RIKI Technical Research Note

This technical Research Note will provide the algorithm for the Theory of Regulatory Compliance (TRC) as proposed by Fiene in 2016 and 2019. The algorithm will provide the basic relationship between differential monitoring, comprehensive inspections, program quality, and client outcomes.

The TRC Algorithm

TRC = DM (RA/KI) > CI x PQ/CO

Where:

DM = Differential Monitoring such as weighted risk assessment (RA) or key indicators (KI).
CI = Comprehensive Inspections in which all rules/regulations are reviewed.
PQ = Quality Rating and Improvement Systems or Early Childhood Environment Scales.
CO = Client Outcomes such as child development assessments.

What the Algorithm Means:

The Theory of Regulatory Compliance (TRC) algorithm essentially means that using risk assessment (RA) or key indicators (KI) is both more cost effective and efficient than completing comprehensive inspections (CI) of facilities in correlating with program quality (PQ) or client outcomes (CO). Completing abbreviated/targeted reviews (DM) are better than doing more comprehensive reviews (CI) in which full compliance is the goal. The Theory of Regulatory Compliance indicates that substantial and not full regulatory compliance is in the best interest of the client and produces the highest level of program quality (PQ).
Differential Monitoring Logic Model and Algorithm (DMLMA)\(^\circledast\): A New Early Childhood Program Quality Indicator Model\(^4\) (ECPQIM\(^4\))\(^\circledast\) For Early Care and Education Regulatory Agencies

Richard Fiene, Ph.D.

This Differential Monitoring Logic Model and Algorithm (DMLMA\(^\circledast\)) is a 4\(^{th}\) generational Early Childhood Program Quality Indicator Model\(^4\) (ECPQIM\(^4\))\(^\circledast\) in which the major monitoring systems in early care and education are integrated conceptually so that the overall early care and education system can be assessed and validated. With this new model, it is now possible to compare results obtained from licensing systems, quality rating and improvement systems (QRIS), risk assessment systems, key indicator systems, technical assistance, and child development/early learning outcome systems. The various approaches to validation are interposed within this model and the specific expected correlational thresholds that should be observed amongst the key elements of the model are suggested (see Table 1 and Figures 1 & 2).

The DMLMA\(^\circledast\) can be used by state agencies (child care, child residential, adult residential (just replace Child Outcomes with Adult Outcomes)), Federal agencies (Head Start, child care, Pre-K), and large provider organizations where an economy of scale is required. This model can be used with state as well as national standards, such as state licensing rules/regulations and Head Start Performance Standards or Caring for Our Children/Stepping Stones. Most states and Federal agencies have either some or all of the key elements of this model in their overall monitoring systems. The purpose of this model is to alter a one-size fits all monitoring system to one that is targeted, spending more time with problem programs who need additional assistance. This is a cost neutral model that is both cost effective and efficient and re-allocates resources from the compliant programs to the non-compliant programs.

**Key Elements** (see Figures 1 & 2):  
**CI** = state or federal standards, usually rules or regulations that measure health and safety - Caring for Our Children or Head Start Performance Standards will be applicable here.  
**PQ** = Quality Rating and Improvement Systems (QRIS) standards at the state level; ERS (ECERS, ITERS, FDCRS), CLASS, or CDPES (Fiene, 2007).  
**RA** = risk assessment tools/systems in which only the most critical rules/standards are measured. Stepping Stones is an example of this approach.  
**KI** = key indicators in which only predictor rules/standards are measured. The Thirteen Indicators of Quality Child Care is an example of this approach.  
**DM** = differential monitoring decision making in which it is determined if a program is in compliance or not and the number of visits/the number of rules/standards are ascertained from a scoring protocol.  
**PD** = technical assistance/training and/or professional development system which provides targeted assistance to the program based upon the DM results.  
**CO** = child outcomes which assesses how well the children are developing which is the ultimate goal of the system.

Once the above key elements are in place, it is then possible to look at the relationships amongst them to determine if the system is operating as it was intended. This is done through a validation (Figure 2) of the overall system and assessing the inter-correlations (Figure 1) to determine that the DM system is improving the health, safety, program quality and ultimately the overall development of the children it serves.

The DMLMA\(^\circledast\) provides a cross-cutting methodology that can be used in all early care and education delivery systems as well as in other human services. In the past many of these monitoring systems have functioned in silos. The DMLMA\(^\circledast\) integrates all these various monitoring systems together so that the overall monitoring system can be validated as being cost effective and efficient.
STATE AGENCY PLAN (These Steps can be viewed as an overall plan as outlined in Zellman & Fiene (2012):

The **first step** in utilizing the DMLMA for a state is to take a close look at its Comprehensive Licensing Tool (CI) that it uses to collect violation data on all rules with all facilities in its respective state. If the state does not utilize a tool or checklist or does not review all violation data than it needs to consider these changes because the DMLMA is based upon an Instrument Based Program Monitoring System (IPM) which utilizes tools/checklists to collect data on all rules.

The **second step** for the state is to compare their state’s rules with the National *Health and Safety Performance Standards (Caring for Our Children)* to determine the overlap and coverage between the two. This is the first approach to validation which involves Standards review (Zellman & Fiene, 2012).

The **third step** for the state if it utilizes a Risk Assessment (RA) tool is to assess the relationship between this tool and *Stepping Stones* to determine the overlap and coverage between the two. This is a continuation of the first approach to validation which involves Standards review (Zellman & Fiene, 2012).

The **fourth step** for the state is to compare the results from the CI with the RA tools. This step is the second approach to validation which involves Measures (Zellman & Fiene, 2012). The correlation between CI and RA should be at the .50 level or higher (.50+)(see Table 1).

In the **fifth step**, if a state is fortunate enough to have a QRIS – Quality Rating and Improvement System in place and has sufficient program quality (PQ) data available then they will have the ability to compare results from their CI tool with their PQ tool and validate outputs by determining the relationship between compliance with health and safety rules (CI) and program quality (PQ) measures, such as the ERS’s, CLASS, CDPES, etc… This is a very important step because very few empirical demonstrations appear in the research literature regarding this relationship. This step is the third approach to validation which involves Outputs (Zellman & Fiene, 2012). It would be expected that lower correlations (.30+) would be found between CI and PQ because these tools are measuring different aspects of quality such as health & safety versus caregiver-child interactions or overall classroom quality.

The **sixth step** is for the state to generate a Key Indicator (KI) tool from the CI data base. Please see Fiene & Nixon (1985) and Fiene & Kroh (2000) for a detailed explanation of the methodology for generating a KI tool. This step is also part of the second approach to validation which involves Measures. The correlation between the CI and KI should be very high (.70+) because the KI is a subset of predictor rules taken from the CI data base. If a state did not want to use the KI methodology, a direct comparison could be drawn from The *Thirteen Indicators of Quality Child Care* (Fiene, 2002).

The **seventh step** for the state is to use the RA and KI tools together to determine overall compliance of facilities and how often and which rules will be monitored for future visits. This is the basic component of a Differential Monitoring (DM) approach and continues the second approach to validation (Measures). Also, this step should drive decisions within the technical assistance/training/professional development (PD) system in what resources are allocated to a particular facility. It would be expected that moderate correlations (.50+) would be found amongst RA, KI, DM, and PD.

The **eighth and final step** for the state is to compare the results from the various monitoring tools (CI, PQ, RA, KI) with any child development outcome (CO) data they collect. This is a relatively new area and few, if any, states at this point have this capability on a large scale. However, as Early Learning Networks and Standards are developed, this will become more common place. This step is the forth approach to validation which involves Outcomes (Zellman & Fiene, 2012). The correlations between CI, PQ, RA, KI and CO will be on the lower end (.30+) because there are so many other variables that impact children’s development other than child care facilities.

Validation is a continuous approach and is not a once and done process. States should look at their monitoring systems on an on-going basis and make the necessary adjustments as data are collected and compared in order to keep program monitoring as cost effective and efficient.
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.
### Table 1: DMLMA® Expected Thresholds

<table>
<thead>
<tr>
<th>Key Elements</th>
<th>PQ</th>
<th>RA</th>
<th>KI</th>
<th>DM</th>
<th>PD</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI</td>
<td>0.3</td>
<td>0.5</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>PQ</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>RA</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>KI</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>DM</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>PD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.3</td>
</tr>
</tbody>
</table>

### RELATED PUBLICATIONS:


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Figure 1: Differential Monitoring Logic Model & Algorithm (DMLMA)

**DMLMA® Expected Thresholds:**

High Correlations (.70+) = CI x KI.
Moderate Correlations (.50+) = CI x RA; RA x DM; RA x KI; KI x DM; DM x PD.
Lower Correlations (.30+) = PQ x CI; PQ x CO; PQ x DM; RA x CO; KI x CO; CI x CO.

- Licensing System – Health & Safety Rules (CI)
- Risk Assessment Tool (RA)
- Differential Monitoring (DM)
- Technical Assistance (PD)
- Child Outcomes (CO)
- Quality Rating & Improvement (QRIS)(PQ)
- Key Indicator Tool (KI)

CI Visit – less than 100% on KI & RA
KI Visit – 100% on previous KI & RA
Figure 2: Differential Monitoring Logic Model & Algorithm (DMLMA)© and Validation Approaches (Zellman & Fiene, 2012)

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

(1) Standards Validation
(2) Measures Validation
(3) Output Validation
(4) Outcome Validation


Quality Rating & Improvement (QRIS)(PQ)(3) → Key Indicator Tool (KI)(1,2) → CI Visit – less than 100% on KI & RA

KI Visit – 100% on previous KI & RA
Technical Detail Updates to the Fiene Key Indicator Methodology

January 2015

The Key Indicator Methodology has recently been highlighted in a very significant Federal Office of Child Care publication series on Contemporary Licensing Highlights. In that Brief the Key Indicator Methodology is described as part of a differential monitoring approach along with the risk assessment methodology. Because of the potential increased interest in the Key Indicator Methodology, a brief update regarding the technical details of the methodology is warranted. For those readers who are interested in the historical development of Key Indicators I would suggest they download the resources available at the end of the paper.

This brief paper provides the technical and statistical updates for the key indicator methodology based upon the latest research in the field related to licensing and quality rating & improvement systems (QRIS). The examples will be drawn from the licensing research but all the reader needs to do is substitute “rule” for “standard” and the methodology holds for QRIS.

Before proceeding with the technical updates, let me review the purpose and conceptual underpinning of the Key Indicator Methodology. Key Indicators generated from the methodology are not the rules that have the highest levels of non-compliance nor are they the rules that place children most at risk of mortality or morbidity. Key Indicators are generally somewhere in the middle of the pack when it comes to non-compliance and risk assessment. The other important conceptual difference between Key Indicators and risk assessment is that only Key Indicators statistically predict or are predictor rules of overall compliance with all the rules for a particular service type. Risk assessment rules do not predict anything other than a group of experts has rated these rules as high risk for children’s mortality/morbidity if not complied with.

Something that both Key Indicators and risk assessment have in common is through their use one will save time in their monitoring reviews because you will be looking at substantially fewer rules. But it is only with Key Indicators that you can statistically predict additional compliance or non-compliance; this is not the case with risk assessment in which one is only looking at those rules which are a state’s high risk rules. And this is where differential monitoring comes into play by determining which programs are entitled to either Key Indicators and/or risk assessment for more abbreviated monitoring reviews rather than full licensing reviews (the interested reader
should see the *Contemporary Licensing Series on Differential Monitoring, Risk Assessment and Key Indicators* published by the Office of Child Care.

**Technical and Statistical Framework**

One of the first steps in the Key Indicator Methodology is to sort the licensing data into high and low groups, generally the highest and lowest licensing compliance with all the rules can be used for this sorting. Frequency data will be obtained on those programs in the top level (usually top 20-25%) and the bottom level (usually the bottom 20-25%). The middle levels are not used for the purposes of these analyses. These two groups (top level & the bottom level) are then compared to how each program scored on each child care rule (see Figure 1). In some cases, especially where there is very high compliance with the rules and the data are extremely skewed, it may be necessary to use all those programs that are in full (100%) compliance with all the rules as the high group. The next step is to look at each rule and determine if it is in compliance or out of compliance with the rule. This result is cross-referenced with the High Group and the Low Group as depicted in Figure 1.

<table>
<thead>
<tr>
<th>Figure 1</th>
<th>Providers In Compliance on Rule</th>
<th>Programs Out Of Compliance on Rule</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highest level (top 20-25%)</strong></td>
<td>A</td>
<td>B</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Lowest level (bottom 20-25%)</strong></td>
<td>C</td>
<td>D</td>
<td>Z</td>
</tr>
<tr>
<td><strong>Column Total</strong></td>
<td>W</td>
<td>X</td>
<td>Grand Total</td>
</tr>
</tbody>
</table>

Once the data are sorted in the above matrix, the following formula (Figure 2) is used to determine if the rule is a key indicator or not by calculating its respective Key Indicator coefficient. Please refer back to Figure 1 for the actual placement within the cells. The legend (Figure 3) below the formula shows how the cells are defined.
Once the data are run through the formula in Figure 2, the following chart (Figure 4) can be used to make the final determination of including or not including the rule as a key indicator. Based upon the chart in Figure 4, it is best to have a Key Indicator Coefficient approaching +1.00 however that is rarely attained with licensing data but has occurred in more normally distributed data.

Continuing with the chart in Figure 4, if the Key Indicator Coefficient is between +.25 and -.25, this indicates that the indicator rule is unpredictable in being able to predict overall compliance with the full set of rules. Either a false positive in which the indicator appears too often in the low group as being in compliance, or a false negative in which the indicator appears too often in the high group as being out of compliance. This can occur with Key Indicator Coefficients above +.25 but it becomes unlikely as we approach +1.00 although there is always the possibility that other rules could be found out of compliance. Another solution is to increase the number of key indicator rules to be reviewed but this will cut down on the efficiency which is desirable and the purpose of the key indicators.

The last possible outcome with the Key Indicator Coefficient is if it is between -.26 and -1.00, this indicates that the indicator is a terrible predictor because it is doing just the opposite of the decision we want to make. The indicator rule would predominantly be in compliance with the low group rather than the high group so it would be statistically predicting overall non-compliance. This is obviously something we do not want to occur.

Figure 5 gives the results and decisions for a QRIS system. The thresholds in a QRIS system are increased dramatically because QRIS standard data are less skewed than licensing data and a
more stringent criterion needs to be applied in order to include particular standards as Key Indicators.

**Figure 4 – Thresholds for the Fiene Key Indicators for Licensing Rules**

<table>
<thead>
<tr>
<th>Key Indicator Range</th>
<th>Characteristic of Indicator</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+1.00) – (+.26)</td>
<td>Good Predictor</td>
<td>Include</td>
</tr>
<tr>
<td>(+.25) – (-.25)</td>
<td>Unpredictable</td>
<td>Do not Include</td>
</tr>
<tr>
<td>(-.26) – (-1.00)</td>
<td>Terrible Predictor</td>
<td>Do not Include</td>
</tr>
</tbody>
</table>

**Figure 5 – Thresholds for the Fiene Key Indicators for QRIS Standards**

<table>
<thead>
<tr>
<th>Key Indicator Range</th>
<th>Characteristic of Indicator</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+1.00) – (+.76)</td>
<td>Good Predictor</td>
<td>Include</td>
</tr>
<tr>
<td>(+.75) – (-.25)</td>
<td>Unpredictable</td>
<td>Do not Include</td>
</tr>
<tr>
<td>(-.26) – (-1.00)</td>
<td>Terrible Predictor</td>
<td>Do not Include</td>
</tr>
</tbody>
</table>

**RESOURCES AND NOTES**

For those readers who are interested in finding out more about the Key Indicator Methodology and the more recent technical updates as applied in this paper in actual state examples, please see the following publication:

In this book of readings/presentations are examples and information about differential monitoring, risk assessment, key indicators, validation, measurement, statistical dichotomization of data, and regulatory paradigms. This publication delineates the research projects, studies, presentations, & reports completed during 2013-14 in which these updates are drawn from.
For those readers interested in a historical perspective to the development of the Key Indicator methodology and licensing measurement, please see the following publications (most of these publications are available at the following website (http://rikinstitute.wikispaces.com/home):


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This short paper combines the use of risk assessment and licensing decision making matrices. In the past, risk assessment matrices have been used to determine the frequency of monitoring and licensing visits and scope of reviews based upon individual rule severity, risk factors, or both. Notably, these data were lacking because they had not been aggregated to determine what type of licensing decisions should be made based upon prevalence, probability, or regulatory compliance history data. The approach described here is a proposed solution to that problem.

Washington State’s HB 1661 (2017) redefined the department’s facility licensing compliance agreement (FLCA) process. One feature of this new process is to allow licensed providers to appeal violations noted on the FLCA that do not involve “health and safety standards.” To determine what licensing rules are and are not “health and safety standards” under the new definition, the department worked with community and industry stakeholders, and sought extensive public input, to assignment weights to licensing regulations. These weights were based on each regulation’s risk of harm to children. A rule designed to protect against the lowest risk of harm was assigned a “1” and a rule designed to protect against the highest risk of harm was assigned an “8”. Weights of “2” through “7” were determined accordingly. These weights were then grouped into three different categories based on risk:

- **Weights 8, 7 and some 6 = immediate concern**
- **Weights 4, 5 and most 6 = short term concern**
- **Weights 1, 2, and 3 = long term concern**

Using the new risk categories, the department developed a two-prong approach that considers both the risk of harm to children at the time a violation is monitored (single findings) and the risk of harm to children arising from violations noted for a given provider over a four year period (historical or overall findings). Used together, the department will assess the single findings and the historical findings to determine appropriate licensing actions, ranging from offering technical assistance to summarily suspending and revoking a child care license. In addition, the department will also note how many times a provider violates the same rule, with the severity of a licensing action increasing each time. For example, a violation within the short term concern category could be subject to a civil penalty when violated the second (or potentially the 3rd) time in a four-year period. Whereas, a violation in the immediate concern category could be subject to a civil penalty or more severe action upon the first violation. (See Graphic for Step 1).

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1 Washington law governing child care and early learning defines “health and safety standards” to mean “rules or requirements developed by the department to protect the health and safety of children against substantial risk of bodily injury, illness, or death.” RCW 43.216.395(2)(b).
Step 1:

A more difficult task is assigning initial thresholds for the overall finding score. It is this second step (Step 2) where we need to consider probability and severity side by side as depicted in Chart 1 below which is generally considered the standard Risk Assessment Matrix in the licensing research literature:

Step 2:

<table>
<thead>
<tr>
<th>Chart 1 – Risk Assessment Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Risk/</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Severity</td>
</tr>
<tr>
<td>Medium</td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td># of Rules</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The next step (Step 3) is to build in licensing decisions using a graduated Tiered Level system as depicted in the following figure. In many jurisdictions, a graduated Tiered Level system is used to make determinations related to monitoring visits (frequency and scope) and not necessarily for licensing decisions.
Step 3:

Step 4 involves combining steps 1 and 2 into a revised risk assessment matrix as depicted in the following chart:

Step 4:

Risk Assessment (RA) Matrix Revised

<table>
<thead>
<tr>
<th>Risk/Severity</th>
<th>Levels</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td></td>
<td>9</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Short-term</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Long-term</td>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Probability

- 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.

The last step (Step 5) is to take steps 3 and 4 and combine them together into the following charts which will provide guidance for making licensing decisions about individual programs based upon regulatory compliance prevalence, probability, and history as well as rule risk/severity data.
Step 5:

Licensing Decision Making Matrix*

Tier 1 = (1 – 2) RA Matrix Score

Tier 2 = (3) RA Matrix Score
Tier 3 = (4 – 5) RA Matrix Score

Tier 4 = (6 – 9) RA Matrix Score

*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+

The following algorithms should be followed in moving from the Risk Assessment Matrix (RAM) (Step 4) to the Licensing Decision Making Matrix (Step 5):

1) Σ (Yr1 RC + Yr2 RC + Yr3 RC + Yr4 RC).
2) Identify all rules by high, medium, low, no risk levels. HR, MR, LR, NULL.
3) HR = Tier4.
4) Σ NC Total/# of Years = Average NC.
5) Σ NC by RCH, RCM, and RCL.
6) LR + RCL or LR + RCM = Tier 1.
7) LR + RCH = Tier 2.
8) MR + RCL or MR + RCM = Tier 3.
9) MR + RCH or HR + RCM or HR + RCL = Tier 4.
   HR + RCH = Tier 4+.

Risk Level:
HR = High Risk (7-8 weights)
MR = Medium Risk (4-6 weights)
LR = Low Risk (1-3 weights)

Prevalence Level:
RCH = High Non Compliance (NC) (8+) or Low Regulatory Compliance (RC) (92 or less)
RCM = Medium Non Compliance (3-7) or Medium Regulatory Compliance (93-97)
RCL = Low Non Compliance (1-2) or High Regulatory Compliance (98-99)
ABSTRACT

A new Early Childhood Program Quality Indicator Model (ECPQIM©) is described which utilizes targeted program monitoring (Differential Monitoring) via two licensing methodologies: Key Indicators and Risk Assessments. The theoretical & conceptual framework as well as a logic model are presented along with a scoring protocol that can be utilized to compare state and national organizations on how they are designing and implementing their program monitoring systems. A state plan is presented as well as results from five (5) states (Georgia, Kansas, Illinois, Colorado, and New York) and a national organization (Office of Head Start). The five states and national organization are then compared using the Differential Monitoring Scoring Protocol (DMSP©). The Head Start program monitoring system scored a perfect 10 out of 10 in utilizing the DMSP©.
Introduction

This Differential Monitoring Logic Model (DMLM©) provides a new Early Childhood Program Quality Indicator Model (ECPQIM4©) in which the major monitoring systems in early care and education are integrated conceptually so that the overall early care and education system can be assessed and validated. With this new model, it is now possible to compare results obtained from licensing systems, quality rating and improvement systems (QRIS), risk assessment systems, key indicator systems, technical assistance, and child development/early learning outcome systems (see Figures 1 & 2 for a graphical depiction of the theoretical underpinnings and actual design & logic model for the ECPQIM4©/DMLM).

The DMLM© can be used by state agencies (child care, child residential, adult residential (just replace Child Outcomes with Adult Outcomes)), Federal agencies (Head Start, child care, Pre-K), and large provider organizations where an economy of scale is required. This model can be used with state as well as national standards, such as state licensing rules/regulations and Head Start Performance Standards or Caring for Our Children/Stepping Stones. Most states and Federal agencies have either some or all of the key elements of this model in their overall
monitoring systems. The purpose of this model is to alter a one-size fits all monitoring system to one that is targeted, spending more time with problem programs who need additional assistance. This is a cost neutral model that is both cost effective and efficient and re-allocates resources from the compliant programs to the non-compliant programs.

Figure 1
The Theoretical Underpinnings for ECPQIM©: Early Childhood Program Quality Indicator Model©
Key Elements (see Figure 2): CI = state or federal standards, usually rules or regulations that measure health and safety - *Caring for Our Children or Head Start Performance* Standards will be applicable here. PQ = Quality Rating and Improvement Systems (QRIS) standards at the state level; ERS (ECERS, ITERS, FDCRS), CLASS, or CDPES (Fiene, 2007). RA = risk assessment tools/systems in which only the most critical rules/standards are measured. Stepping Stones is an example of this approach. KI = key indicators in which only predictor rules/standards are measured. The Thirteen Indicators of Quality Child Care is an example of this approach. DM = differential monitoring decision making in which it is determined if a program is in compliance or not and the number of visits/the number of rules/standards are ascertained from a scoring protocol. PD = technical assistance/training and/or professional development system which provides targeted assistance to the program based upon the DM results. CO = child outcomes which assesses how well the children are developing which is the ultimate goal of the system.

Once the above key elements are in place, it is then possible to look at the relationships amongst them to determine if the system is operating as it was intended; in other words, to determine if the DM system is improving the health, safety, program quality and ultimately the overall development of the children it serves.

The DMLM© provides a cross-cutting methodology that can be used in all early care and education delivery systems as well as in other human services. In the past many of these monitoring systems have functioned in silos. The DMLM© integrates all these various
monitoring systems together so that the overall monitoring system can be validated as being cost effective and efficient.

**Figure 2**

Early Childhood Program Quality Indicator Model (ECPQIM⁴©):
Differential Monitoring Logic Model (DMLM©)
Comprehensive National Example

---

**Program Compliance (PC)**
- Full Licensing Visit
- Comprehensive Instrument/Tool (CI)
- Health & Safety
- Structural Quality
  *Eg: Caring for Our Children (CFOC)*

**Program Quality (PQ) Initiatives:**
- Quality Rating & Improvement (QRIS)
- Professional Development (PD)
- Early Learning System (ELS)
- Process Quality
  *Eg: CLASS/ERS’s (ECERS, FDCRS)*

**Key Indicators (KI) – Abbreviated Visit**
Statistical predictor rules/standards that predict overall compliance with rules or standards.
*Eg: 13 Indicators of Quality Child Care*

**Risk Assessment (RA) – Abbreviated Visit**
Weighting of Rules or Standards
Places children at greatest risk of mortality or morbidity if non-compliance found.
*Eg: Stepping Stones to CFOC*

**Differential Monitoring (DM):** How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs.
Methodology

State Agency Plan for implementing a Differential Monitoring System:

The **first step** in utilizing the DMLM© for a state is to take a close look at its Comprehensive Licensing Tool (CI) that it uses to collect violation data on all rules with all facilities in its respective state. If the state does not utilize a tool or checklist or does not review all violation data than it needs to consider these changes because the DMLM© is based upon an Instrument Based Program Monitoring System (IPM) which utilizes tools/checklists to collect data on all rules.

The **second step** for the state is to compare their state’s rules with the National *Health and Safety Performance Standards (Caring for Our Children)* to determine the overlap and coverage between the two.

The **third step** for the state if it utilizes a Risk Assessment (RA) tool is to assess the relationship between this tool and *Stepping Stones* to determine the overlap and coverage between the two.

The **fourth step** for the state is to compare the results from the CI with the RA tools.

In the **fifth step**, if a state is fortunate enough to have a QRIS – Quality Rating and Improvement System in place and has sufficient program quality (PQ) data available then they will have the
ability to compare results from their CI tool with their PQ tool and validate outputs by determining the relationship between compliance with health and safety rules (CI) and program quality (PQ) measures, such as the ERS’s, CLASS, CDPES, etc… This is a very important step because very few empirical demonstrations appear in the research literature regarding this relationship.

The sixth step is for the state to generate a Key Indicator (KI) tool from the CI data base. Please see Fiene & Nixon (1985) and Fiene & Kroh (2000) for a detailed explanation of the methodology for generating a KI tool. If a state did not want to use the KI methodology, a direct comparison could be drawn from The Thirteen Indicators of Quality Child Care (Fiene, 2002).

The seventh step for the state is to use the RA and KI tools together to determine overall compliance of facilities and how often and which rules will be monitored for future visits. This is the basic component of a Differential Monitoring (DM) approach. Also, this step should drive decisions within the technical assistance/training/professional development (PD) system in what resources are allocated to a particular facility.

The eighth and final step for the state is to compare the results from the various monitoring tools (CI, PQ, RA, KI) with any child development outcome (CO) data they collect. This is a relatively new area and few, if any, states at this point have this capability on a large scale. However, as Early Learning Networks/Systems and Standards (ELS) are developed, this will become more common place.
The ECPQIM©DMLM© is presented without two additional items that were present in the 2012/2013 versions which are important to note. The algorithm (Fiene, 2012, 1013) and validation framework (Zellman & Fiene, 2012) are not presented because the author felt that these two components took away from a more direct presentation of differential monitoring. For those interested readers, please refer to my previous abstracts (Fiene, 2012, 2013) which included the algorithm and validation frameworks.

Just a brief word about the Theoretical Underpinnings for ECPQIM©. This graphic (Figure 1) attempts to provide the relationships amongst public policy, interventions, and empirical evidence through the lens of translational research, implementation science, and program monitoring. In constructing the ECPQIM© I have borrowed concepts from each area and integrated them in a model for monitoring early care and education programs. The graphic provides a means for displaying the relationships and potential intersections as well as the content that is important to each scientific/research field.

Figure 3 is provided as additional information regarding differential monitoring conceptually without all the details as in figure 2; and figure 4 is provided to demonstrate the impact that a state’s licensing law can have on using the Key Indicators and Risk Assessment methodologies. Also, taking Figure 2 and attempting to quantify these relationships, I am proposing a scoring protocol as depicted in Table 1. This can provide a numerical means of comparing various differential monitoring systems and their relative strength. This protocol could be a useful tool in future research for determining which combinations work best.
Figure 3
Licensing Rules, Compliance Reviews, Differential Monitoring, Abbreviated Tools, Risk Assessment, and Key Indicators

All Licensing Rules – Full Compliance Reviews

Differential Monitoring

How Often to Visit? What is Reviewed?

Frequency

More Often Less Often

Abbreviated Tool

Risk Assessment Weights
Key Indicators Predictors
Table 1: Differential Monitoring Scoring Protocol (DMSP)

<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>
Results

I have written extensively about an Early Childhood Program Quality Indicator Model (ECPQIM©) and its latest iteration presented as a logic model: Differential Monitoring Logic Model (DMLM©). Several states and Head Start have used the model in order to re-align their program monitoring systems. This paper will present the results of those new program monitoring systems through the lenses of the ECPQIM©/DMLM© logic model display. Each particular approach used various components of the overall comprehensive national model and I have highlighted those sections by connecting arrows.

The interested reader should obtain a copy of the Office of Child Care’s Licensing Brief on Differential Monitoring, Risk Assessment, and Key Indicators published by the National Center on Child Care Quality Improvements which gives additional details regarding these approaches and methodologies as well as other state examples. Please go to the following URL website: (https://childcareta.acf.hhs.gov/sites/default/files/1408_differential_monitoring_final_1.pdf). In fact, this paper builds upon that excellent Licensing Brief.

Let’s start with Figure 1 which provides the Comprehensive National Example that depicts all the possible interconnections and gives national examples from the research literature. As one will see, it is possible for a national organization or a state agency to select the various components from the model based upon what is available in their particular organization or state. All do have the program compliance/licensing component but not all have fully functional program quality initiatives or do not have the data to draw from the program quality initiatives.
The next level of components are the key indicator and risk assessment approaches or methodologies which organizations or state agencies can use alone or in tandem. One limitation in the key indicator methodology is not to use it with program initiatives if the data are not severely skewed in their data distribution as is the case with licensing data.

The last component is the resulting differential monitoring approach based upon the results from using the key indicator and risk assessment methodologies either alone or in tandem. This is the ultimate revision of the program monitoring system in which how often and what is reviewed are answered.

All the components are highlighted in Figure 5 because all are possibilities to be used by a national or state agency. The examples in Figure 5 are drawn from the national research literature so *Caring for Our Children* is the example for Program Compliance, Licensing, Health & Safety Comprehensive Instrument. The following examples in Figures 6-11 will show some differences in how national and state agencies have developed their respective differential monitoring systems. The tables (Tables 1-3) at the end of this paper (page 21-22) explains the scoring protocol. Also see the end of the paper for an explanation of Notes a,b,c (page 22).

Figure 5

Program Compliance (PC)
- Full Licensing Visit
- Comprehensive Instrument (CI)
- Health & Safety
- Structural Quality
  Eg: Caring for Our Children (CFOC)

Program Quality (PQ) Initiatives:
- Quality Rating & Improvement (QRIS)
- Professional Development (PD)
- Early Learning System (ELS)
- Process Quality
  Eq: CLASS/ERS’s (ECERS, FDCRS)

Key Indicators (KI) – Abbreviated Visit
- Statistical predictor rules/standards that predict overall compliance with rules or standards.
  Eg: 13 Indicators of Quality Child Care

Risk Assessment (RA) – Abbreviated Visit
- Weighting of Rules or Standards
- Places children at greatest risk of mortality or morbidity if non-compliance found.
  Eg: Stepping Stones to CFOC

Differential Monitoring (DM): How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs.

Figure 6 provides an example from New York where the state agency is attempting to restructure their early care and education program monitoring system to have a better balance between licensing and key program quality indicators. The plan is to have licensing staff collect data from both areas which means a need to save time in the licensing reviews via key indicators and to only identify indicators of quality through a risk assessment approach. The results from these
two methodologies will then be combined into a Quality Indicators Instrument to be used by licensing staff in their annual reviews.

**(ECPQIM4©)(DMLM©): New York Example (NY)**

**Figure 6**

<table>
<thead>
<tr>
<th>Program Compliance (PC)</th>
<th>Program Quality (PQ) Initiatives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Licensing Visit</td>
<td>Quality Rating &amp; Improvement (QRIS)</td>
</tr>
<tr>
<td>Comprehensive Instrument (CI)</td>
<td>Professional Development (PD)</td>
</tr>
<tr>
<td>Health &amp; Safety</td>
<td>Early Learning System (ELS)</td>
</tr>
<tr>
<td>Structural Quality</td>
<td>Process Quality</td>
</tr>
<tr>
<td>Eg: New York Licensing Rules</td>
<td>Eg: CLASS/ERS’s (ECERS, FDCRS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Indicators (KI) – Abbreviated Visit</th>
<th>Risk Assessment (RA) – Abbreviated Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical predictor rules/standards that predict overall compliance with rules or standards.</td>
<td>Weighting of Rules or Standards</td>
</tr>
<tr>
<td>Eg: New York Key Indicators</td>
<td>Places children at greatest risk of mortality or morbidity if non-compliance found.</td>
</tr>
<tr>
<td>Eg: New York Key Indicators</td>
<td>Eg: Selected Quality Indicators</td>
</tr>
</tbody>
</table>

**Differential Monitoring (DM):** How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs.

Figure 7 provides an example from Georgia in which the driving methodology is a risk assessment core rule review system that results in a differential monitoring system called the Annual Compliance Determination Worksheet (ACDW) approach. Key indicators are not used directly but were used as part of the risk assessment core rule development. Please note
how the relationship amongst the various components is different from the NYQI approach delineated in Figure 6. There is a link to their program quality initiatives which proved very significant in the validation studies performed on their Core Rule differential monitoring system.

(ECPQIM4©)(DMLM©): Georgia Example (GA)

Figure 7

Program Compliance (PC)
Full Licensing Visit
Comprehensive Instrument (CI)
Health & Safety
Structural Quality
Eg: Georgia Licensing Rules

Program Quality (PQ) Initiatives:
Quality Rating & Improvement (QRIS)
Professional Development (PD)
Early Learning System (ELS)
Process Quality
Eg: ERS’s (ECERS, FDCRS)

Key Indicators (KI) – Abbreviated Visit
Statistical predictor rules/standards that predict overall compliance with rules or standards.
Eg: 13 Indicators of Quality Child Care

Risk Assessment (RA) – Abbreviated Visit
Weighting of Rules or Standards
Places children at greatest risk of mortality or morbidity if non-compliance found.
Eg: Core Rules

Differential Monitoring (DM): How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs. Eg: Annual Compliance Determination Worksheet (ACDW)

Figure 8 presents a very different approach from the previous two approaches. In Kansas’s case, the state agency was only interested in developing a key indicator approach and was not interested in risk assessment nor had the capability to tie data together from their program quality
initiatives. This is noted by the arrow connections and yellow highlighting which is more minimal in this figure. As one can see, this still is a viable option for developing a differential monitoring approach.

**Figure 8**

**Program Compliance (PC)**
- Full Licensing Visit
- Comprehensive Instrument (CI)
- Health & Safety
- Structural Quality
  *Eg: Kansas Licensing Rules*

**Program Quality (PQ) Initiatives:**
- Quality Rating & Improvement (QRIS)
- Professional Development (PD)
- Early Learning System (ELS)
- Process Quality

**Key Indicators (KI) – Abbreviated Visit**
- Statistical predictor rules/standards that predict overall compliance with rules or standards.
  *Eg: Kansas Key Indicators*

**Risk Assessment (RA) – Abbreviated Visit**
- Weighting of Rules or Standards
- Places children at greatest risk of mortality or morbidity if non-compliance found.

**Differential Monitoring (DM):** How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs.

Figure 9 depicts the use of both key indicator and risk assessment methodologies with their licensing system but no data interaction with their program quality initiatives. It is proposed that
both methodologies will be used together in future licensing reviews of programs which will constitute their differential monitoring system approach.

(ECPQIM4©)(DMLM©): Illinois Example (IL)

Figure 9

Program Compliance (PC)
- Full Licensing Visit
- Comprehensive Instrument (CI)
- Health & Safety
- Structural Quality
  *Eg: Illinois Licensing Rules*

Program Quality (PQ) Initiatives:
- Quality Rating & Improvement (QRIS)
- Professional Development (PD)
- Early Learning System (ELS)
- Process Quality

Key Indicators (KI) – Abbreviated Visit
- Statistical predictor rules/standards that predict overall compliance with rules or standards.
  *Eg: Illinois Key Indicators*

Risk Assessment (RA) – Abbreviated Visit
- Weighting of Rules or Standards
  - Places children at greatest risk of mortality or morbidity if non-compliance found.
  *Eg: Illinois Weighting Consensus*

Differential Monitoring (DM): How often to visit – More or Less? And what is reviewed – More or Less? Time saved on the compliant programs can be used with the non-compliant programs. This should create a more cost effective and efficient program monitoring system with targeted reviews which should ultimately lead to better outcomes (CO) for the children and their families served in the programs.

Figure 10 depicts the new aligned differential monitoring system being employed in Head Start. Head Start has a very comprehensive system that employs various aspects from all the components in their system. The Head Start Performance Standards are very comprehensive, CLASS is used as a major process quality measure and both a key indicator (Head Start Key
Running Head: Differential Monitoring Logic Model

Indicator – Compliance (HSKI-C)) and risk assessment (Selected Compliance Measures) are utilized in their program monitoring system. The Head Start new Aligned Program Monitoring system comes closest to the comprehensive national model.

(ECPQIM4©)(DMLM©): Head Start Example (HS)

Figure 10

In Figure 11 a very different scenario played out in the state of Colorado in which key indicators were developed for their QRIS system rather than for their licensing system. As mentioned earlier, when applying the key indicator methodology to Quality Initiatives one needs to be very
Running Head: Differential Monitoring Logic Model

cautious if the data distribution is not exceptionally skewed as is the case with licensing data.

Some of the data were sufficiently skewed to be able to be used in generating quality key
indicators there were limitations noted.

**ECPQIM4©)(DMLM©): Colorado Example (CO)**

**Figure 11**

Program Compliance (PC)
Full Licensing Visit
Comprehensive Instrument (CI)
Health & Safety
Structural Quality

Program Quality (PQ) Initiatives:
Quality Rating & Improvement (QRIS)
Professional Development (PD)
Early Learning System (ELS)
Process Quality
*Eg: ECERS*

Key Indicators (KI) – Abbreviated Visit
Statistical predictor rules/standards that predict overall compliance with rules or
standards.
*Eg: Colorado Quality Key Indicators*

Risk Assessment (RA) – Abbreviated Visit
Weighting of Rules or Standards
Places children at greatest risk of mortality or morbidity if non-compliance found.

Differential Monitoring (DM): How often to visit – More or Less? And what is reviewed – More or
Less? Time saved on the compliant programs can be used with the non-compliant programs. This
should create a more cost effective and efficient program monitoring system with targeted reviews
which should ultimately lead to better outcomes (CO) for the children and their families served in
the programs.
Conclusion

This paper presents the latest examples of national and state agencies differential monitoring approaches. It clearly demonstrates that there are many different approaches to developing and implementing differential monitoring. A key research question for the future as more states utilize the different approaches is to study if one approach is better than the next or a combination works better than most. From my 40+ years of experience as a researcher and state policy analyst I would suggest that a more comprehensive approach that employs the full menu of program quality initiatives similar to the Head Start or the NYQI approaches will be most effective.

As mentioned in the introduction of this paper in describing the Comprehensive National Example of the DMLM© Model the following three tables (Tables 1-3) present a Differential Monitoring Scoring Protocol (DMSP©) that can potentially be used to compare states on how in depth their differential monitoring system is. Table 1 describes the DMSP© in narrative terms delineating the various systems that need to be in place in order to get a particular score. A score of 0 means no systems are in place or do not intersect while a score of 10 means that all of the systems are in place and intersect or are linked. Table 2 gives the points assigned to the specific systems that are part of a differential monitoring system. And Table 3 gives the actual points assigned to the state & national examples that have been presented in this paper for New York (NY), Georgia (GA), Head Start (HS), Kansas (KS), Illinois (IL), and Colorado (CO). The total points assigned to the comprehensive model are also provided as a point of context.
There are a couple of important things to note about the DMSP© in Table 2, such as: if Key Indicators (KI) and Risk Assessment (RA) are linked, it negates KI and RA being scored separately. If KI and RA are developed separately, it is very improbable that they will not be linked but that is always a possibility, so it is listed as so. Linking Program Compliance/Licensing (PC) and Program Quality (PQ) Initiatives is a highly desirable event and is assigned a high score (4 points). Linking KI and RA is also considered a highly desirable event and is assigned a high score (4 points).

Table 1: Differential Monitoring Scoring Protocol (DMSP)©

<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>

Table 2: 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)
### Table 3: DMLM® SCORING PROTOCOL WITH STATE EXAMPLES

<table>
<thead>
<tr>
<th>SYSTEMS (pts)</th>
<th>MODEL</th>
<th>GA</th>
<th>NY</th>
<th>HS</th>
<th>IL</th>
<th>KS</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>KI (1)</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>RA (1)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>KI + RA -&gt; DM (4)</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>KI + RA (2)</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PC + PQ (4)</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>KI -&gt; DM (1)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>RA -&gt; DM (1)</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL (10)</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

GA (Georgia); NY (New York); HS (Head Start); IL (Illinois), KS (Kansas); CO (Colorado)

Notes a, b, c: The arrows going from Key Indicators (KI) and Risk Assessment (RA) to Differential Monitoring (DM) can be configured in the following ways: only KI (Kansas); only RA (don’t have an example of this as of this writing) or a combination of KI and RA (Illinois) but this configuration could mean all of the KI and RA rules which would be more rules than if only KI or RA rules were selected or only those rules that overlap (KI+RA) which would be a much reduced number of rules. Or a different configuration determined by the state agency.
REFERENCES


Key Words: Program Monitoring, Scoring Protocols, Differential Monitoring, Program Quality, Licensing.

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A Theory on the Relationship With Professional Development, Program Quality and Regulatory Compliance Predicting Early Childhood Outcomes

Richard Fiene, Ph.D.

July 2019

This abstract is the compilation of 50 years of research into early childhood professional development, program quality indicators and regulatory compliance and their respective impact on early childhood outcomes. Professional development, program quality and regulatory compliance all have impacts on early childhood outcomes (ECO) but if we put them all in the same equation, what are their relative impact on outcomes. That is the purpose of this abstract. Based upon results from the Research Institute for Key indicators (RIKI) Early Childhood Program Quality Improvement and Indicators Model (ECPQIM) data base, it is now possible to ascertain their relative weights.

For purposes of this abstract, professional development (PD) includes any training, coaching or technical assistance which focuses on teaching staff. Program quality (PQ) includes Quality Rating and Improvement Systems (QRIS) standards and their respective observational evaluations (ERS, CLASS). Regulatory compliance (RC) includes licensing health and safety rules and regulations as promulgated and enforced by state agencies. In the past, these systems have been dealt with in silos and there has been very little attempts at combining them in any fashion. One of the results of the ECPQIM data base was and is to attempt combining these various systems into a unified equation or algorithm.

Based on the results of the ECPQIM data base results, the following equation/algorithm can depict this unified relationship:

\[ ECO = \sum (0.50PD + 0.30PQ + 0.20RC) \]

In this relationship, the largest impact comes from the PD system, followed by the PQ system and lastly by the RC system. The implications of this relationship are that states may want to reconsider how they are allocating resources based upon this above equation/algorithm. This is a controversial proposal but one that should be considered since it is driven by empirical evidence into the relative impact over the past 50 years of research related to professional development, program quality and regulatory compliance as they relate to early childhood outcomes.