DM (1))</td>
</tr>
<tr>
<td>4</td>
<td>(PC + PQ (4)) or (KI (1)) &amp; (KI-&gt;DM (1)) &amp; (RA (1)) &amp; (RA-&gt;DM (1))</td>
</tr>
<tr>
<td>6</td>
<td>(KI + RA-&gt;DM (4)) &amp; (KI (1)) &amp; (RA (1))</td>
</tr>
<tr>
<td>8</td>
<td>(KI (2) &amp; RA (2)) &amp; (PC + PQ (4)).</td>
</tr>
<tr>
<td>10</td>
<td>(KI + RA-&gt;DM (4)) &amp; (KI (1)) &amp; (RA (1)) &amp; (PC + PQ (4)).</td>
</tr>
</tbody>
</table>

KI (Key Indicators); RA (Risk Assessment); PC (Program Compliance/Licensing); PQ (Program Quality Initiatives; DM (Differential Monitoring).
The Licensing Law:
All Rules that are promulgated based upon the Law

Compliance Decision:
100% compliance with all rules all the time.

Key Indicators are ok to use.
Risk Assessment is ok to use.

When Key Indicators and Risk Assessments Can Be Used

Validation Approaches (Zellman & Fiene, 2012)

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

DMLMA© Expected Thresholds

DMLMA© Expected Thresholds
- .70+
- .50+
- .30+

DMLMA© Key Elements Examples
- CI x KI
- RA x CI; RA x DM; RA x KI; DM x KI; DM x PD
- PQ x CI; PQ x CO; RA x CO; KI x CO; CI x CO

Interpretation of Inter-Correlations

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

Validation Approach/Research Question

<table>
<thead>
<tr>
<th>CCC Actual (Expected*)</th>
<th>FCC Actual (Expected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARDS/Key Indicators</td>
<td>VALIDATED</td>
</tr>
<tr>
<td>KI x CR</td>
<td>.49 (.50+)</td>
</tr>
<tr>
<td>KI x LS</td>
<td>.78 (.70+)</td>
</tr>
<tr>
<td>MEASURES/Core Rules/ACDW</td>
<td>VALIDATED</td>
</tr>
<tr>
<td>CR x LS</td>
<td>.69 (.50+)</td>
</tr>
<tr>
<td>CR x ACDW</td>
<td>.76 (.50+)</td>
</tr>
<tr>
<td>OUTPUTS/Program Quality</td>
<td>VALIDATED</td>
</tr>
<tr>
<td>ECERS-R/PK x LS</td>
<td>.37 (.30+)</td>
</tr>
<tr>
<td>ECERS-R/PS x LS</td>
<td>.29 (.30+)</td>
</tr>
<tr>
<td>ECERS-R/PK x CR</td>
<td>.53 (.30+)</td>
</tr>
<tr>
<td>ECERS-R/PS x CR</td>
<td>.34 (.30+)</td>
</tr>
</tbody>
</table>

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

National Validation Data

<table>
<thead>
<tr>
<th>Providers who failed the Key Indicator review</th>
<th>Providers who passed the Key Indicator review</th>
<th>Row Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers who failed the Comprehensive review</td>
<td>37</td>
<td>X</td>
</tr>
<tr>
<td>Providers who passed the Comprehensive review</td>
<td>Y</td>
<td>2</td>
</tr>
<tr>
<td>Column Totals</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

Annotations for Figure 1

- A couple of annotations regarding Figure 1.
- W + Z = the number of agreements in which the provider passed the Key Indicator review and also passed the Comprehensive review.
- X = the number of providers who passed the Key Indicator review but failed the Comprehensive review. This is something that should not happen, but there is always the possibility this could occur because the Key Indicator Methodology is based on statistical methods and probabilities. We will call these False Negatives (FN).
- Y = the number of providers who failed the Key Indicator review but passed the Comprehensive review. Again, this can happen but is not as much of a concern as with “X”. We will call these False Positives (FP).

Formula for Agreement Ratio

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

\[
\text{Agreement Ratio} = \frac{A}{A + D}
\]

- 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 = 7 and C = 1 for a total of 8 disagreements. Putting the numbers into the above formula:

\[
\frac{42}{42 + 8} = 0.84
\]

- The False Positives (FP) ratio is 1.4 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.
Differential Monitoring Model

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.

Differential Monitoring Model (cont)

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.

Differential Monitoring Benefits

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.

Program Compliance/Licensing (CI)(PC)

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.

Advantages of Instrument Based Program Monitoring (IPM)

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

State Example of Violation Data (Fiene, 2013d)

Violation Data in Centers and Homes by Regional Location

<table>
<thead>
<tr>
<th>Region</th>
<th>Centers</th>
<th>Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.30</td>
<td>109</td>
</tr>
<tr>
<td>2</td>
<td>8.32</td>
<td>191</td>
</tr>
<tr>
<td>3</td>
<td>5.31</td>
<td>121</td>
</tr>
<tr>
<td>4</td>
<td>5.57</td>
<td>61</td>
</tr>
</tbody>
</table>

* = Average (Means)

Violation Data in Centers and Homes by Type of Licensing Inspection

<table>
<thead>
<tr>
<th>License Type</th>
<th>Centers</th>
<th>Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>7.44</td>
<td>36</td>
</tr>
<tr>
<td>Renewal</td>
<td>7.87</td>
<td>368</td>
</tr>
<tr>
<td>Amendment</td>
<td>9.10</td>
<td>10</td>
</tr>
<tr>
<td>Correction</td>
<td>6.22</td>
<td>14</td>
</tr>
<tr>
<td>Temporary</td>
<td>11.22</td>
<td>9</td>
</tr>
</tbody>
</table>

* = Average (Means)
Head Start: Content Area Correlations (Fiene, 2013c)

<table>
<thead>
<tr>
<th></th>
<th>CHS</th>
<th>ERSEA</th>
<th>FCE</th>
<th>FIS</th>
<th>GOV</th>
<th>SYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDE</td>
<td>.33**</td>
<td>.26**</td>
<td>.06ns</td>
<td>.14**</td>
<td>.13*</td>
<td>.33**</td>
</tr>
<tr>
<td>CHS</td>
<td>.29**</td>
<td>.18**</td>
<td>.09ns</td>
<td>.25**</td>
<td>.51**</td>
<td></td>
</tr>
<tr>
<td>ERSEA</td>
<td>.15**</td>
<td>.10*</td>
<td>.27**</td>
<td>.38**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCE</td>
<td>.01ns</td>
<td>.17**</td>
<td>.23**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIS</td>
<td>.13*</td>
<td>.23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOV</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- **USA vs World**

Program Quality (PQ)

- 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.

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

![Graph showing comparisons between different years and star levels in STARS.]

- Not in STARS
- Start w/STARS
- STARS 1-2
- STARS 3&4

Early Childhood Environment Rating Scale

- Thelma Harms
- Richard M. Clifford
ECERS/FDCRS By Type of Setting (Fiene, et al. 2002)

- 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

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

<table>
<thead>
<tr>
<th></th>
<th>HS</th>
<th>CC</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>8%</td>
<td>62%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>(3.99 or less)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>46%</td>
<td>23%</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>(4.00-4.99)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>46%</td>
<td>15%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>(5.00 or higher)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ECERS/FDCRS and Education of the Provider

- 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

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Range</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITERS</td>
<td>3.72</td>
<td>2.81 to 5.22</td>
<td>0.706</td>
</tr>
<tr>
<td>NECPA</td>
<td>83.50</td>
<td>59 to 138</td>
<td>30.81</td>
</tr>
<tr>
<td>PC/PQ</td>
<td>100%</td>
<td>Equal to QRIS Block System.</td>
<td></td>
</tr>
<tr>
<td>Substantial but not 100%</td>
<td>Equal to QRIS Point.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Determining Compliance

- 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/APHANRC, 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”

Risk Assessment (RA)

- 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.

State Example of Risk Assessment Tool

- Risk Assessment Matrix (RAM)
  - Regulatory Compliance (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+
  - RA Example = Stepping Stones

13 Key Indicators/Stepping Stones Crosswalk with State Rules Template

Using RAM to make licensing decisions
Key Indicators (KI) (Fiene & Nixon, 1985)

- 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.

Advantages of Key Indicators

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

Pre-Requisites for Key Indicators

- 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.

How to Develop Key Indicators

- 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.

Criteria for Using Key Indicators

- 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 cited 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

Key Indicator Systems Summary

<table>
<thead>
<tr>
<th>1980 - 2010</th>
<th>2011+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time savings only.</td>
<td>Time and cost savings.</td>
</tr>
<tr>
<td>Child care mostly.</td>
<td>All services.</td>
</tr>
<tr>
<td>Child care benchmarking.</td>
<td>Benchmarks in all services.</td>
</tr>
<tr>
<td>Substantial compliance.</td>
<td>CC national benchmarks.</td>
</tr>
<tr>
<td>Safeguards.</td>
<td>Safeguards.</td>
</tr>
<tr>
<td>Tied to outcomes study.</td>
<td>Tied to outcomes study.</td>
</tr>
<tr>
<td>Adult residential – PA.</td>
<td>National benchmarks.</td>
</tr>
<tr>
<td>Child residential – PA.</td>
<td>Inter-National benchmarks.</td>
</tr>
<tr>
<td>Risk assessment/weighting.</td>
<td>Risk assessment/DMLMA.</td>
</tr>
</tbody>
</table>
Key Indicator Formula Matrix

<table>
<thead>
<tr>
<th>Providers in Compliance with specific standard</th>
<th>Programs Out Of Compliance with specific standard</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Group = top 25%</td>
<td>A</td>
<td>Y</td>
</tr>
<tr>
<td>Low Group = bottom 25%</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Column Total</td>
<td>W</td>
<td>X</td>
</tr>
</tbody>
</table>

Key Indicator Matrix Expectations

- 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.

Key Indicator Statistical Methodology

\[ \phi = \frac{(A)(D) - (B)(C)}{\sqrt{(W)(X)(Y)(Z)}} \]

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.

Theory of Regulatory Compliance Algorithm (Fiene KIS Algorithm)

1) ZR = C
2) Review C history x 3 yrs
3) NC + C = CI
4) If CI ≥ 100 -> KI
5) If CI ≥ 0 or if C < 100 -> CI
6) If RA (NC% > 0) -> CI
7) KI + RA = DM
8) KI = ((A)(D) - (B)(C)) / sqrt((W)(X)(Y)(Z))
9) RA = ZR1 + ZR2 + ZR3 + .... ZRn / N
10) (TRC = 99%) + (\( \phi = 100% \))
11) CI < 100) + (CIPQ = 100) -> KI (10% CI) + RA (10-20% CI) + KIQP (5-10% of CIPQ) -> OU
Legend:

- 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 \(\geq 0.26\) Include; KI \(\leq 0.25\) Null, do not include
- RA = Risk Assessment
- SR1 = 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

Legend (cont)

- 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).
- D = Low Group + Programs in Compliance on Specific Compliance Measure (R1...Rn).
- E = 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 (\(\sum R = 98^+\)).
- Z = Total Number of Programs in Low Group (\(\sum R \leq 97\)).
- High Group = Top 25% of Programs in Compliance with all Compliance Measures (\(\sum R\)).
- Low Group = Bottom 25% of Programs in Compliance with all Compliance Measures (\(\sum R\)).

Key Indicator Coefficient Ranges

<table>
<thead>
<tr>
<th>KI Coefficient Range</th>
<th>Characteristic of Indicator</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+1.00) – (+0.25)</td>
<td>Good Predictor – Licensing</td>
<td>Include</td>
</tr>
<tr>
<td>(+1.00) – (+0.76)</td>
<td>Good Predictor – QRIS</td>
<td>Include</td>
</tr>
<tr>
<td>(+0.25) – (-0.25)</td>
<td>Unpredictable – Licensing</td>
<td>Do not Include</td>
</tr>
<tr>
<td>(+0.75) – (-0.25)</td>
<td>Unpredictable – QRIS</td>
<td>Do not Include</td>
</tr>
<tr>
<td>(-0.26) – (-1.00)</td>
<td>Terrible Predictor</td>
<td>Do not Include</td>
</tr>
</tbody>
</table>

Examples of Key Indicator Applications

- 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.

Examples of Health & Safety Key Indicators


- 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

Caring for Our Children Basics (2015)

- 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)
Federal Legislation

- 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”.

QRIS Key Indicators – CO. QualiStar

- 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.

Development of Head Start Key Indicators

- 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.

Head Start Key Indicators (Fiene, 2013c)

<table>
<thead>
<tr>
<th>CM</th>
<th>Phi</th>
<th>ES</th>
<th>CO</th>
<th>IS</th>
<th>Total Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDF.1</td>
<td>.28***</td>
<td>.10*</td>
<td>m</td>
<td>m</td>
<td>.30***</td>
</tr>
<tr>
<td>CHS.1</td>
<td>.29***</td>
<td>.15**</td>
<td>.16**</td>
<td>m</td>
<td>.39***</td>
</tr>
<tr>
<td>CHS.2</td>
<td>.33***</td>
<td>.18**</td>
<td>.15**</td>
<td>.10*</td>
<td>.36***</td>
</tr>
<tr>
<td>CHS.21</td>
<td>.40***</td>
<td>.18**</td>
<td>.15**</td>
<td>m</td>
<td>.54***</td>
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<td>CHS.10</td>
<td>.30***</td>
<td>.11*</td>
<td>.11*</td>
<td>m</td>
<td>.24***</td>
</tr>
<tr>
<td>PRO.21</td>
<td>.31***</td>
<td>.11*</td>
<td>m</td>
<td>m</td>
<td>.46***</td>
</tr>
<tr>
<td>SYS.21</td>
<td>.47***</td>
<td>.15**</td>
<td>.16**</td>
<td>.14**</td>
<td>.55***</td>
</tr>
<tr>
<td>SYS.34</td>
<td>.58***</td>
<td>.13**</td>
<td>.10*</td>
<td>m</td>
<td>.36***</td>
</tr>
</tbody>
</table>

* P < .05
** P < .01
*** P < .001
Head Start Key Indicators Sample Content

**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)

**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)

**HSKI-C Monitoring Protocol**

- Administration for Children and Families
- U. S. Department of Health and Human Services
- Office of Head Start
- September 8, 2014

**Conceptual Similarities Between Licensing & QRIS and Key Indicator Methodology**

- 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.

**Other Examples of Key Indicators**

- **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

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

<table>
<thead>
<tr>
<th>Providers with a 5 or higher on Item 16</th>
<th>Programs with a 3 or less on Item 16</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Group – 5.00+</td>
<td>117</td>
<td>117</td>
</tr>
<tr>
<td>Low Group – 3.00 or less</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>Column Total</td>
<td>117</td>
<td>152</td>
</tr>
</tbody>
</table>

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 the 2006 QRIS – Keystone STARS Evaluation.

**Box Plot of ECERS Item 16**
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.

Reward good compliance:
- Abbreviated inspection – if no serious violations, for a period of time
- Fewer full compliance reviews if compliance record is strong
- 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)

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.

- 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

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

**Core Indicators**
- Screener = CR + KI

**Monitoring Visit**
- Licensing Study
- Core Indicators

**Compliance Decisions:**
- Core Indicators (100%) = the next visit is a Monitoring Visit. Every 3-4 years a full Licensing Study is conducted.
- Core Indicators (not 100%) = 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.
- Less than 96% with all rules which indicates lower compliance with all rules. The next visit is a Licensing Study.

**Math Model for Computing ACR (Fiene, 1979)**

\[
\begin{align*}
CH &= \frac{(NC \times (TH + TO))}{2} \div (1/T_A) \\
\text{Where:} \\
CH &= \text{Contact Hours} \\
NC &= \text{total number of children on the maximum enrollment day.} \\
TO &= \text{total number of hours the center is open.} \\
TH &= \text{total number of hours at full enrollment.} \\
TA &= \text{total number of teaching staff.}
\end{align*}
\]

Professional Development (PD) (Fiene, 1995, Fiene, et al., 1998)

- 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.

**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.

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

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Pre - Test</th>
<th>Post - Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITERS</td>
<td>130.90</td>
<td>130.90</td>
</tr>
<tr>
<td>ARNETT</td>
<td>118.99</td>
<td>118.99</td>
</tr>
<tr>
<td>KIDI</td>
<td>116.68</td>
<td>116.68</td>
</tr>
<tr>
<td>BLOOM</td>
<td>116.98</td>
<td>116.98</td>
</tr>
</tbody>
</table>

**Correlations**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Pre-Final Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>Pre-Final Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>Post-Final Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>Post-Final Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITERS</td>
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<td>45</td>
<td>0.633</td>
<td>0.633</td>
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<td>0.633</td>
<td>0.633</td>
<td>45</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
</tr>
<tr>
<td>ARNETT</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
<td>0.633</td>
<td>0.633</td>
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<td>0.633</td>
<td>0.633</td>
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</tr>
<tr>
<td>KIDI</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
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<td>0.633</td>
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<td>45</td>
</tr>
<tr>
<td>BLOOM</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
<td>0.633</td>
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<td>45</td>
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<td>0.633</td>
<td>45</td>
<td>0.633</td>
<td>0.633</td>
<td>45</td>
</tr>
</tbody>
</table>

**Infant-Toddler Teacher Mentoring**
ITERS/HOME Post-Test Scores

<table>
<thead>
<tr>
<th>Workshops (6 hrs)</th>
<th>Certificate + Mentoring (18+6 hrs)</th>
<th>Mentoring Caregiver (50 hrs)</th>
<th>Mentoring Director (50 hrs)</th>
<th>Mentoring Parents (45 hrs)</th>
<th>Mentoring Caregiver + Parent (135 hrs)</th>
<th>Mentoring Caregiver + Parent + Director (225 hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.76</td>
<td>4.01</td>
<td>4.21</td>
<td>4.03</td>
<td>4.23</td>
<td>4.55</td>
<td>5.04</td>
</tr>
</tbody>
</table>

Child Outcomes (CO)

- **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).

Correlation of Accreditation, Licensing, & Training with Child Outcomes

<table>
<thead>
<tr>
<th>Quality</th>
<th>Training</th>
<th>Accreditation</th>
<th>Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECERS</td>
<td>.23*</td>
<td>.33*/.34*</td>
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</tr>
<tr>
<td>EWECS/CCECD</td>
<td>.29*</td>
<td>.31*/.34*</td>
<td>.30*/.34*</td>
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<td>NECPA/NAEYC</td>
<td>.29*</td>
<td>.30*/.34*</td>
<td></td>
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</tr>
<tr>
<td>Slosson</td>
<td>.23*</td>
<td>.35*/.34*</td>
<td></td>
</tr>
<tr>
<td>CBI-INT</td>
<td>.15/ .14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TELD</td>
<td>.28*/.22*</td>
<td>.31*/.34*</td>
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</tr>
<tr>
<td>ALI</td>
<td>.01/ .11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM</td>
<td>.21*/.20*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key Element ECPQIM/DMLMA Publication Summary

- **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 & Fienie, 1997).

Outstanding Issues

- **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.**

Methodological Issues & Findings

- 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 Fien 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.
Lessons Learned

- 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.

Future Research

- 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 or will be 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.

Concluding Thoughts

- 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 is the need to balance regulatory compliance with quality indicators.
- 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 between 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.
- There is very little variance in licensing data with generally only 20 rules separating the top compliant programs from the lowest compliant programs.

Core Indicators – Final Thoughts

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

Early Childhood Program Quality Indicator Model (ECPQIM) Evolution

- 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) 2012-15. (ECPQIM4+)
The following graphics represent the previous generations of ECPQIM 1-4 beginning in 1975 up to the present model (DMLMA, 2013).


\[ CO + PO = (PD + PC + PQ)/PM \]

Where:
- **CO** = Child Outcomes
- **PO** = Provider Outcomes
- **PD** = Professional Development
- **PC** = Program Compliance/Licensing
- **PQ** = Program Quality/QRIS
- **PM** = Program Monitoring

**Differential Monitoring Logic Model & Algorithm (DMLMA©) (Fiene, 2012): A 4th Generation ECPQIM – Early Childhood Program Quality Indicator Model**

\[ CO \times PQ \Rightarrow RA + KI \Rightarrow DM \Rightarrow PD \Rightarrow CO \]

**Definitions of Key Elements**:
- **CO**: 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)

**Early Childhood Program Quality Improvement and Indicator Models (ECPQI2M0–4©)**

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).
Theory of Regulatory Compliance and Early Childhood Outcomes Algorithms

**Theory of Early Childhood Outcomes**

- $ECO = \frac{1}{2} (0.5PD + 0.3PQ + 0.2PC)$

**Theory of Regulatory Compliance**

- $RC = DM (KI/RA) > CI (PQ/CO)$

**RELATED PUBLICATIONS AND REPORTS**

- Class (1995). Learning, unlearning a renewal, UC Irvine, University of Southern California.
- Fiene, Greenberg, Bergsten, Carl, Fegley, & Gibbons (2002). Head Start Key Indicators. Middletown: Pennsylvania, Research Institute for Key Indicators.

**Resources**

- For the interested reader, please consult the following excellent publications by the Assistant Secretary's Office for Planning and Evaluation, the Office of Child Care, and the National Resource Center for Health and Safety in Child Care that will provide additional insights into program monitoring in general, differential monitoring in particular, risk assessment and key indicator systems:
  - For the interested reader, please consult the following excellent publications by the Assistant Secretary's Office for Planning and Evaluation, the Office of Child Care, and the National Resource Center for Health and Safety in Child Care that will provide additional insights into program monitoring in general, differential monitoring in particular, risk assessment and key indicator systems:
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