

**THE DIFFERENTIAL MONITORING MODEL:
RETHINKING HOW TO BEST MONITOR
QUALITY IN EARLY CARE AND EDUCATION**

Richard Fiene, Ph.D.

**Child Policy University Consortium
To be presented April 15, 2013**

Contents

Methods for Achieving Quality Child Care

Regulatory Paradigms

DMLMA Logic Model & Validation Approaches

DMLMA Expected Thresholds

Licensing/Program Compliance (PC) and Program Quality (PQ)

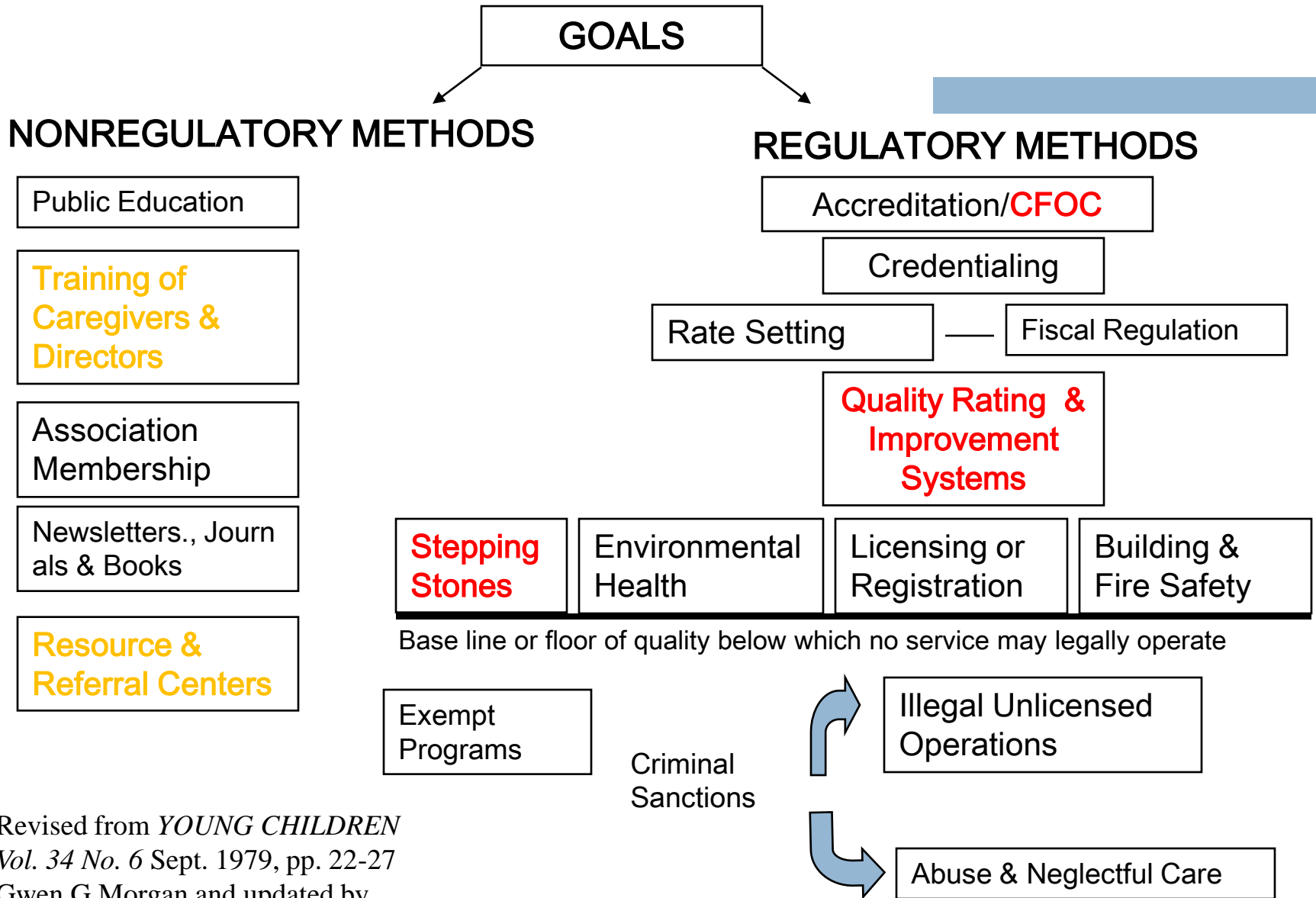
Risk Assessment (RA) and Key Indicators (KI)

Differential Monitoring (DM)

Professional Development (PD) and Child Outcomes (CO)

Previous Models (ECPQIM 1 – 3)

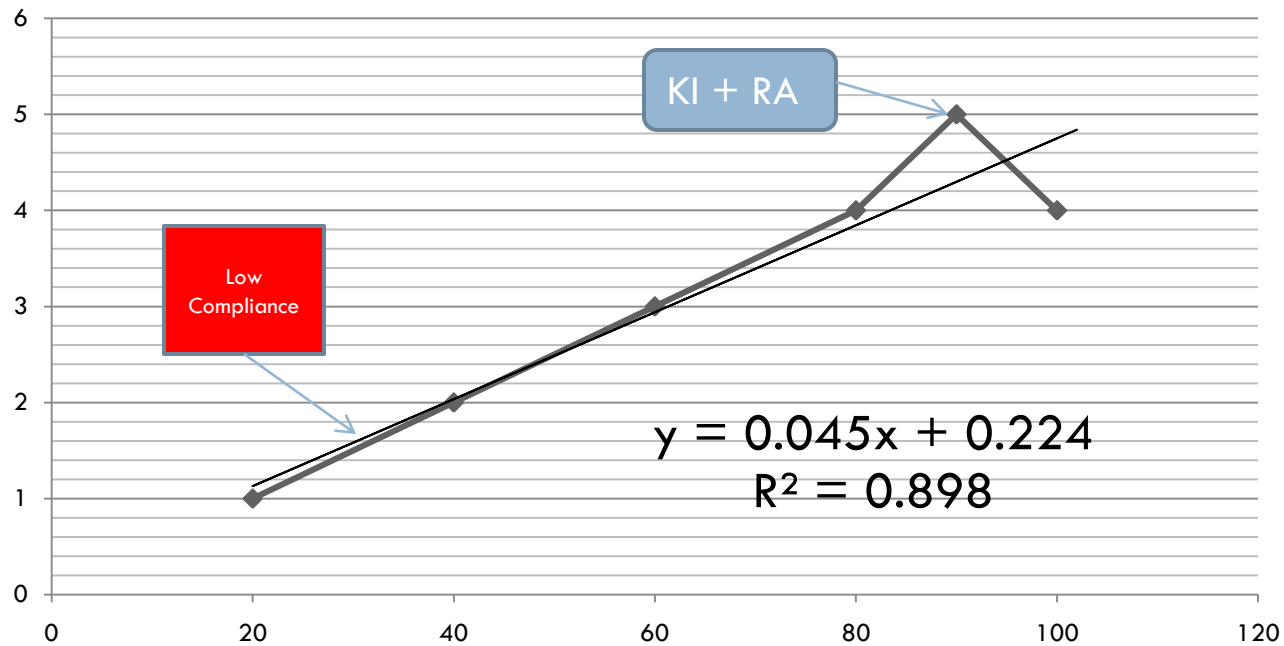
Methods for Achieving Quality Child Care



Revised from *YOUNG CHILDREN*
 Vol. 34 No. 6 Sept. 1979, pp. 22-27
 Gwen G Morgan and updated by
 Rick Fiene, Dec 2012.

Relationship between PC (CI) & PQ

PQ = ERS/CLASS



PC = % Rule Compliance

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.**

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

$$CI \times PQ \Rightarrow RA + KI \Rightarrow DM + PD \Rightarrow CO$$

Definitions of Key Elements:

CI = Comprehensive Licensing Tool (Health and Safety)(*Caring for Our Children*)

PQ = *ECERS-R, FDCRS-R, CLASS, CDPEs* (Caregiver/Child Interactions/Classroom Environment)

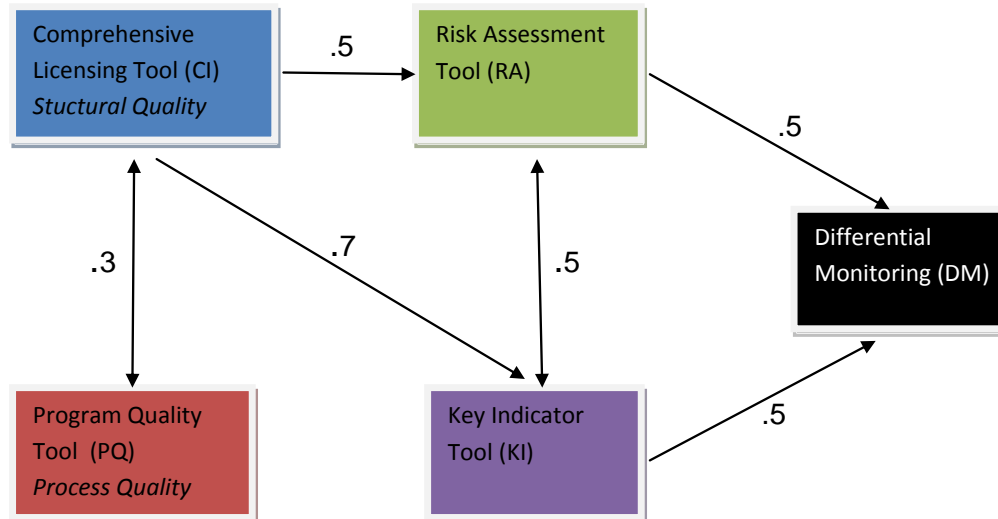
RA = Risk Assessment, (High Risk Rules)(*Stepping Stones*)

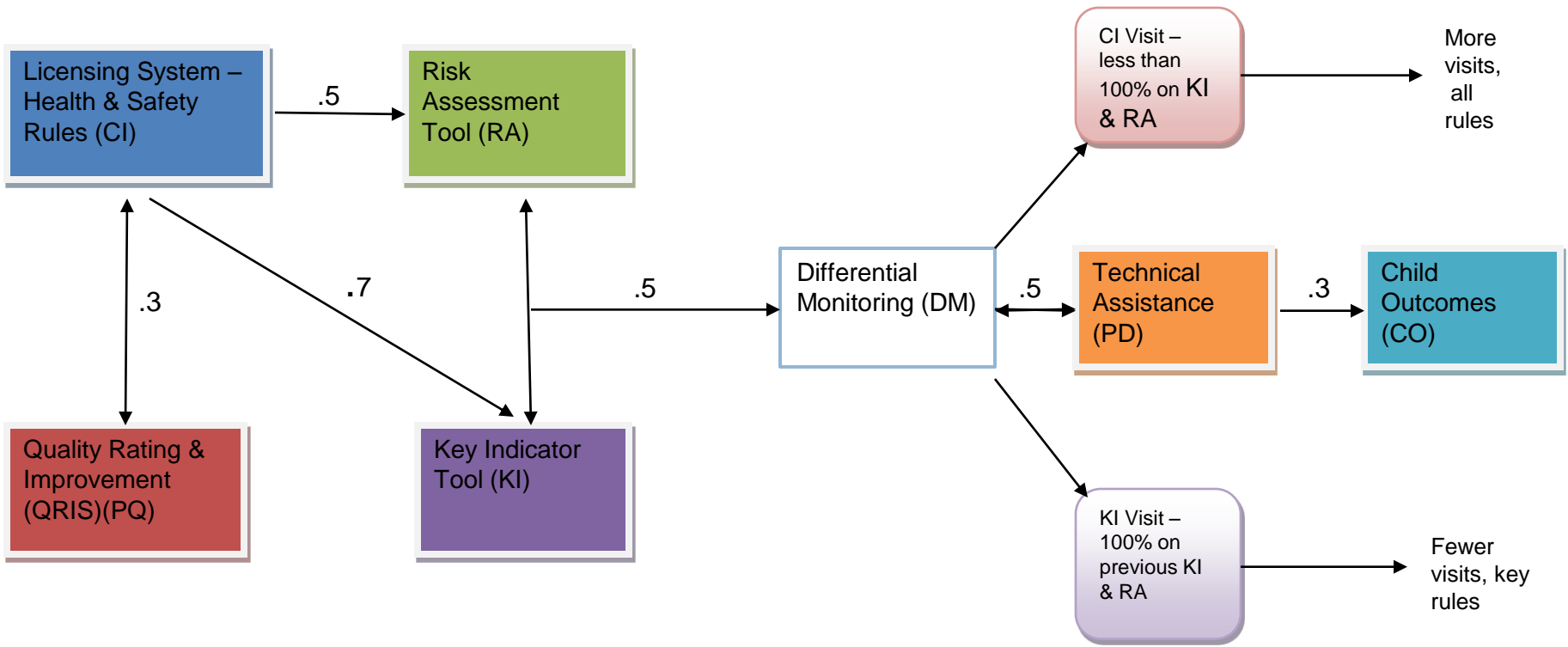
KI = Key Indicators (Predictor Rules)(*13 Key Indicators of Quality Child Care*)

DM = Differential Monitoring, (How often to visit and what to review)

PD = Professional Development/Technical Assistance/Training

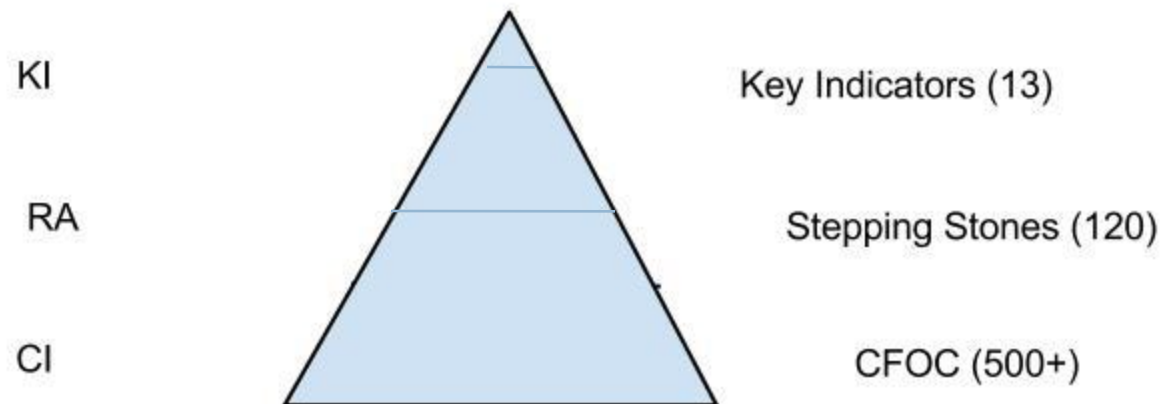
CO = Child Outcomes (See Next Slide for PD and CO Key Elements)





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

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.

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**

DMLMA Expected Thresholds Matrix

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

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.**

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.**

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.**

Key Indicators (KI)

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

Key Indicator Formula Matrix

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

	<i>Providers In Compliance</i>	<i>Programs Out Of Compliance</i>	<i>Row Total</i>
<i>High Group</i>	A	B	Y
<i>Low Group</i>	C	D	Z
<i>Column Total</i>	W	X	Grand Total

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.

Key Indicator Phi Coefficient Ranges

<u>Phi Coefficient Range</u>	<u>Characteristic of Indicator</u>	<u>Decision</u>
(+1.00) – (+.26)	Good Predictor	Include
(+.25) – (0)	Too Easy	Do not Include
(0) – (-.25)	Too Difficult	Do not Include
(-.26) – (-1.00)	Terrible Predictor	Do not Include

Examples of 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**

Provider Outcomes to Determine Differential Monitoring (DM)

- **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.***

Professional Development (PD)

- **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.**

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).**

RELATED PUBLICATIONS

- Class (1957). Licensing, unpublished manuscript, USC: University of Southern California.
- Fiene (2007). Child Development Program Evaluation & Caregiver Observation Scale, in T Halle (Ed.), *Early Care and Education Quality Measures Compendium*, Washington, D.C.: Child Trends.
- Fiene (2003). Licensing related indicators of quality child care, *Child Care Bulletin*, Winter 2002-2003, pps 12-13.
- Fiene (2002). *Thirteen indicators of quality child care: Research update*. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services.
- Fiene (1985). Measuring the effectiveness of regulations, *New England Journal of Human Services*, 5(2), 38-39.
- Fiene (1981). A new tool for day care monitoring introduced by children's consortium, *Evaluation Practice*, 1(2), 10-11.
- Fiene & Kroh (2000). Licensing Measurement and Systems, *NARA Licensing Curriculum*. Washington, D.C.: National Association for Regulatory Administration.
- Fiene & Nixon (1985). Instrument based program monitoring and the indicator checklist for child care, *Child Care Quarterly*, 14(3), 198-214.
- Griffin & Fiene (1995). *A systematic approach to policy planning and quality improvement for child care: A technical manual for state administrators*. Washington, D.C.: National Center for Clinical Infant Programs-Zero to Three.
- Morgan, Stevenson, Fiene, & Stephens (1986). Gaps and excesses in the regulation of child day care, *Reviews of Infectious Diseases-- Infectious Diseases in Child Day Care: Management and Prevention*, 8(4), 634-643.
- Zellman, G. L. and Fiene, R. (2012). *Validation of Quality Rating and Improvement Systems for Early Care and Education and School-Age Care*, Research-to-Policy, Research-to-Practice Brief OPRE 2012. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

For Additional Information:

Richard Fiene, Ph.D., RIKI Director

Email:

ResearchInstituteforKeyIndicators@gmail.com

Fiene@psu.edu

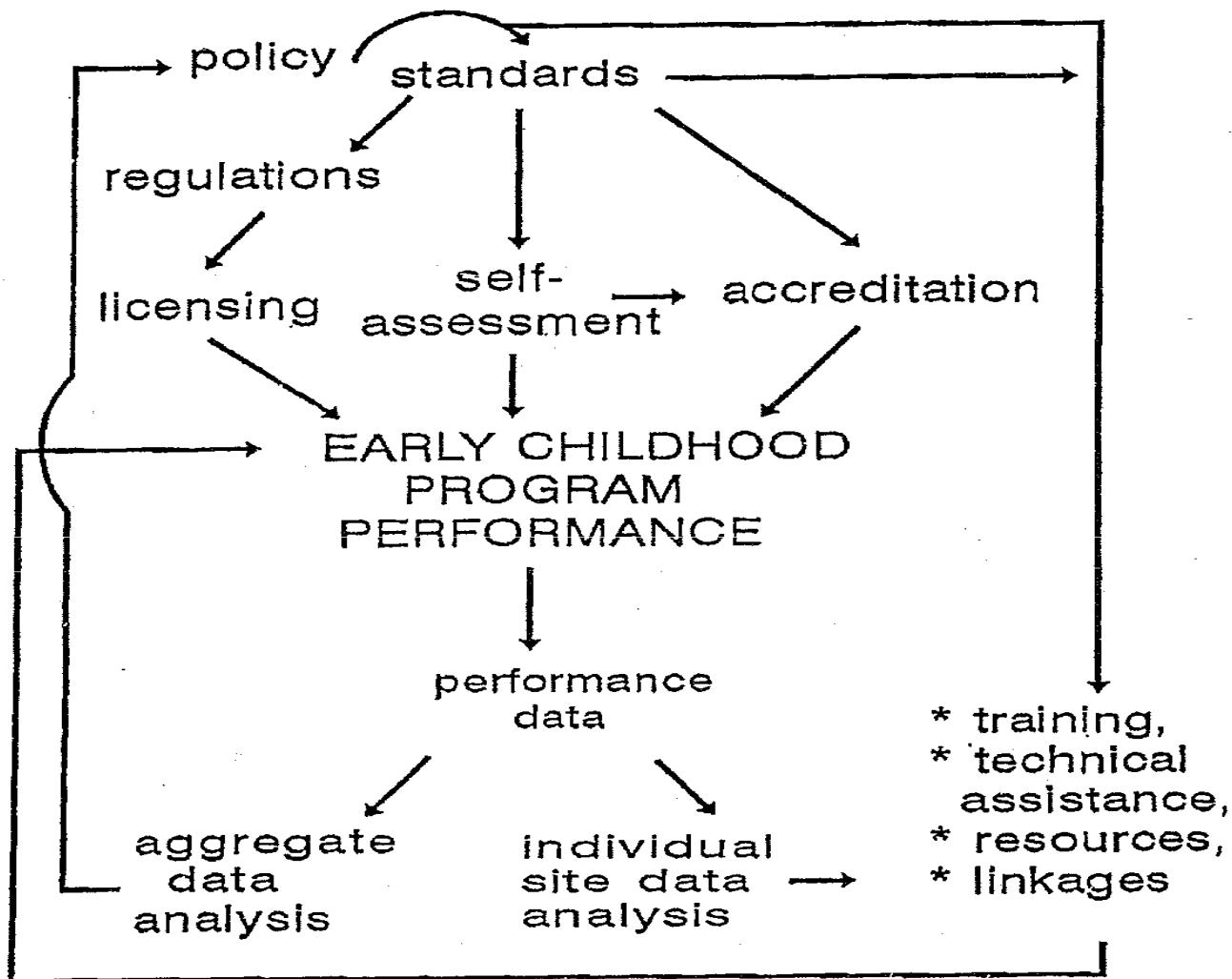
Website:

<http://pennstate.academia.edu/RickFiene>

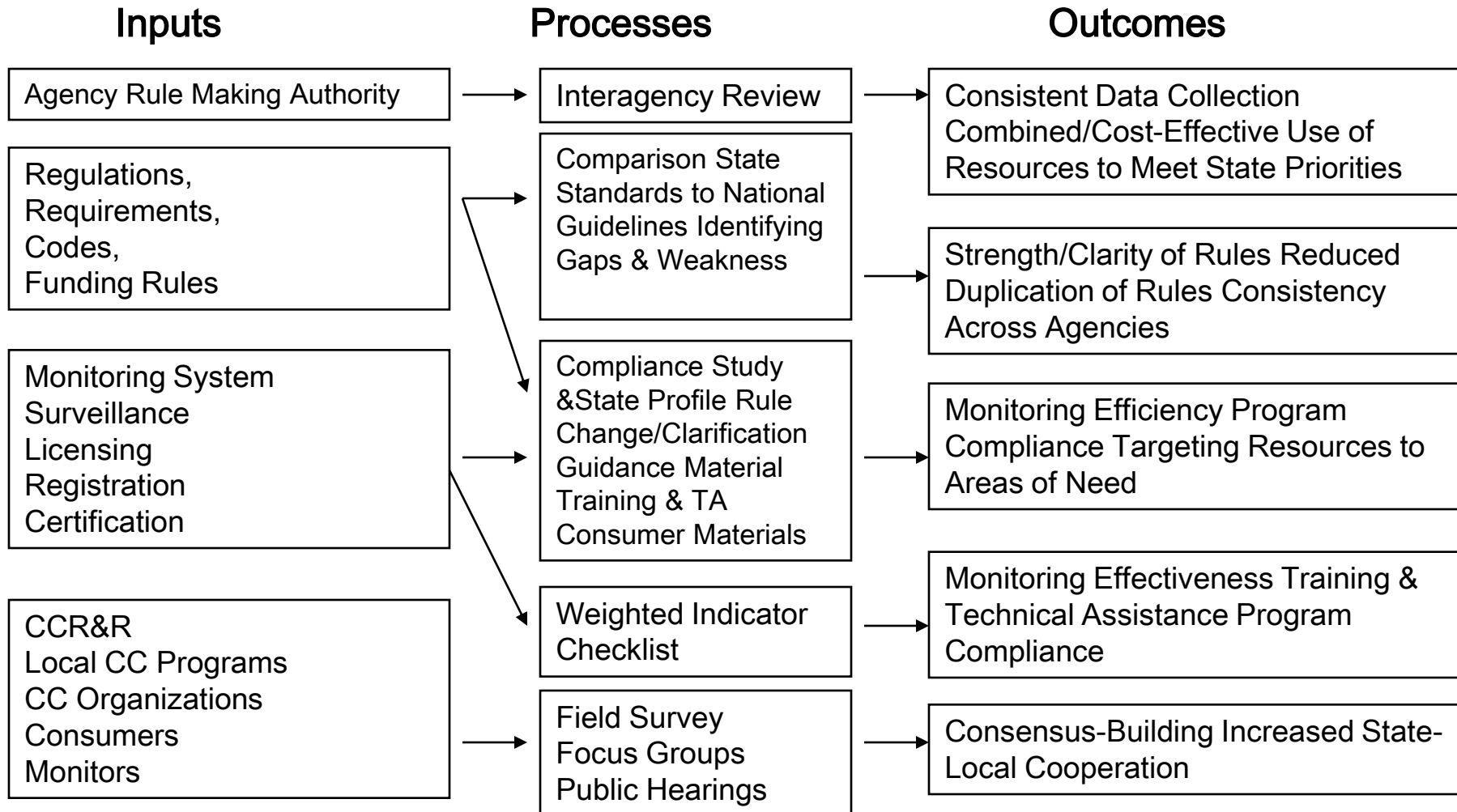
ECPQIM 1-3 Graphics

The following graphics represent the previous generations of ECPQIM 1-3 beginning in 1975 up to the present model (DMLMA, 2012).

EARLY CHILDHOOD PROGRAM QUALITY IMPROVEMENT



ZERO TO THREE's Better Care for the Babies Project: A System's Approach to State Child Care Planning—Griffin/Fiene (1995), (ECPQIM 2), 1995 - 1999



Early Childhood Program Quality Indicator Model 3 (Fiene, 2000 - 2011)

$$\mathbf{CO + PO = (PD + PC + PQ)/PM}$$

Where:

CO = Child Outcomes

PO = Provider Outcomes

PD = Professional Development

PC = Program Compliance/Licensing

PQ = Program Quality/QRIS

PM = Program Monitoring

Early Childhood Program Quality Indicator Models (ECPQIM 1 – 4)

- ECPQIM 1: 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.**
- ECPQIM 2: 1995 – 1999. Policy Evaluation and Regulatory Systems Planning added to model.**
- ECPQIM 3: 2000 – 2011. Inferential Inspections & Risk Assessment added to model.**
- ECPQIM 4: 2012 – present. Validation with expected Thresholds & Differential Monitoring added; Quality Indicators introduced.**