A Smarter Approach to Early Childhood Program Quality

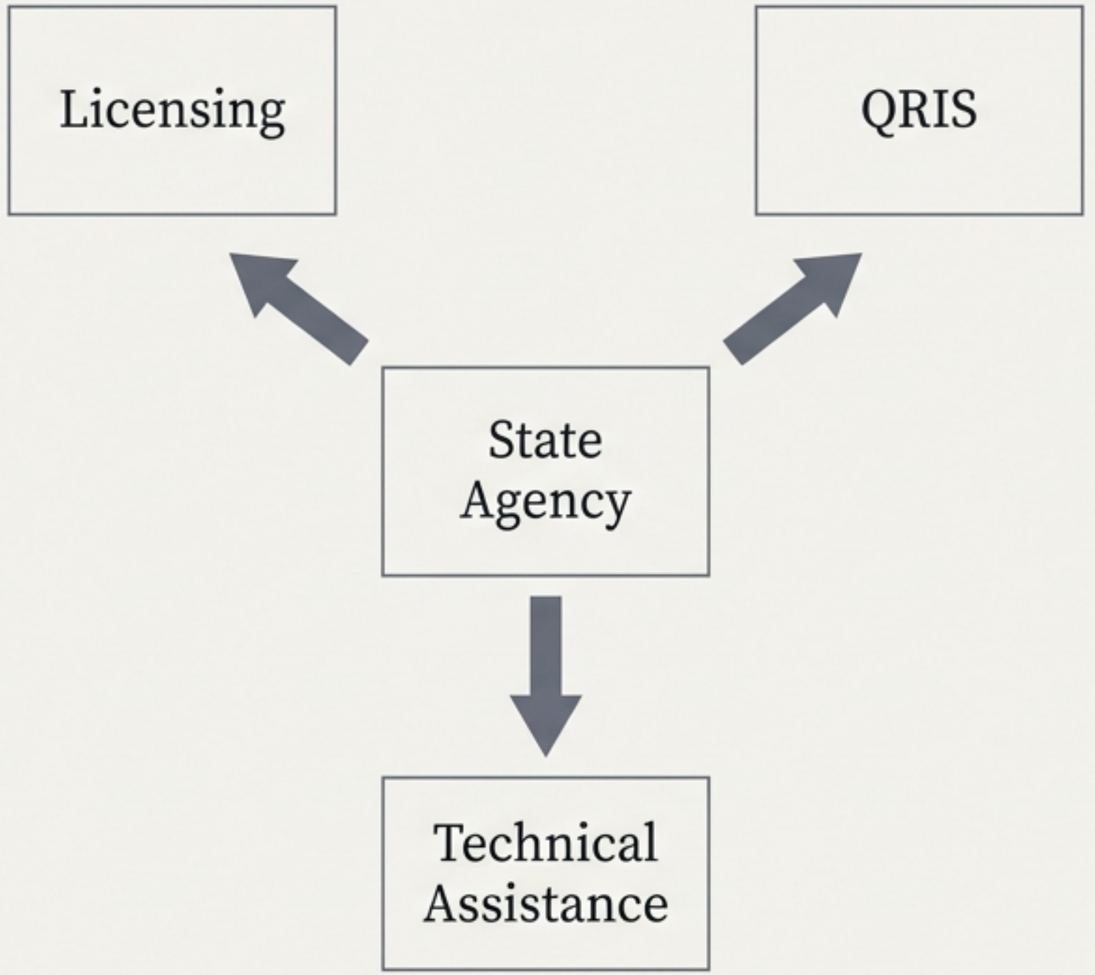
Introducing the Differential Monitoring Logic Model & Algorithm (DMLMA)

Richard Fiene, Ph.D.

Research Institute for Key Indicators

Our current monitoring systems are often inefficient and siloed.

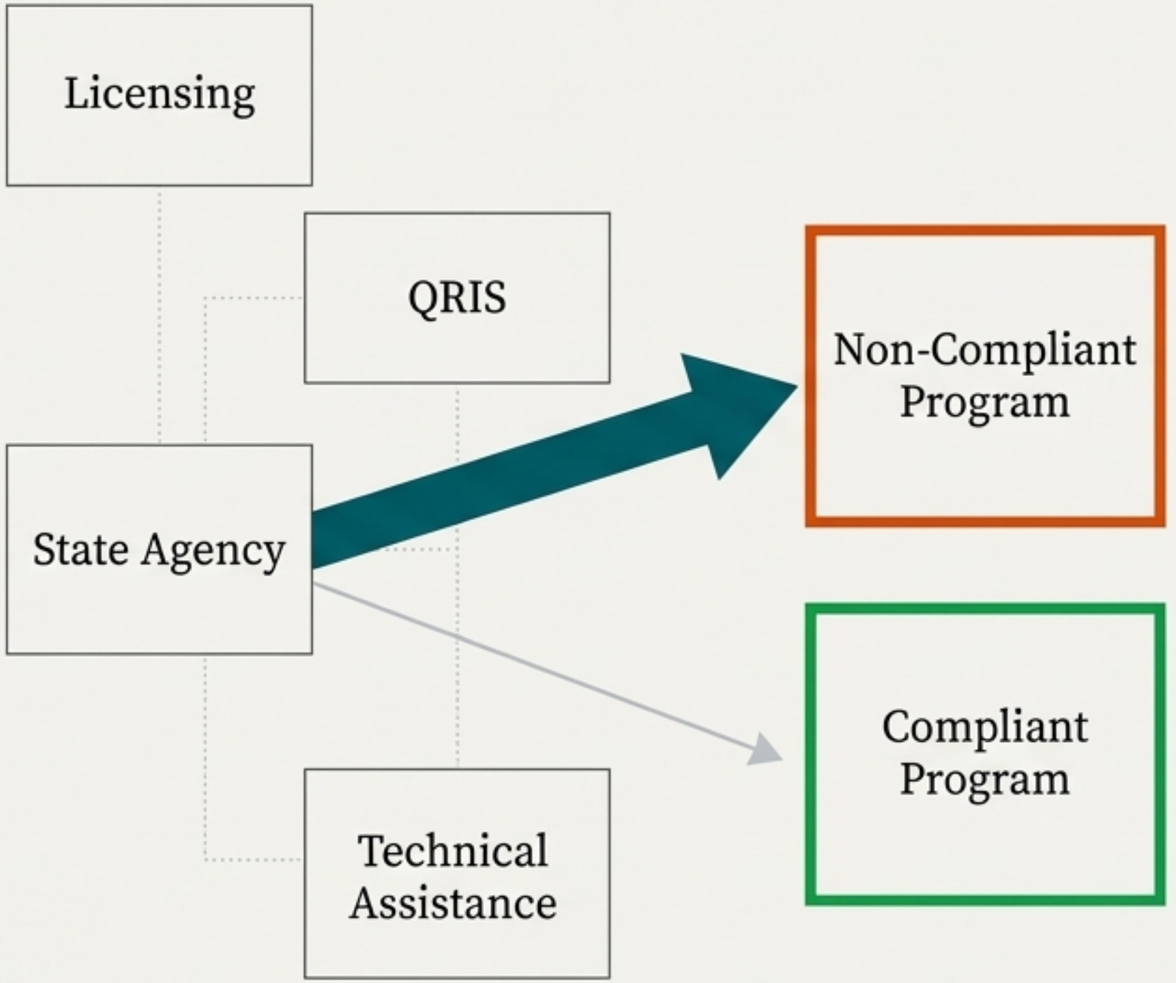
We rely on multiple monitoring systems—Licensing, Quality Rating and Improvement Systems (QRIS), and Risk Assessment—that frequently operate operate in isolation. This leads to a “one-size-fits-all” approach where compliant, high-quality programs receive the same level of scrutiny as non-compliant programs, wasting valuable time and resources.



We need a system that focuses resources where they matter most.

The goal is to move beyond “one-size-fits-all” to a targeted model. A differential monitoring system can intelligently distinguish between programs, allowing us to re-allocate monitoring efforts ***from*** compliant programs ***to*** non-compliant programs that need more support.

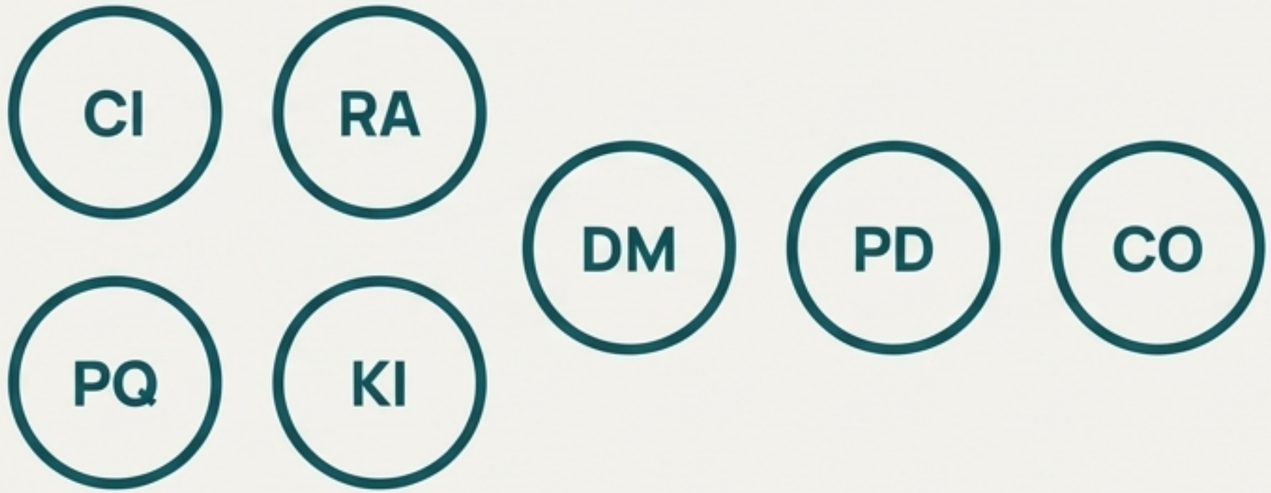
This is a cost-neutral model that is both more effective and more efficient.



The DMLMA integrates key monitoring systems into one coherent model.

The Differential Monitoring Logic Model and Algorithm (DMLMA) is a 4th-generation Early Childhood Program Quality Indicator Model (ECPQIM4). It conceptually integrates the major monitoring systems so the overall ECE system can be assessed and validated. The seven key elements of the model are:

- Compliance Instrument (CI)
- Program Quality (PQ)
- Risk Assessment (RA)
- Key Indicators (KI)
- Differential Monitoring (DM)
- Professional Development (PD)
- Child Outcomes (CO)



The model is built on seven distinct but related data sources.

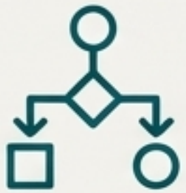
Each element represents a specific component of the ECE monitoring landscape.

CI (Compliance Instrument): Comprehensive health and safety standards (e.g., state licensing rules, Head Start Performance Standards).

PQ (Program Quality): QRIS standards measuring interactions and environment (e.g., ERS, CLASS).

RA (Risk Assessment): Tools measuring only the most critical rules/standards (e.g., Stepping Stones).

KI (Key Indicators): A small subset of rules that are predictive of overall quality (e.g., The Thirteen Indicators of Quality Child Care).



DM (Differential Monitoring): The decision-making process that determines visit frequency and scope based on compliance data.

PD (Professional Development): Targeted technical assistance and training based on monitoring results.

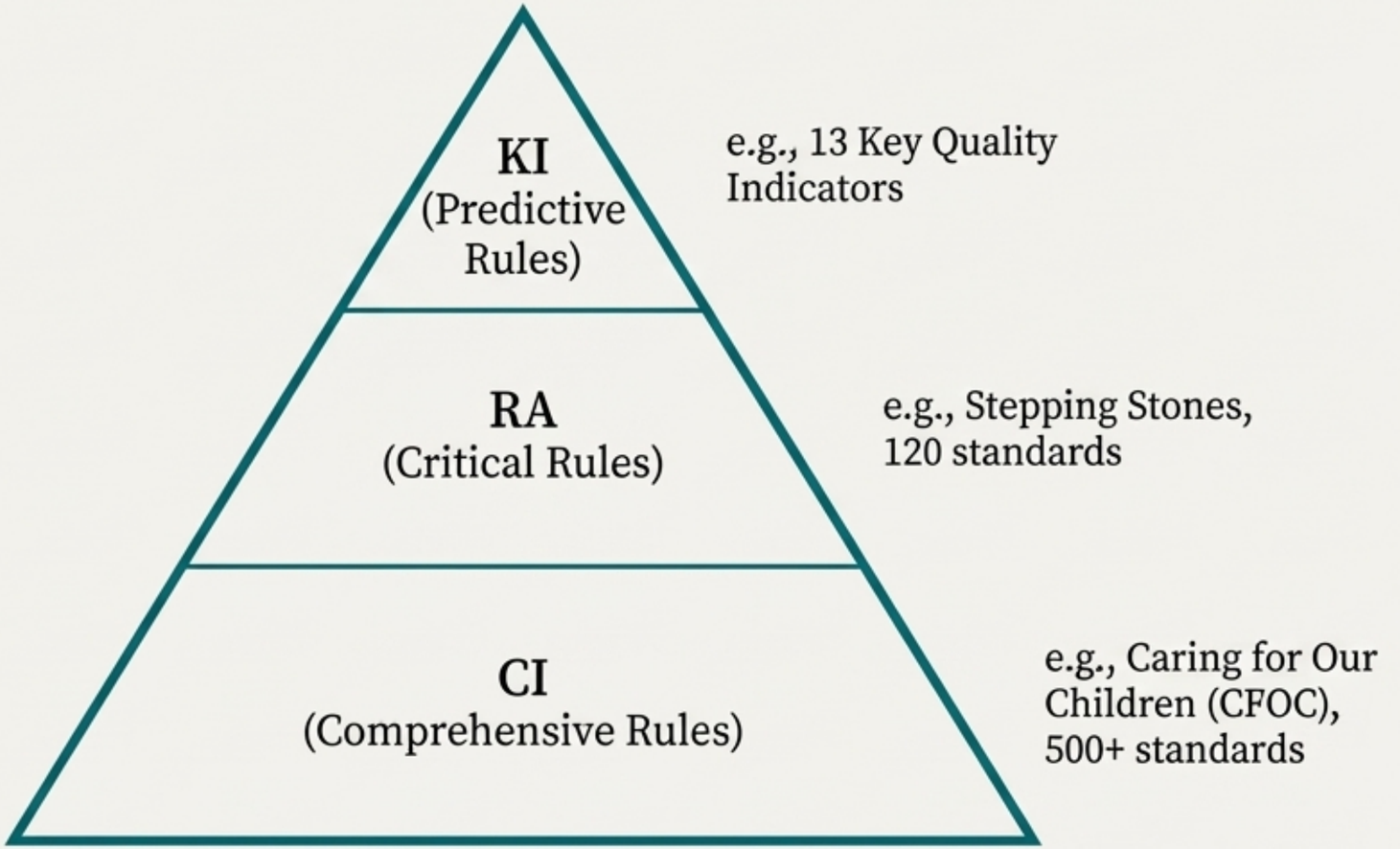
CO (Child Outcomes): The ultimate measure of success, assessing child development and learning.

The model organizes program rules from comprehensive to critical to predictive

The system's efficiency comes from a tiered approach to rules.

The Compliance Instrument (CI) is the most comprehensive set. The Risk Assessment (RA) tool narrows this down to the most critical rules.

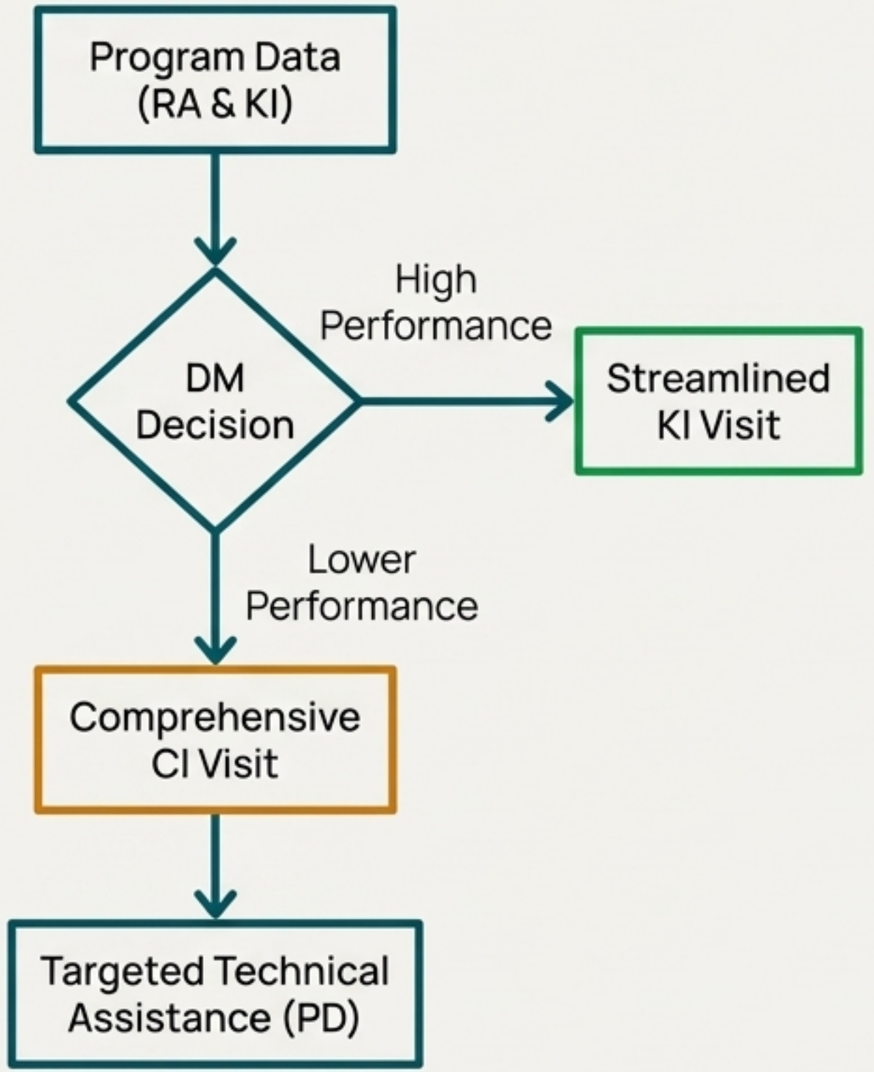
The Key Indicator (KI) tool is a small, highly predictive subset of the CI.



Data from Risk Assessment and Key Indicator tools drive monitoring decisions.

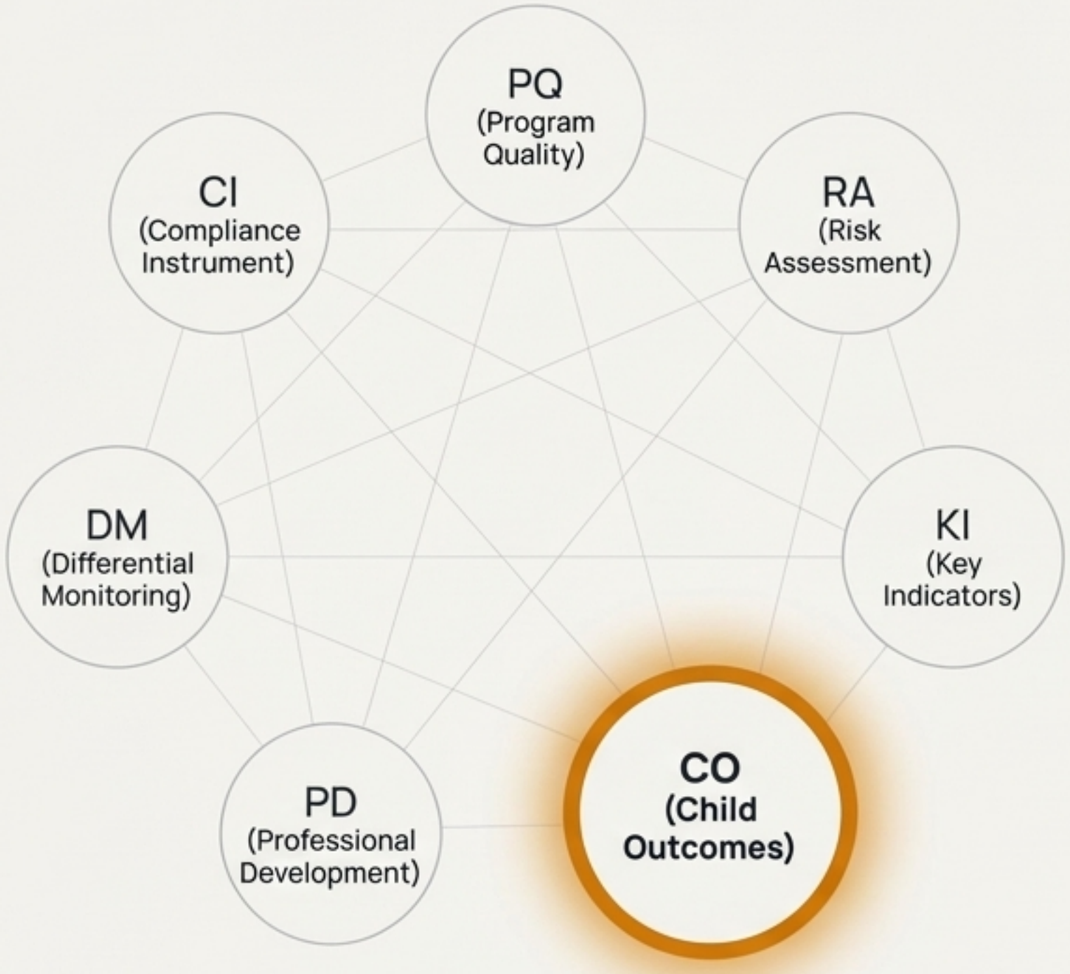
The central mechanism of Differential Monitoring (DM) is straightforward. A program's performance on the streamlined RA and KI tools determines the monitoring path.

- High Performance (e.g., 100% on KI & RA): Triggers a streamlined, less intensive "KI Visit."
- Lower Performance (e.g., less than 100%): Triggers a comprehensive "CI Visit" using the full set of rules and allocates targeted professional development (PD).



The entire system is designed to improve child development outcomes.

While the model integrates various monitoring processes, its ultimate purpose is to positively impact Child Outcomes (CO). All other elements—CI, PQ, RA, KI—are inputs and processes that must be validated against their ability to improve the health, safety, program quality, and overall development of the children served.

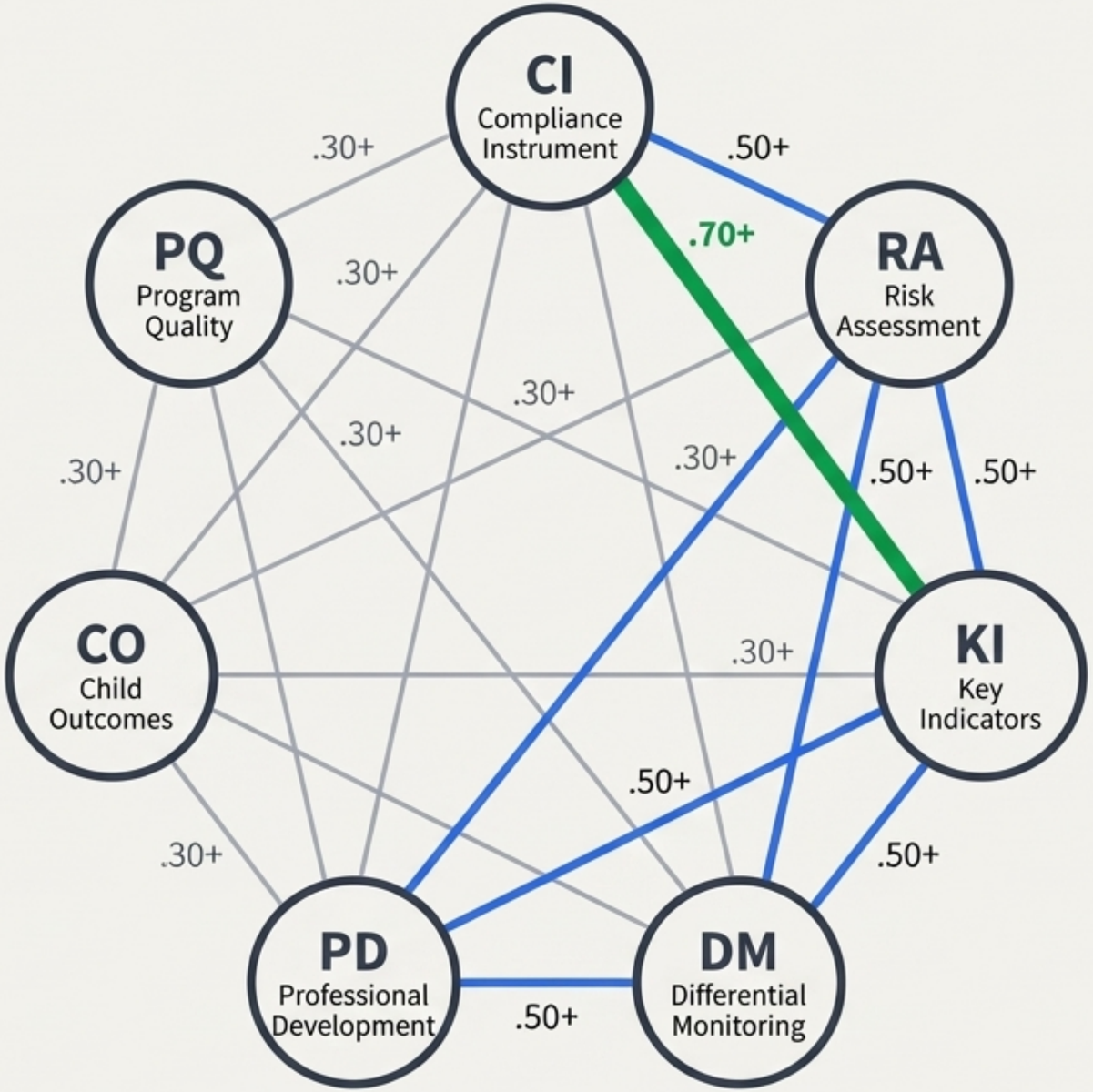


The model's strength lies in the predictable relationships between its parts.

The DMLMA is a testable system. Its validity is demonstrated through expected statistical correlations between the key elements. These thresholds confirm the model is functioning as intended.

Correlation Key

- **High (.70+):** Between the comprehensive rules (CI) and its predictive subset (KI).
- **Moderate (.50+):** Between related tools like CI/RA and RA/KI, and between monitoring data and decisions (RA/DM, KI/DM).
- **Lower (.30+):** Between tools measuring different aspects of quality (e.g., CI and PQ) or between processes and final outcomes (e.g., CI and CO).



The DMLMA can be continuously validated across four key approaches.

Validation is an on-going process. Based on the framework by Zellman & Fiene (2012), the DMLMA's integrity is assessed at four levels, ensuring the entire system remains effective and efficient.

(1) **Standards Validation**
Comparing state tools (CI, RA) to national standards (CFOC, Stepping Stones).

(2) **Measures Validation**
Correlating results between different measurement tools (e.g., CI vs. RA; CI vs. KI).

(3) **Output Validation**
Determining the relationship between compliance (CI) and program quality measures (PQ).

(4) **Outcome Validation**
Correlating monitoring data (CI, PQ, RA, KI) with child development outcomes (CO).

The DMLMA delivers a more effective and efficient monitoring system.

By moving away from a siloed, one-size-fits-all approach, the DMLMA provides significant advantages:

Targeted: Focuses time and attention on non-compliant programs that need the most help.

Efficient: Intelligently re-allocates resources from compliant to non-compliant programs.

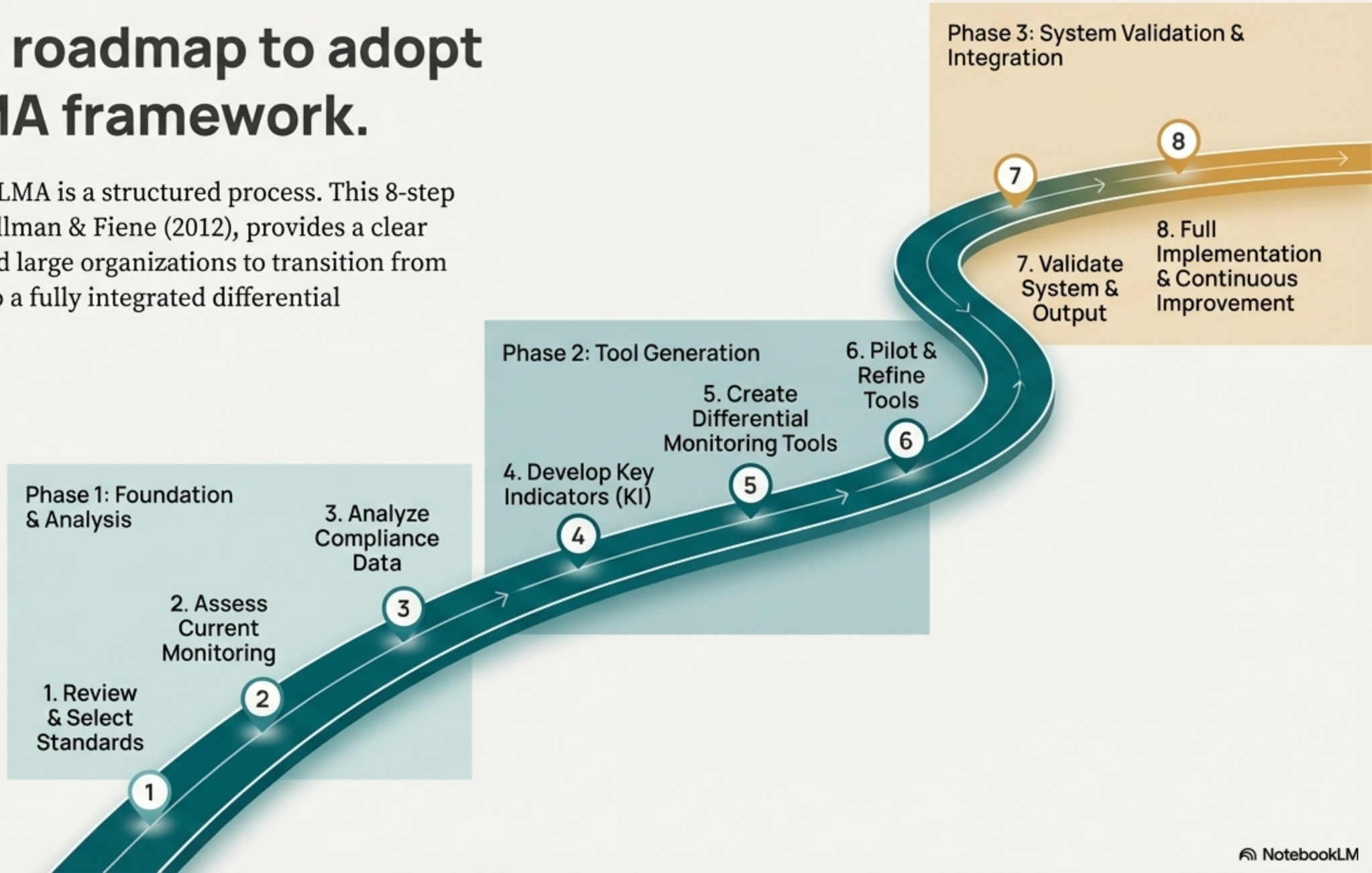
Cost-Neutral: Operates within existing budgets by optimizing resource deployment.

Integrated: Breaks down data silos, creating a holistic view of the early care and education system.

Validated: Provides a data-driven, evidence-based framework for continuous quality improvement.

An 8-step roadmap to adopt the DMLMA framework.

Implementing the DMLMA is a structured process. This 8-step plan, as outlined in Zellman & Fiene (2012), provides a clear sequence for states and large organizations to transition from their current system to a fully integrated differential monitoring model.



A detailed guide from initial analysis to outcome measurement.

Implementing the DMLMA framework involves a comprehensive, eight-step process designed to ensure accuracy, efficiency, and measurable outcomes.

Steps 1–4: Foundation & Tool Validation

1. 

Establish a comprehensive, instrument-based licensing tool (CI). Develop a detailed licensing instrument that serves as the baseline for all monitoring activities.

2. 

Compare the CI to national standards (*Caring for Our Children*) for standards validation. Ensure the CI tool aligns with recognized best practices.

3. 

If using a Risk Assessment (RA) tool, compare it to national standards (*Stepping Stones*). Validate the risk assessment approach against established guidelines.

4. 

Validate measures by correlating results from the CI and RA tools (expected correlation: .50+). Confirm consistency and reliability between the core instruments.

Steps 5–8: Output & Outcome Validation, Integration

5. 

Validate outputs by correlating health and safety compliance (CI) with program quality data (PQ) from QRIS tools (expected correlation: .30+). Link compliance to broader quality measures.

6. 

Generate a Key Indicator (KI) tool from the CI database (expected CI-KI correlation: .70+). Create a streamlined tool focusing on critical compliance indicators.

7. 

Use RA and KI tools together to drive Differential Monitoring (DM) decisions and guide Professional Development (PD) (expected correlations: .50+). Utilize data to tailor monitoring and support.

8. 

Validate outcomes by correlating all monitoring data (CI, PQ, RA, KI) with child development outcome (CO) data (expected correlations: .30+). Demonstrate the impact of monitoring on child outcomes.

Move beyond one-size-fits-all. Build a smarter future for ECE quality.

The Differential Monitoring Logic Model and Algorithm offers a validated, cost-neutral path to a more efficient and effective quality assurance system. By integrating data and targeting resources, we can better support programs and, most importantly, improve outcomes for children.

Begin your journey by assessing your current monitoring tools and data systems.

For Additional Information

Source Serif Pro Regular

Contact:

Dr. Richard Fiene, Director

Research Institute for Key Indicators

Email: DrFiene@gmail.com;
ResearchInstituteKeyIndicators@ymail.com

Source Serif Pro Regular

Key Publication:

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.

Research Institute
for Key Indicators

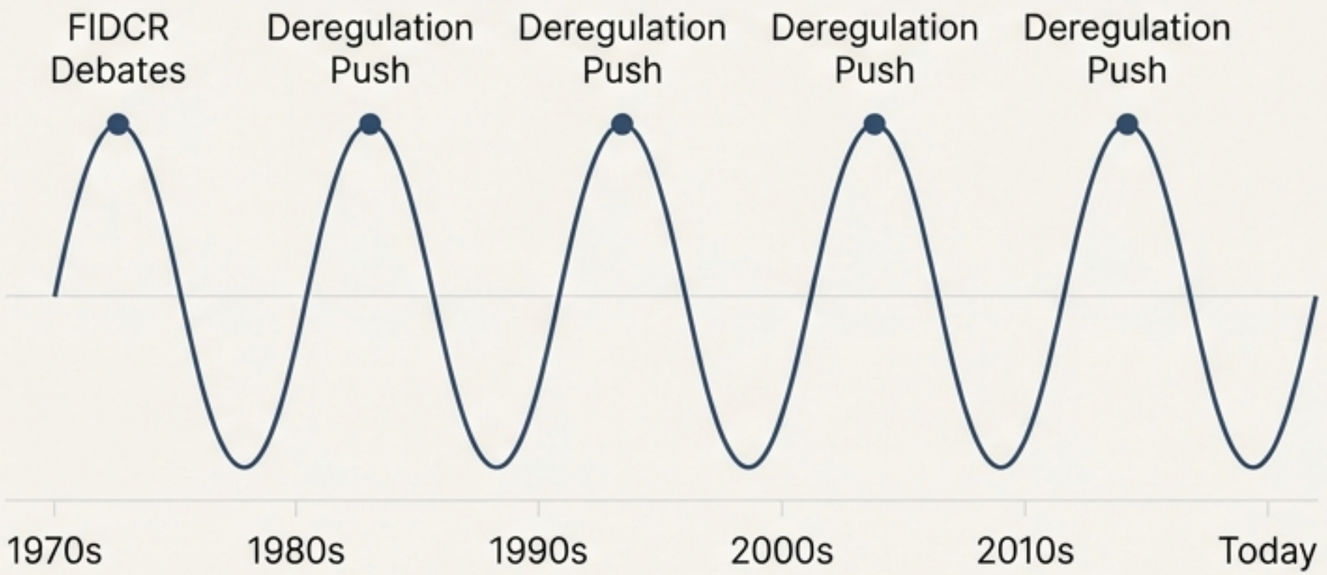
The Right Rules

A Science-Based Solution to the Child Care Trilemma

Based on the work of Richard Fiene,
Leading Researcher in Human Services Regulatory Science.

For 60 years, the debate over child care regulation has been stuck in a cycle.

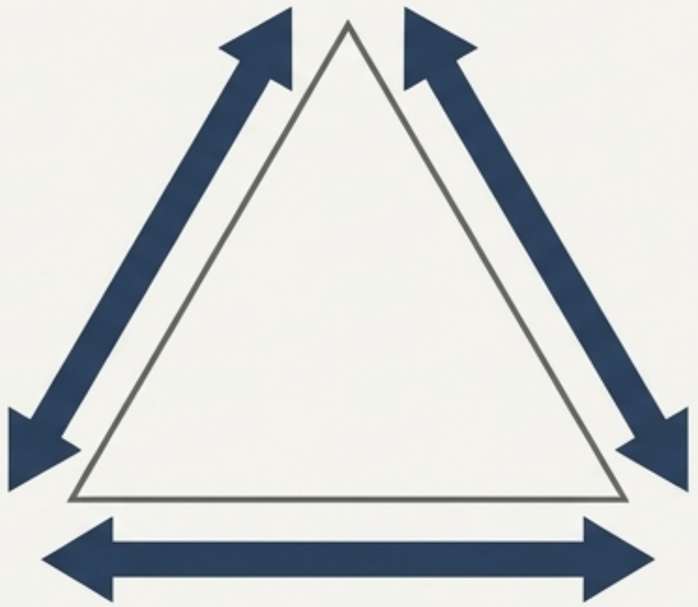
Introduce the perpetual conflict between ensuring basic protections for children and the push for greater access and affordability. Ground this in history by mentioning the author's direct experience with the Federal Interagency Day Care Requirements (FIDCR) debates in the 1970s.



"Rules and regulations: Can't live with them, Can't live without them."

The core challenge is balancing three competing, critical needs.

Quality
Ensuring safe, developmentally appropriate environments



Affordability
Keeping costs manageable for families

Access
Ensuring enough available slots for children

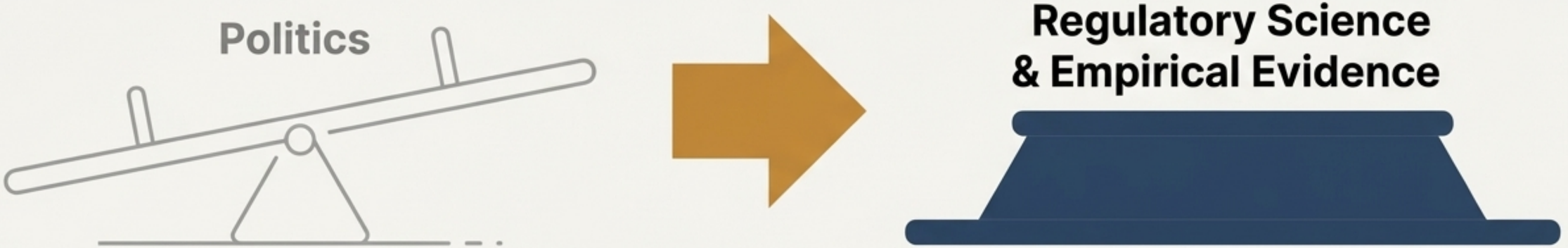
The central tension: As quality increases, so does cost while accessibility decreases based upon what parents can afford.

Today, the call to “deregulate” is getting louder, posing a risk to child safety and quality.

Acknowledge the current child care crisis is fueling a push to “arbitrarily” remove rules to increase access, citing recent reports (Hechinger Report, NAEYC). Characterize this approach as a “**knee-jerk reaction**” and “**politically expedient**,” setting up the need for a more rational alternative.

There is a better way: taking the debate out of the political arena and into the field of Regulatory Science.

Introduce “Regulatory Science” as an emerging field focused on empirical evidence to solve regulatory challenges. Introduce Richard Fiene’s Theory of Regulatory Compliance, noting it has been empirically proven in the U.S. and Canada.

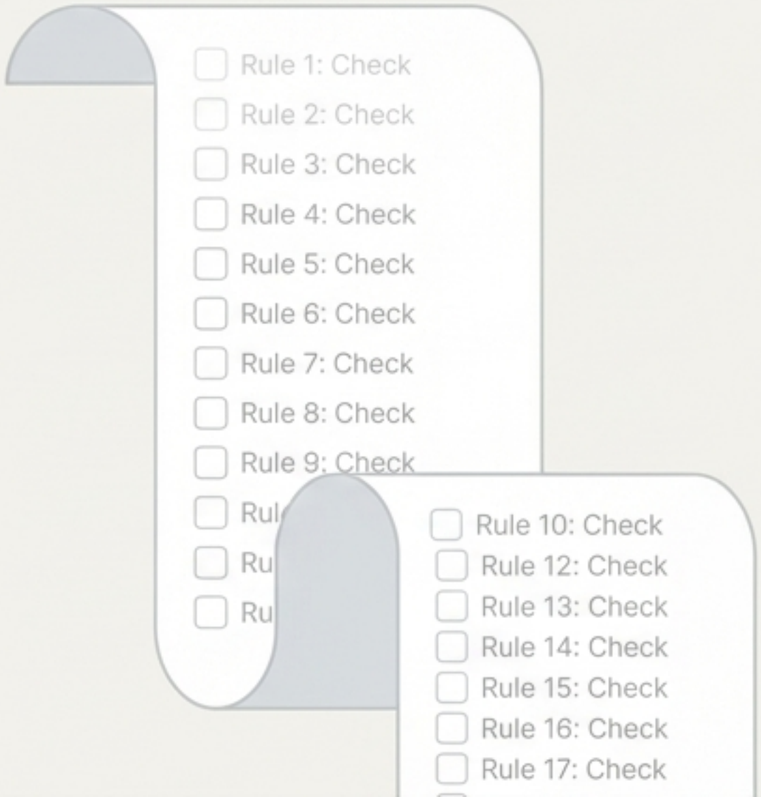


The Theory: “Substantial regulatory compliance with child care rules... may be equivalent to full (100 percent) regulatory compliance with all child care rules...”

This theory changes everything about how we monitor and ensure quality.

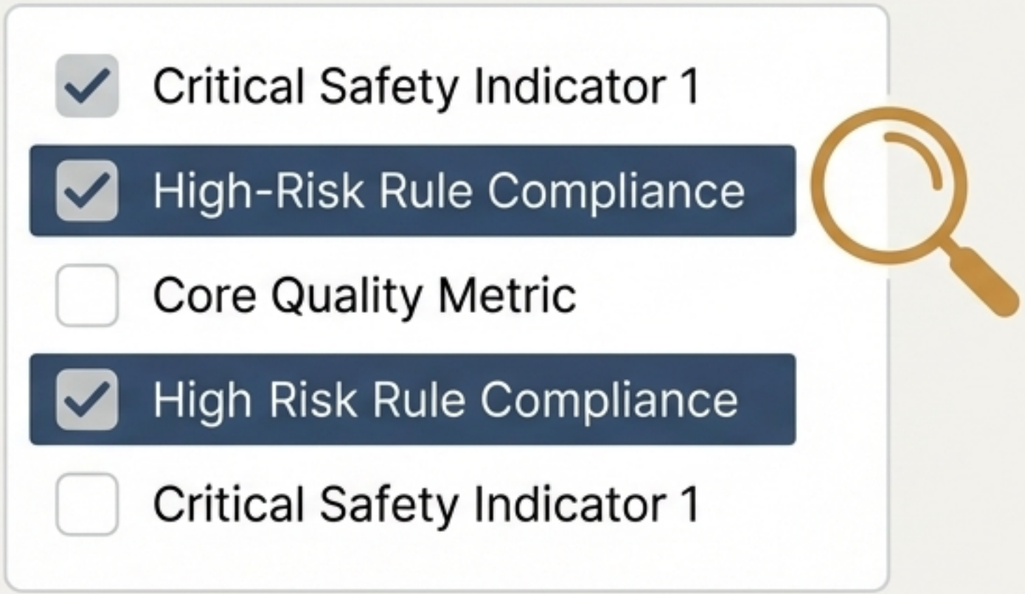
Old Way: Uniform Monitoring

A “one-size-fits-all” approach. Checking every rule, every time, regardless of importance.



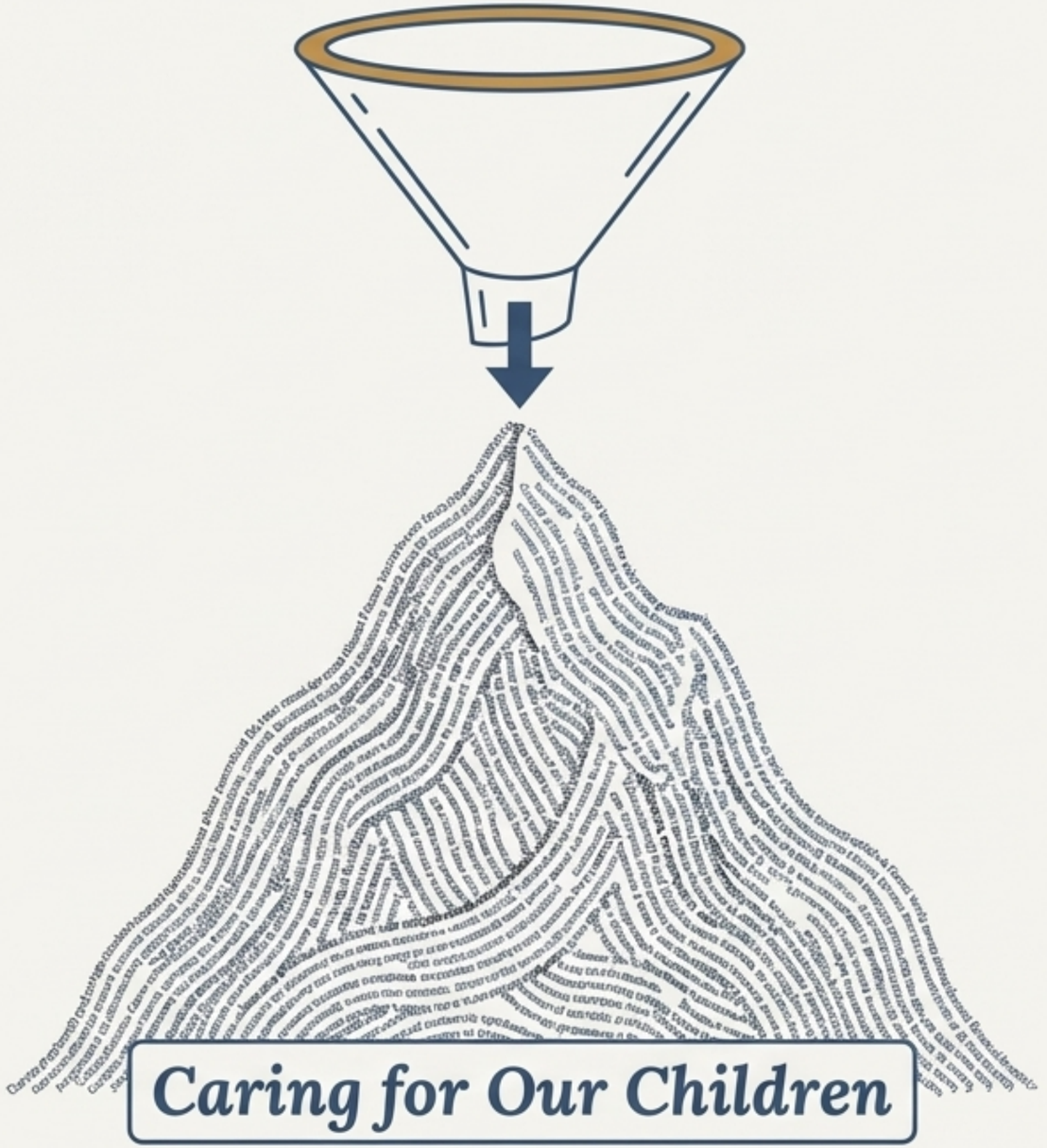
New Way: Differential Monitoring

A targeted approach. Using risk assessment and key indicators to focus on the rules that most predict overall compliance and safety.



The "gold standard" for child care, *Caring for Our Children* (CFOC), is comprehensive but daunting.

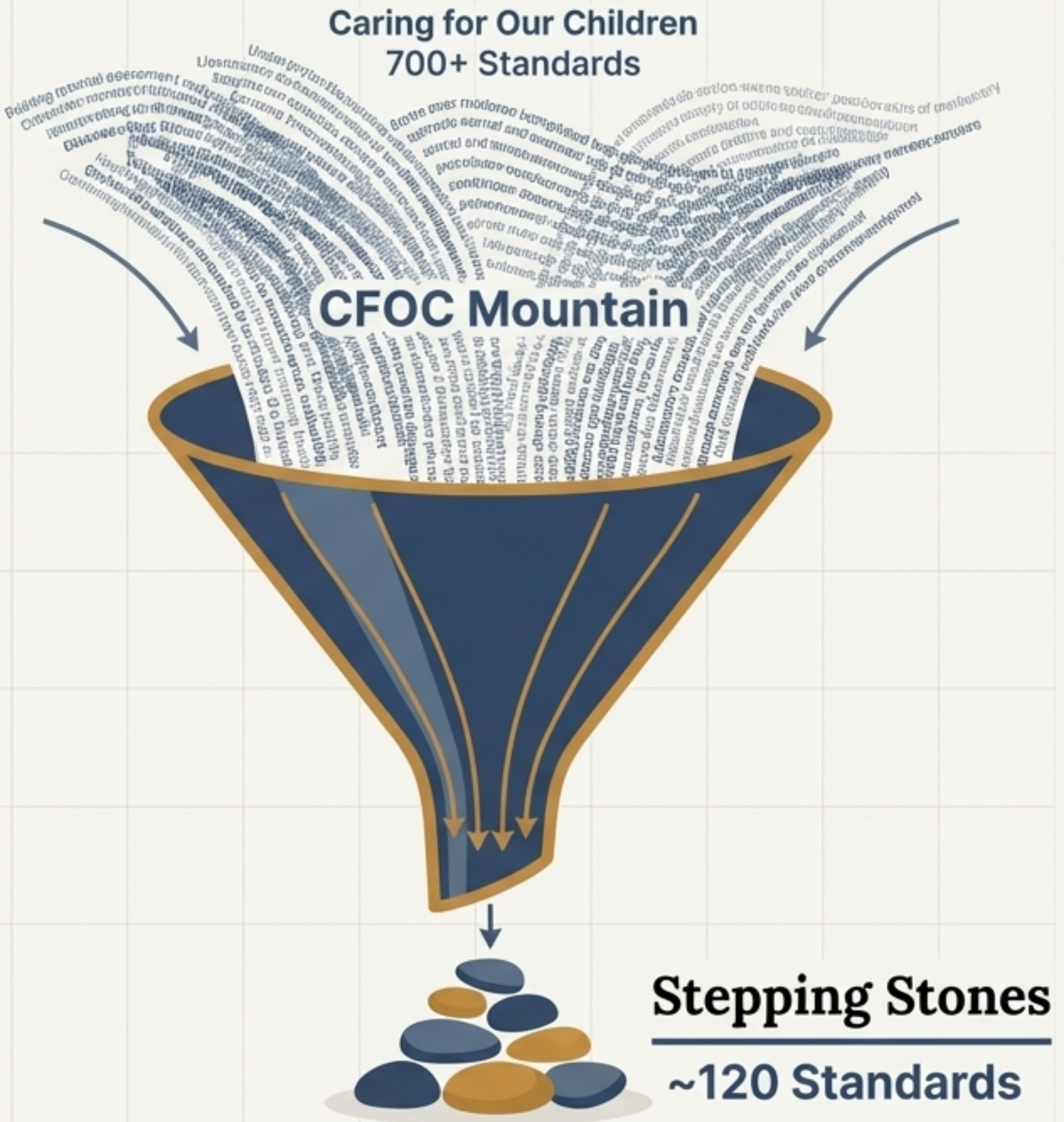
Caring for Our Children is the peer-reviewed, science-backed foundation for health and safety standards, published by the AAP, APHA, and other leading organizations. However, its sheer volume, containing over 700 individual standards, often makes it a target for claims of “over-regulation.”



Regulatory science first helped distill *CFOC* by identifying the rules that prevent the most harm.

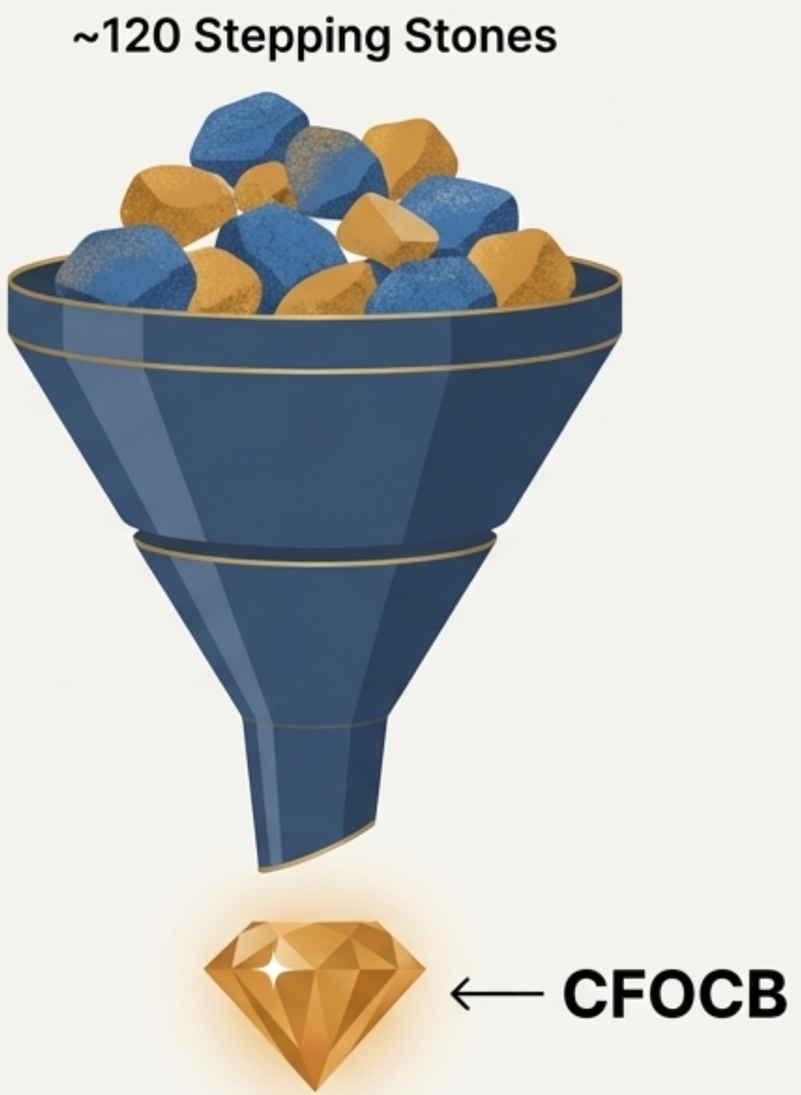
Explain the risk assessment methodology: a process to determine which standards, if not met, would place children at the greatest risk of morbidity or mortality.

State that this process resulted in the creation of ***Stepping Stones to Caring for Our Children***.



The final refinement identified the essential standards that predict overall compliance.

Explain the “key indicator” methodology: a scientific process used to find the smaller set of standards that have the most predictive value for overall quality and safety. State that this process resulted in the creation of Caring for Our Children Basics (CFOCB).

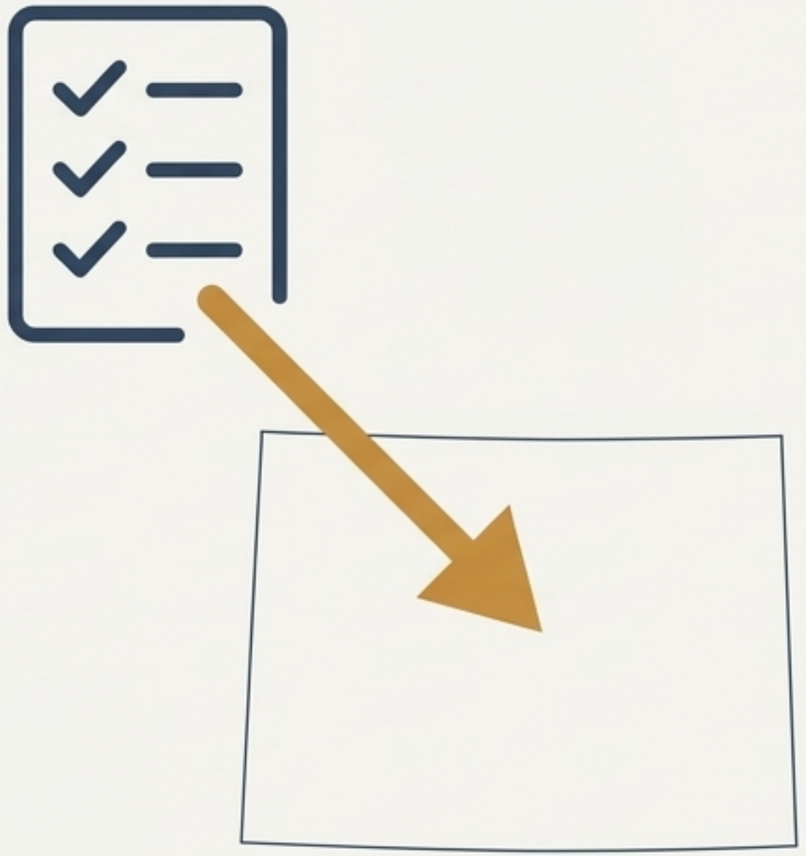


Caring for Our Children Basics (CFOCB) provides a science-based, non-negotiable floor for safety and quality.

Position *CFOCB*'s 65 standards as the direct, evidence-based alternative to deregulation. The choice isn't *fewer* rules; it's the *right* rules. These standards were developed by a cross-representation of medical experts, early care and education experts, child developmental experts, public health and environmental experts.

The path forward begins with one question: How do your state's rules measure up to *CFOCB*?

Provide a clear, direct challenge to the audience: benchmark your current state child care rules against the 65 standards in *Caring for Our Children Basics*. Mention that templates have been developed to guide this comparison process (citing Fiene, 2025).



A strong foundation lets us innovate on the toughest rules, like staff–child ratios.

- **The Problem:** Staff-child ratios have the greatest impact on cost, access, and quality, and have been the focal point of debate for 50 years.
- **An Innovative Solution:** Propose an alternate rule where the staff-child ratio can be increased slightly, but *only with the most highly qualified staff*.
- **The Key Incentive:** The additional revenue generated by the extra child goes directly to the more qualified staff member as a salary increase.

The guiding principle is simple: use empirical data, not political whims, to protect children.

Reiterate that regulatory compliance is a measurement issue and should be solved with corresponding measurement tools.

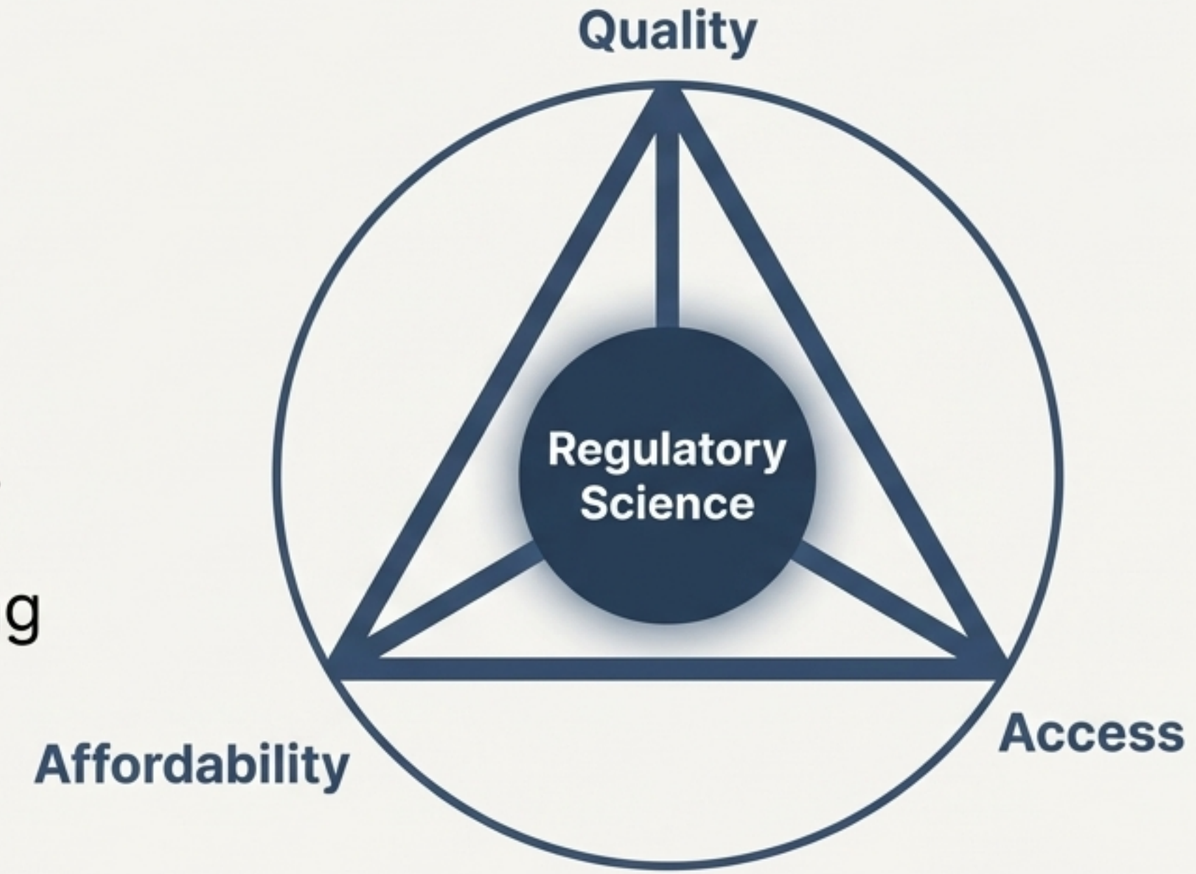
"Use the data, do not ignore the empirical evidence and leave it up to the whims of the political process to determine what stays and what gets pitched."

- Richard Fiene

Find studies and guidance at the National Association for Regulatory Administration: naralicensing.org

A science-based approach offers a future where quality, affordability, and access can support each other.

1. **ANCHOR** your system in the 65 essential standards of *CFOCB*.
2. **BENCHMARK** your current rules against this non-negotiable floor.
3. **INNOVATE** on complex rules using data-driven, creative solutions.



Bridging the Gap: A New Framework for Quality in Human Services Regulation

Moving from Disconnected Metrics to an Integrated Model of Oversight

Structural Rules

Process Quality

Based on the White Paper "Key Quality Indicators" from the National Association for Regulatory Administration (NARA).

Our Shared Mission: Ensuring Every Child Thrives in a Safe and Enriching Environment

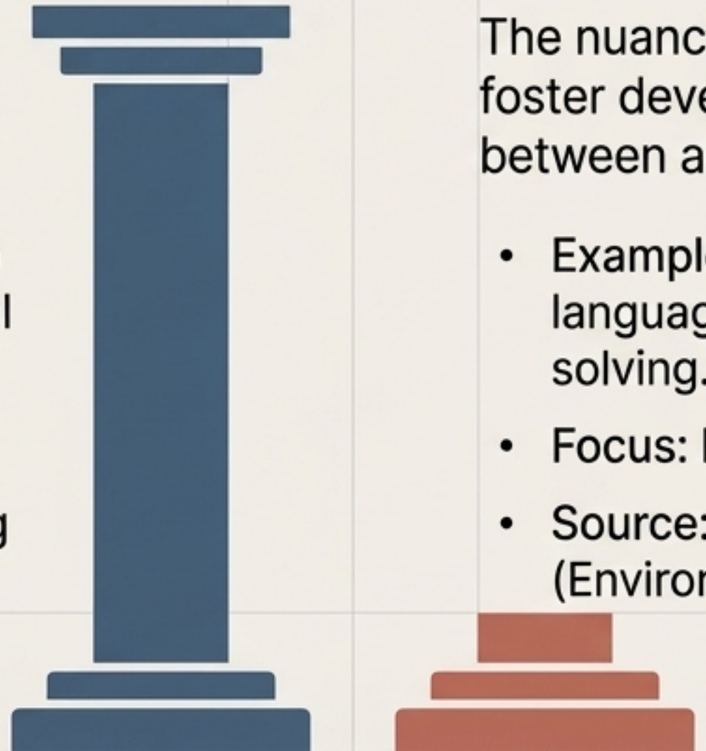
For over 40 years, the core objective of child care regulation and quality improvement has been consistent. We aim to create systems that not only protect children from harm but also actively promote their development. This requires a deep understanding of what truly defines 'quality.''

The Enduring Challenge: Two Disconnected Views of Quality

Structural Quality

The foundation of safety and health. These are the countable, objective standards set by licensing rules.

- Examples: Staff-child ratios, group sizes, background checks, physical environment safety.
- Focus: Preventing harm.
- Source: Primarily found in licensing rules and regulations.



Process Quality

The nuanced, interpersonal dynamics that foster development. The nature of interactions between adults and children.

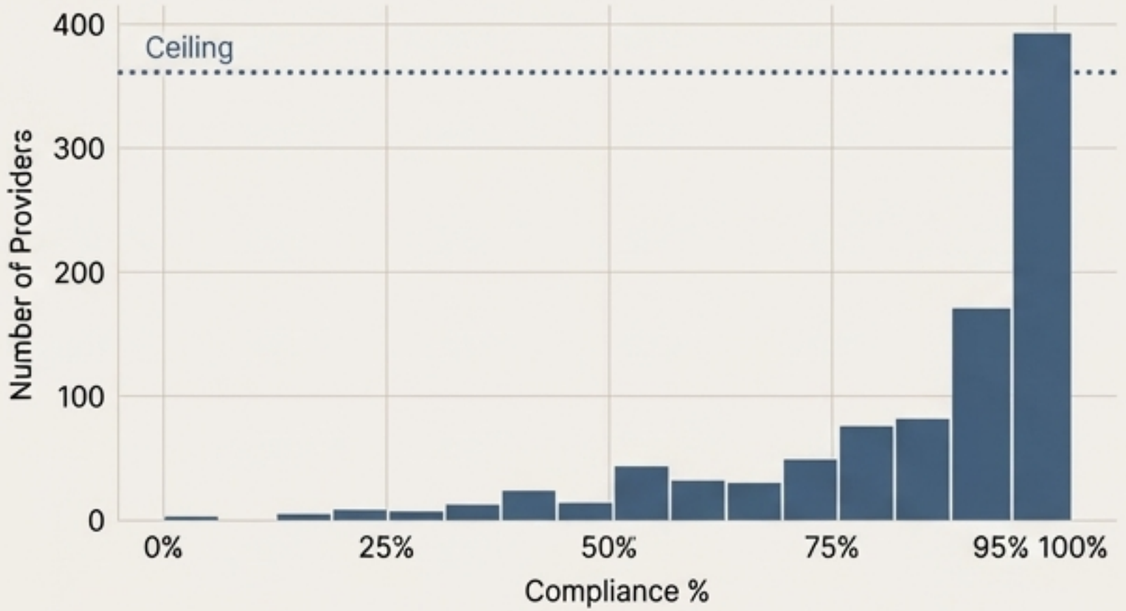
- Examples: Emotional climate, engaging language, opportunities for problem-solving.
- Focus: Promoting enrichment.
- Source: Assessed by tools like ERS (Environmental Rating Scales) and CLASS.

Why the Gap Persists: A Tale of Two Data Sets

The weak statistical correlation between structural and process quality isn't a failure of intent, but a result of fundamental differences in measurement. Structural data has a "ceiling effect," while process data follows a normal distribution.

Positively Skewed Distribution with a Ceiling Effect

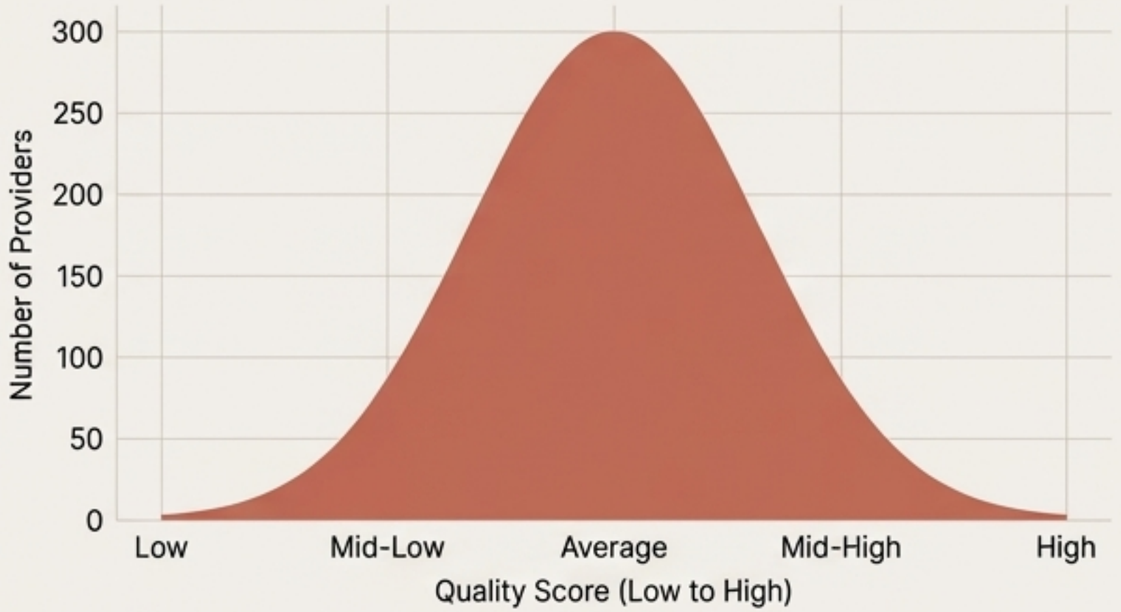
Compliance with Licensing Rules



Visualizes providers clustering at the top, showing little differentiation.

Normal Distribution

ERS/CLASS Observation Scores



Illustrates an even distribution of providers across the quality spectrum.

Because structural measures are binary (yes/no compliance), they struggle to differentiate between good and great programs, unlike the scaled scores of process tools.

The Traditional Paradigm: Uniform Monitoring is Inefficient and Incomplete

Through the 1970s and 1980s, the standard approach was to treat all providers and all rules equally. This model proved insufficient for predicting quality or using resources effectively.

Uniform Monitoring

Every provider receives the same level of oversight, regardless of history or risk. Resources are spread thin.

100% Compliance Focus

The goal is full compliance with every rule, even though research shows diminishing returns after achieving “substantial compliance.”

Disconnected Metrics

Structural compliance data is collected and analyzed separately from process quality data, missing the opportunity to build an build a holistic view of a program.

A New Theory to Connect Compliance with Quality

Introducing the **Theory of Regulatory Compliance (TRC)**, a paradigm shift in regulatory science developed by Dr. Richard Fiene.

Substantial Compliance is More Predictive

TRC demonstrates that achieving substantial compliance with structural rules is often more predictive of program quality than striving for 100% compliance, which can show diminishing returns.

Enabling a New Approach

This theory moves the field away from uniform monitoring and creates the foundation for a more targeted, predictive, and efficient model.

"TRC has been described as a paradigm shift that moved the licensing field... away from a uniform monitoring approach toward a differential monitoring model."

The Tool for the Job: The Key Indicator Methodology

What are Key Indicators?

A small subset of rules, regulations, or standards that are statistically proven to predict overall compliance with the full set of rules.

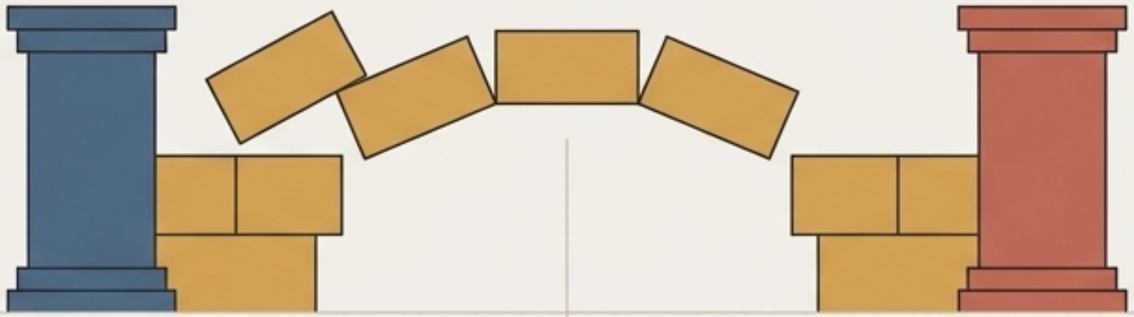
How it Works

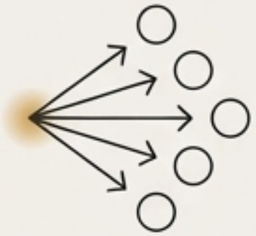
1. **Identify**: Through statistical analysis, identify the rules that have the most predictive power.
2. **Focus**: Build abbreviated or targeted inspections around these "key indicators."
3. **Predict**: A provider's performance on these indicators reliably signals their overall compliance and quality.

Critical Components

The methodology's predictive power relies on two specific techniques: the **weighting of rules** and the **dichotomization of data** to mitigate false positives and negatives in licensing decisions.

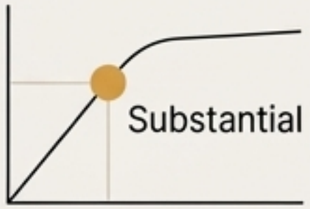
The New Paradigm: Differential Monitoring is Targeted, Predictive, and Efficient





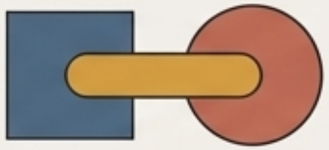
Differential Monitoring

Oversight is targeted based on risk, compliance history, and key indicators. Resources are focused where they are needed most.



Substantial Compliance Focus

The goal is to ensure providers meet a meaningful threshold of compliance that is directly linked to quality, rather than an arbitrary 100%.



Integrated Indicators

Key indicators serve as anchors, linking structural compliance directly to measures of process quality, creating a unified view.

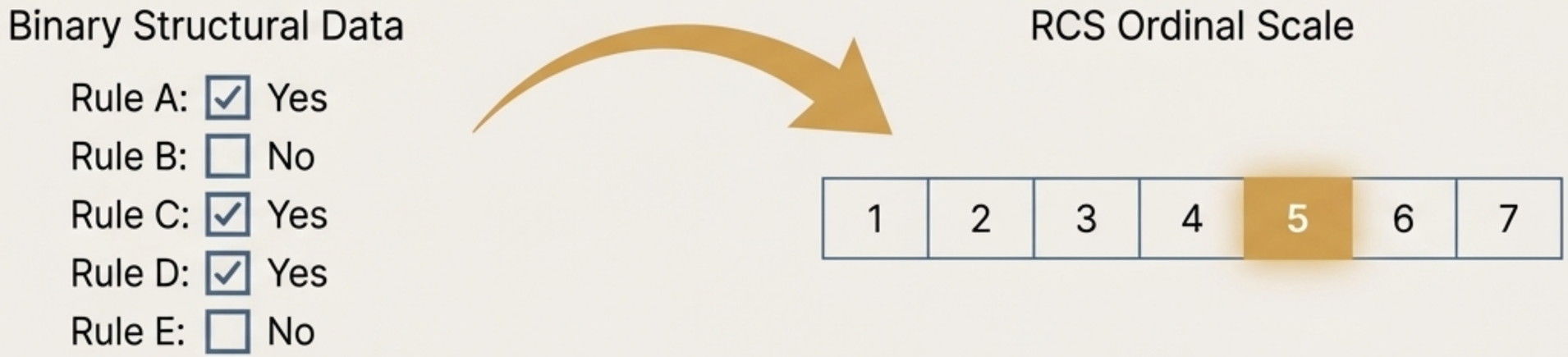
Making Data Comparable: The Regulatory Compliance Scale (RCS)

The Challenge

Traditional structural data is binary (compliant/not compliant), making it difficult to compare statistically with process quality tools that use 1-to-7 point scales.

The Solution

The RCS translates violation counts and compliance data into a categorical, ordinal scale (e.g., a 1-7 rating).



The Benefit

“By establishing a categorical structure, the RCS enables structural quality to be analyzed on more equal footing with process quality from a statistical measurement standpoint, creating a more effective comparative tool.”

Proof in Practice: Key Indicators Have Been Validated Across All Quality Systems

Accreditation

Used to develop the National Early Childhood Program Accreditation (NECPA) system as a cost-effective and empirically validated alternative.

Professional Development

Identified coaching and mentoring as more effective than traditional workshops for improving teacher-child interactions.

Quality Rating & Improvement Systems (QRIS)

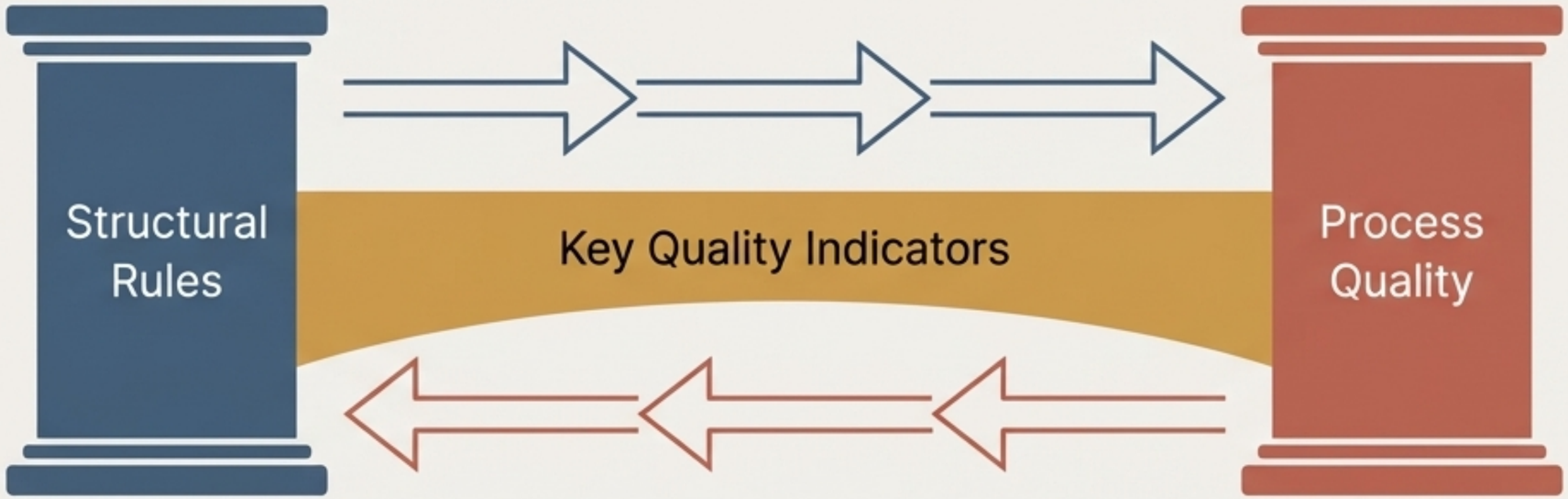
Developed Key Quality Indicators (KQIs) for domains like family engagement, which are statistically linked to higher QRIS ratings.

Quality Observation (ERS)

Identified that subscales related to language exchange and reasoning skills serve as strong predictors of overall ERS scores.

The Integrated Monitoring Model: A Unified Approach to Oversight

The evolution from uniform to differential monitoring now leads to integrated monitoring. Key Quality Indicators (KQIs) drawn from licensing, QRIS, accreditation, and ERS create a single, comprehensive framework for evaluating both structural and process quality.



"This integrated model offers jurisdictions a promising framework to align compliance monitoring with broader goals related to service effectiveness and developmental outcomes."

The Path Forward: Expanding the Integrated Model Beyond Child Care

The Opportunity

"The underlying methodology is applicable across a wide range of human service systems, including child residential and adult residential programs—any setting governed by rules, regulations, or standards."

The Challenges

Expanding into new domains requires addressing key differences:

- **Defining Quality**: It is harder to quantify 'quality' for adolescents or aging populations, where developmental milestones are less universal.
- **Lack of Tools**: There is an absence of established, population-wide quality evaluation systems for many adult services. Most existing tools focus on individual experience, not provider-level performance.

The Goal

Future research must focus on adapting and validating provider-level quality assessment tools for other human services to realize the full potential of this transformative model.

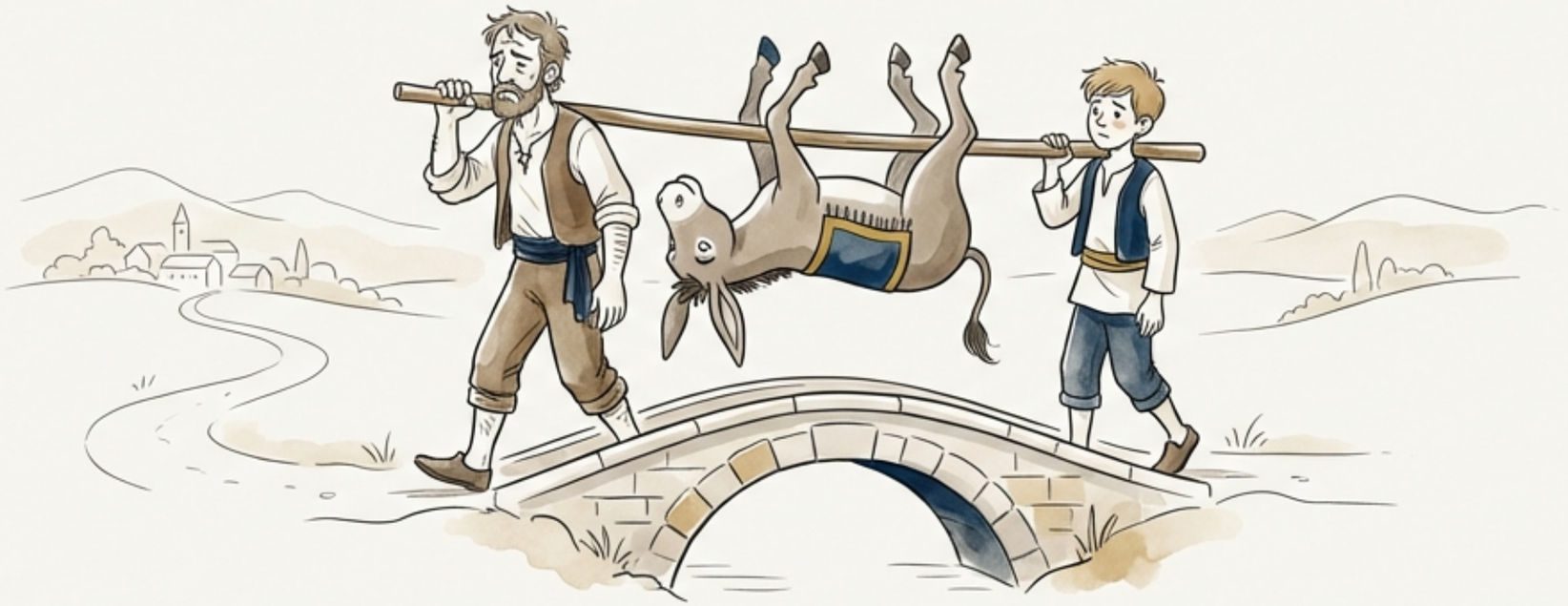
A Framework Built on Decades of Research and Validation

The concepts presented are the result of over 40 years of research by Dr. Richard Fiene, a leading international scholar on human services licensing and regulatory science. His work, including the Theory of Regulatory Compliance and the Key Indicator Methodology, has been instrumental in shifting public policy toward more effective, data-driven oversight.

The Research Institute for Key Indicators, an affiliated data laboratory with the Edna Bennett Pierce Prevention Research Center at Pennsylvania State University.

For a comprehensive review of the research and methodology, please refer to the NARA White Paper: "Key Quality Indicators."

The Fable of the Donkey



An old fable recounts how a father and son, taking a donkey to market, try to please every critical villager they meet. Their efforts to follow every piece of advice end absurdly and tragically, with them carrying the beast of burden themselves, ultimately causing its death.

Like the villagers' advice, regulations are well-intentioned. But programs that try to follow every single rule to the letter may find themselves too weighed down to achieve what they set out to do.

The Compliance Paradox

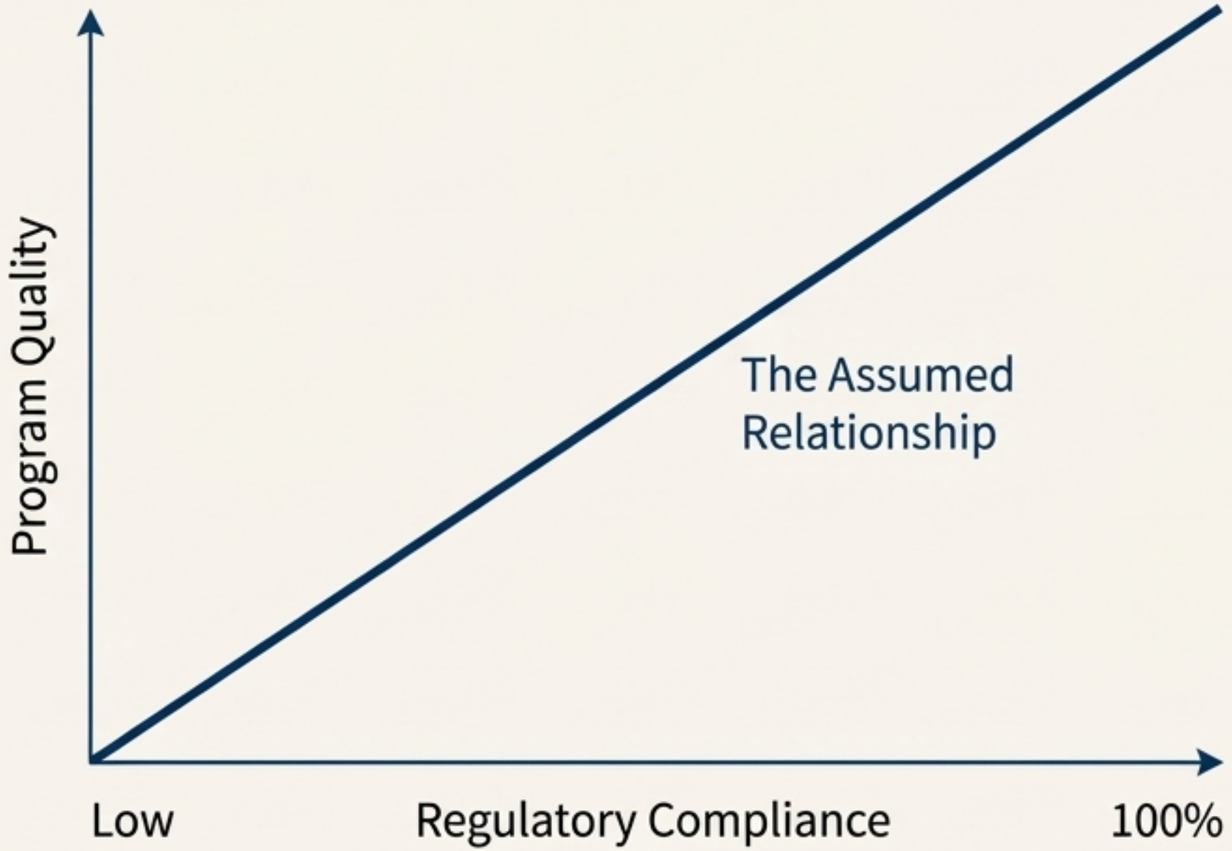
For four decades, a consistent pattern has emerged in childcare regulation:

Perfectly Compliant Programs: Staff spend an inordinate amount of time dotting i's and crossing t's on paperwork, leaving little time for improving classroom instruction.

Substantially Compliant Programs:
Staff, while still careful about rules, fuss less with paperwork and work more with teachers on improving skills and curriculum.

"When you're up to your behind in alligators, it's hard to remember that you set out to drain the swamp." - Richard Fiene

The Common-Sense Assumption That Led Us Astray



For decades, regulatory policy was built on a logical, philosophical assumption: fuller regulatory compliance would produce, linearly, better quality across programs.

- As compliance goes up, quality goes up.
- Therefore, the ultimate goal should be 100% compliance with every rule.

From a public policy standpoint, this notion sounds aspirational and sensible. **But what does the empirical data actually say?**

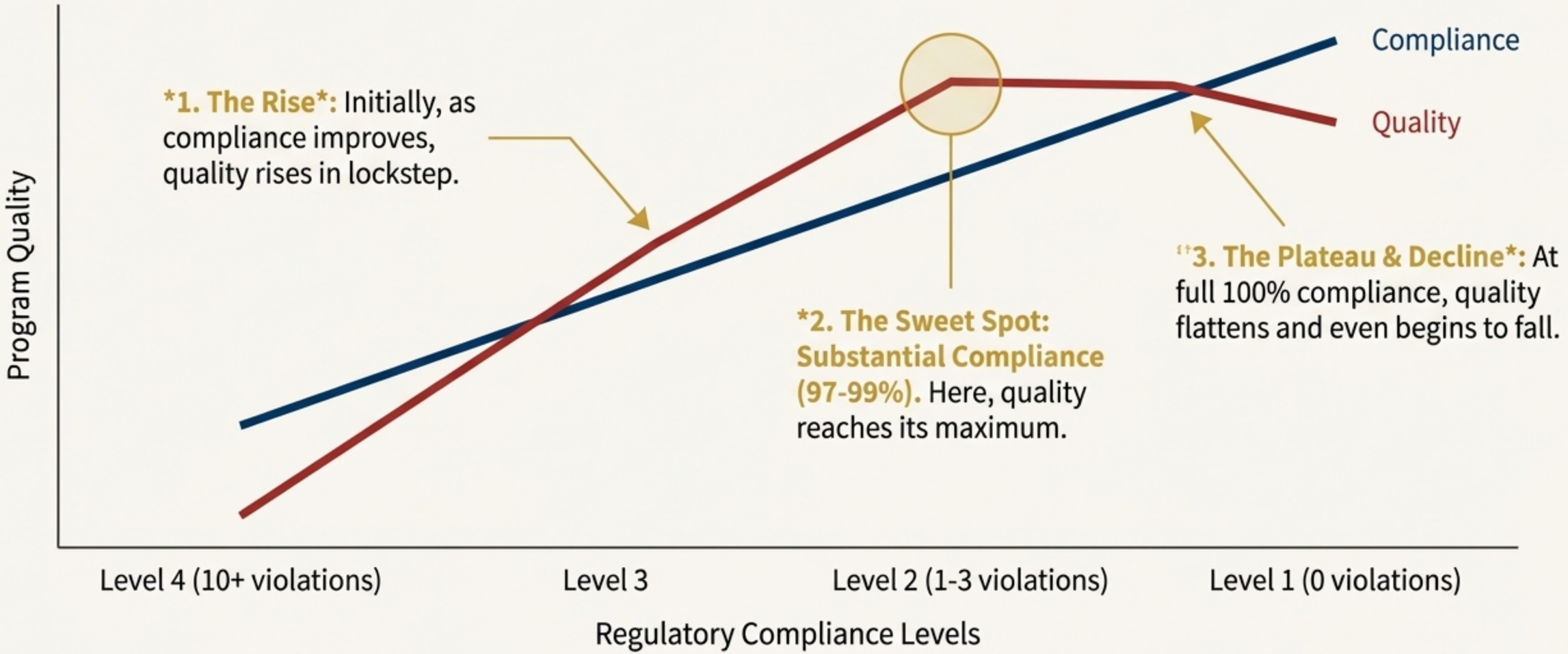
The Data Revealed a Surprising Truth

As computing power increased in the 1980s, researchers could finally analyze large datasets from state licensing agencies. When they compared regulatory violations to program quality, they found something unexpected.

- A linear relationship did exist, but only up to a certain point.
- After programs reached **substantial regulatory compliance** (98–99%), quality consistently **plateaued**.
- Worse, some replication studies in the 2010s suggested **diminishing returns**—quality actually declined slightly at 100% compliance.

"If, as data suggested, substantially compliant programs provided the same or better care as fully compliant ones, then clearly we needed to rethink our program evaluation strategies." — Richard Fiene in Source Sans Pro

Visualizing the Plateau Effect



This data, replicated across eight states and three Canadian provinces, called into question the long-held policy of requiring full compliance for licensure. It showed that the pursuit of perfection was not just inefficient, but counterproductive.

A New Paradigm: The Theory of Regulatory Compliance

This new, outcomes-based scientific framework reframes the central question of regulation. The goal is to close the gap between box-checking and genuine program quality. The theory is not about **arguing for** more or fewer rules.

“It is never about more or fewer rules; it is about which rules are really productive and which are not.”

The theory is built on two key pillars: adopting **Substantial Compliance** as the standard and using **Differential Monitoring** to focus resources.

The Strategy: From Uniform to Differential Monitoring

The Old Way: Uniform Monitoring

One-size-fits-all. Every rule is treated equally. Comprehensive reviews for everyone, every time.

The New Way: Differential Monitoring

A targeted approach. Focuses on rules proven to be most critical. Allocates resources based on risk and performance.

Differential monitoring replaces the brute-force approach with an intelligent system built on two powerful analytical tools: **Key Indicators** and **Risk Assessment**.

Component 1: Key Indicators

Definition:
Key Indicators are a small subset of rules that are statistical predictors of overall compliance.

How They Work:

- They are identified through statistical analysis of historical data.
- If a facility follows these specific rules, it strongly suggests they will follow most other rules as well.
- This allows for highly efficient and predictive inspections without needing to review all 200-400 regulations every single time.

Think of them as the **‘canary in the coal mine’** for regulatory health.

Component 2: Risk Assessment

Definition:

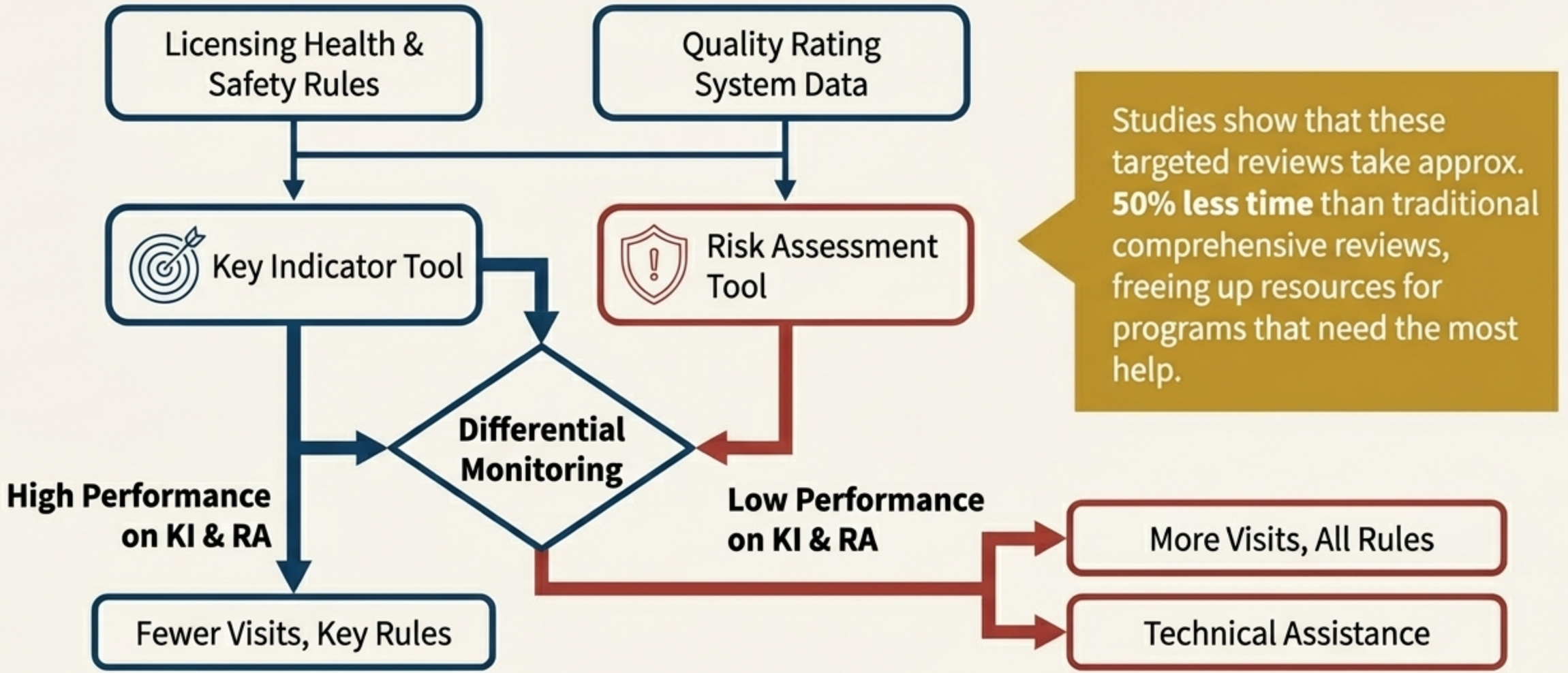
Risk Assessment focuses on rules and regulations which, when breached, place children at the greatest risk of sickness, injury, or death.

How It Works:

- Stakeholders (providers, parents, licensing staff) collaboratively “weight” each rule’s risk on a scale (typically 1-10).
- Rules with high-risk weights (e.g., related to supervision, hazardous materials) become part of every single differential monitoring review.

While Key Indicators predict broad compliance, Risk Assessment ensures that the most critical health and safety rules are never overlooked.

The Differential Monitoring System in Action



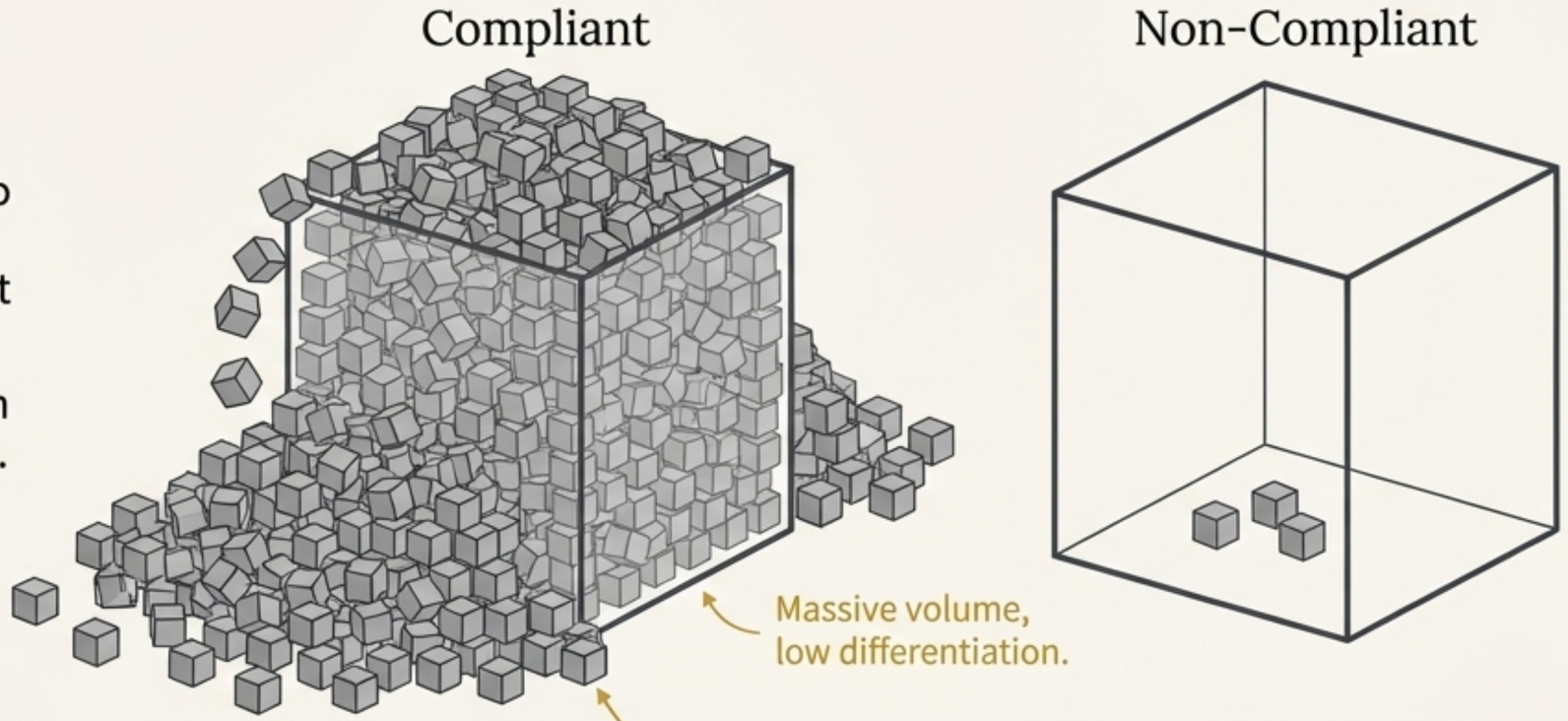
Studies show that these targeted reviews take approx. **50% less time** than traditional comprehensive reviews, freeing up resources for programs that need the most help.

Comprehensive reviews are still required every 3-4 years to validate the predictive power of the Key Indicators and Risk Assessment rules.

A Deeper Problem: The Nature of Licensing Data

The Traditional Approach

- **Nominal Data:** Data is sorted into exclusive categories like “approved” or “denied.” You can’t “do math” on it.
- **Binary Measurement:** A program either follows a rule, or it doesn’t. There are no gray areas.



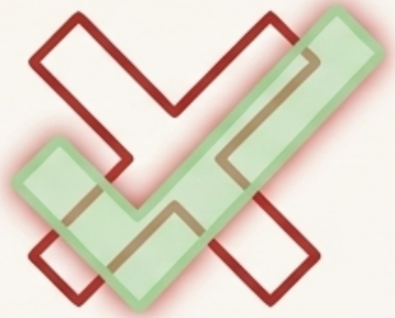
The Unintended Consequence: Severely Skewed Data

- Because programs must be compliant to operate, nearly all data falls into the “compliant” bucket.
- This makes it incredibly difficult to distinguish between excellent, good, and barely-passing programs.

The Dangers of a Binary System: False Positives & False Negatives

False Positive

An assessor rules a program is non-compliant with a rule it actually follows. This can be frustrating and costly for providers.

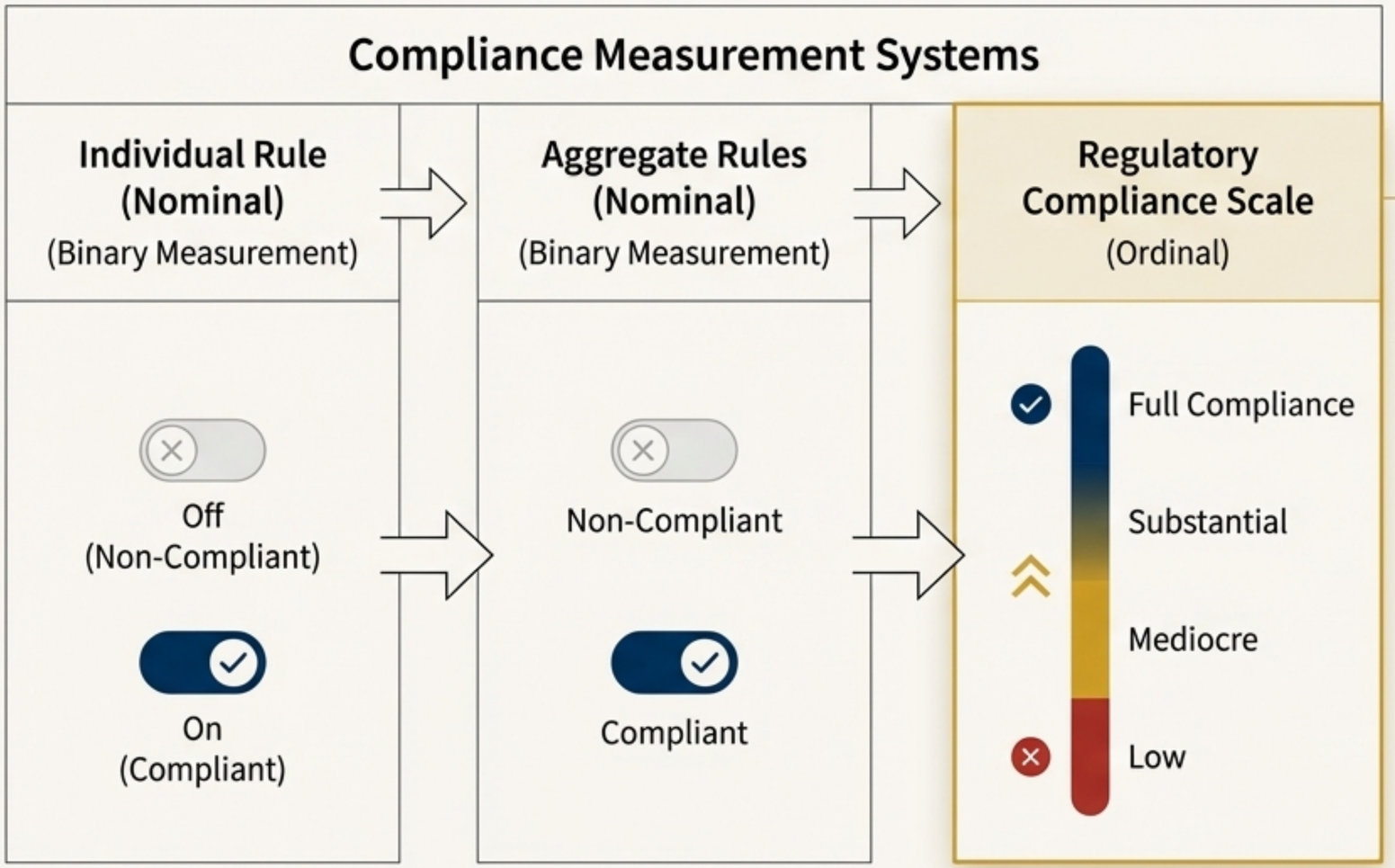


False Negative

An evaluator says a program complies with a rule that it actually breaches. **This is the far more dangerous error, as it places children at risk.**

"The all-**or-nothing** approach fails as a standard because it generates skewed data, raises the risks of false negatives and false positives, and springs from the false assumption that program quality increases in step with 100 percent compliance."

The Solution: Evolving from a Binary Switch to a Graded Scale



Inspired by the 1-7 Likert scales already used in quality measurement, a new Regulatory Compliance Scale is being developed. This transforms licensing data from a simple violation tally into a more useful and intuitive scale. It allows us to see the difference between “excellent,” “good,” and “mediocre” compliance, aligning the data with real-world quality.

The Future: Toward Integrative Monitoring and Smarter Regulation

The Next Frontier

The ultimate goal is **Integrative Monitoring**, a system that:

- Fully incorporates **program quality** elements into the rules themselves.
- Evolves Key Indicators from predicting mere *compliance* to forecasting true program *quality*.

The Challenge Ahead

Regulatory scientists must untangle the relationship between compliance and quality (a non-linear curve) and compliance and safety (where full compliance remains the linear goal). This requires breaking down silos between licensing, accreditation, and quality rating systems.

A Broader Application

These principles—of challenging assumptions, focusing on key drivers, and improving measurement—can be applied to other human service sectors, such as foster care and adult residential care, to achieve better outcomes with limited resources.

The CCEE Heart Monitor

A New Integrated System for Monitoring Structural and Process Quality in Early Education

Richard Fiene PhD | Research Institute for Key Indicators Data Laboratory | Penn State Edna Bennett Pierce Prevention Research Center | July 2025

Our Field Has a Disconnected View of Quality

For decades, we have measured Child Care and Early Education (CCEE) quality using **separate and distinct tools,** creating a fragmented picture.

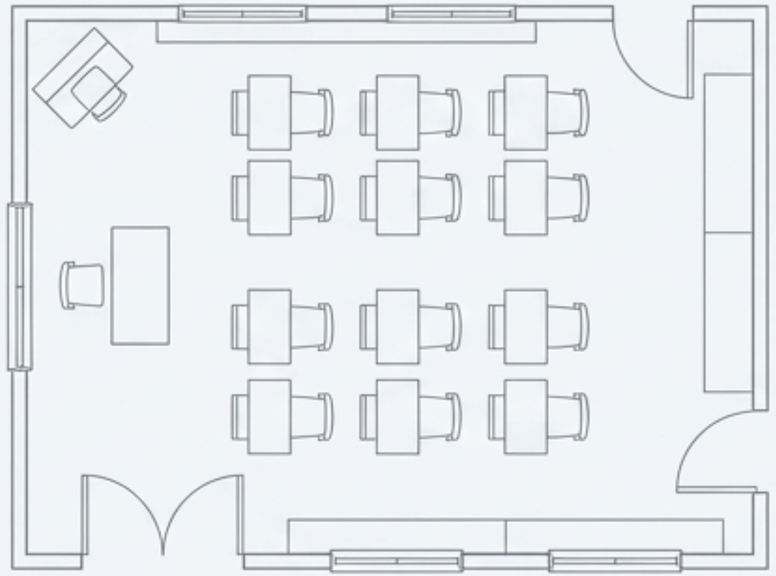
Structural Quality

Measured by licensing inspectors.
Focuses on health and safety compliance.

Process Quality

Measured by quality observers.
Focuses on the “magic” of interactions.

We Measure the Framework, But We Miss the Heartbeat



Structural quality—staff-child ratios, group sizes, safety rules—is the essential framework that protects children.

But process quality—the rich interactions between staff and children—is the ‘heart’ of the program. It’s the ‘dance’ where development truly happens.

> *“All the structural quality rules and regulations are important in protecting children and keeping them healthy but the interaction of child and adult is where the action occurs.”*

The CCEE Heart Monitor: A Unified System to See Program Health

The CCEE Heart Monitor (CCEEHM) is a new integrated monitoring system that assesses both structural and process quality on one platform. It places the measurement of process quality squarely within the structural measurement strategy, providing a complete and dynamic picture of a program's health.

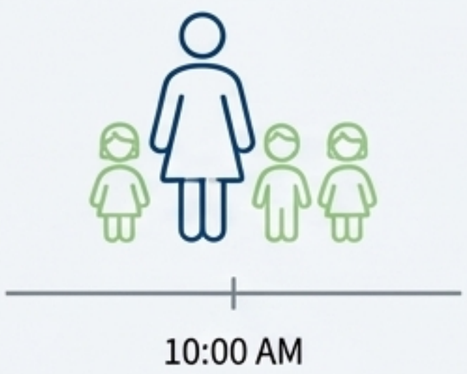
Key Features

- ✓ Integrates structural and process quality.
- ✓ Built on the Contact Hour (CH) metric and Key Indicator Methodology (KIM).
- ✓ Delivered through a user-friendly software application.
- ✓ For use by staff, licensors, and quality assessors.

The Foundation: Replacing Static Ratios with the Dynamic Contact Hour (CH) Metric

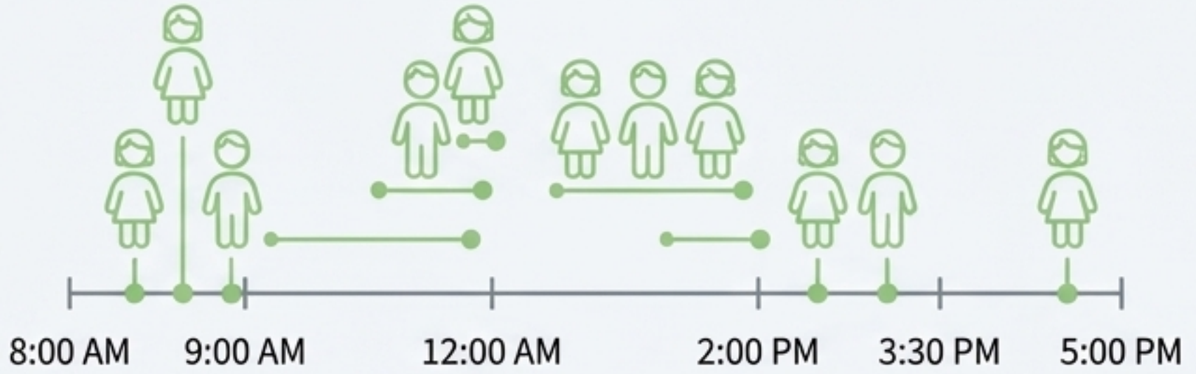
Traditional adult-child ratios and group size measurements are static snapshots. The Contact Hour (CH) metric is a more effective and efficient measurement because it incorporates the dimension of **time**, capturing the flow of children and staff throughout the day.

Static Snapshot



1:4 ratio

Dynamic Flow



The ratio is not constant.

How it Works

The CH metric calculates the total exposure time of adults with children. A higher CH value can correlate with increased non-compliance with adult-child ratios.

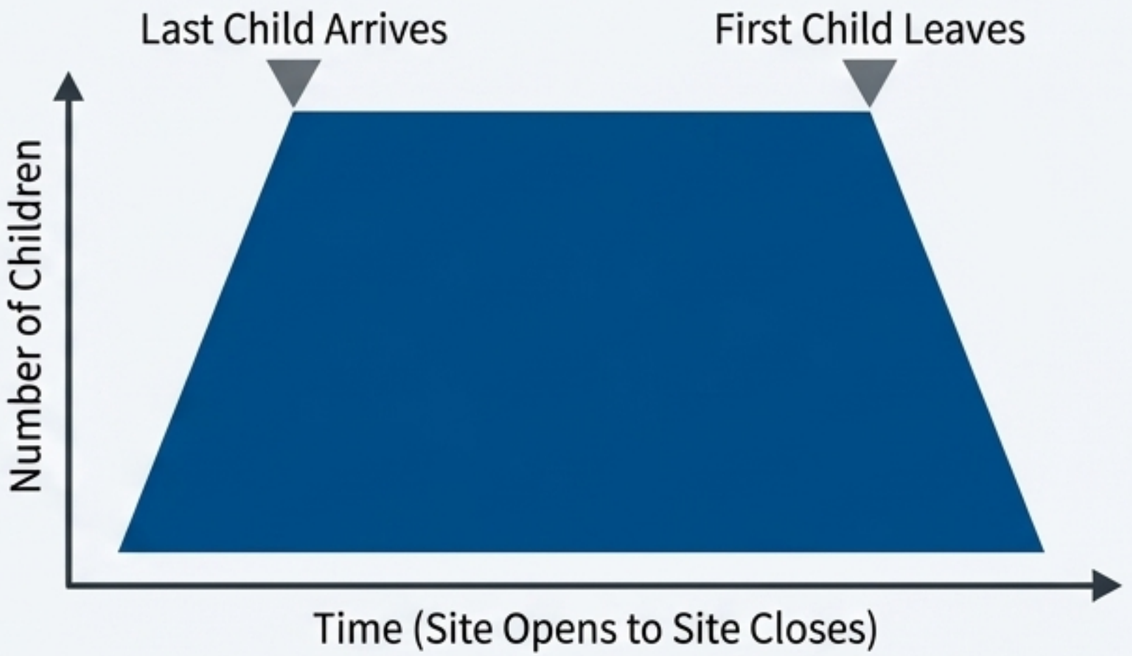
Calculating the Contact Hour is Simple

The entire CH calculation is based on the answers to six straightforward questions about a specific classroom or group.

The 6 Questions

1. First teaching staff arrival time?
2. Last teaching staff leave time?
3. Number of teaching/caregiving staff?
4. Number of children on maximum enrollment day?
5. Last child arrival time?
6. First child leave time?

The Trapezoidal Model



These 6 inputs create a model representing the daily density of the program. The area of this shape determines the Contact Hours and compliance with ratio standards.

The Shape of the Day Reveals Program Density and Compliance

The relationship between when children arrive and leave changes the shape of the CH model. Each shape tells a different story about the program's operation and compliance.

1. Triangle Shape: Lowest CH.

Unlikely scenario where full enrollment is a single point in time.

2. Trapezoid Shape: Most likely scenario.

Children gradually arrive and leave, with a period of full enrollment.

3. Square/Rectangle Shape: The efficiency benchmark.

All children arrive and leave at the same time.

4. Tall Rectangle Shape: High CH.

Indicates non-compliance with adult-child ratios and group size—the key issue the CH metric was designed to identify.

The “Heartbeat”: Measuring Process Quality with 10 Validated Indicators (PQI)

The Contact Hour metric provides the structural baseline. The Program Quality Indicators (PQI) measure the interactions, curriculum, and environment—the true ‘process quality.’ These 10 indicators were drawn from decades of key indicator studies and validated in a study in Saskatchewan.

> **Key Idea:** The PQIs move the CCEEHM from an absolute value (in or out of compliance) to a relative one that captures the nuances of quality.

A Comprehensive Look at Program Quality

The 10 PQIs are grouped into three core domains of early childhood education quality.

Staffing & Program

- 1. ECE III Educators (AA/BA Level)
- 2. Stimulating and Dynamic Environment
- 3. Developmentally Appropriate Curriculum

Family & Community Partnership

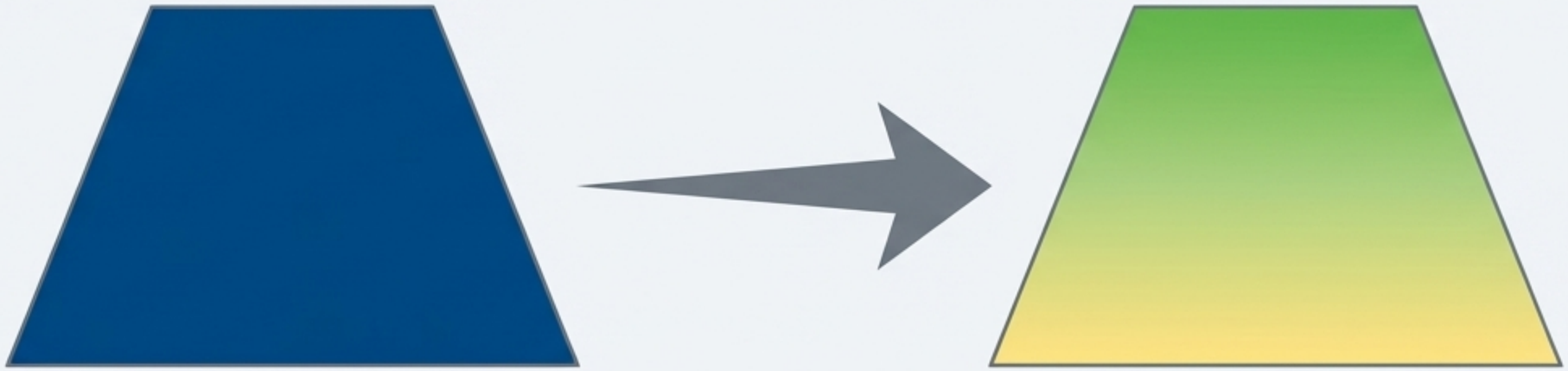
- 4. Opportunities for Staff & Families to Engage
- 5. Regular Information on Child's Progress

Classroom Interactions (Observation)

- 6. Encouraging Communication (Preschool)
- 7. Infant/Toddler Conversation & Questioning
- 8. Using Language for Reasoning Skills (Preschool)
- 9. Educators Listen Attentively
- 10. Educators Speak Warmly to Children

The Intersection: Creating a Complete Picture of Program Health

The CCEEHM integrates the structural CH metric with the process PQI scores. This transforms the compliance model. A program's CH trapezoid is no longer just a measure of capacity; it becomes a canvas filled with data on the quality of interactions happening every hour.



Structural Compliance
(Absolute Value)

Integrated Quality Profile
(Relative Value)

We can now see not only **if** a program is compliant with ratios, but **how** high-quality the interactions are within those hours.

The Future of Observation: Powering the PQI with Artificial Intelligence

To fill the CH model with rich PQI data would require thousands of human observations, which is unrealistic. AI makes this possible.

How it Works

Observation

Video cameras in classrooms allow AI to observe interactions continuously.

Training

The AI is trained on what constitutes various quality levels for each PQI, similar to training human observers for inter-rater reliability.

Analysis

The AI provides summary measurements on an hourly basis, feeding directly into the CCEEHM.

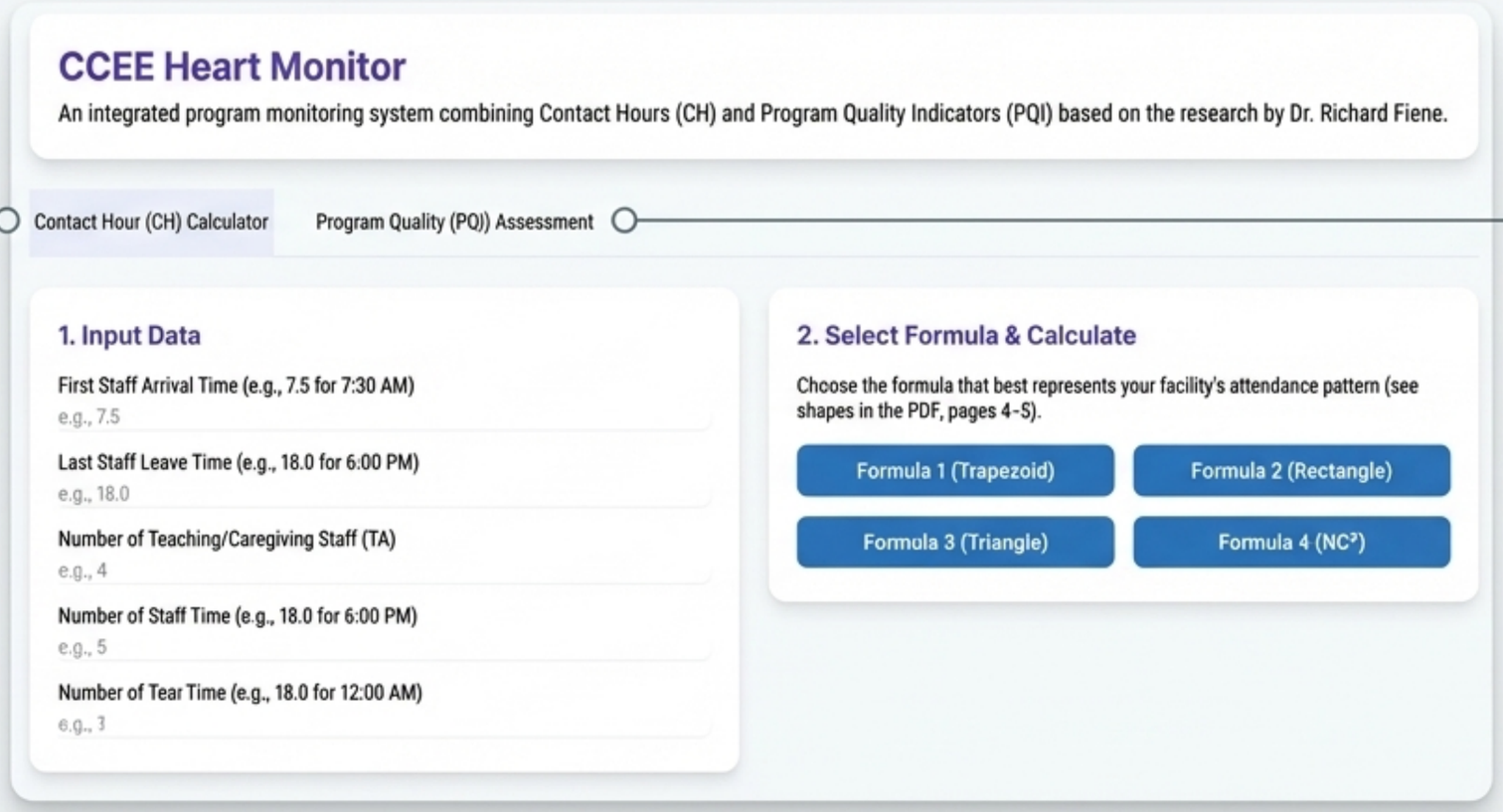
Key Benefits

- **Scalability:** Allows for constant, comprehensive observation.
- **Objectivity:** Reduces issues of human bias in observing and decision-making.
- **Consistency:** AI observers have less ‘drift’ over time than human observers.

From Theory to Tool: The CCEE Heart Monitor App

The CCEE Heart Monitor is an intuitive software application that performs all scoring and calculations. Assessors can use it manually, or it can be integrated with AI observation systems. It provides real-time results for both the Contact Hour metric and the Program Quality Indicators.

Contact Hour (CH) Calculator: Input the 6 data points to determine structural compliance.



Program Quality (PQI) Assessment: Go through the 10 indicators to evaluate process quality.

A More Effective, Efficient, and Holistic Approach to Quality

The CCEEHM offers significant advantages over traditional, fragmented monitoring systems.

Unified

Provides a single, integrated view of structural and process quality.

Cost-Effective & Efficient

Based on the proven Key Indicator Methodology and delivered in a simple app.

Objective & Reliable

AI-powered observation enhances consistency and reduces bias.

Comprehensive

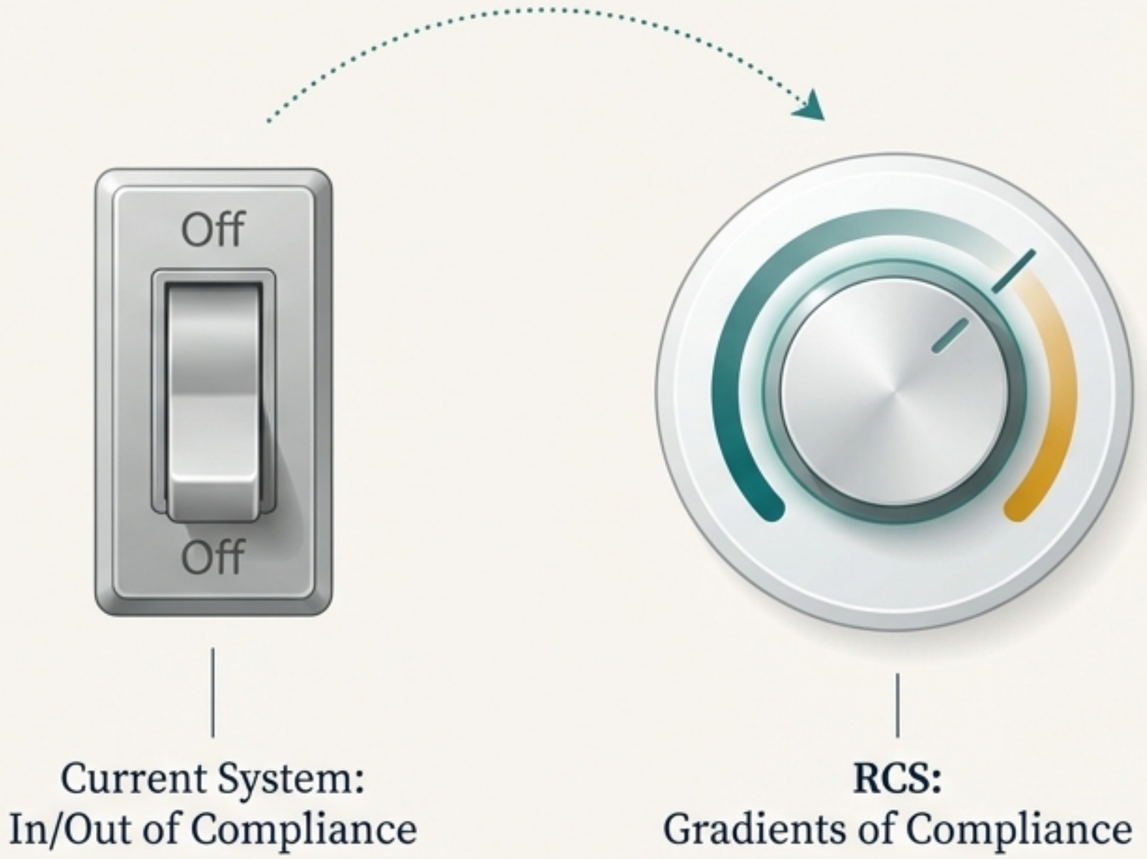
Delivers a true, holistic picture of a program's daily health and quality.

A New Paradigm for CCEE Monitoring and Improvement

The CCEE Heart Monitor is more than a new tool—it's a paradigm shift. By providing an integrated, dynamic, and nuanced view of program quality, it moves the field beyond simple compliance checking. It offers the data and insights necessary to support genuine, continuous quality improvement, ultimately helping us better understand and enhance the daily experiences of children.

Measuring What Matters: Moving Beyond Pass/Fail in Regulatory Compliance

Introducing the Regulatory Compliance **Scale (RCS):** A New Paradigm for Licensing and Quality Improvement



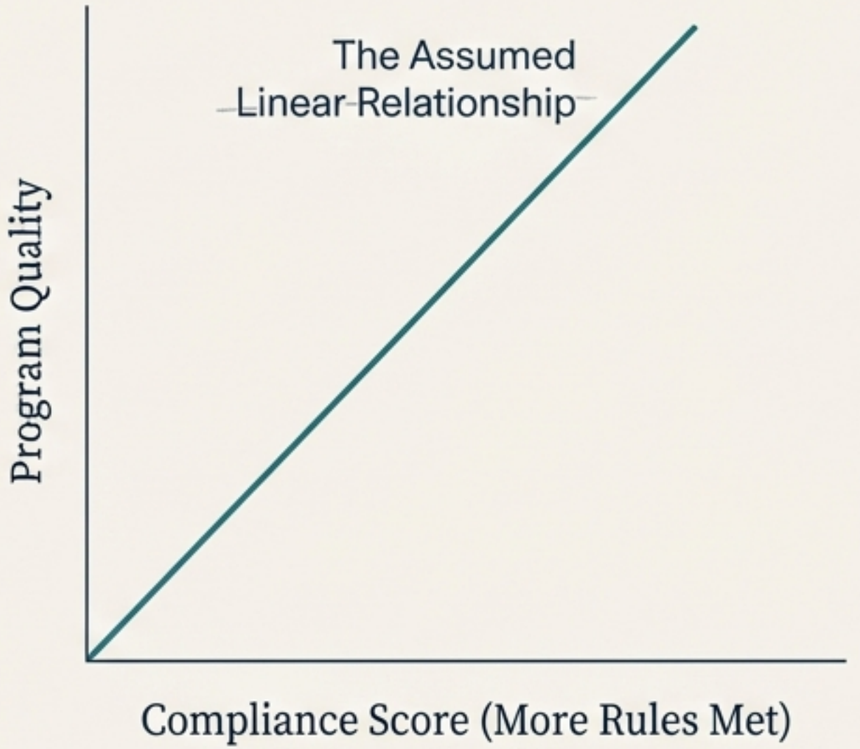
Based on the work of Dr. Richard Fiene, Penn State's Edna Bennett Pierce Prevention Research Center. April 2025.

The Current System Is Absolute. Our understanding of quality is not.

Regulatory compliance measurement is dominated by a nominal, ‘all or none’ system. A rule is either in full compliance or it is out. There are no gradients.

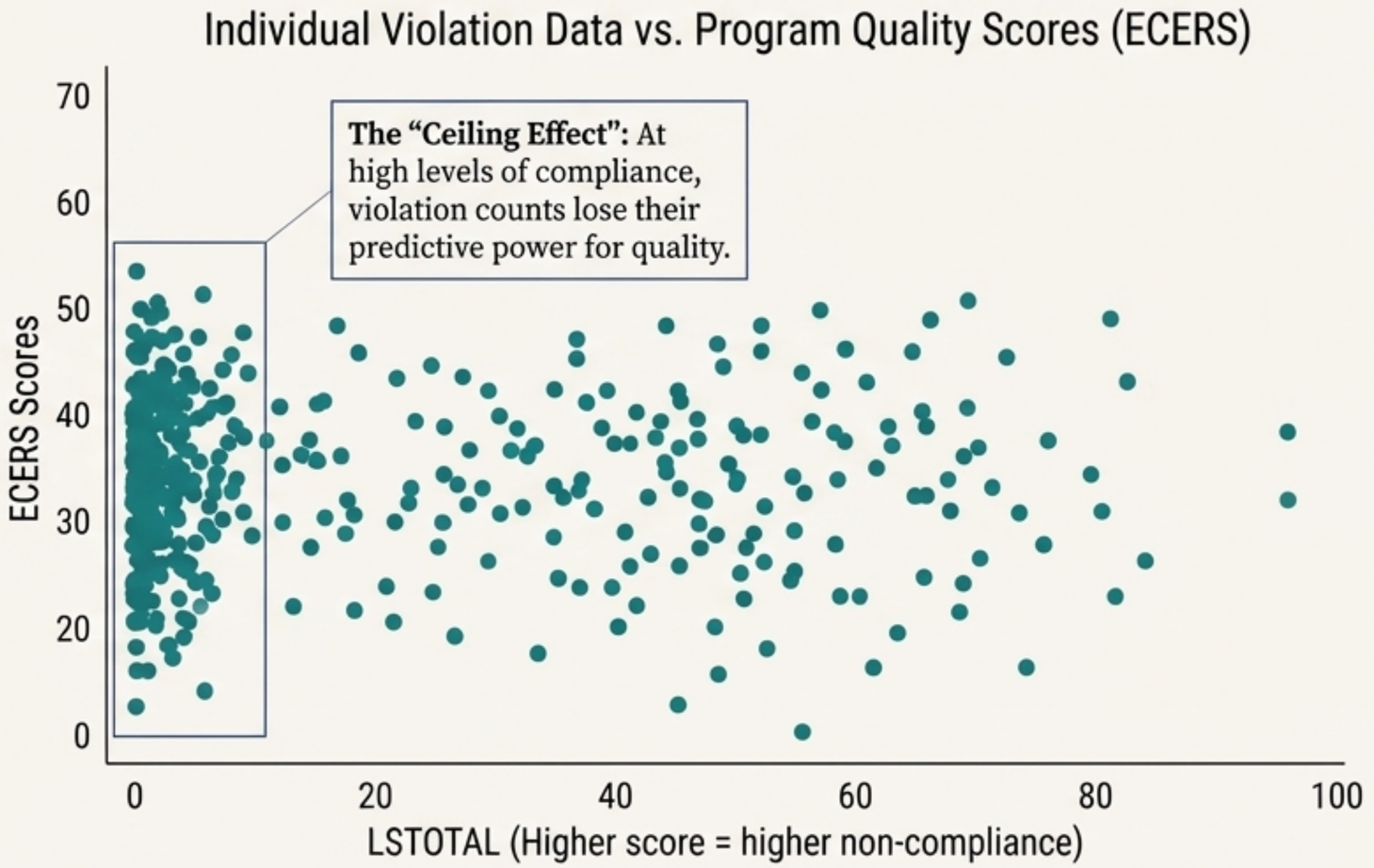
This absolute approach creates a significant challenge: it assumes a simple, linear relationship between the number of rules met and the actual quality of a program.

However, decades of research demonstrate this assumption is flawed. Simply counting violations fails to capture the nuances of program quality and can misrepresent a program’s true performance.



The Data Reveals a ‘Ceiling Effect’: More Compliance Doesn’t Always Mean Higher Quality

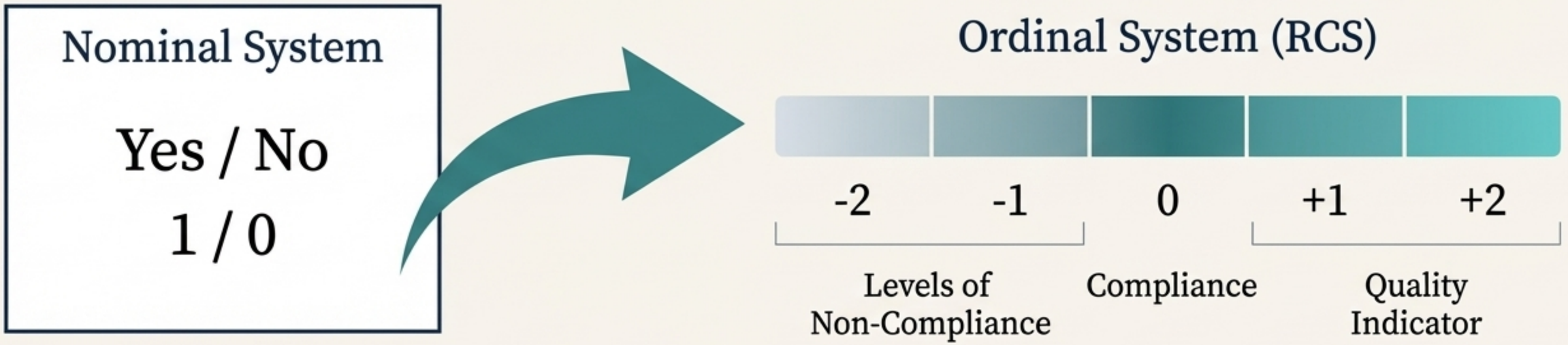
When we plot raw violation data against established quality scores (like ECERS), the expected linear relationship disappears. There is not a significant correlation. Many programs with few or no violations cluster together, making it impossible to distinguish between them on quality.



The Solution: An Ordinal Scale to Measure Gradients of Compliance

We propose a new paradigm: The Regulatory Compliance Scale (RCS). This moves measurement from a nominal (Yes/No) system to an ordinal one that accounts for degrees of compliance.

Instead of a `1` or `0` for each rule, the RCS uses a `-2, –1, 0, +1, +2` format, similar to accreditation systems. This allows us to account for severity, prevalence, and even add a Quality Indicator (QI) element to basic compliance.



The Regulatory Compliance Scale (RCS) Defined

The RCS groups programs into four distinct, logical categories based on violation counts. This framework allows for a more nuanced understanding of performance, moving beyond a simple violation count to a meaningful compliance level.

The Regulatory Compliance Scale (RCS) Framework

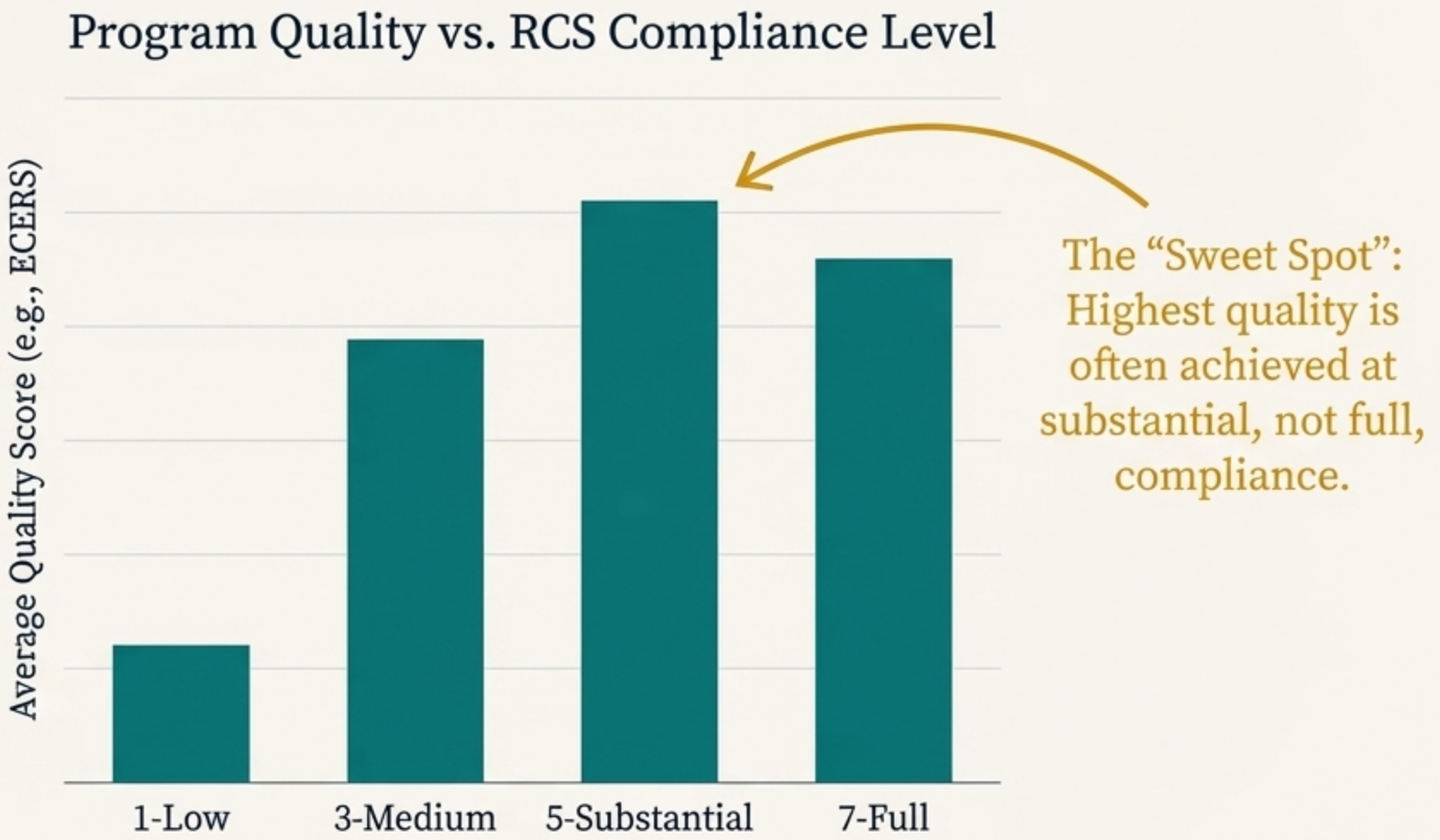
Scale Level	Compliance Level	Violation Count (Unweighted Model)	Risk Level
7 (A)	Full Compliance	0 violations	None
5 (B)	Substantial Compliance	1-2 violations	Low
3 (C)	Medium Compliance	3-10 violations	Medium
1 (D)	Low Compliance	11+ violations	High

These thresholds are based on 40 years of research into regulatory compliance data distributions.

How the RCS Reveals the True Relationship with Quality

When the same data is grouped using the RCS categories, a clear, non-linear pattern emerges.

This confirms the Theory of Regulatory Compliance: "Substantial Compliance" is often the sweet spot for quality—sometimes even outperforming "Full Compliance".



The Original RCS Model Is Validated Across Multiple Jurisdictions and Methods

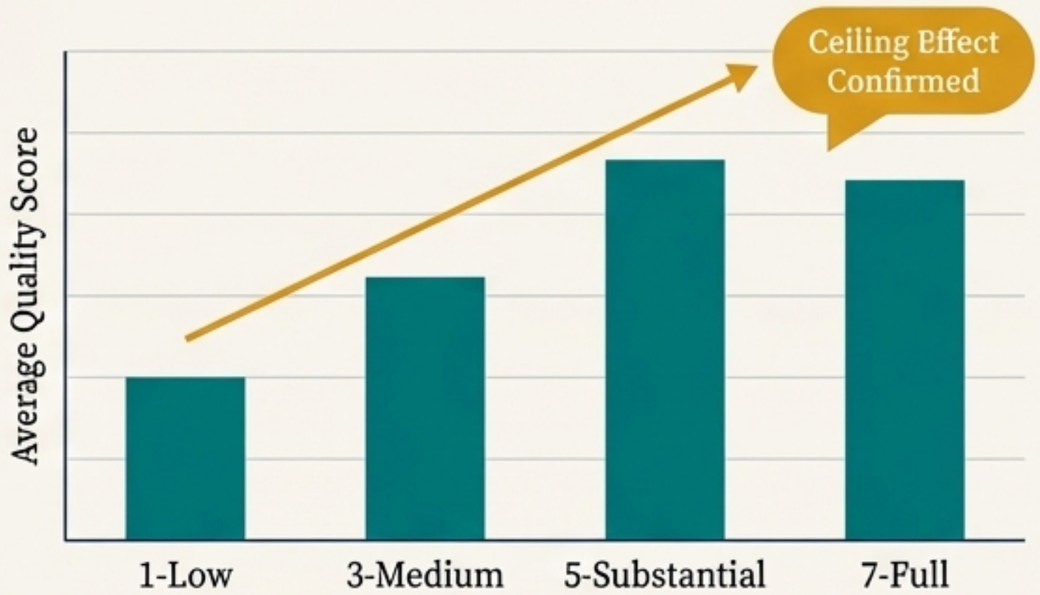
To ensure its efficacy, the original RCS model was tested against five alternate models, including some based on the Fibonacci sequence, across multiple jurisdictions in the US and Canada. Analyses using both correlations and ANOVAs consistently demonstrated that the original RCS model is the most effective and reliable.

RCS Model Comparison

Jurisdiction	Original RCS	Model 3	Model 5	Fibonacci Model
Jurisdiction 1	✓	✓	✓	
Jurisdiction 2	✓	✓	✓	
Jurisdiction 3	✓			✓
Jurisdiction 4	✓		✓	✓
Jurisdiction 5	✓	✓	✓	

Original RCS (RCS0) demonstrates consistently strong, significant correlations with quality metrics.

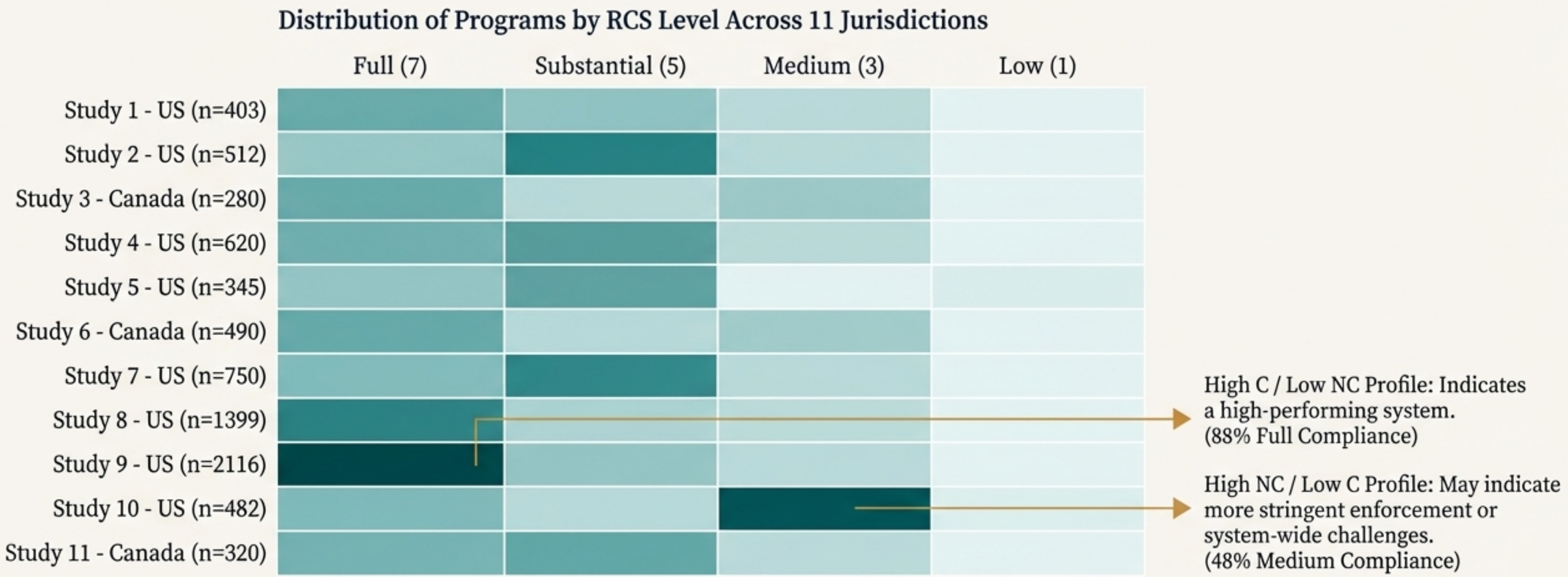
Ceiling Effect Confirmed via ANOVA



ANOVA results confirm the ceiling effect phenomenon is present across jurisdictions ($p < .05$), validating the RCS's structure.

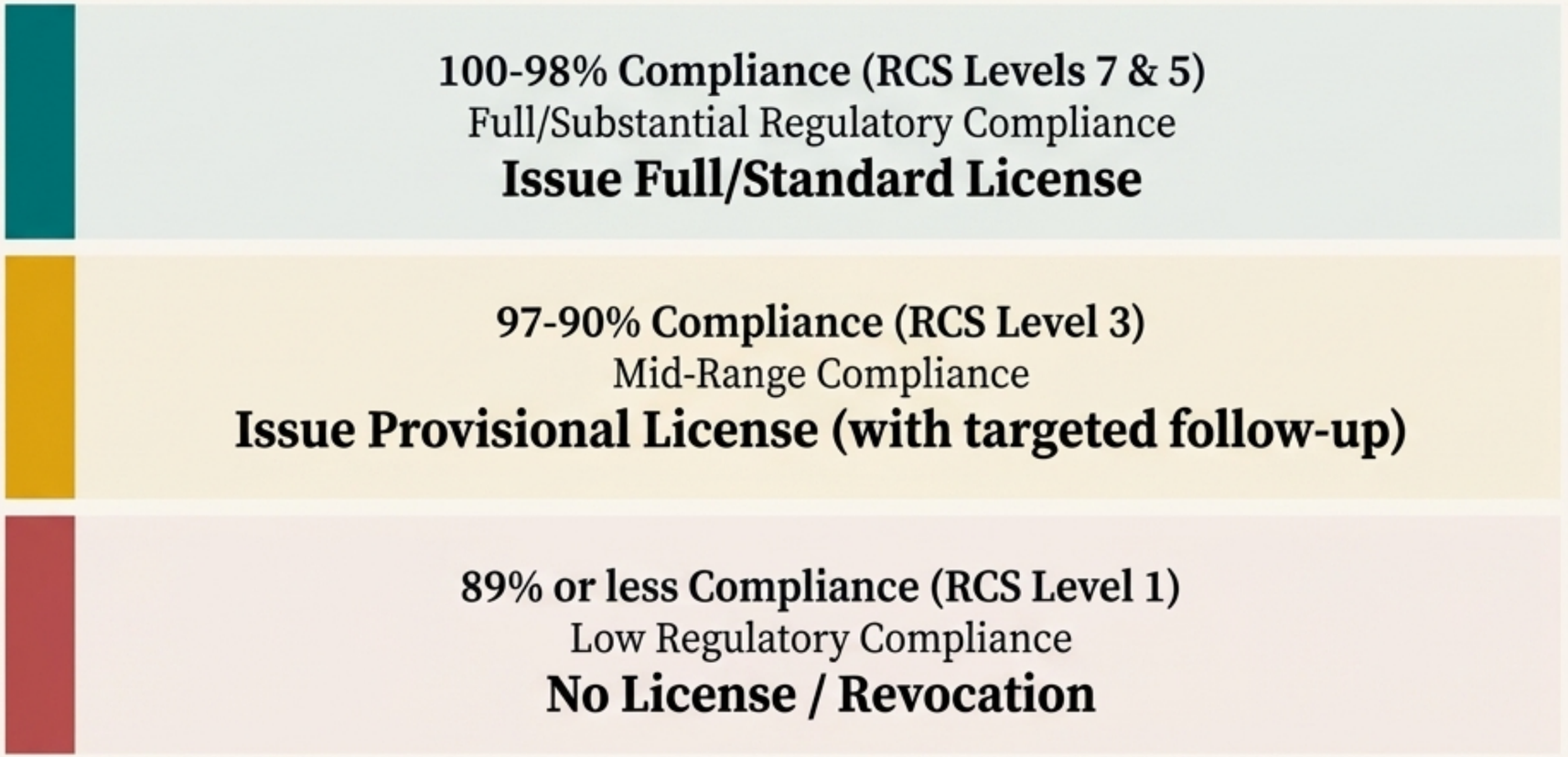
A Decade of Data: How 11 Jurisdictions Compare Using the RCS

Data from 11 studies across the US and Canada (2013-2023) show significant variation in compliance profiles. The RCS provides a standardized lens to understand these differences, highlighting systems that may be overly stringent or have high percentages of low-performing programs.



From Measurement to Action: A Proposed Scale for Licensing Decisions

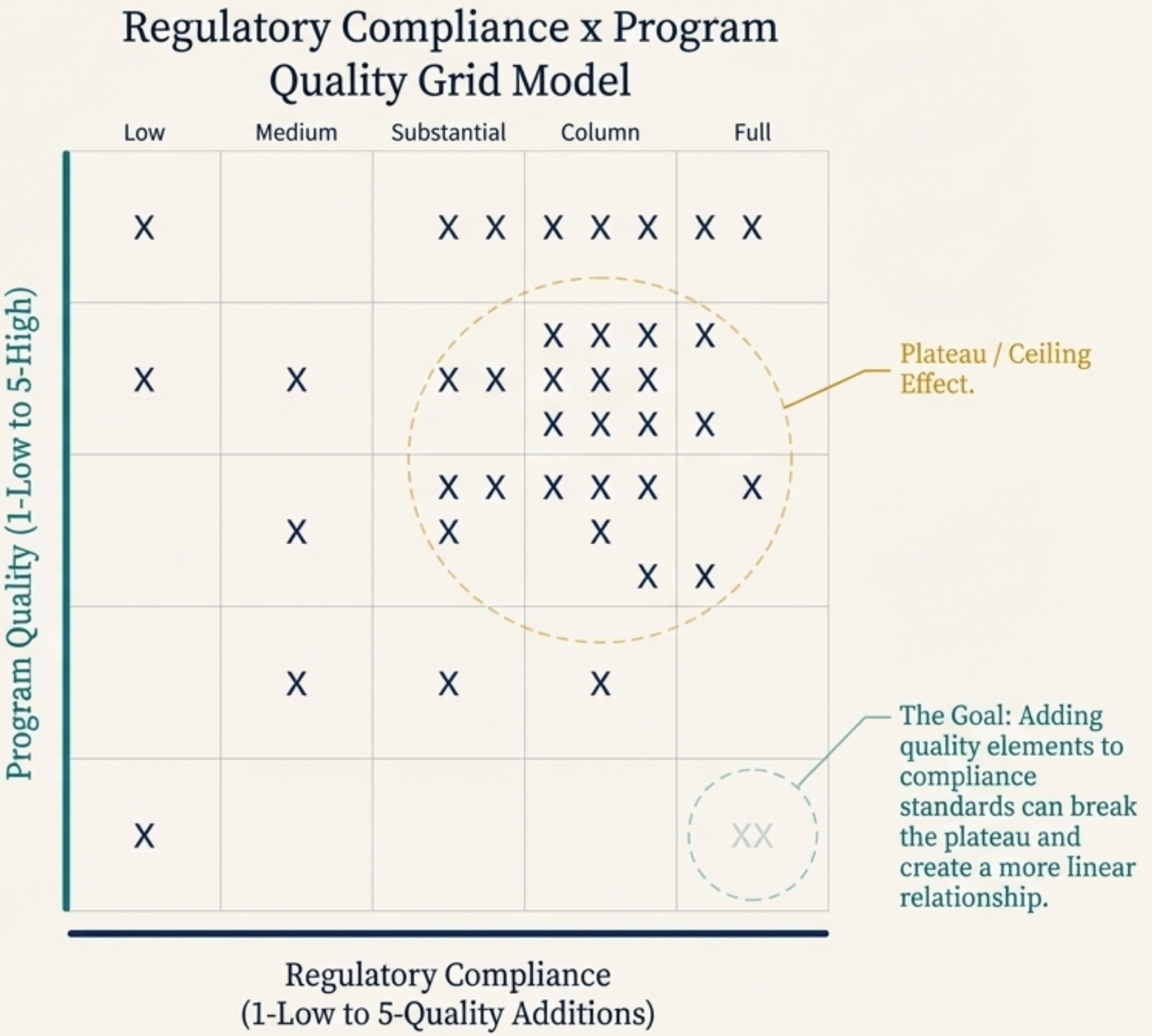
The RCS provides an empirical foundation for tiered licensing decisions. By moving away from a single cut-off, jurisdictions can create a more responsive system that issues licenses commensurate with a program's demonstrated level of compliance.



Jurisdictions can adjust these thresholds based on their specific data distributions and regulatory goals.

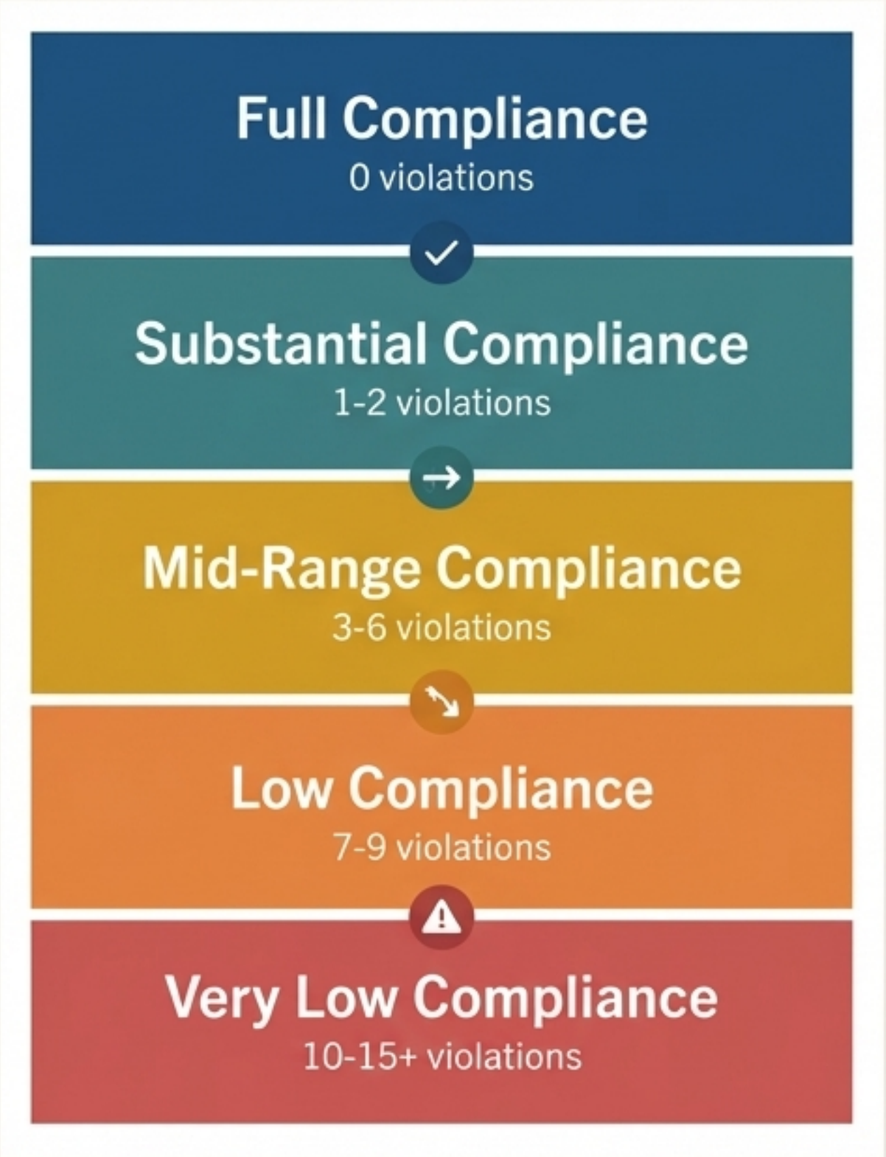
A Strategic View: The Regulatory Compliance x Program Quality Grid

The RCS enables a more sophisticated analysis of the interplay between regulatory compliance (RC) and program quality (PQ). This grid model visualizes the the non-linear relationship and provides a theoretical framework for enhancing health and safety rules with quality components to achieve better outcomes.



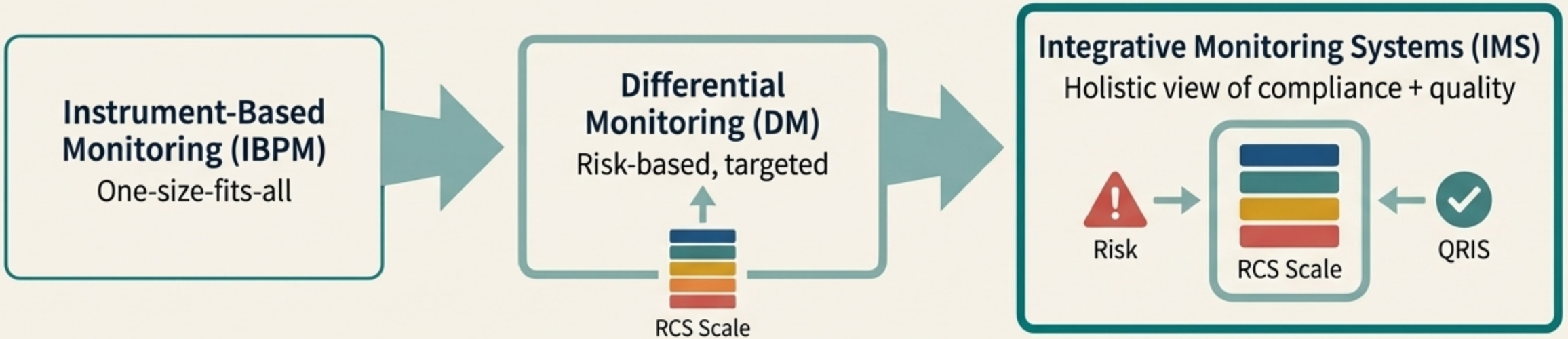
For Public Transparency: The Regulatory Compliance Scoring System & Scale (RC3S)

Just as restaurants receive grades for health inspections, human service facilities can be rated using a clear, color-coded system based on the RCS RCs. The RC3S translates complex compliance data into an at-a-glance rating, empowering parents, clients, and the public.



A Unified System: Integrating Licensing and Quality Improvement

A major implication of an ordinal measurement system is the ability to merge licensing and Quality Rating and Improvement Systems (QRIS). The RCS, combined with the Key Indicator Methodology, allows inspectors to measure both compliance and quality indicators within a single, mandated framework. This balances effectiveness with efficiency.



The RCS is the foundational metric that enables the shift to more advanced, integrated monitoring systems.

The Future of Regulatory Science is More Nuanced, Not More Absolute

The binary pass/fail model of compliance is an outdated paradigm that fails to predict program quality.

The Theory of Regulatory Compliance and the ‘ceiling effect’ are proven phenomena that demand a new measurement approach.

The Regulatory Compliance Scale (RCS) offers a validated, ordinal-based metric that provides a more accurate picture of performance.

Adopting the RCS can lead to more informed licensing decisions, greater public transparency, and the potential to unify compliance and quality systems.

On/Off Switch

Dimmer Dial

RC x PQ grid and unified system

It is time to move the field from an instrument-based to a differential and integrative monitoring approach. Consider the Regulatory Compliance Scale. Let’s pilot the future of compliance measurement.

The Uncertainty-Certainty Matrix: A New Framework for Licensing Decision-Making

A proposed conceptual model for improving validation, reliability, and monitoring in regulatory science.

We Face a Fundamental Measurement Problem

There is a high level of dissatisfaction with the levels of reliability in the results of program monitoring reviews.

In human services licensing, our decisions must be accurate and consistent. However, the field struggles with maintaining a high degree of inter-rater reliability among inspectors.

This isn't just a process issue; it's a "fundamental measurement problem." Our data is often binary (in compliance / out of compliance), leaving little room for error but suffering from inconsistency.

This unreliability undermines our ability to protect clients and make sound policy decisions, leading to the old adage: "Garbage In, Garbage Out."

The High Cost of Uncertainty: False Positives vs. False Negatives

When a decision about compliance disagrees with the actual state of compliance, two types of errors can occur.

False Positive

A decision is made that a rule is **out of compliance** when it is **actually in compliance.**

Creates unnecessary burden and friction, but is the lesser of two evils.

False Negative

A decision is made that a rule is **in compliance** when it is **actually out of compliance.**

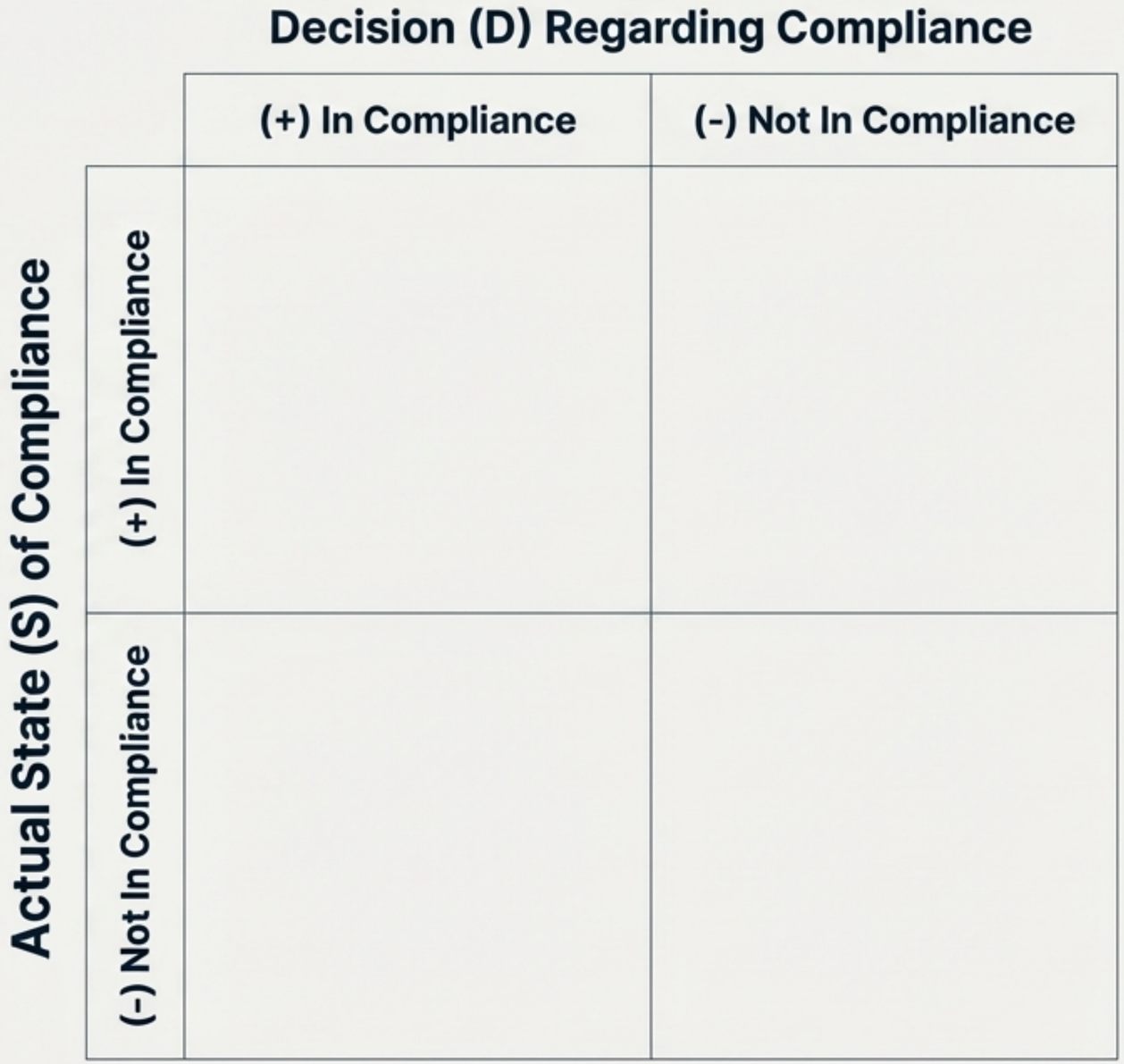
Places clients at extreme and hidden risk. This is the error we must prioritize avoiding.

A New Language for Clarity: The Uncertanty-Certainty Matrix (UCM)

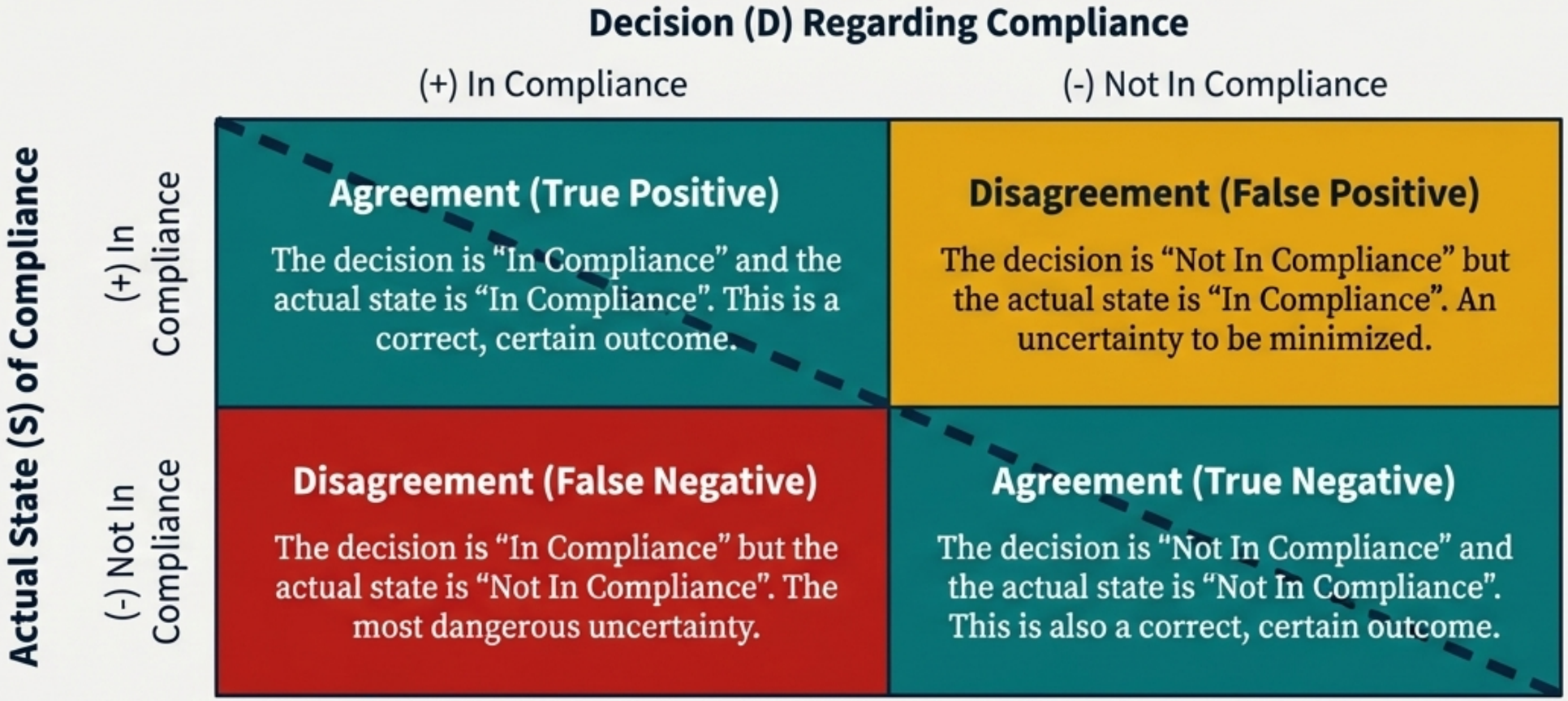
The UCM is a conceptual tool that reframes the classic Contingency Table for regulatory science. It provides a simple, powerful visual language to diagnose the health of our decision-making.

The matrix is built on two simple axes:

1. **The Decision (D):** The judgment made by a licensing inspector regarding a rule's compliance.
2. **The Actual State (S):** The verifiable, ground-truth reality of that rule's compliance.



Deconstructing the UCM: The Four Possible Outcomes



In a perfect world, all results would fall along the diagonal (the agreement cells).
The UCM helps us see how far from perfect we are.

Application 1: A Diagnostic Tool for System Health

Using the UCM for Validation and Reliability Studies

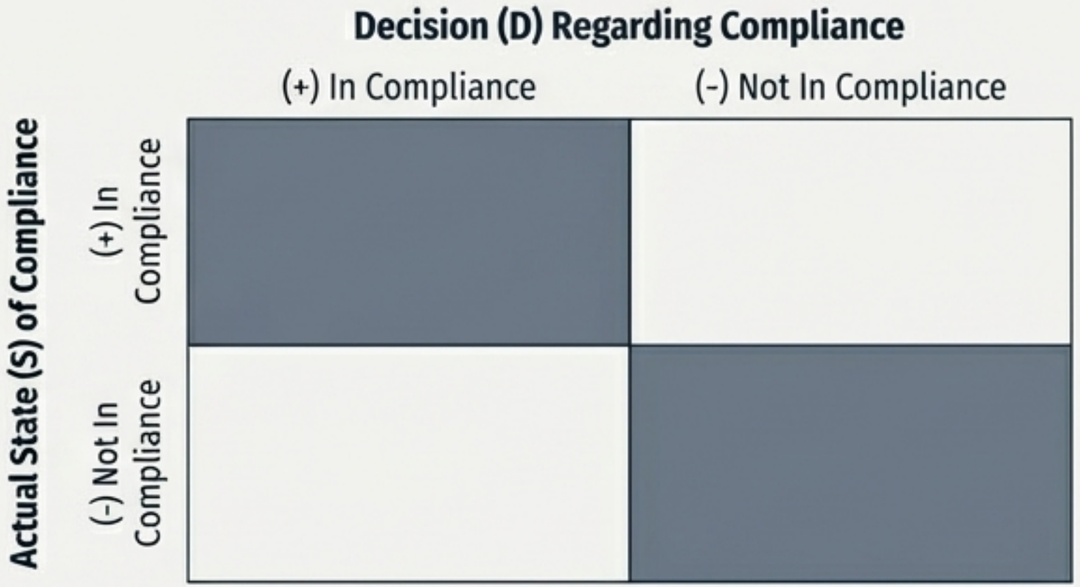
The UCM's primary power is its ability to reveal patterns in data. By plotting licensing decisions against a verified standard, we can visually diagnose the validity and reliability of our system.

For Validity: We look for the elimination or reduction of false positives and false negatives. A healthy system shows a strong diagonal pattern.

For Reliability: We test for bias. A horizontal or vertical pattern indicates a systemic bias in decision-making at the individual inspector or system level.

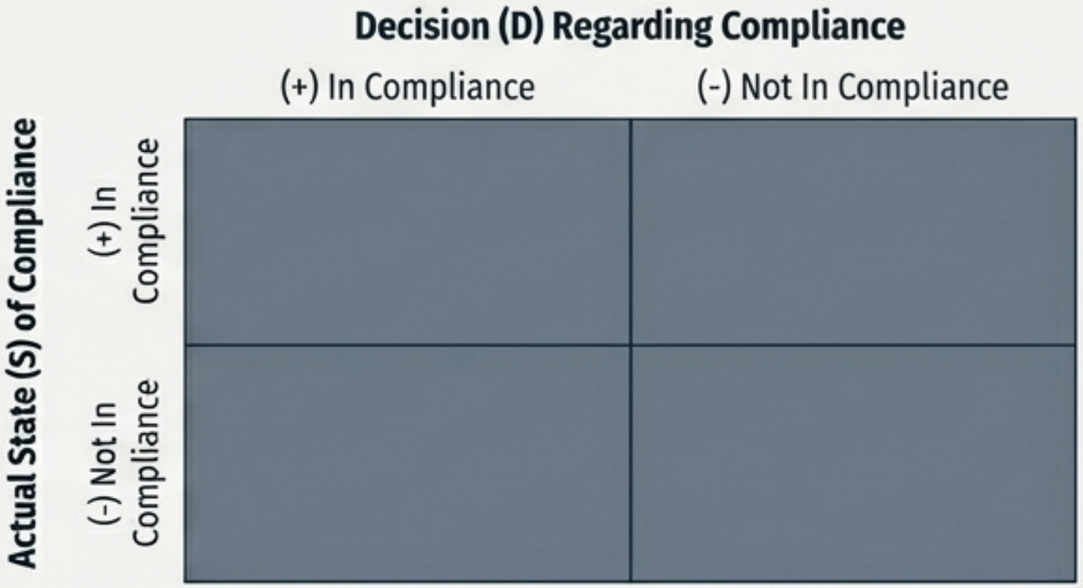
Visualizing System Health: Patterns of Accuracy vs. Randomness

The Signature of Accuracy



Decisions consistently match reality. This is the target state, where the coefficient would approach +1.00.

The Signature of Failure

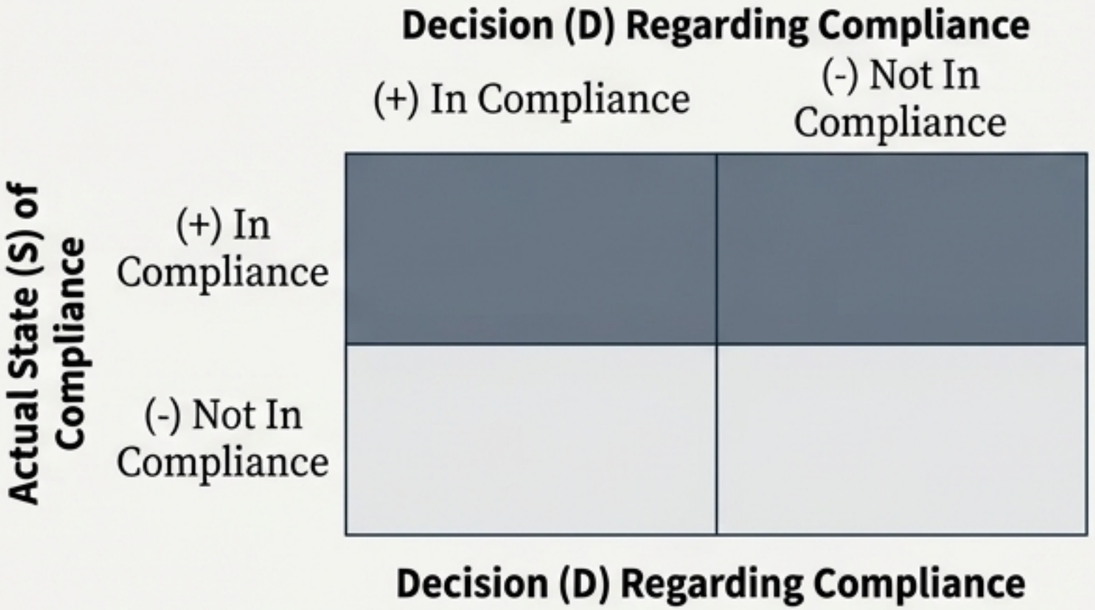


Decisions are random and have no connection to reality. This indicates a complete breakdown in measurement and requires immediate intervention and training.

Diagnosing Bias: Uncovering Skewed Decision-Making

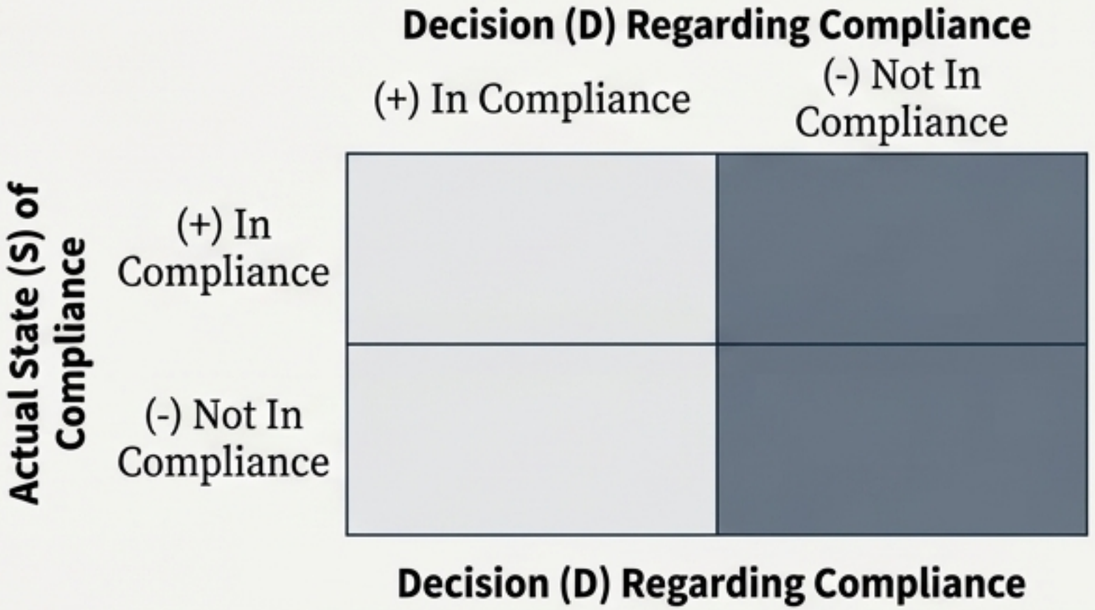
Bias is revealed when data clusters horizontally or vertically, showing a tendency to make a certain decision regardless of the actual state of compliance.

Example: Positive Bias in Assessor



The inspector has a tendency to decide facilities are ‘In Compliance’ even when they are not.

Example: Negative Bias in Assessor



The inspector has a tendency to decide facilities are ‘Not In Compliance’ even when they are.

This provides a helpful visual for administrators to see how decisions are being made in the field and where to target training.

Application 2: Sharpening Focus with Differential Monitoring

Adapting the UCM to Make Smarter Policy Decisions

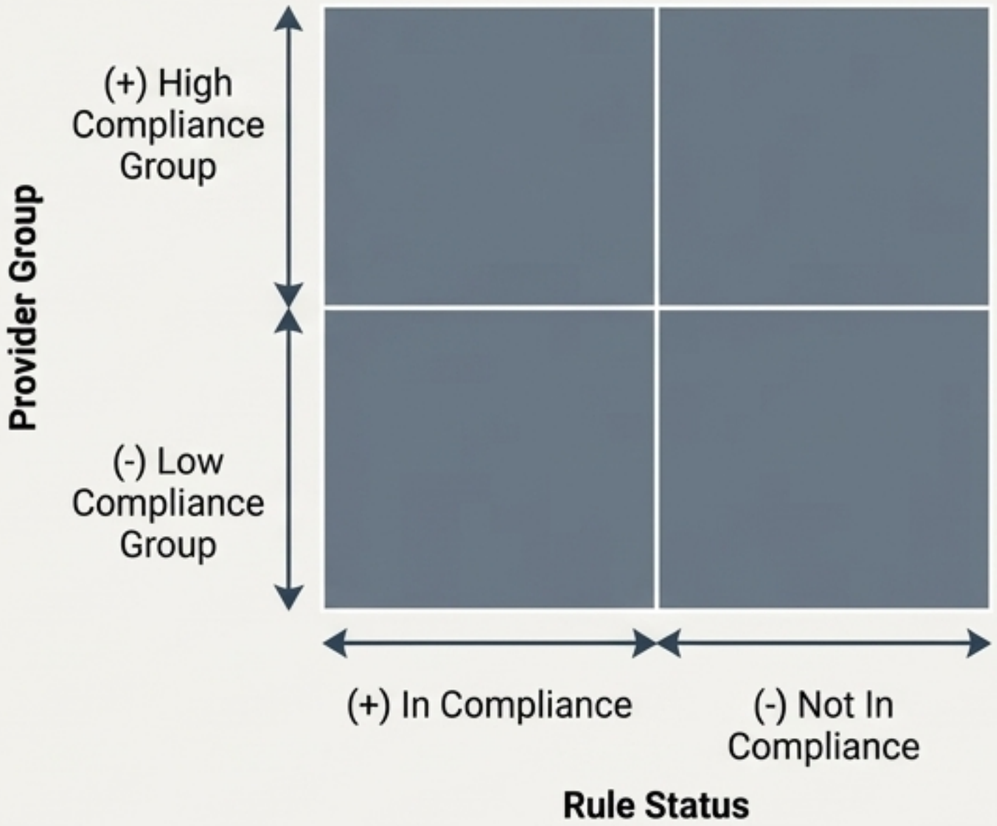
Beyond system diagnostics, the matrix can be adapted for Differential Monitoring (DMM). This helps us understand the relationship between individual rules and overall provider performance.

Instead of "Decision vs. Reality," the DMM compares rule compliance against provider performance groups.

New Axes for the DMM:

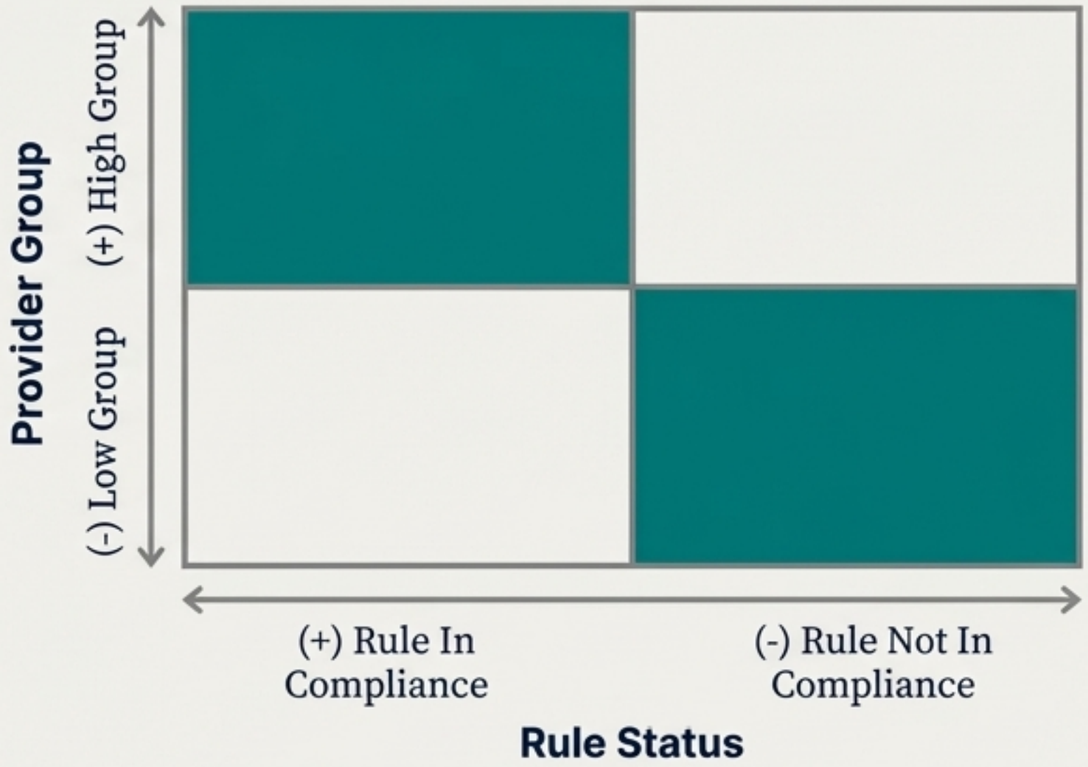
1. **Provider Group:** Is the provider in the High Compliance Group (+) or the Low Compliance Group (-)?
2. **Rule Status:** Is a specific rule In Compliance (+) or Not In Compliance (-)?

This helps identify which rules are the most powerful indicators of quality and risk.



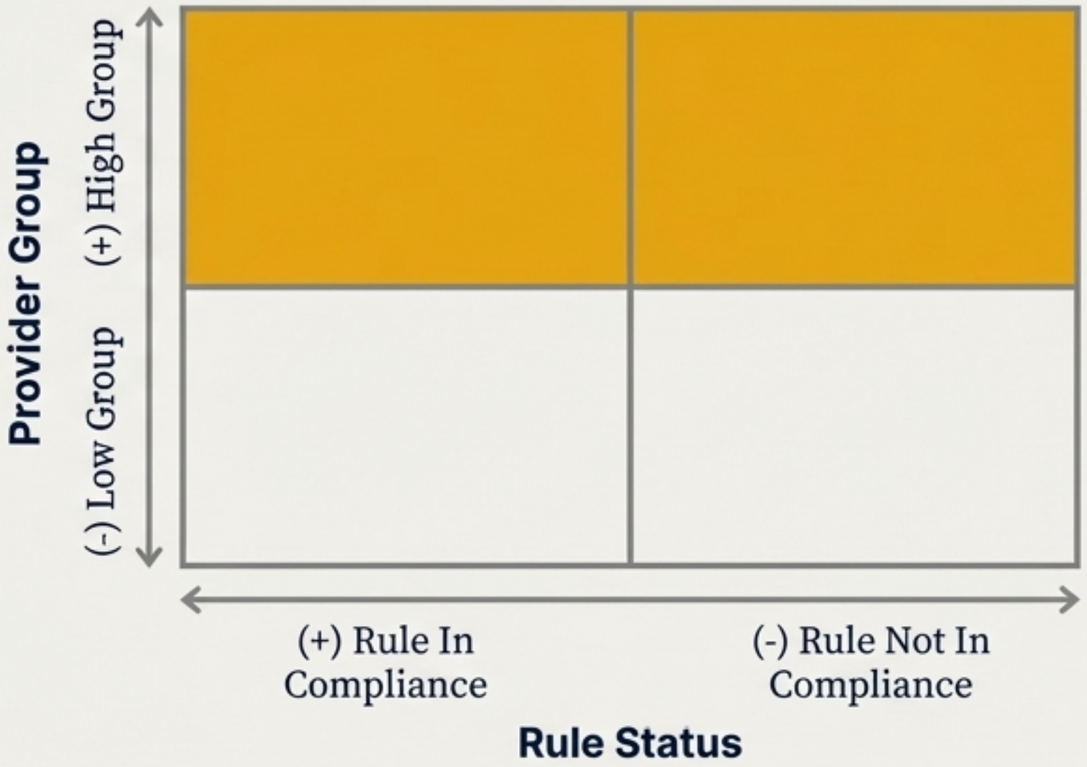
The Differential Monitoring Matrix (DMM) in Action

Identifying Key Indicator Rules



This pattern identifies a “Key Indicator Rule.” High-performing providers are in compliance with this rule, while low-performing providers are not. It effectively differentiates between the two groups.

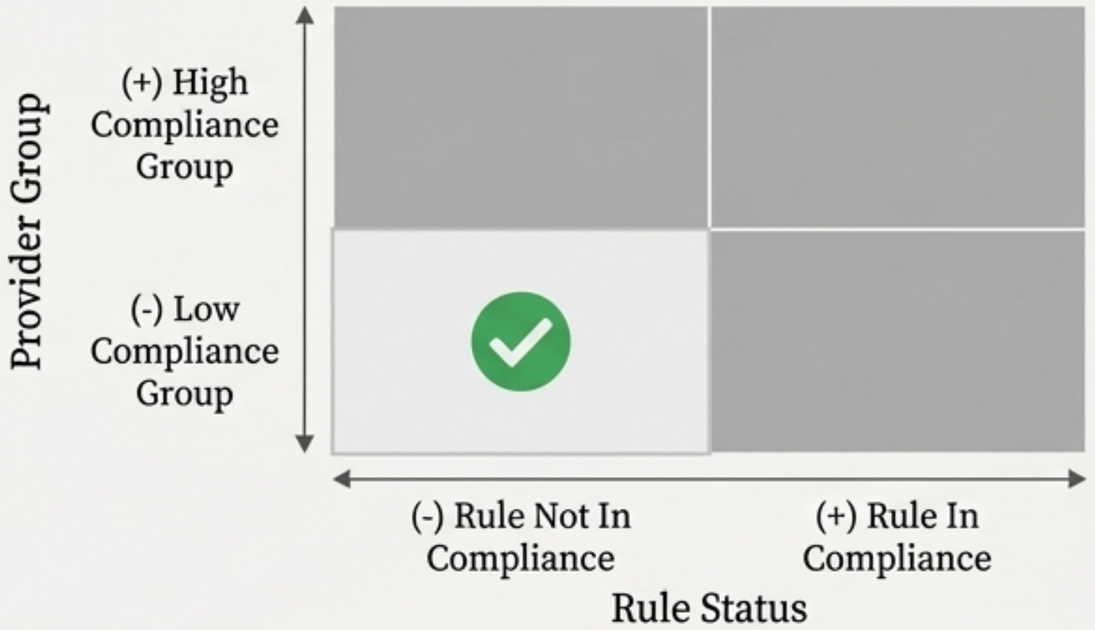
Identifying High-Risk Rules



This identifies a “High-Risk Rule.” Nearly everyone is in compliance with this rule. Non-compliance is rare but signals a significant problem. The presence of false positives (+–) is expected and acceptable here.

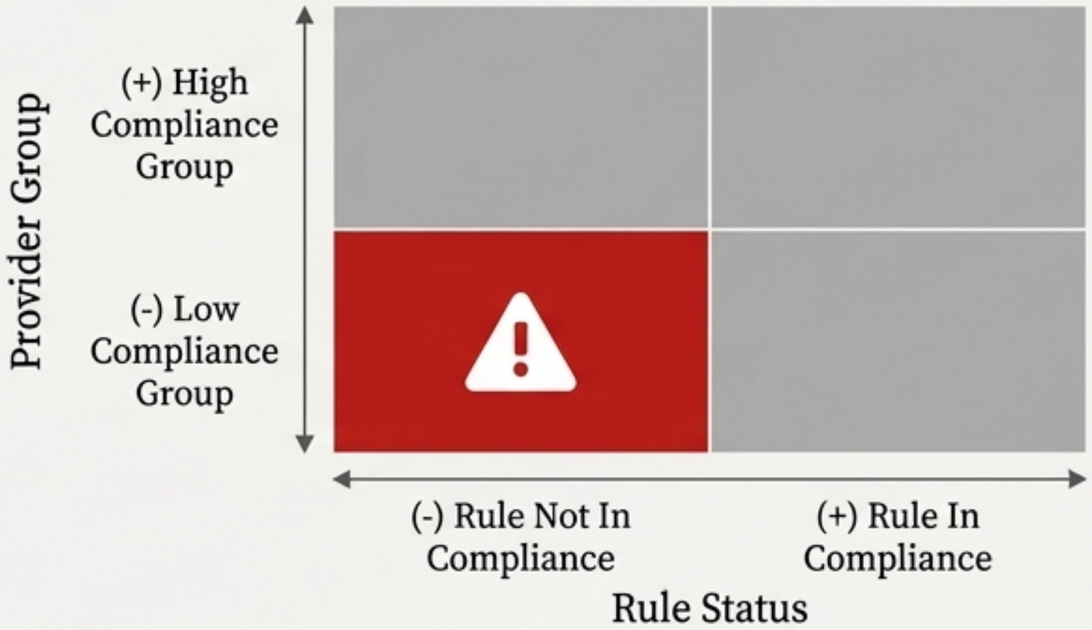
Informing Policy: The Critical Choice Between Full and Substantial Compliance

The Power of Full Compliance for the "High Group"



Requiring 100% compliance for the high group is highly recommended because it **eliminates false negatives.**

The Risk of Substantial Compliance for the "High Group"

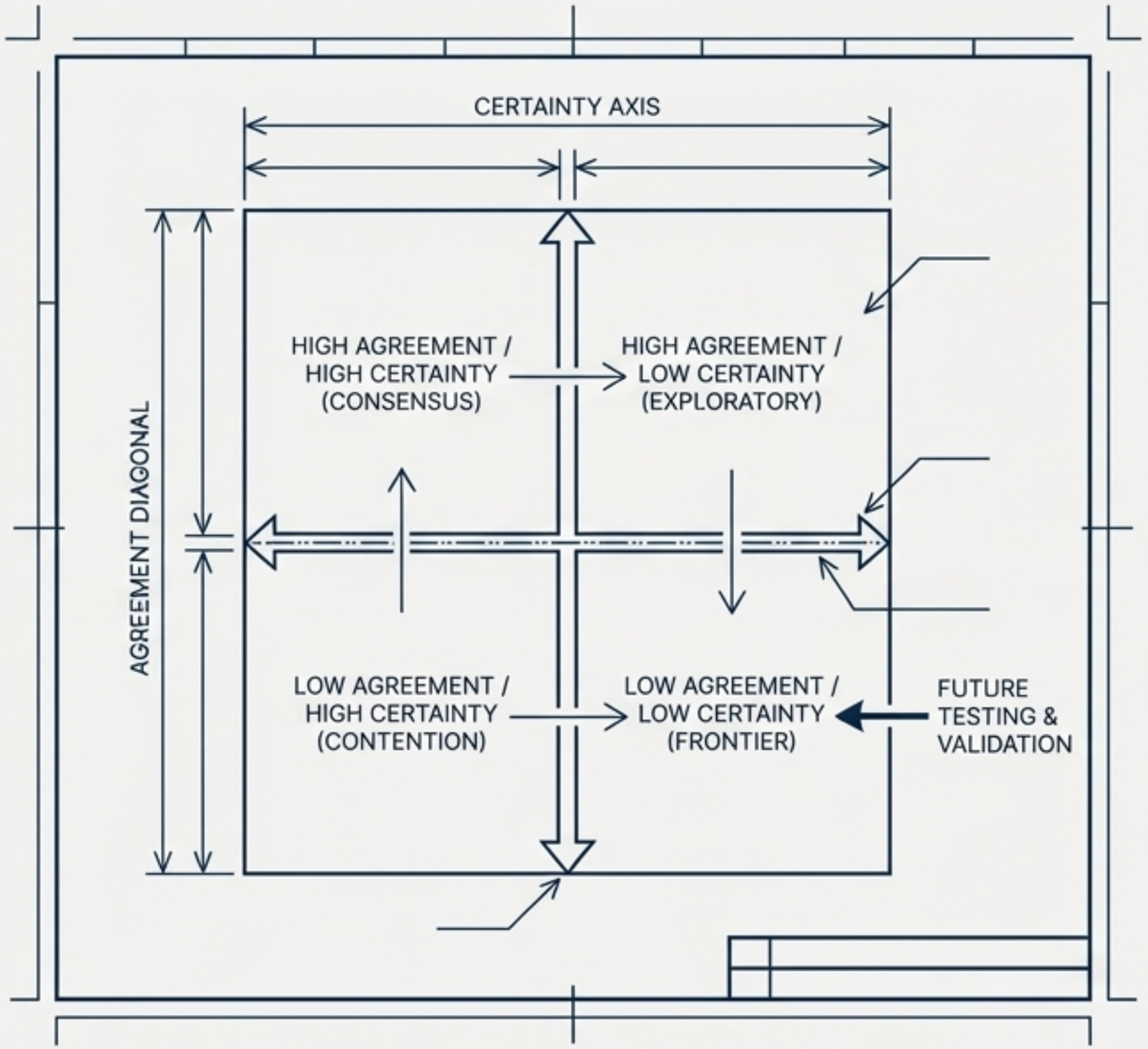


Allowing some non-compliance **re-introduces false negatives,** which should be avoided if possible or mathematically adjusted for.

The DMM provides a clear data framework for making crucial policy decisions about compliance thresholds.

Acknowledging the Frontier: A Powerful Conceptual Model

The primary limitation of the UCM is that, as of this writing, it is a theoretical model that has not yet been empirically tested to verify its utility for policymakers and researchers. While it is a conceptual framework, it holds immense promise for a field that has a known measurement problem with reliability and validity.



The Path Forward: From Concept to Confirmation

The UCM provides a robust model for making better licensing decisions. The next step is for licensing researchers and regulatory scientists to test and validate this framework.

Researchers	Administrators & Policymakers
Experiment with the UCM in different regulatory arenas. Apply it to existing regulatory compliance history data to determine if bias is present.	Consider the UCM as a visual tool for diagnosing your system's health and guiding policy discussions around monitoring and compliance.

"Without a solid measurement structure it is the old adage of 'Garbage In, Garbage Out'. Hopefully, the UCM will be a first step to rectifying this issue."

The Promise of Certainty: Building More Protective Regulatory Systems

The Uncertainty-Certainty Matrix provides a clear, visual, and actionable framework to:

- **Diagnose** systemic issues of reliability and bias.
- **Identify** the rules that matter most for safety and quality.
- **Address** the persistent measurement problem in regulatory science.
- **Reduce** dangerous false negatives and better protect clients.

By embracing a more robust measurement model, we can move from uncertainty to certainty, ensuring our licensing systems perform as they should: protecting those in our care.

Modernizing Child Care Oversight Means Moving from Comprehensive Audits to Predictive Insights

A proven methodology for increasing efficiency, reducing provider burden, and focusing resources where they matter most.

State agencies face the dual pressure of ensuring compliance while simultaneously promoting quality child development.

States are responsible for both the floor and the ceiling of child care. We must enforce minimum health and safety regulations…

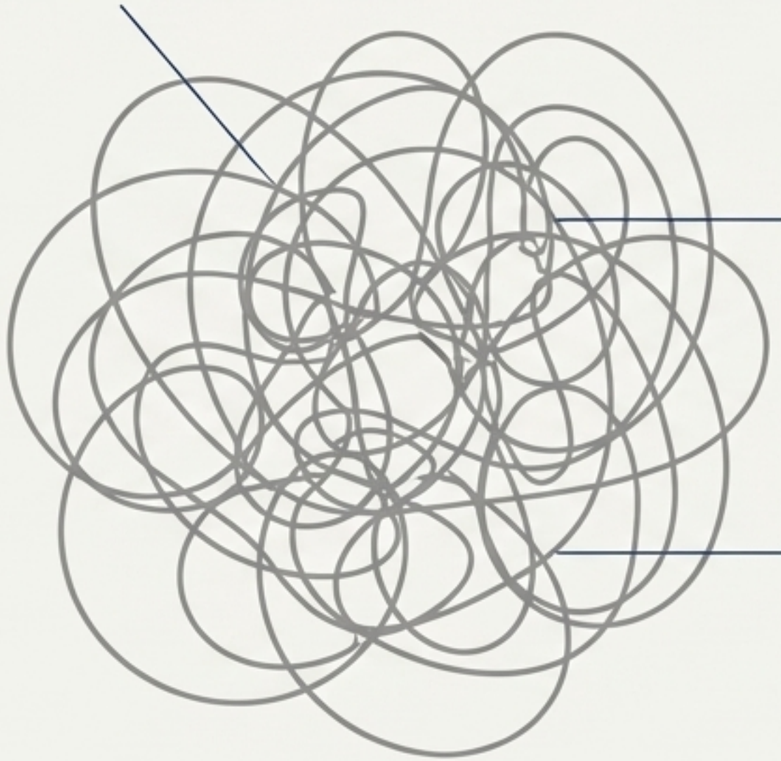
…while also supporting services that foster positive child development outcomes.

This is a significant undertaking in a **$6.3 billion** national industry serving over **1.2 million children** daily.

The traditional narrative site visit report is no longer sufficient for today's regulatory environment.

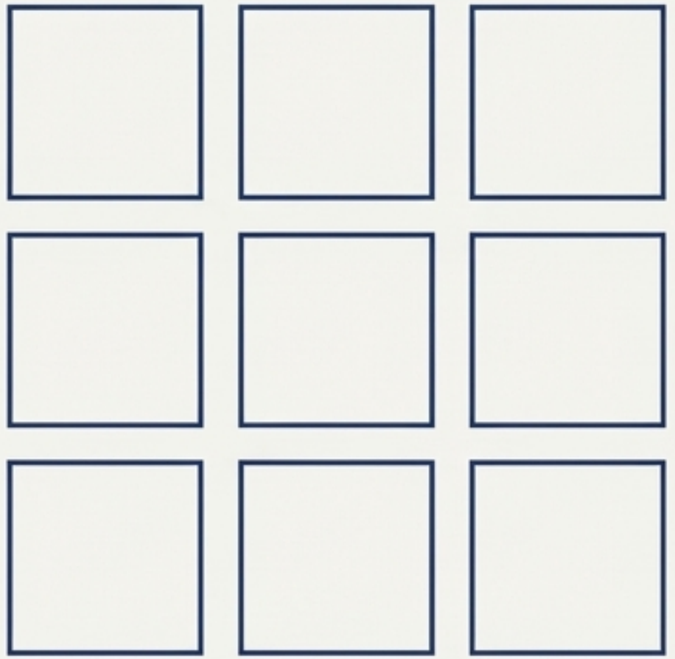
For decades, monitoring has relied on narrative reports summarizing observations. While well-intentioned, this approach is:

Time-Consuming: Burdensome for both monitors to write and administrators to analyze.



Inconsistent: Prone to individual monitor bias, making state-wide comparisons difficult.

Hard to Aggregate: Qualitative data is difficult to summarize succinctly for policymakers and data-driven decision-making.



Four powerful forces are compelling states to innovate their monitoring and enforcement efforts.

Public Accountability

Increasing demand from parents and the public to ensure both safety and quality.

Fiscal Constraints

Pressure to operate more efficiently as state budgets tighten and workloads increase.

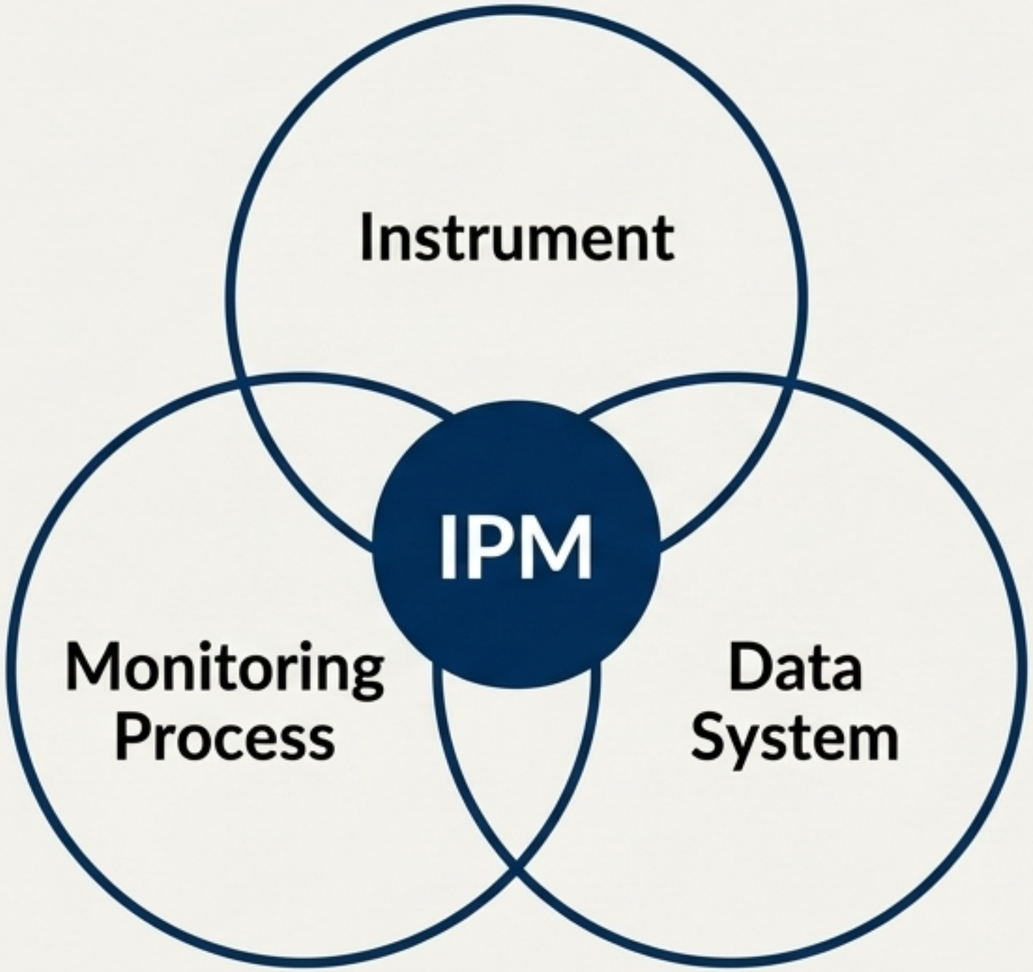
Regulatory Reform

A growing movement to reduce the general level of state regulation and its burden on private providers.

Provider Burden

An active effort to simplify monitoring procedures for providers who may have little experience with complex regulations.

Instrument-Based Program Monitoring (IPM) provides a systematic, data-driven solution.



IPM moves away from narrative reports to a comprehensive system built on three core principles:

- **Instrument-Based:** Uses standardized checklists with specific questions directly corresponding to state regulations.
- **Supports Program Monitoring:** A management process for periodic reviews, inspections, and corrective action across licensing, contract contract compliance, and program quality.
- **A Comprehensive System:** Links program, fiscal, and statistical components into a single, quantifiable information system.

IPM delivers consistency, full regulatory coverage, and clear expectations for everyone.

By standardizing the monitoring process, IPM creates immediate advantages:

Reduces Bias:
The same instrument is used with all providers.

Ensures Coverage:
Questions are explicitly based on regulations, ensuring all areas are covered.

Creates Clarity:
Providers and monitors have a clear, shared understanding of expectations.

Simplifies Process:
Standardized procedures reduce the time, cost, and burden of monitoring for both the provider and the state.

Pioneering states have achieved significant cost savings and efficiencies with IPM.

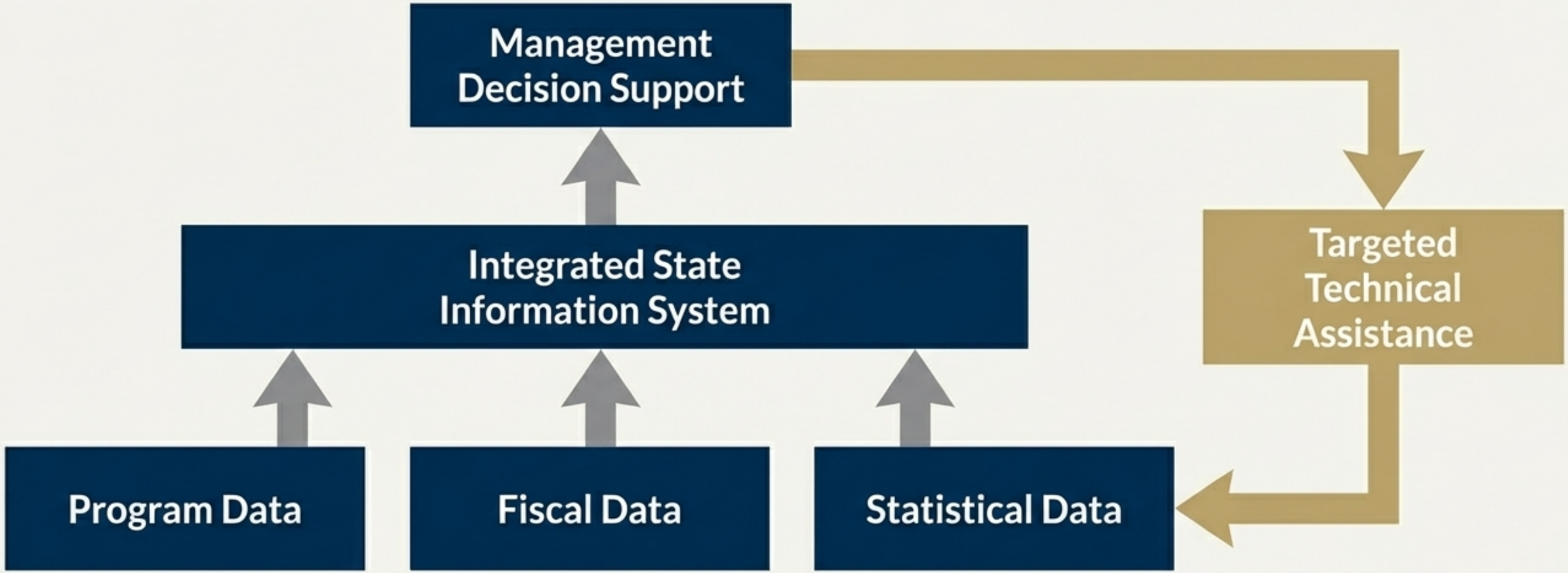
$5 Million

Pennsylvania Case Study

By linking its IPM system to fiscal data, Pennsylvania set a funding ceiling that did not jeopardize program quality. The state saved approximately $5 million, reallocating funds from high-cost providers to improve services elsewhere on a targeted basis—all without major resistance from provider groups.

Early Adopters:
Pennsylvania
West Virginia
California
New York
City's Agency for Child Development

IPM creates a data-driven foundation for a true management information system.



An IPM system links disparate data sources, enabling states to move beyond simple compliance checks to sophisticated decision support, resource allocation, and targeted technical assistance.

Now, we can amplify the benefits of IPM by focusing only on what predicts quality.

What if you could accurately predict a provider's full compliance score by asking just a fraction of the questions?

A recent innovation, the **Indicator Checklist**, is a short-form instrument containing only the items that have been statistically proven to be the most effective in discriminating between high- and low-performing providers.

The data confirms the Indicator Checklist's predictive power and remarkable efficiency.

r = +.80

A consistently high positive correlation between the short Indicator Checklist score and the full comprehensive instrument score.

200 → 25

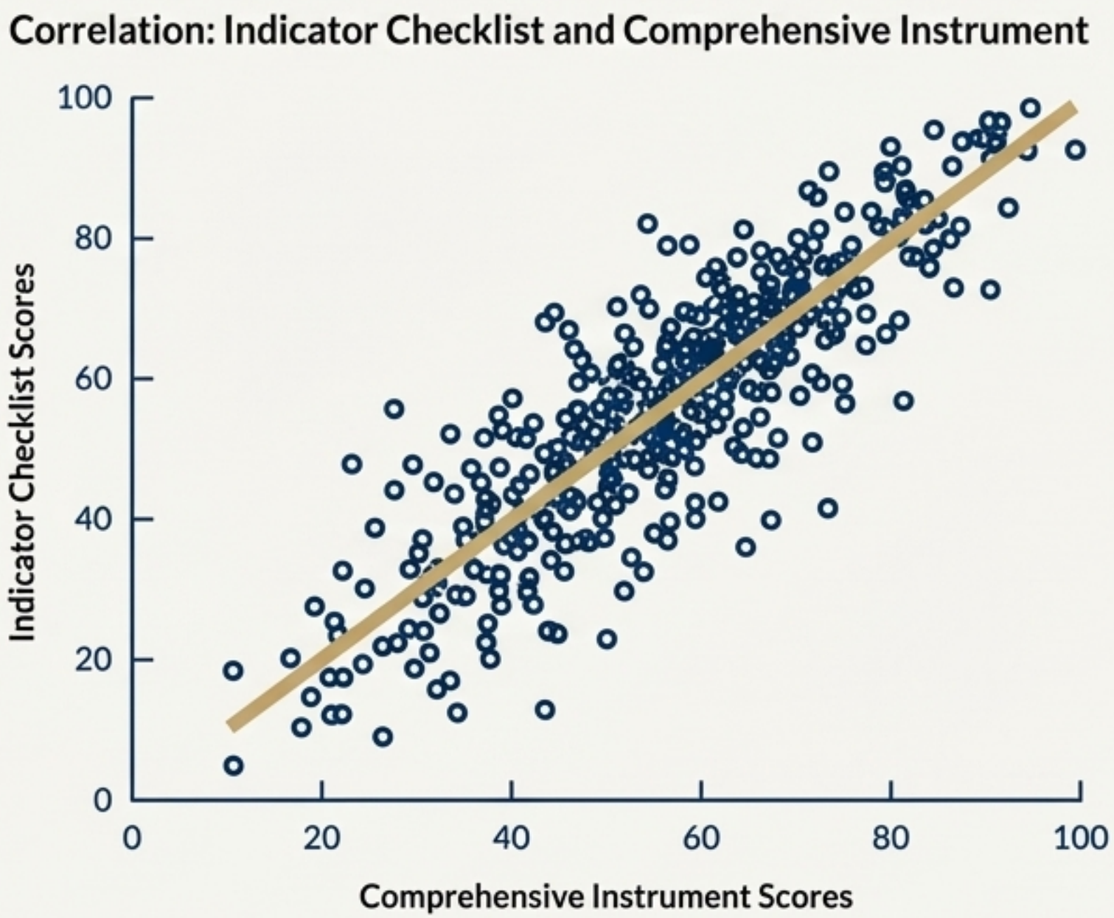
The average comprehensive instrument has ~200 items. The average Indicator Checklist has just ~25.

50%

A West Virginia study found the checklist reduced staff monitoring time by 50%.

$800

This time savings translated to an annual savings of $800 per provider visit.



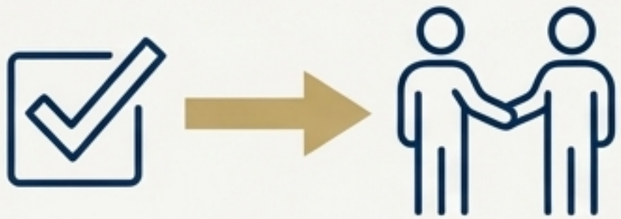
Across multiple states, eight key areas consistently predict overall program compliance.

Analysis of data from Pennsylvania, West Virginia, California, and New York City reveals common predictor items. Providers in full compliance consistently meet these standards, while problem providers do not.

- **Group Size & Adult/Child Ratios**
- **Sufficient Space (40 sq ft/child)**
- **Equipment is Accessible to Children**
- **Age-Appropriate Vehicle Safety Carriers**
- **Cleaning Materials Inaccessible to Children**
- **Emergency Contact Info Available**
- **Periodic Staff Health Appraisals**
- **Activities Promote Development & Self-Esteem**

The Indicator Checklist unlocks a new, more strategic model for monitoring.

This targeted approach allows for a fundamental shift in how resources are used:

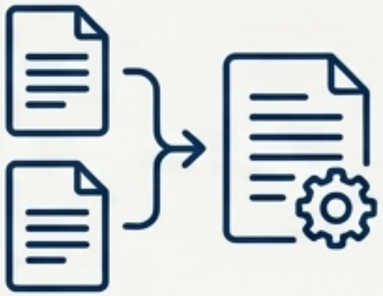


From Enforcer to Consultant

Freeing up significant staff time allows monitors to shift from rote compliance checking to providing high-value technical assistance.

Reduced Provider Burden

High-performing providers can be monitored with the short form, with a full comprehensive review only needed periodically (e.g., every 3 years).



Consolidated Reviews

The short checklist is simple enough that it can be administered by other staff, such as during a fiscal audit, further increasing efficiency.

Developing an Indicator Checklist is a straighforward, data-driven process.

Start with a Comprehensive Instrument: Begin with an existing, weighted instrument where item importance is established.

Analyze Historical Data: Use existing score data to reliably distinguish between high- and low-compliance providers.

Identify Predictor Items: Use a simple statistical formula (phi coefficient) to select the items with the strongest predictive power.

Add Critical Health & Safety Items: Augment the predictor items with a small number of non-negotiable items that are grounds for license revocation.

The essential prerequisites are a trusted comprehensive instrument and sufficient historical data.

We can anticipate and solve for the primary implementation challenges.

Challenge 1: Regulatory Requirements

Some state regulations mandate annual *comprehensive* reviews.

Solution

The strong cost-effectiveness data provides a compelling case for regulatory updates that allow for more flexible, risk-based review cycles.

Challenge 2: Staff Resistance

Monitors may view a shorter form as a threat to their professional role or job security.

Solution

Reframe the initiative as a professional development opportunity, shifting the monitor's role from enforcement to high-value consultation and technical assistance.

Challenge 3: Lack of Prerequisites

A state may not yet have a comprehensive, weighted instrument with sufficient data.

Solution

The Children's Services Monitoring Transfer Consortium (CSMTC) has developed guidebooks and model instruments to help states build this foundation.

The future of child care oversight is efficient, data-driven, and focused on improving quality.

Instrument-Based Program Monitoring and the Indicator Checklist represent a major advance in the art of monitoring. They allow states to maintain strong compliance capabilities with less burden and lower cost.

This evolution makes it possible for providers to operate more effectively and, most importantly, allows states to **reallocate precious resources** toward **technical assistance** that actively improves the quality of care and developmental outcomes for our children.

"This is the next step in realizing the full potential of monitoring to achieve our social goals."

Children's Services Monitoring Transfer Consortium (CSMTC)

Monitoring Practices in Child Care and Early Education

A Data-Driven Look at How States Ensure Quality and Safety

TRLECE
The Role of Licensing in Early Care and Education

OPRE

Based on findings from the 2017 Child Care Licensing Study.

The Mandate for Monitoring: Ensuring Safe and Healthy Environments for Children

Child Care and Early Education (CCEE) licensing agencies establish and monitor regulations that programs must meet to operate legally. This oversight is crucial for child safety.

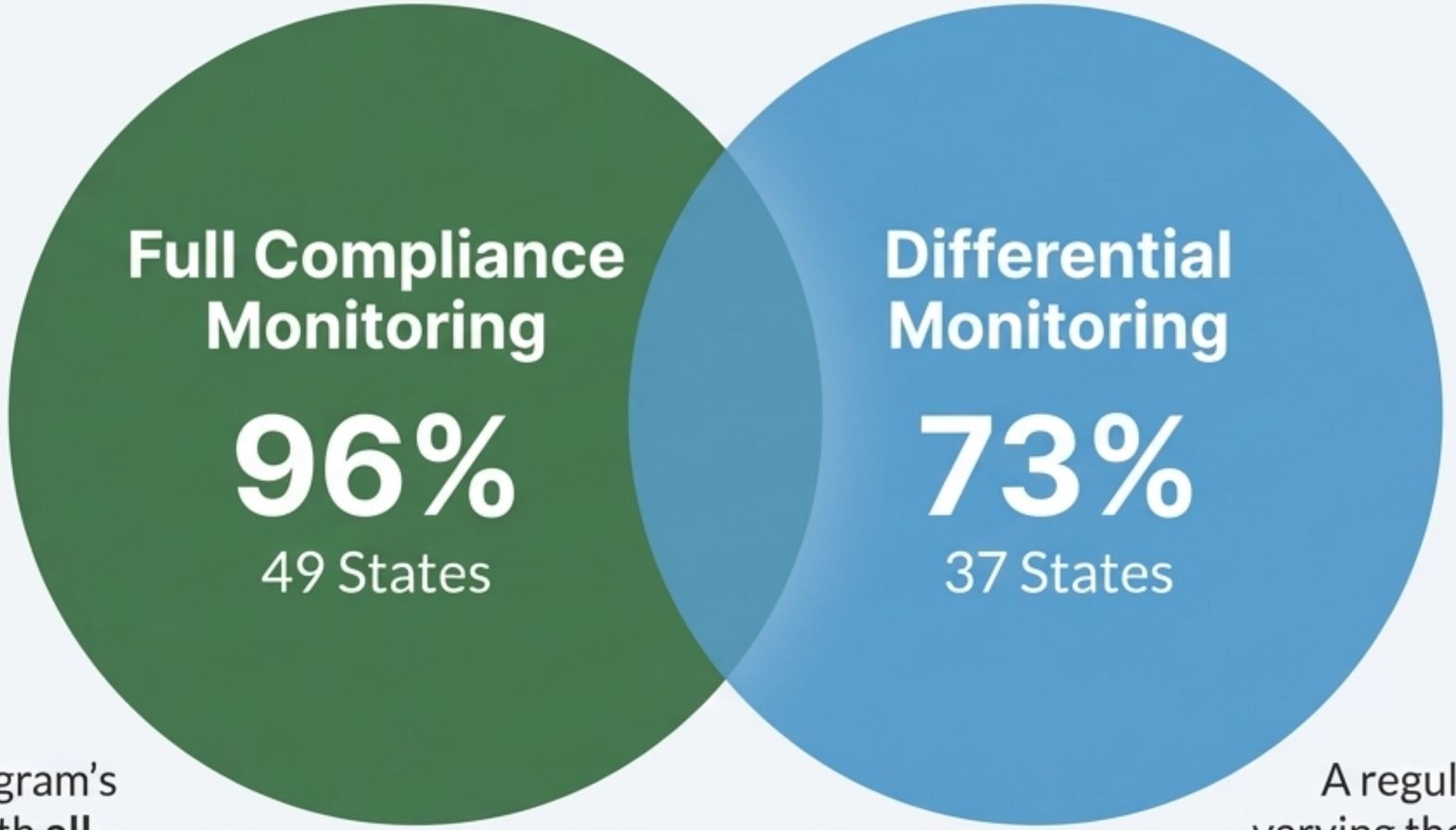
Beyond these federal minimums, states have **significant autonomy** in deciding how to monitor programs most effectively and efficiently with their limited resources.

The Federal Floor

The Child Care and Development Fund (CCDF) sets minimum requirements for states, including:

- A **pre-licensure inspection** for licensed programs.
- At least **one annual unannounced inspection** for licensed programs.

States Employ Two Core Approaches to Monitoring

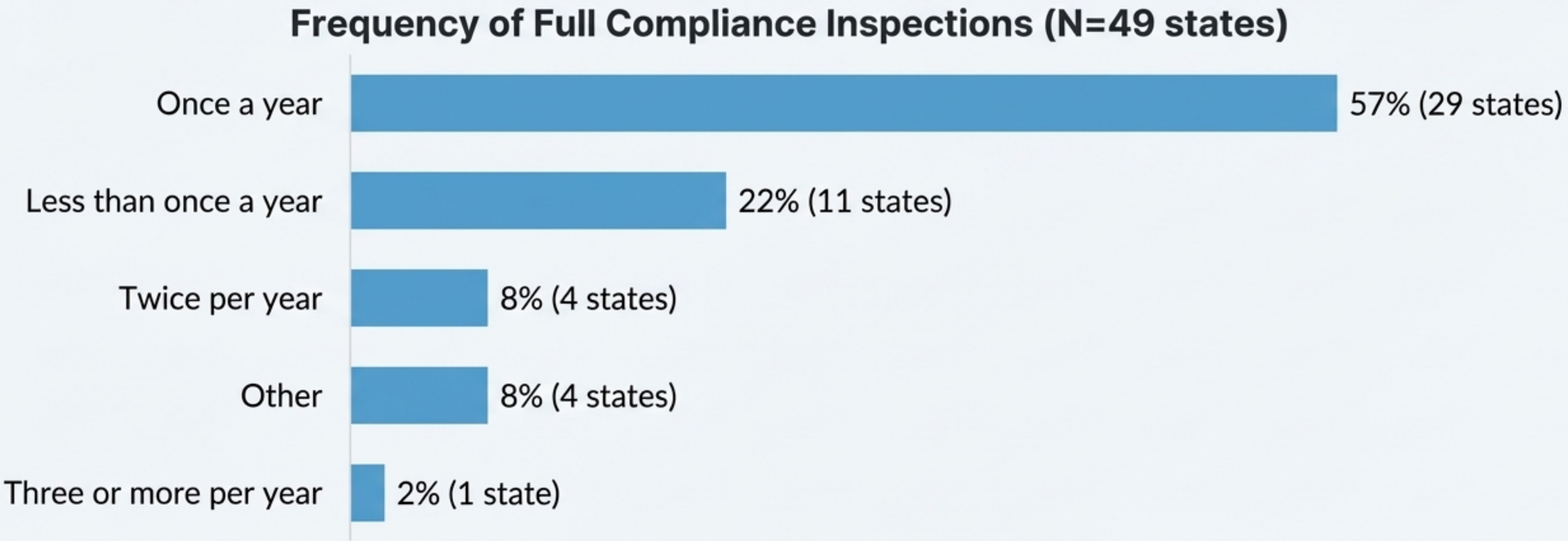


Assessing a program's compliance with **all** licensing regulations on a set schedule.

A regulatory method for varying the **depth or frequency** of monitoring based on specific factors, such as a program's compliance history.

Full Compliance Inspections are the National Standard

In 2017, 96% of states (49) conducted at least one full compliance inspection, monitoring all regulations.



**Data for child care centers. Findings are similar for family and group child care homes.*

What is Differential Monitoring? A Strategy for Targeted Oversight

Differential monitoring is an umbrella term for varying the frequency or depth of inspections. Instead of a one-size-fits-all approach, it allows agencies to tailor monitoring based on a track record (e.g., number, severity, or repetition of violations).

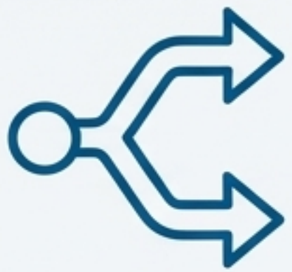
Why States Use Differential Monitoring:

Increase Focus: Target monitoring resources on CCEE programs with a history of low compliance.

Recognize Quality: Acknowledge and reduce the burden on programs with a history of strong compliance.

Improve Efficiency: Use limited staff resources more effectively, allowing more time for technical assistance and provider support.

The Two Levers of Differential Monitoring



Differential Monitoring

Varying the Depth of Inspections

69%

Method: Using abbreviated inspections to monitor a selected subset of regulations rather than all of them.

The most common strategy, used by 35 states.

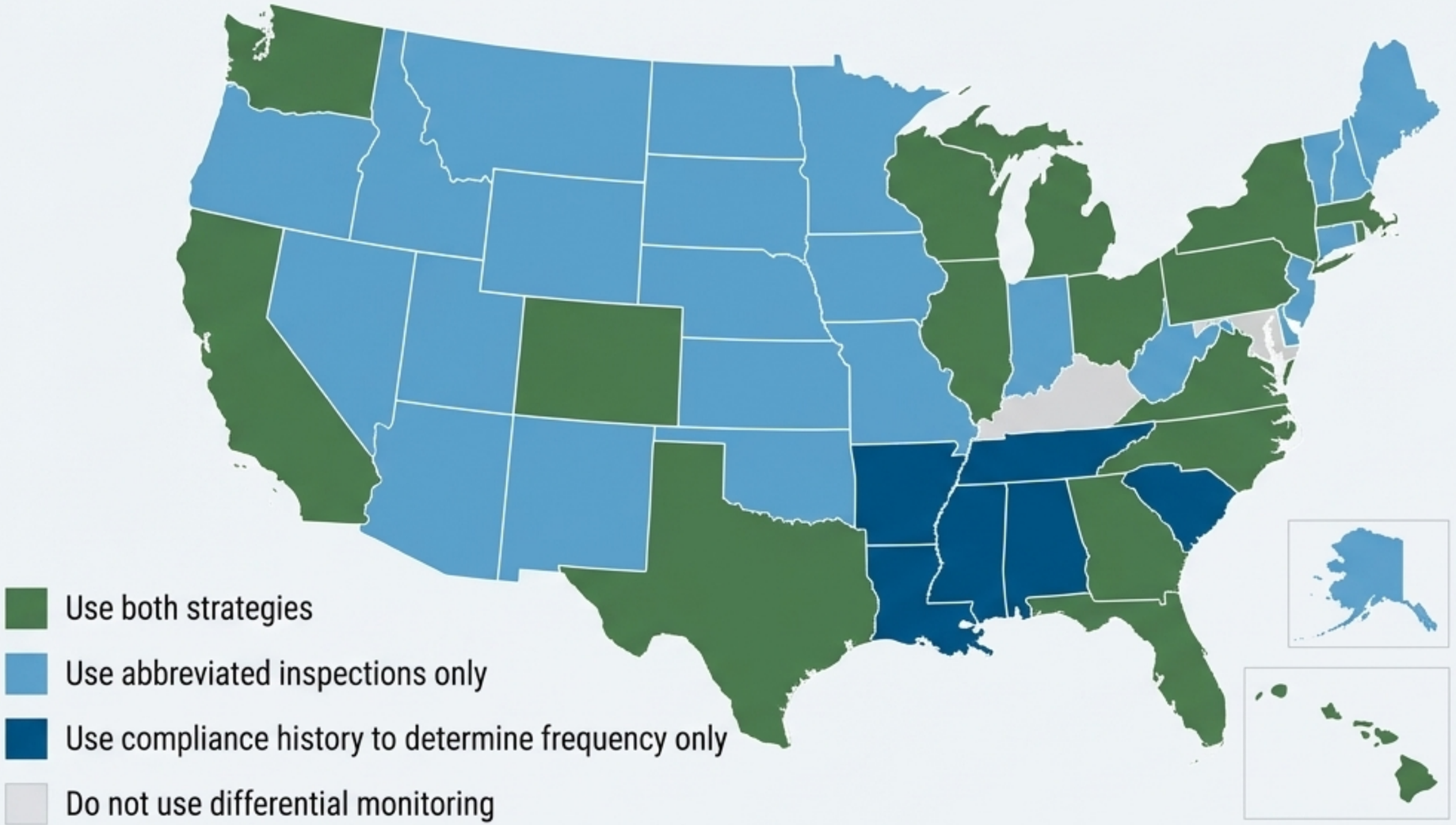
Varying the Frequency of Inspections

33%

Method: Using a program's compliance history to determine how often it is inspected (e.g., less frequently for high performers, more for low performers).

Used by 17 states.

Three-Quarters of States Use a Differentiated Approach to Monitoring



15 States (29%)
use BOTH strategies.

20 States (39%)
use abbreviated inspections ONLY.

3 States (6%)
use frequency based on compliance ONLY.

How States Select Regulations for Abbreviated Inspections

States that use abbreviated inspections employ one or more data-informed methods to select the subset of regulations to monitor.

Consensus Approach

60%

A group of experts agrees on the regulations most critical to include in all inspections.

(21 of 35 states) use this approach.

Risk Assessment Approach

49%

Identifies regulations that, if violated, place children at the greatest risk of injury or death.

(17 of 35 states) use this approach.

Key Indicators Approach

29%

Employs a statistical methodology to select a subset of regulations that best predicts overall compliance.

(10 of 35 states) use this approach.

**Respondents were allowed to select more than one response; therefore, percentages will not sum to 100%.*

Methodologies in Action: State Case Studies

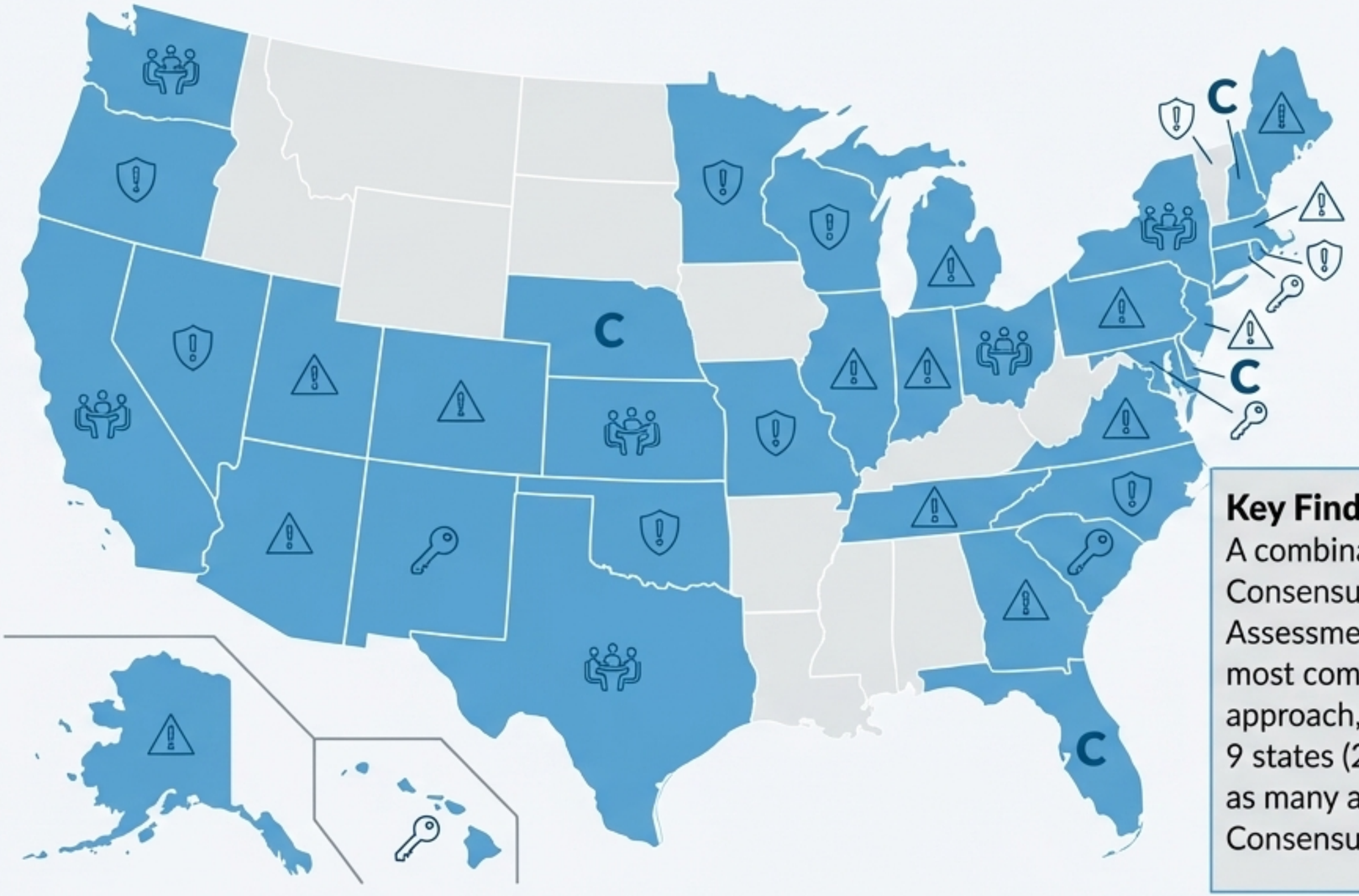
Georgia's Risk Assessment

- **Process:** Designated **74 of 456** licensing regulations as "core rules."
- **Inputs:** Selection was informed by research literature, focus groups with CCEE directors and staff, and licensing agency expertise.
- **Outcome:** Compliance on core rules impacts eligibility for Georgia's QRIS and Pre-K programs.

Michigan's Key Indicators

- **Process:** Conducted a statistical analysis of **3,826 inspections** to identify the subset of regulations that best predict compliance with all rules.
- **Outcome:** The analysis identified **~26 key indicators** that best predicted membership in high-compliance (top 25%) and low-compliance (bottom 25%) groups.

Mapping the Methodologies for Abbreviated Inspections



Legend:

C - Consensus of requirements

- Assessment of risk of harm

Key - Key indicator methodology

Key Finding:
A combination of Consensus and Risk Assessment is the most common approach, used by 9 states (26%), just as many as use Consensus alone.

The Safety Net: When to Switch Back to Full Compliance

Efficiency is balanced with accountability. Most states using abbreviated inspections have a policy to revert to a full inspection if problems are identified.

66%

of states

(23 of 35) using abbreviated inspections have a policy on when to **switch to full compliance visits.**

Case Study: Florida's Policy

- **Eligibility:** Programs must have no serious violations for two consecutive years to qualify for an abbreviated inspection.
- **Trigger:** If **any violations** are found during the abbreviated inspection, the program is no longer eligible and must complete a full compliance inspection.

Consistent Trends Across All Licensed Program Types

The monitoring strategies and trends presented for Child Care Centers (CCC) are highly similar for Family Child Care Homes (FCCH) and Group Child Care Homes (GCCH).

Monitoring Strategies by Program Type (2017)

Metric	Child Care Centers (N=51)	Family Child Care Homes (N=44)	Group Child Care Homes (N=38)
Use Full Compliance Monitoring	96%	95%	97%
Use Differential Monitoring	73%	77%	76%
Use Abbreviated Inspections	69%	72%	71%
Use Compliance History for Frequency	33%	36%	29%

CCC

FCCH

GCCH

Key Takeaways on the State of Licensing Monitoring

1

A DUAL APPROACH IS THE NORM.

While nearly all states (96%) conduct traditional full compliance inspections, a vast majority (75%) also leverage differential monitoring to enhance efficiency and target resources.

2

DEPTH IS VARIED MORE OFTEN THAN FREQUENCY.

Varying inspection depth via abbreviated inspections (used by 69% of states) is more than twice as common as varying inspection frequency based on compliance history (33%).

3

A SPECTRUM OF DATA-DRIVEN METHODS IS USED.

States use a range of methods—from expert consensus (60%) and risk assessment (49%) to statistical key indicators (29%)—to intelligently focus their abbreviated monitoring efforts.

4

SYSTEMS INCLUDE A SAFETY NET.

Two-thirds of states using abbreviated inspections have policies to revert to full compliance monitoring when violations are found, balancing efficiency with accountability.

About This Research

Project Name:

This brief was produced by The Role of Licensing in Early Care and Education (TRLECE) project.

Funding:

Funded by the Office of Planning, Research, and Evaluation (OPRE), Administration for Children and Families (ACF), U.S. Department of Health and Human Services.

Data Source:

All findings are based on an analysis of the 2017 Child Care Licensing Study.

Full Report Citation:

Miranda, B., Ekyalongo, Y., Franchett, A., & Maxwell, K. (2022). *Monitoring Practices Used in Child Care and Early Education Licensing*. OPRE Report #2022-137. Washington, DC: OPRE, ACF, U.S. DHHS.

What Does the Science Say About Child Care Licensing?

Child Care and Early Education (CCEE) licensing is the foundational system establishing the minimum standards for legal operation. It touches a vast and diverse array of providers who serve millions of young children across the United States.

Given its critical role in protecting children and setting a baseline for quality, a central question emerges for policymakers, researchers, and practitioners:

What is the actual evidence base for how licensing works, what its impacts are, and where the science can guide us next?

This presentation embarks on an investigator's journey through the landscape of regulatory science to answer that question.

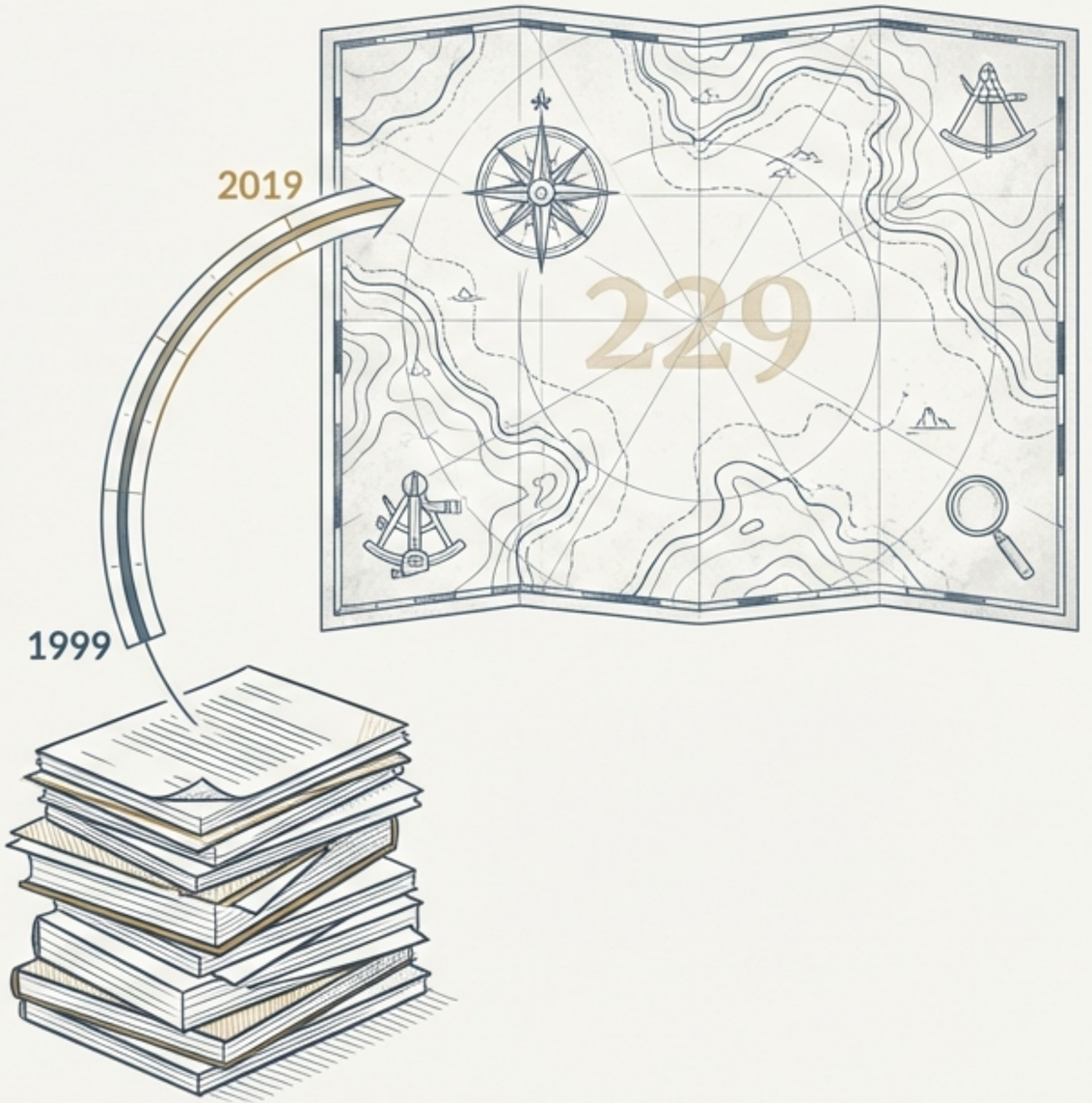
Our Map: A 20-Year Review of the Scientific Literature

To navigate this complex landscape, we will use the definitive map of the field: The OPRE Child Care and Early Education Licensing Literature Review. This is not a casual survey; it is a systematic synthesis of the state of the science.

Timeframe: 1999–2019, a critical two-decade period of policy evolution.

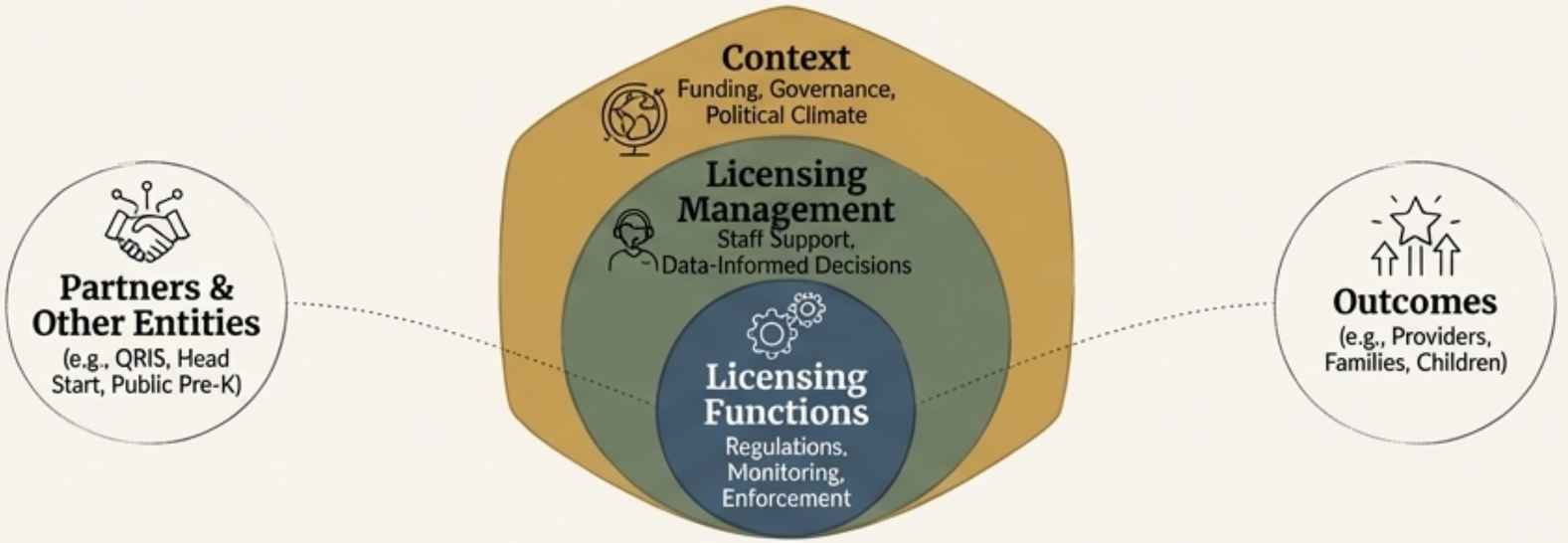
Sources: A comprehensive review of 229 peer-reviewed articles, government reports, and non-governmental organization reports.

Guiding Questions: The review was structured to find what aspects of licensing are studied, what the findings are, what outcomes are addressed, and where the critical gaps in our knowledge lie.



The Legend: Understanding the Licensing System's Components

The OPRE report provides a conceptual framework that organizes the multifaceted licensing system. This framework, developed with input from licensing staff, state leaders, and researchers, will be the legend for our journey.



It situates licensing within a broader context and identifies its core components:

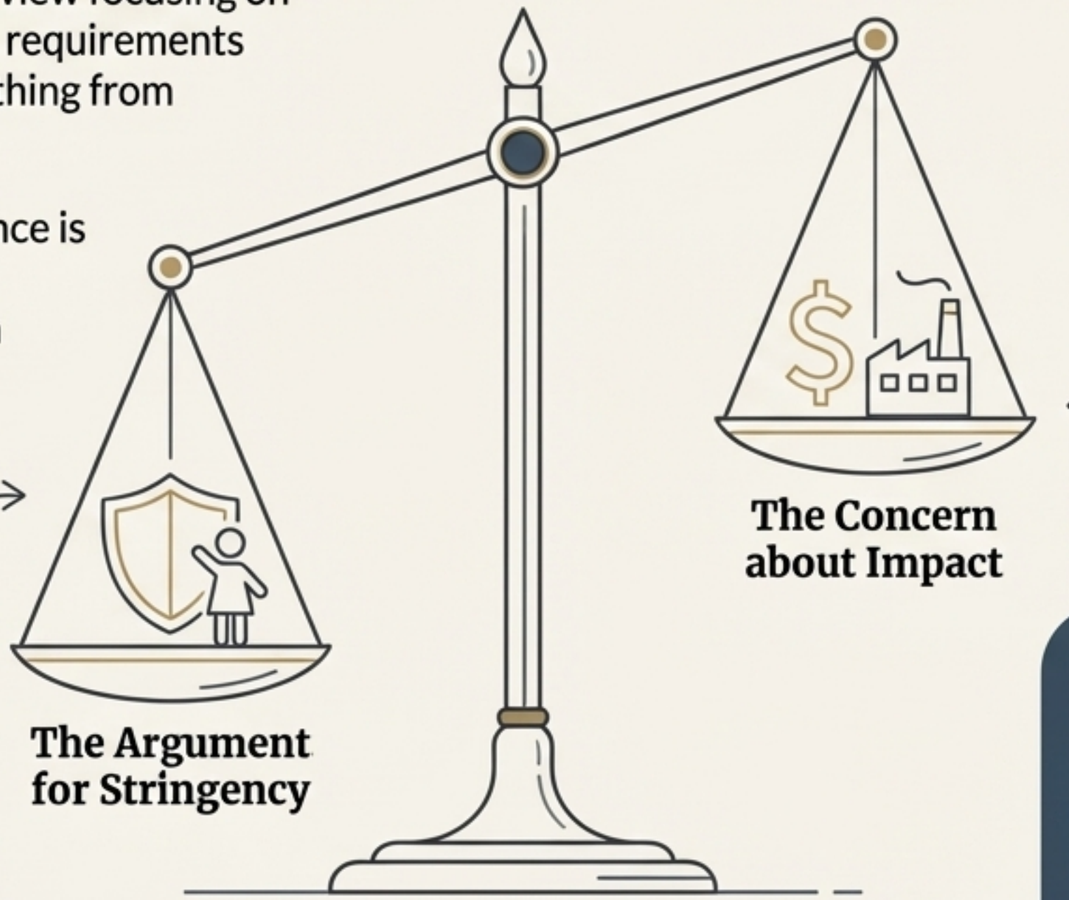
- **Context**: External factors like funding, governance, and political climate.
- **Licensing Management**: The internal operations, from staff support to data-informed decision-making.
- **Licensing Functions**: The core activities of the system (e.g., Regulations, Monitoring, Enforcement).
- **Partners & Other Entities**: How licensing interacts with other systems like QRIS, Head Start, and public Pre-K.
- **Outcomes**: The ultimate goals for providers, families, and children.

Landmark 1: The World of Regulations

Regulations are the most researched component of licensing, with **118** articles in the review focusing on them. They represent the minimum requirements for legal operation and cover everything from staffing to health and safety.

A central tension in regulatory science is balancing child protection with market effects. Research explores a persistent scholarly debate:

Higher standards are linked to higher quality and better child outcomes (Helburn, 1995; Rigby et al., 2007).



The Argument for Stringency

The Concern about Impact

Stricter regulations—on ratios, group size, and staff qualifications—can increase the cost of care, potentially reducing supply and affordability for families (Gormley, 1991; Thomas & Gorry, 2015).

SCHOLAR SPOTLIGHT | William Gormley (1991, 2000)

Pioneered the analysis of how the costliness and intrusiveness of regulations can affect the supply of licensed CCEE, framing the core economic tensions that researchers still grapple with today.

A Clear Link: How Playground Safety Rules Reduced Injuries

While many studies find correlations, it is rare to find research that causally links a specific regulation to a direct child outcome. A key study from North Carolina provides this critical evidence.

The North Carolina Playground Study

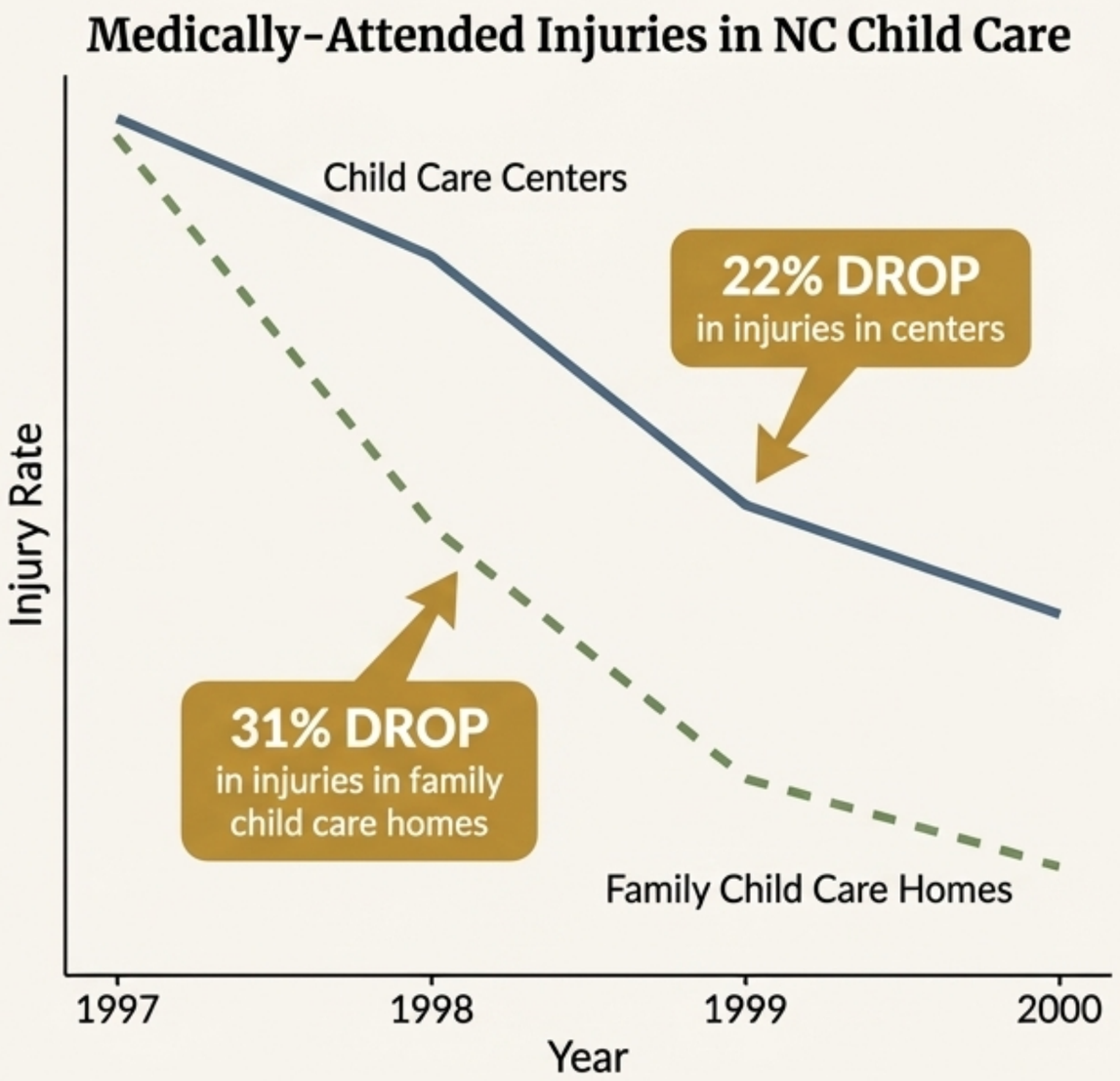
Context: In 1996, North Carolina announced a new, comprehensive set of playground safety regulations, implemented over a five-year period.

Method: Researchers tracked medically-attended injuries in licensed child care settings before and during the implementation period.

The Finding: The implementation of the regulations was directly linked to a significant drop in injuries.

RESEARCHER SPOTLIGHT | Kotch et al. (2003)

This landmark study found that the new playground safety regulations were associated with a **22% drop** in medically-attended injuries in centers and a **31% drop** in family child care homes, demonstrating a clear, positive impact of a specific licensing regulation on child safety.



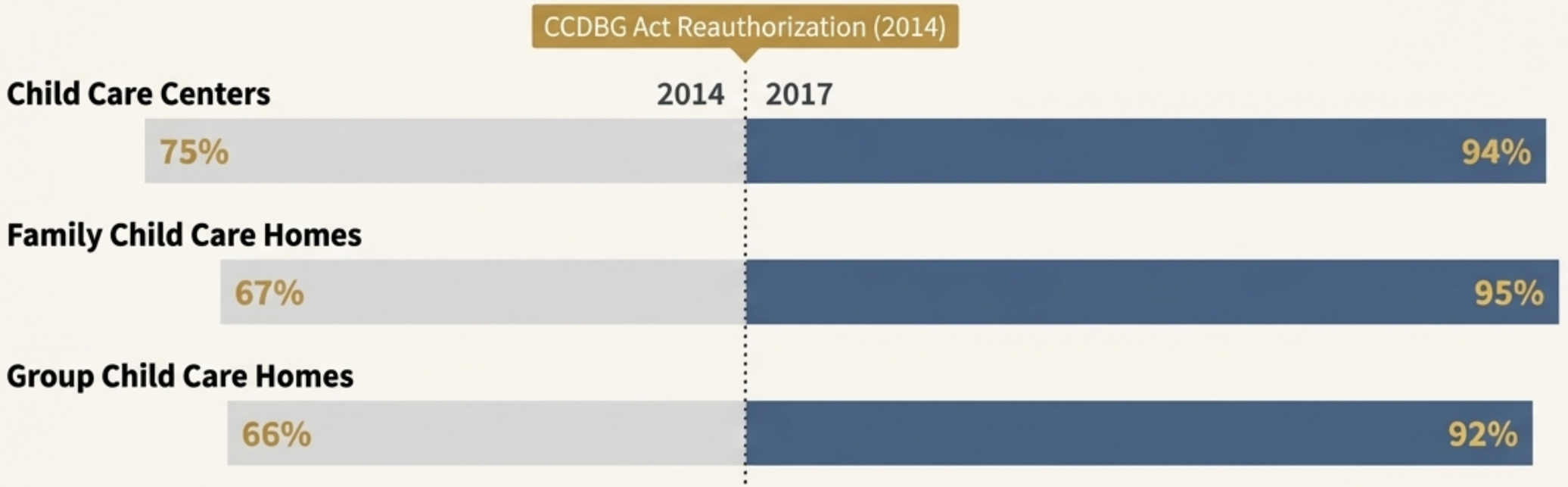
Landmark 2: The Practice of Monitoring

Strong regulations are meaningless without effective monitoring. The research shows a significant evolution in how states approach this core function, largely driven by federal policy.

The Post-2014 Shift to Unannounced Inspections:

The 2014 reauthorization of the Child Care and Development Block Grant (CCDBG) Act mandated annual _*unannounced* inspections for licensed providers receiving federal funds. The impact on state practice was immediate and dramatic.

Percentage of States Conducting *Unannounced Only* Routine Inspections



This reflects one of the most significant, system-wide shifts in licensing practice in decades.

The Science of Monitoring: From Full Reviews to Targeted Approaches

To manage large caseloads and focus resources where they are most needed, many states have adopted more sophisticated monitoring strategies. As of 2017, 67% of states reported using some form of abbreviated compliance review.

Two Dominant Methodologies

1. **Risk Assessment:** Licensing agencies and experts identify regulations that pose the greatest risk of harm to children if violated. Monitoring then focuses on this high-risk subset.

2. **Key Indicators**: A statistical approach to identify the specific regulations that best predict a provider's compliance with the *full* set of regulations.

RESEARCHER SPOTLIGHT | Richard Fiene

Developed the foundational 'Key Indicators' methodology (Fiene & Kroh, 2016). His work demonstrated that a smaller, statistically-validated subset of regulations could effectively predict overall compliance, allowing for more efficient and data-driven monitoring. Some states now combine Key Indicator and Risk Assessment approaches for a more robust system.

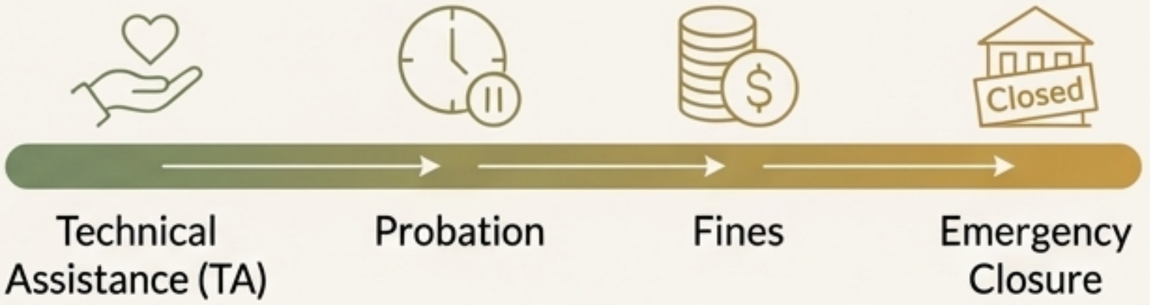
Landmark 3: Compliance and Enforcement in Action

Monitoring determines a provider's compliance status, which is the trigger for the entire enforcement system. Research shows that higher-quality programs generally have better compliance records.

What Predicts Higher Compliance?

- **Quality Markers:** Accreditation and higher QRIS star ratings are associated with fewer violations (Fiene, 2017; Winterbottom & Jones, 2014).
- **Funding & Support:** Publicly funded programs and FCC providers in professional networks tend to to have better compliance (Doromal et al., 2018; Rosenthal et al., 2020).
- **Provider Education:** Compliance with continuing education requirements is a strong predictor of overall compliance (Crowley et al., 2013).

Enforcement: From Support to Sanction



States use a continuum of enforcement actions, from providing technical assistance (TA) to emergency closure. The most common allowable actions are license revocation/denial, emergency closure, and civil fines.

- **Trend:** Between 2014 and 2017, the number of civil fines issued by states **more than doubled**, indicating a potential shift towards more intermediate financial sanctions.

Broadening the Horizon: Lessons from Parallel Fields

The challenges and methodologies in CCEE licensing are not unique. Looking at parallel human services fields, like nursing home regulation, can provide valuable insights and tools for research.

Case in Point: Nursing Home Research

- **National Data:** Unlike CCEE, nursing homes that accept Medicare/Medicaid must report to a national database, allowing for large-scale, cross-state research.
- **Quantifying "Stringency":** Researchers developed a "stringency index" to score and compare the strictness of state inspection and sanction processes.

Implication for CCEE

- While CCEE lacks a national database, the concept of creating an index to quantify and compare the stringency of state licensing systems could be a powerful tool for future research.

RESEARCHER SPOTLIGHT | Harrington et al. (2004)
Developed the "stringency index" for nursing homes. In a subsequent study, Mukamel et al. (2012) used this index to find that higher state regulatory stringency was associated with higher quality on multiple patient outcome measures.

The Known World: What the Evidence Confirms

Our journey through 20 years of research reveals a **scientific landscape** with several well-charted territories. The evidence base confirms several foundational principles of regulatory science in child care.

Regulations & Quality are Linked

More demanding licensing standards are consistently associated with higher observable quality in CCEE programs (Helburn, 1995; Apple, 2006).

Specific Rules Have Specific Impacts

Targeted health and safety regulations, such as those for playground safety and immunizations, can lead to measurable, positive child outcomes (Kotch et al., 2003; Hadler et al., 2014).

Monitoring Frequency Matters

More frequent inspections are associated with better performance and compliance over time (Gormley, 1995).

Federal Policy Can Drive Systemic Change

The CCDBG Act of 2014 dramatically and rapidly shifted state monitoring practices toward unannounced inspections, showing the power of federal levers.

The Uncharted Territories: Where the Map is Blank

While much of the literature focuses on regulations, our journey reveals vast, uncharted territories where the evidence base is thin or non-existent. Understanding these areas is critical for building a more effective and equitable licensing system.

Key Gaps Identified in the Literature:

Enforcement

Beyond descriptive data, there is almost no research on what enforcement strategies are most effective, for whom, and under what conditions.

Licensing Management

The "back office" of licensing—staff management, quality assurance, data-informed decision making—is significantly under-researched.

Equity

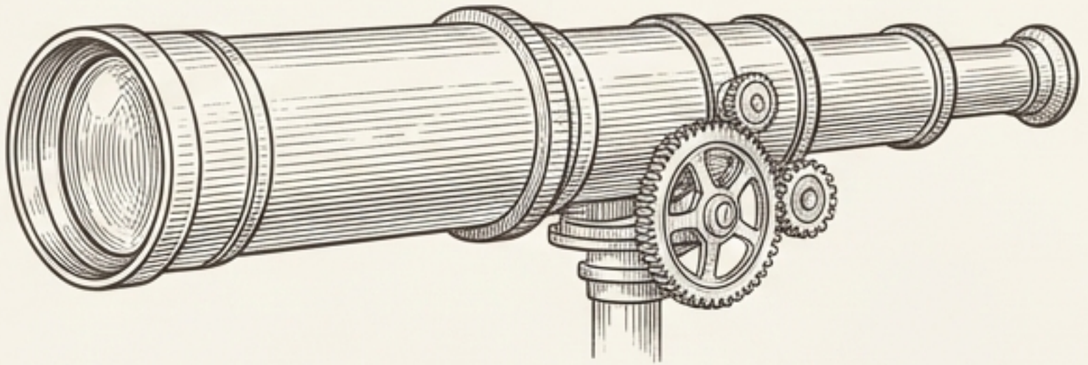
We found no research studies that explicitly examined racial equity within licensing, a critical gap in understanding how the system impacts diverse providers and communities.

Provider & Family Perspectives

More research is needed to understand providers' perceptions of licensing and families' experiences with and use of licensing information.

The Next Frontiers: A Call for Future Investigators

The gaps in our knowledge are not dead ends; they are the starting points for the next wave of **critical research.** The OPRE review points toward clear, high-impact questions for the field to tackle.



Future Research Should Explore:

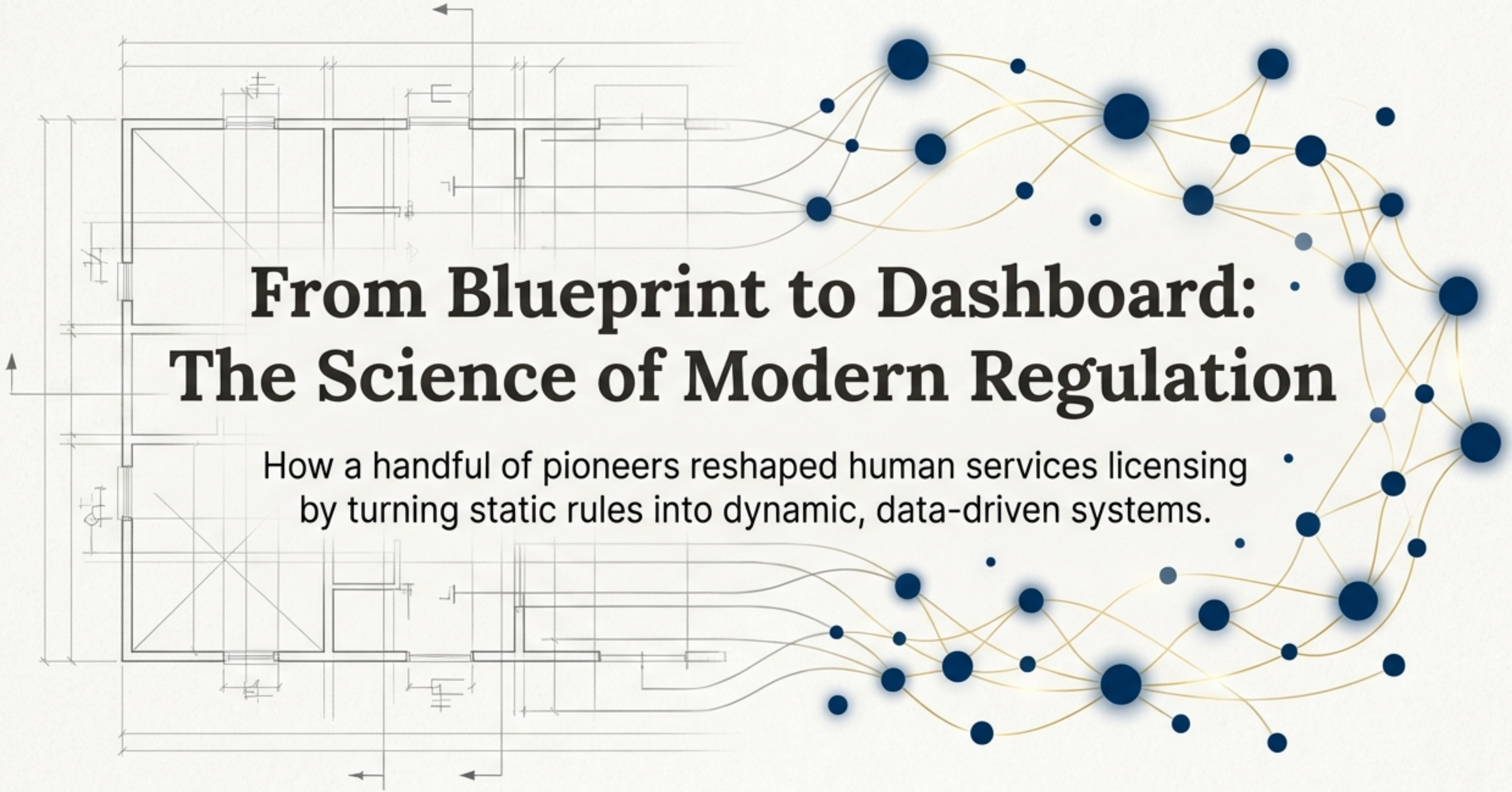
Effectiveness: How can we measure the effectiveness of enforcement? Can administrative data track the impact of policy changes on compliance and child safety?

Equity: Are patterns of compliance and enforcement consistent across provider types, settings (rural vs. urban), and racial/ethnic groups? *What policies and procedures support equitable outcomes?*

Efficiency: Are abbreviated monitoring systems as effective as full compliance reviews? What is the best mix of methodologies for consistent, strong, and efficient regulation?

Experience: How do families actually find, interpret, and use consumer education and inspection reports when choosing care? *What supports do providers find most helpful for maintaining compliance and improving quality?*

Answering these questions will help us draw a more complete map of the licensing world, ensuring the system works better for everyone.

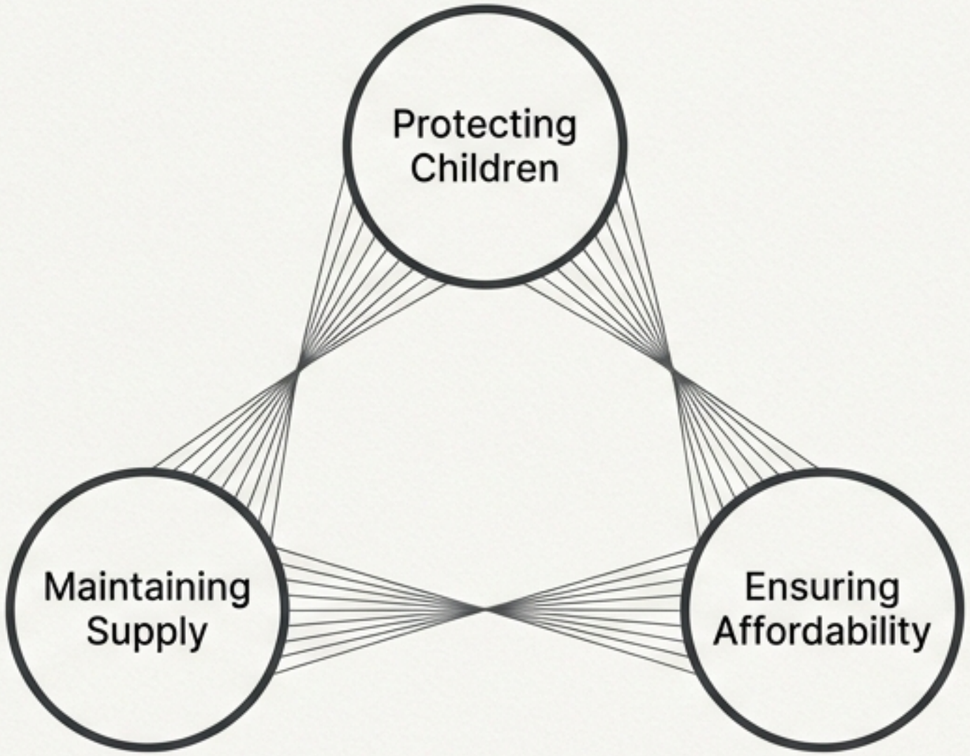


From Blueprint to Dashboard: The Science of Modern Regulation

How a handful of pioneers reshaped human services licensing by turning static rules into dynamic, data-driven systems.

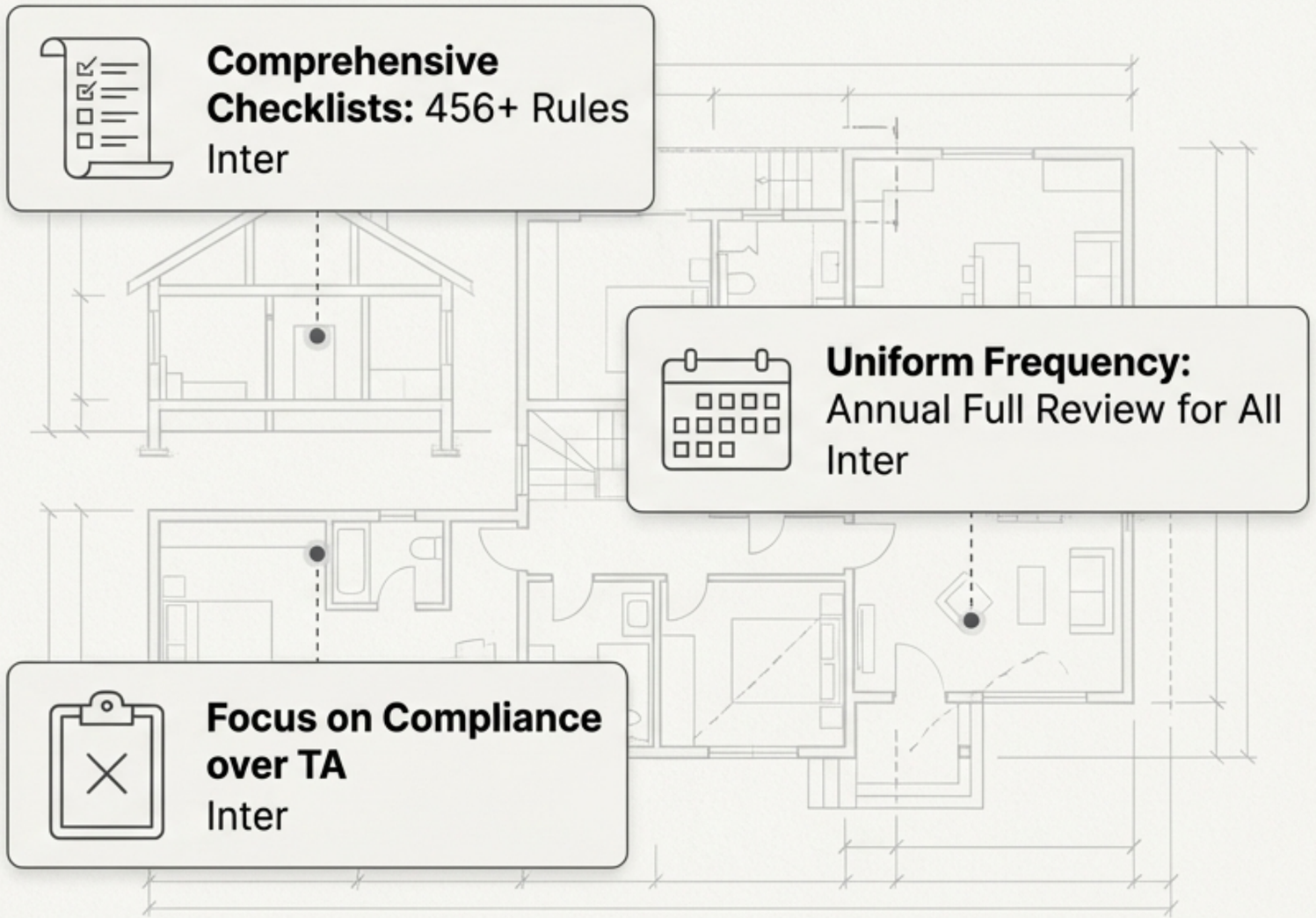
The Regulator's Dilemma: A Balancing Act of Conflicting Mandates

At its core, licensing has always faced a fundamental tension. As scholar William T. Gormley articulated, the system must balance three critical, often competing, goals:



"Gormley (1991) noted that the number, breadth, costliness, and intrusiveness of regulations all influence the supply of licensed Child Care and Early Education (CCEE)."

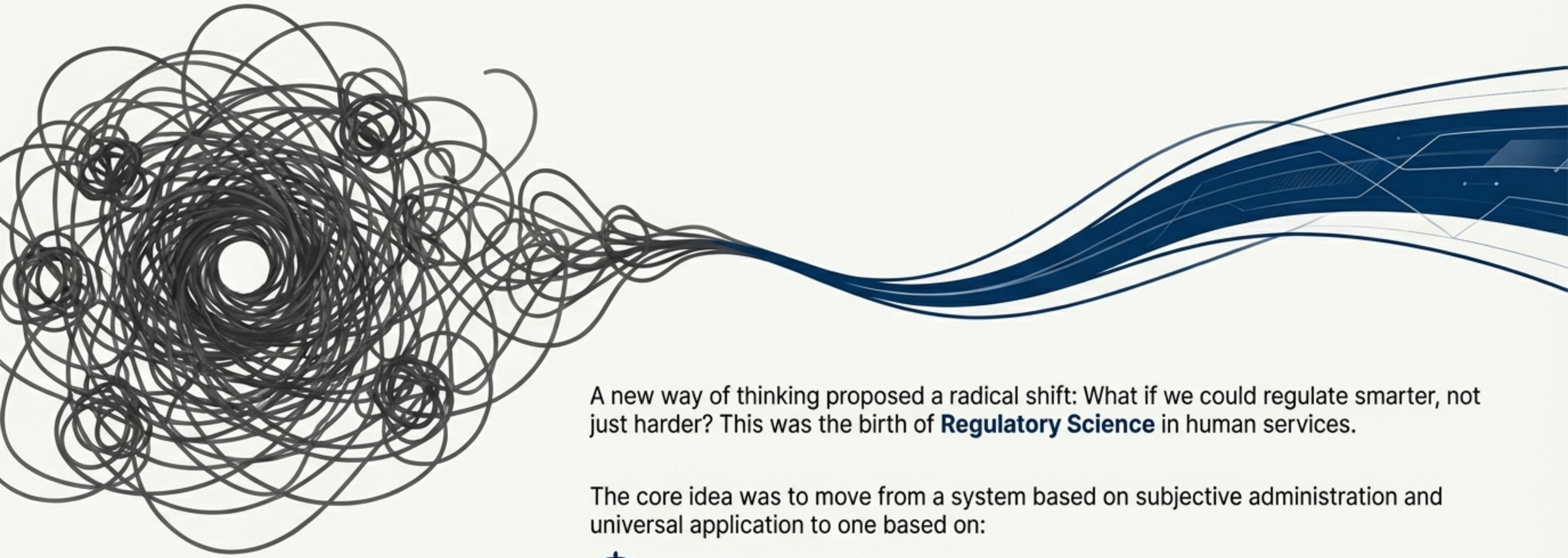
The Old Model Was a Static Blueprint



Historically, licensing operated on a one-size-fits-all model. It was defined by:

- **Comprehensive Checklists:** Every provider was monitored against hundreds of regulations during every inspection.
- **Uniform Frequency:** Inspection schedules were often identical for all providers, regardless of their history or quality.
- **Focus on Compliance over TA:** Gormley (2000) described U.S. licensing as focusing more on compliance than on technical assistance.

A New Paradigm Emerged: The Rise of Regulatory Science

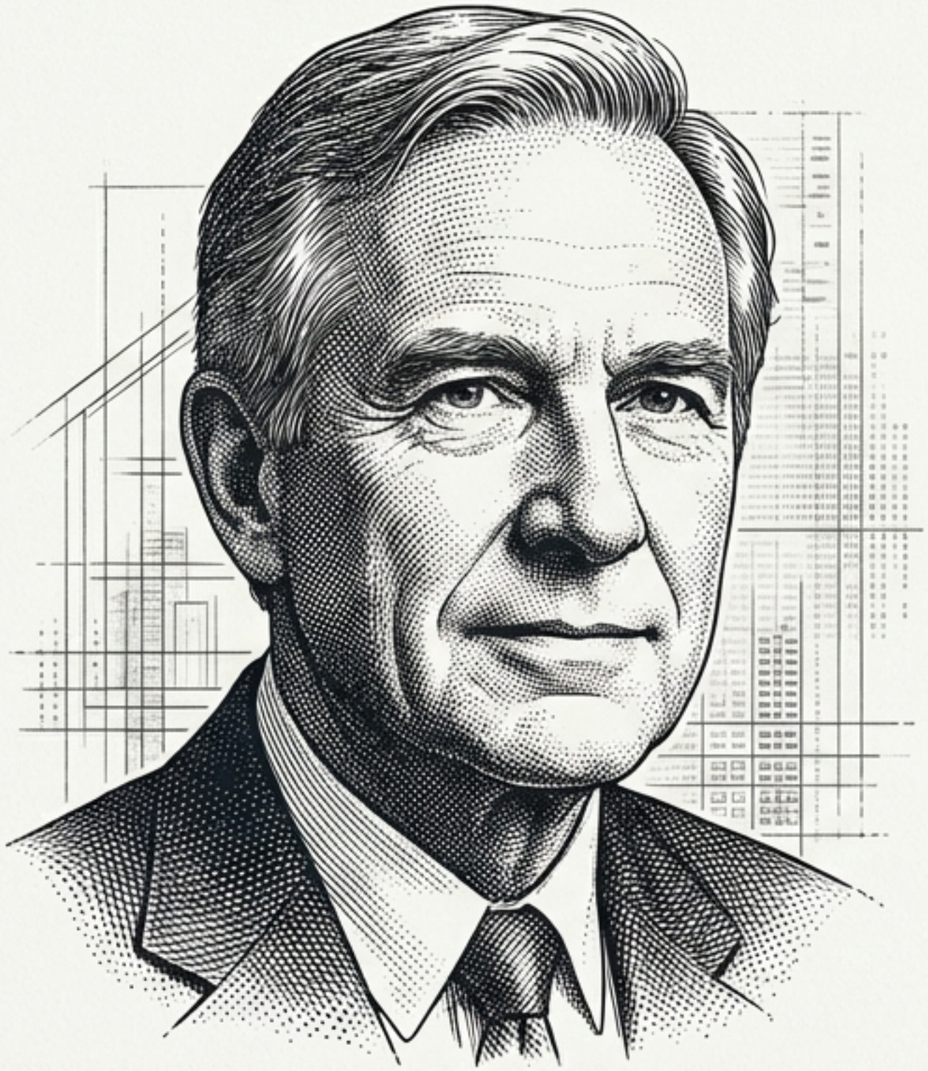


A new way of thinking proposed a radical shift: What if we could regulate smarter, not just harder? This was the birth of **Regulatory Science** in human services.

The core idea was to move from a system based on subjective administration and universal application to one based on:

- **Objectivity:** Using data and statistical methods.
- **Efficiency:** Focusing resources where they are most needed.
- **Prediction:** Identifying the rules that truly predict overall quality and safety.

The Architect of Efficiency: Richard Fiene



At the heart of this transformation was the work of researcher Richard Fiene. He sought to find the "signal in the noise" of hundreds of regulations.

His work provided the statistical foundation for a more intelligent, risk-based approach to licensing.

Fiene's research introduced two groundbreaking concepts that would redefine monitoring.

Key Indicators

Differential Monitoring

Fiene's First Breakthrough: Identifying the 'Key Indicators'

The problem: How can an inspector effectively monitor hundreds of regulations?

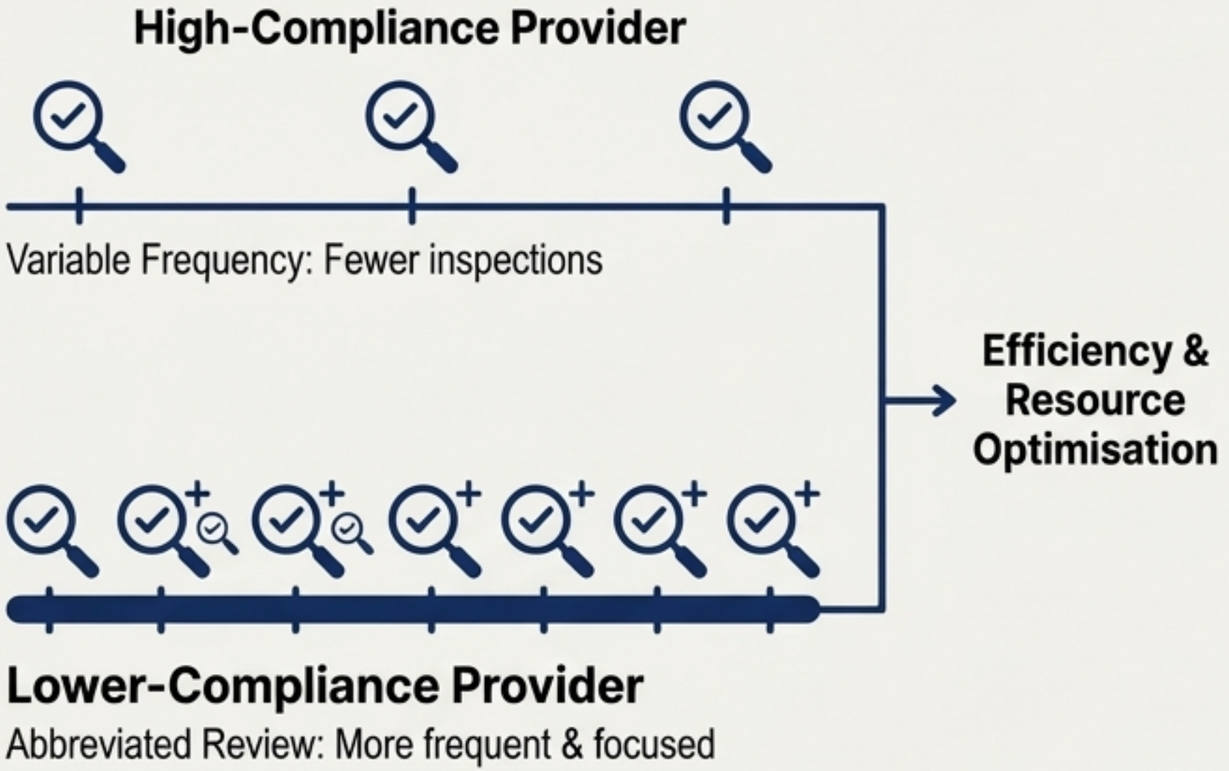
Fiene's solution: The **Key Indicators** approach. Through statistical analysis, he demonstrated that a small, core subset of regulations could reliably predict compliance with the *full* set of regulations.

These are not just the "most important" rules; they are the most *predictive* rules.

This methodology allowed licensing agencies to focus on what mattered most for assessing overall compliance.

The Key Indicators approach identifies regulations through statistical methods to determine the subset that best predicts compliance with the full set. (Source: Fiene & Kroh, 2000; NCCCQI, 2014g).

Putting the Science to Work: Differential Monitoring



Key Indicators unlocked a more dynamic way to regulate: **Differential Monitoring**. Instead of treating every provider the same, this approach tailors the frequency and depth of monitoring based on a facility's history of compliance.

There are two main types:

1. **Variable Frequency**: High-performing providers receive fewer inspections.
2. **Abbreviated Compliance Review**: Inspectors monitor only the Key Indicators, or a risk-assessed subset of rules.

67%

By 2017, 67% of states and territories reported using abbreviated compliance reviews during inspections, a direct legacy of this scientific approach. (Source: NARA, 2020a).

From Blueprint to Dashboard: The Georgia Case Study

Georgia's 'core rule' system provides a powerful example of Fiene's model in practice.

The Blueprint

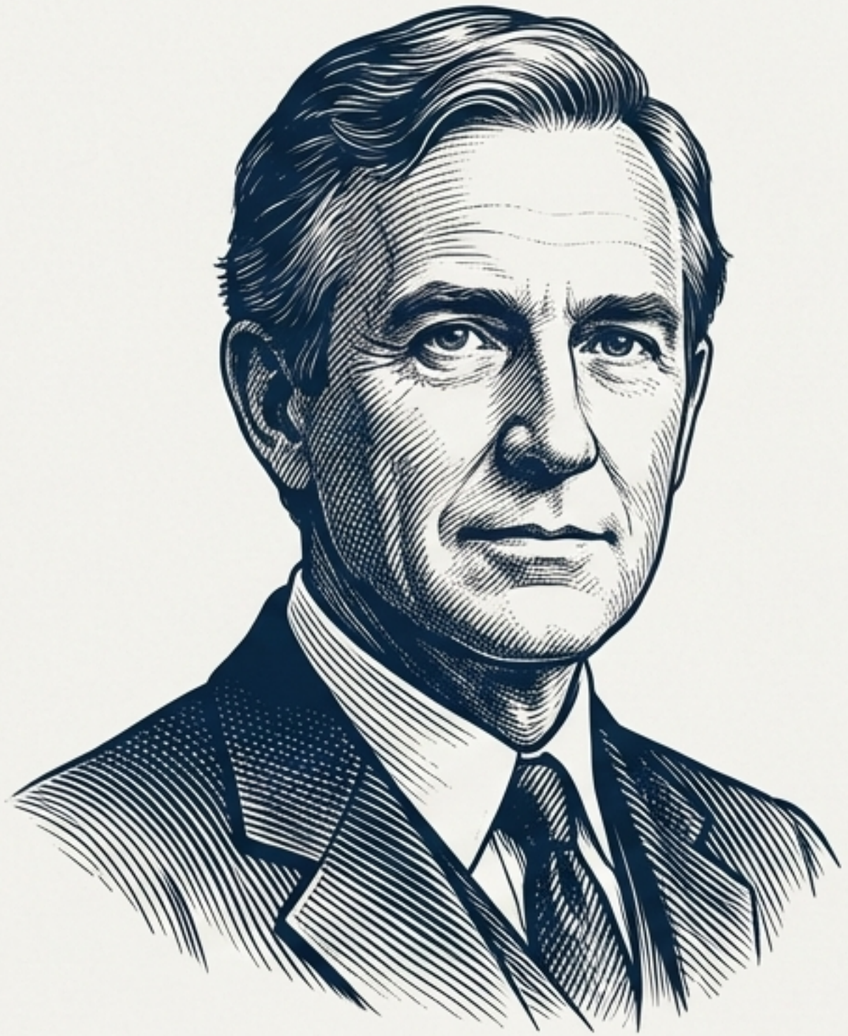
licensing rules monitored during every visit.

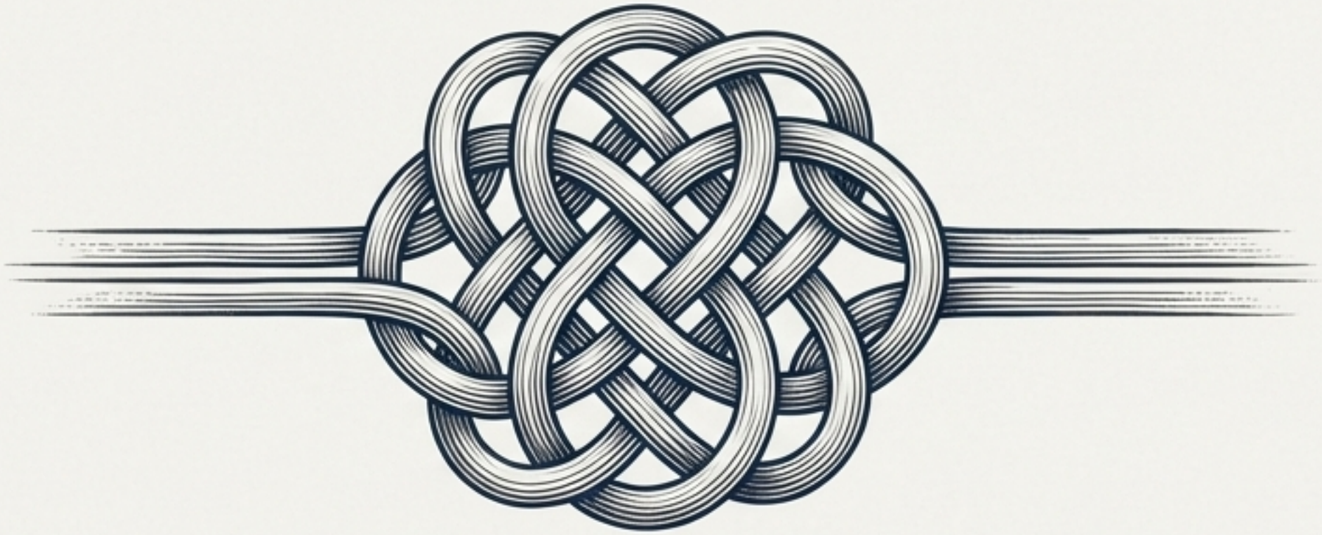
The Dashboard

predictive "core rules" for focused visits.

A validation study confirmed that Georgia's core rules successfully predicted program compliance with the full set of rules. (Source: Fiene, 2014a).

The Foundational Thinker: William T. Gormley





Long before the data-driven solutions were developed, **William T. Gormley** was the scholar who precisely defined the intricate challenges and trade-offs inherent in CCEE regulation. His work didn't offer a simple answer, but it brilliantly articulated the right questions, laying the intellectual groundwork for the field. He gave language to the complex balancing act that regulators faced every day.

Gormley's Dilemma: The Tension Between Rules and Reality

Gormley's research highlighted the unintended consequences of regulation.

If regulations are too strict or costly... they risk reducing the supply of licensed care, pushing families toward the unregulated market.

If regulations are too lenient... they may fail to protect children and ensure a baseline of quality.

This framework revealed that the central challenge wasn't just writing rules, but designing a **system** that could navigate these trade-offs intelligently.

The Systems Integrators: Maxwell, Miranda, and Colleagues

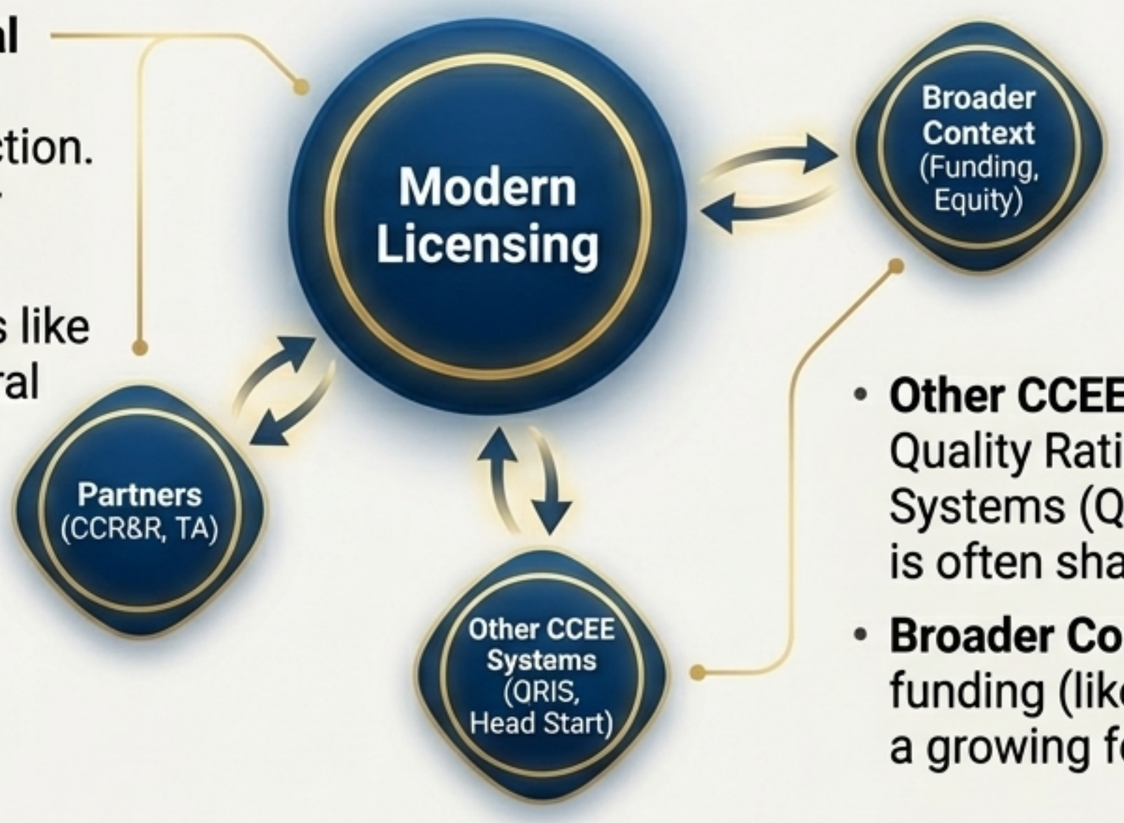
The work of pioneers like Fiene and Gormley did not happen in a vacuum. Modern scholars, such as the authors of the comprehensive literature review this presentation is based on (Kelly Maxwell, Brenda Miranda, et al.), have been crucial in synthesizing these ideas. Their role is to integrate regulatory science into a broader, interconnected system that includes partners, quality initiatives, and a modern focus on equity.

Maxwell, K., Miranda, B., et al. (2024). *Child care and early education licensing literature review*. OPRE Report #2024-199.

Today's Reality: Regulatory Science Within a Connected System

The **CCEE Licensing Conceptual Framework** shows that modern licensing is not an isolated function. It is a hub connected to a larger ecosystem:

- **Partners:** Works with entities like Child Care Resource & Referral (CCR&R) agencies for training and TA.



- **Other CCEE Systems:** Aligns with Quality Rating and Improvement Systems (QRIS) and Head Start. Data is often shared and coordinated.
- **Broader Context:** Influenced by funding (like CCDF), governance, and a growing focus on equity.

The bidirectional arrows show that influence flows both ways—licensing both shapes and is shaped by its environment.

The Science is Powerful, But Not a Panacea

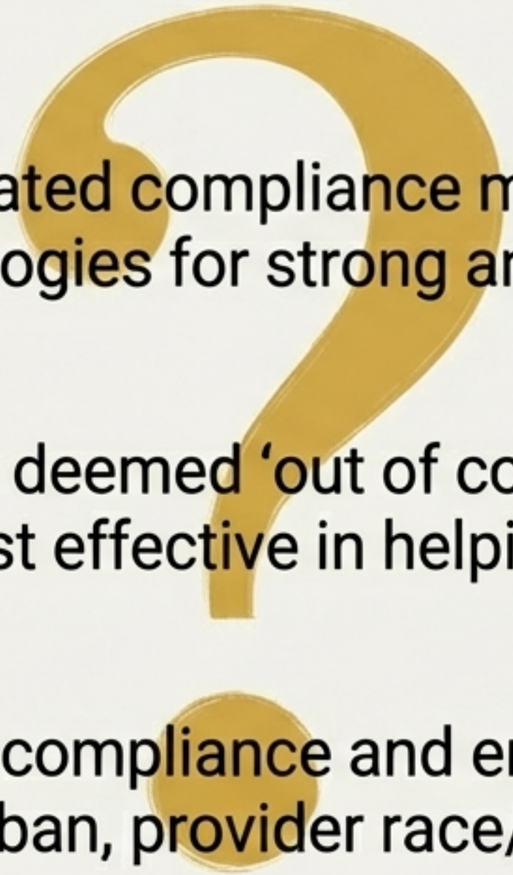
Implementing data-driven regulation presents its own set of complexities. Research reveals a nuanced picture of its real-world. Research reveals a nuanced picture of its real-world impact:

- **The Inspection Frequency Puzzle:** Studies on the link between inspection frequency and child safety have produced mixed results. Currie & Hotz (2004) found higher annual inspections for FCC homes were associated with higher accidental death rates, rates, but not with reported accidents, highlighting the difficulty in drawing simple conclusions.
- **The Unintended Consequences:** The same study found that more frequent inspections were associated with a *lower* probability that parents chose licensed centers, possibly due to increased cost passed on to families.

This reminds us that regulation is a dynamic field where data continues to reveal new challenges.

The Next Frontier: Critical Questions for the Field

The evolution of regulatory science is not over. The source literature review identifies key gaps and questions that researchers and policymakers must now address:

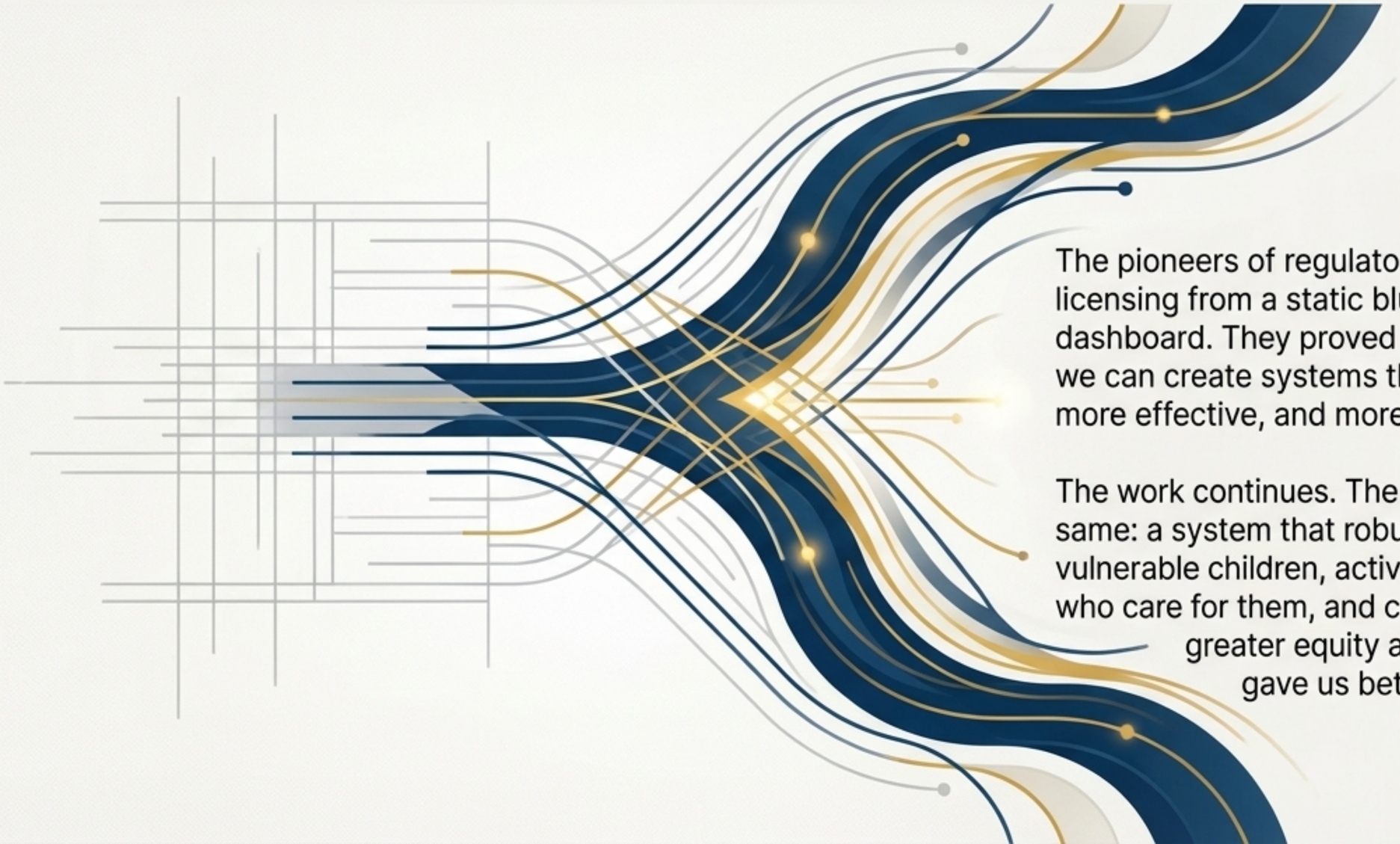


On Monitoring: Are all abbreviated compliance methods equally effective? What is the best mix of methiologies for strong and consistent enforcement? (Source: NCCCQI, 2014g)

On Compliance: Are programs deemed ‘out of compliance’ actually of lower quality? What supports are most effective in helping providers return to compliance?

On Equity: How do patterns of compliance and enforcement differ across provider types (e.g., rural vs. urban, provider race/ethnicity, language)?

The Enduring Quest for a Smarter, Fairer System



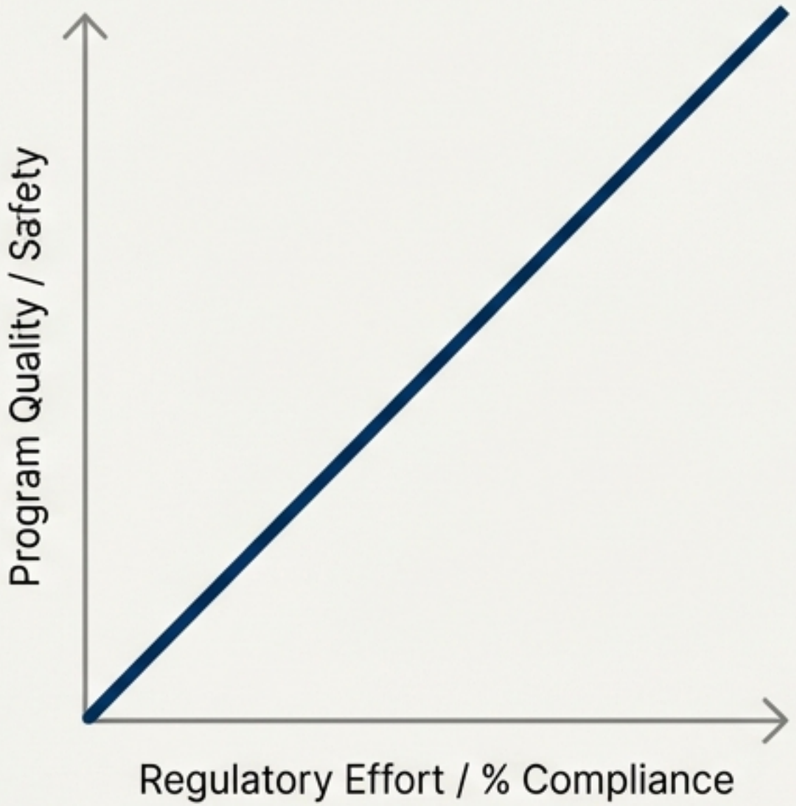
The pioneers of regulatory science transformed licensing from a static blueprint into a dynamic dashboard. They proved that by leveraging data, we can create systems that are more efficient, more effective, and more responsive.

The work continues. The ultimate goal remains the same: a system that robustly protects our most vulnerable children, actively supports the providers who care for them, and constantly strives for greater equity and quality. The science gave us better tools; the quest is to use them with wisdom.

Beyond 100%: A New Paradigm for Regulatory Science

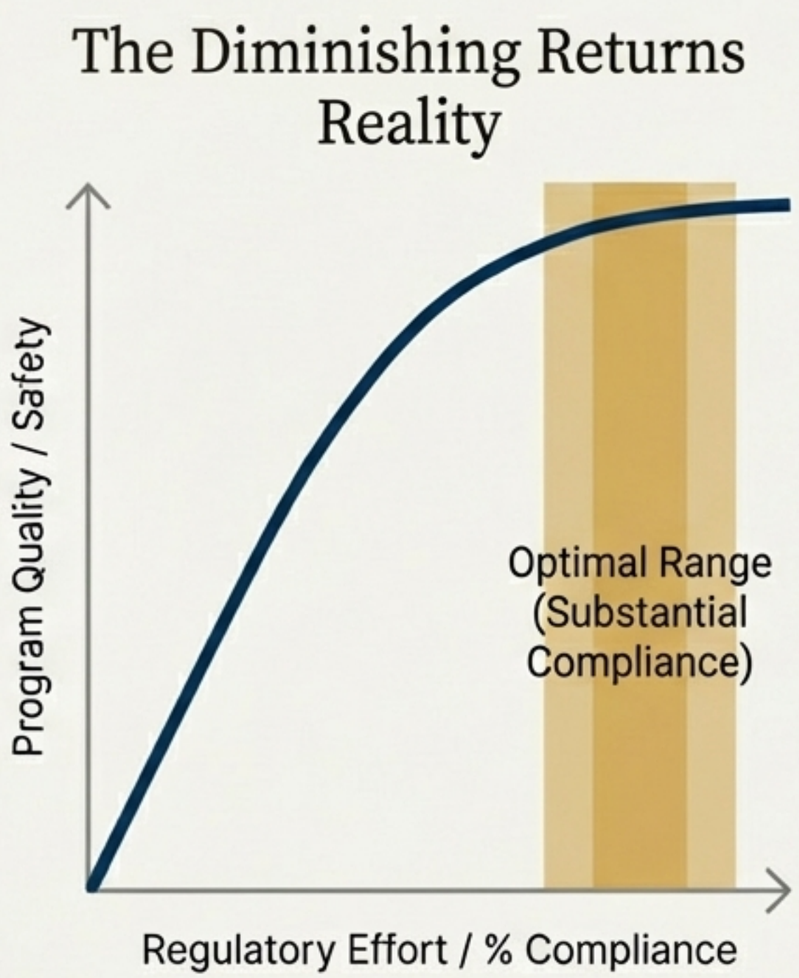
An exploration of Richard Fiene's Theory of Regulatory Compliance and its transformative impact on effective, efficient oversight.

The Linear Assumption



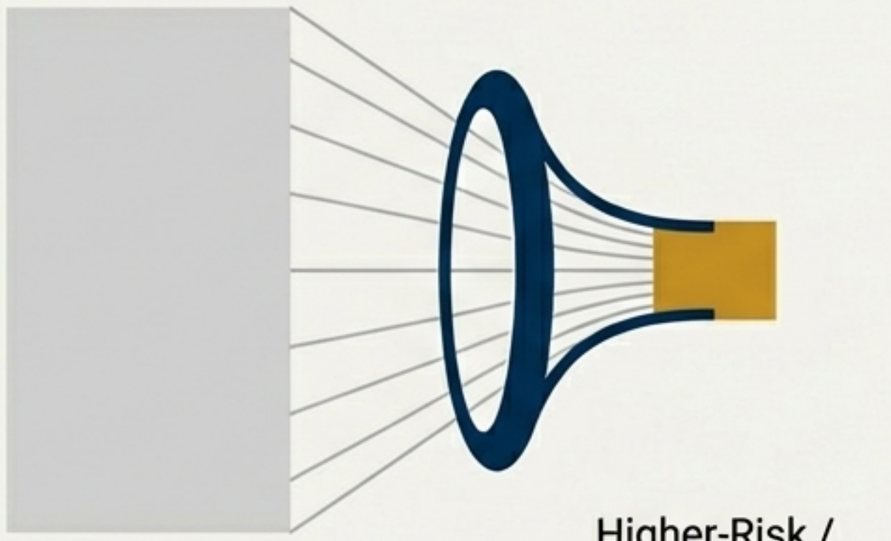
The traditional regulatory model assumed more was always better.

- Historically, regulatory systems operated on a linear assumption: increased monitoring and a push for 100% compliance would invariably lead to better outcomes.
- This led to a uniform, “one-size-fits-all” monitoring approach where all entities were subject to the same level and frequency of inspection, regardless of their compliance history or risk profile.
- This model was often based on anecdotal evidence rather than empirical data, leading to an inefficient allocation of limited regulatory resources.



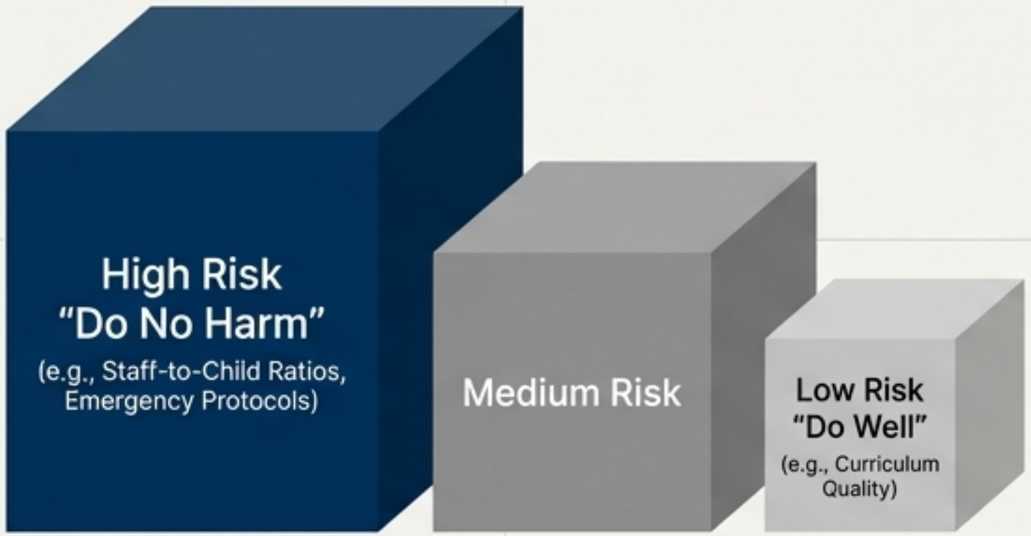
Fiene's research revealed a curvilinear relationship between compliance and quality.

- Fiene's Theory of Regulatory Compliance (TRC+) posits that the link between compliance and quality is not linear but follows a pattern of diminishing returns.
- Initial improvements in compliance yield significant gains in quality, but beyond a certain point, further efforts produce only marginal benefits.
- This challenges the goal of 100% compliance, suggesting a 'sweet spot' of **substantial compliance** (typically 97-99%) achieves comparable quality and safety with a more efficient use of resources.



This insight enables a more strategic approach: Differential Monitoring.

- Differential Monitoring is a tailored approach that adjusts the intensity and frequency of oversight based on an entity's compliance history and risk profile.
- **Purpose:** To optimize limited regulatory resources by concentrating attention on programs with a history of non-compliance or higher identified risk.
- High-performing programs that consistently demonstrate substantial compliance require less intensive monitoring, freeing up resources for programs that need more support and oversight.



The first component of targeting is Risk Assessment, which prioritizes rules by potential harm.

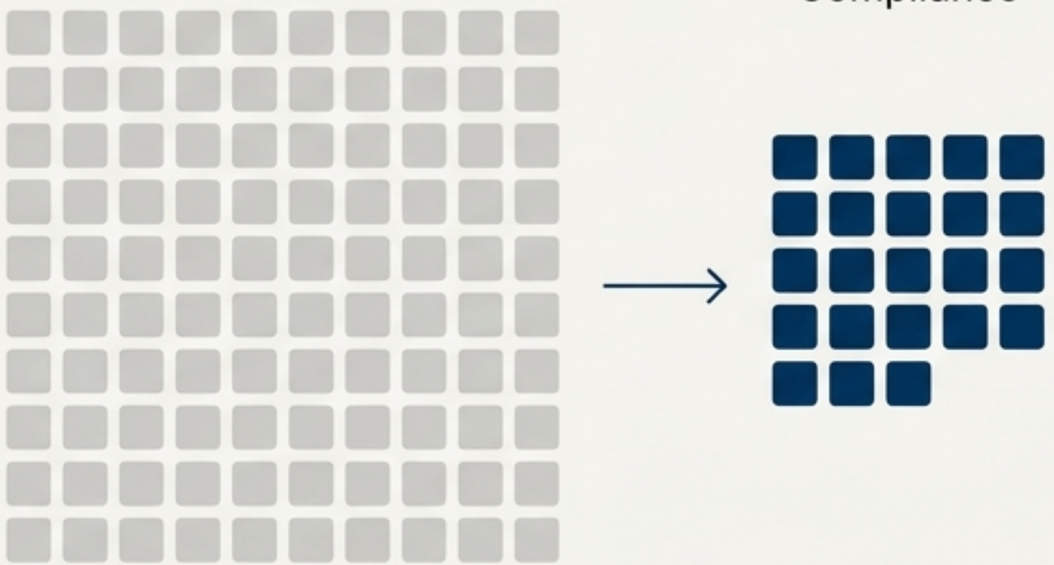
- Risk Assessment (RA) is a systematic process for identifying regulations where non-compliance poses the greatest threat to public safety and well-being.

- It differentiates between types of rules:
  - "Do No Harm" Rules: Essential for basic health and safety. Non-compliance could have severe consequences, often demanding full 100% compliance.
  - "Do Well" Standards: Relate to best practices and promoting positive outcomes.

- By weighting rules based on risk, regulators can focus monitoring and enforcement efforts where they will have the most significant impact.

All 100 Regulations

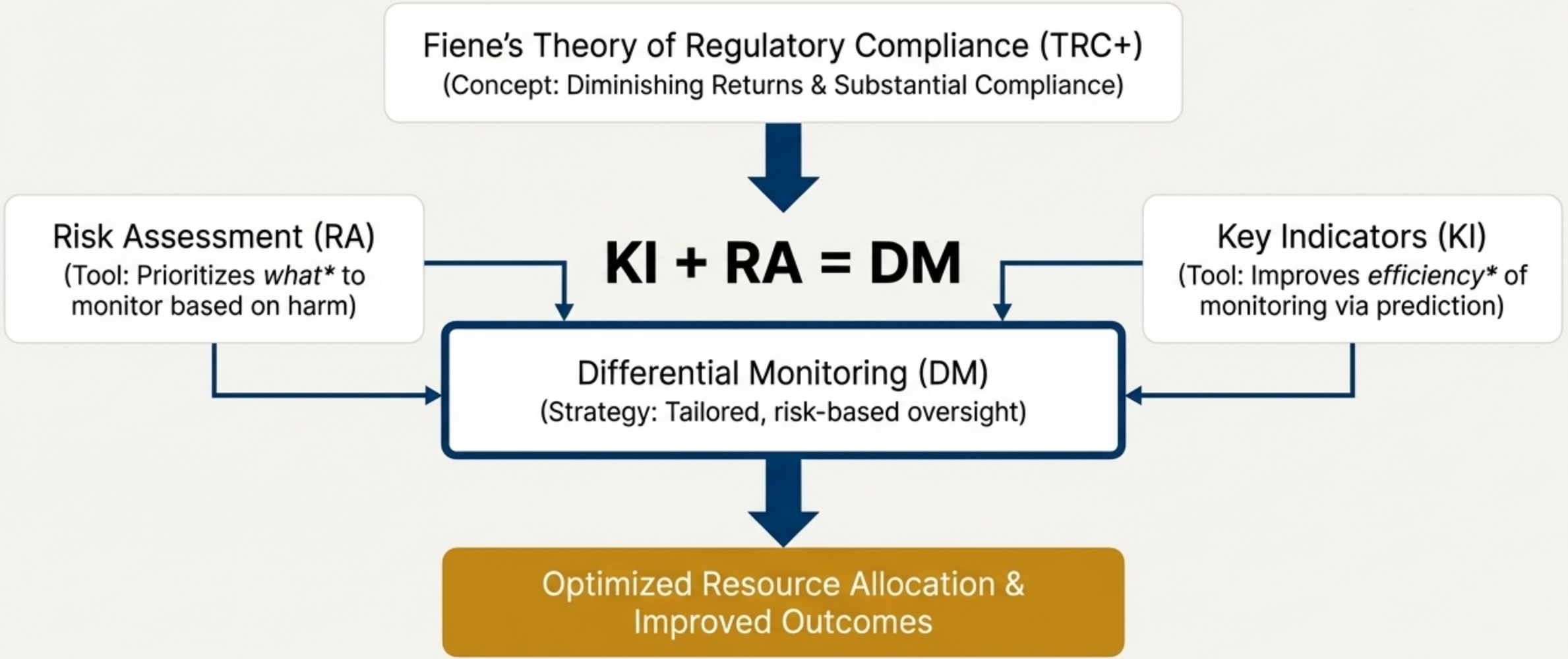
Key Indicators: Predictive of Overall Compliance



The second component is Key Indicators, which use predictive rules to improve efficiency.

- Key Indicators (KI) are a small subset of regulations (typically 10-20%) that are statistically proven to predict **overall compliance** with the entire set of rules.
- By monitoring only these Key Indicators in high-performing programs, agencies can gain a reliable understanding of overall compliance with significantly less effort.
- **Statistical Basis:** Identification relies on the **Fiene Coefficient (FC)**, a statistical measure that quantifies a rule's predictive power. A high positive FC indicates a strong predictor.
- Formula: FC = ((A)(D)) – ((B)(C)) / sqrt (WXYZ)

Together, these components create an evidence-based system for regulatory oversight.



The system moves beyond binary measurement with the Regulatory Compliance Scale.

Traditional compliance measurement is often binary (in compliance / out of compliance), which limits statistical analysis and nuance.

The Regulatory Compliance Scale (RCS) is an ordinal scale that measures varying *degrees* of compliance, providing a more granular and informative assessment.

This allows for a richer understanding of the relationship between compliance levels and program quality.

The Uncertainty-Certainty Matrix validates decisions and minimizes critical errors.

The **Uncertainty-Certainty Matrix** (UCM) is a 2x2 tool used to assess the reliability of regulatory decisions by comparing the decision against the actual state of compliance. The primary goal is to maximize agreement (certainty) and minimize disagreement (uncertainty), with a critical focus on reducing **false negatives**—where an entity is deemed compliant when it is not. The **UCM Coefficient** quantifies the level of certainty, guiding when reliability training for assessors is needed.

The UCM 2x2 Matrix

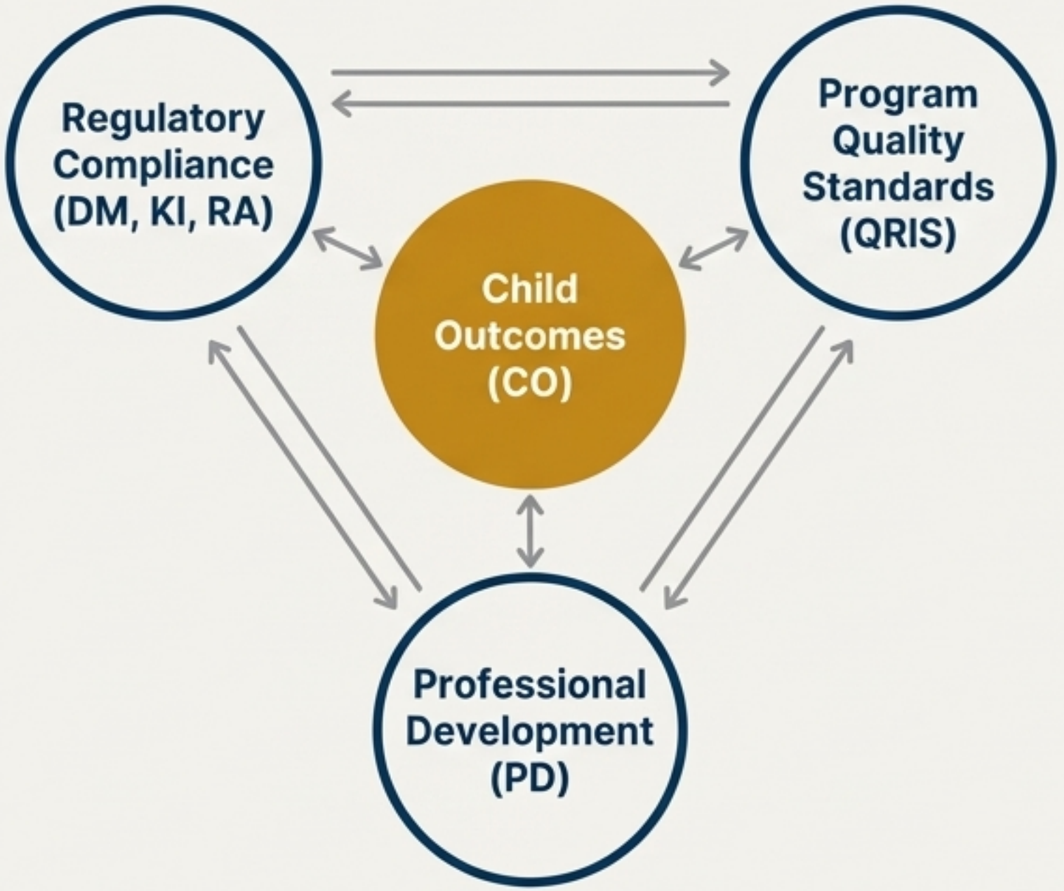
	Actual State: Compliant	Actual State: Not Compliant
Decision: Compliant	Agreement (++): True Positive	Disagreement (-+): False Positive
Decision: Not Compliant	**Disagreement (+-): False Negative (Critical Error)**	Agreement (--): True Negative

UCM Coefficient Interpretation Table

Coefficient	Interpretation	Action
+.25 to +1.00	Acceptable agreement (certainty)	No action required.
+.24 to -.24	Random agreement (uncertainty)	Requires reliability training.
-.25 to -1.00	Severe disagreement (uncertainty)	Demands immediate review of training and rules.

Fiene's model integrates these components into a holistic quality improvement framework.

- The Early Childhood Program Quality Improvement and Indicator Model (ECPQIM) is a comprehensive framework that integrates regulatory compliance (using DM, RA, KI) with broader quality initiatives.
- It acknowledges that meeting minimum regulations is necessary but not sufficient for high quality.
- The model connects compliance efforts with Quality Rating Systems (QRIS), professional development (PD), and child outcomes (CO) to create a complete system for assessing and improving program quality.



The Differential Monitoring Logic Model provides a clear roadmap from inputs to outcomes.

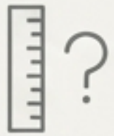
The logic model provides a visual and conceptual representation of how a differential monitoring system operates in practice, detailing the resources, activities, and expected results.

Inputs	Processes	Outputs	Outcomes
• State licensing regulations • Historical compliance data • Risk assessment criteria	• Conducting risk assessments • Using key indicators for abbreviated inspections • Performing comprehensive inspections for high-risk centers • Providing targeted technical assistance	• Risk scores for each center • List of key indicator rules • Number and type of inspections conducted	• Improved regulatory compliance rates • Enhanced program quality (QRIS ratings) • Positive trends in child development outcomes • More efficient allocation of agency resources

The framework's implementation requires navigating valid critiques and challenges.

While transformative, Fiene's theory is not without limitations that require careful consideration during implementation:

- **Misinterpretation**: "The concept of 'substantial compliance' could be misused to justify lower standards or reduced oversight."



- **Measurement Difficulty**: "Objectively measuring program quality beyond simple compliance remains a complex challenge."

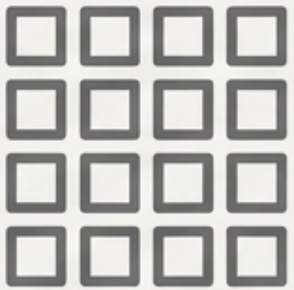
- **Generalizability**: "The theory is primarily validated in human services; its applicability to other sectors like environmental or financial regulation requires further research."

- **Implementation Hurdles**: "Shifting from a traditional 'zero-tolerance' model can face logistical and cultural resistance within regulatory agencies."

Fiene's theory marks a fundamental shift toward an evidence-based, efficient regulatory future.

Fiene's work has propelled regulatory science beyond simplistic, linear assumptions toward a more nuanced, data-informed paradigm. The shift from pursuing 100% compliance to optimizing for **substantial compliance** allows for a more strategic and effective allocation of resources. By integrating **Differential Monitoring, Risk Assessment, and Key Indicators**, the framework provides practical, evidence-based tools for regulators. The ultimate legacy is a move toward regulatory systems that are both more efficient in their operation and more effective in protecting the public and improving quality.

Old Paradigm



Uniform
Assumption-Based
Resource-Intensive

New Paradigm

Differential
Evidence-Based
Optimized

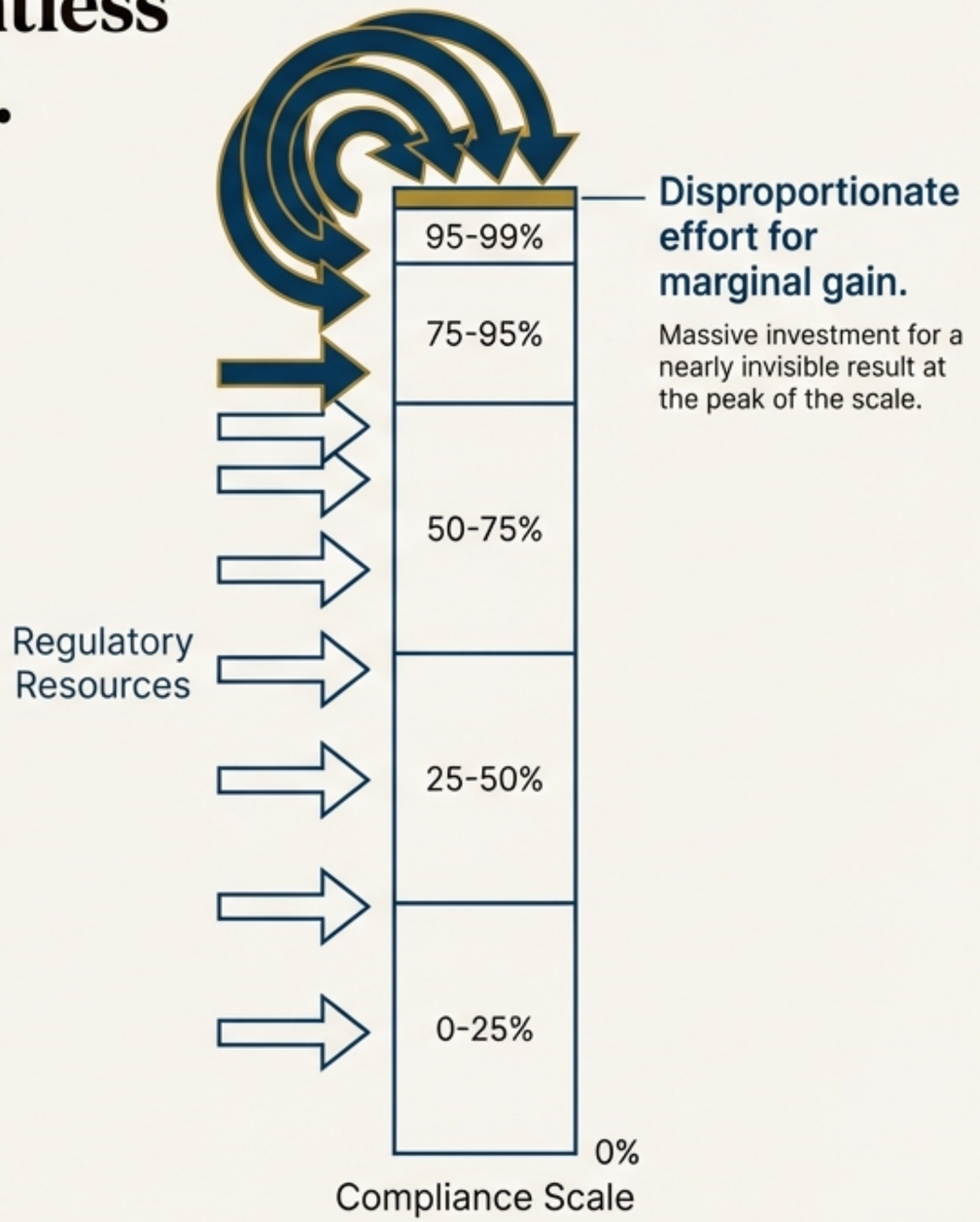
The Myth of Perfection: Why the Relentless Pursuit of 100% Compliance is Flawed.

For decades, regulatory science has operated on a simple, linear assumption: “more is better.” This model suggests a direct correlation between regulatory effort and program quality, leading to a singular goal: achieving 100% compliance with all rules.

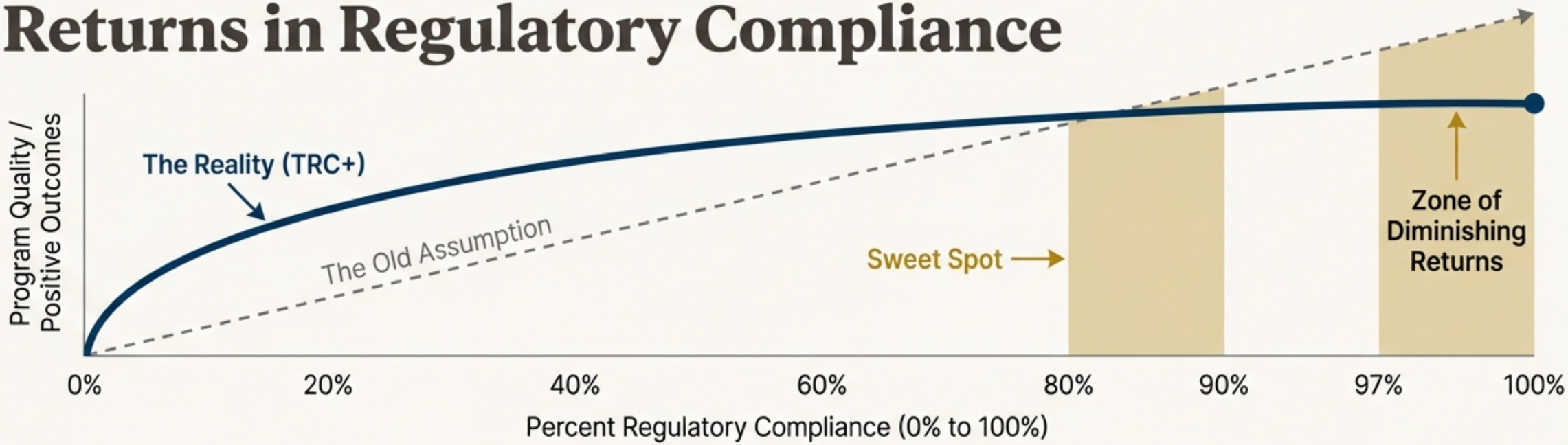
This traditional approach is characterized by:

- **Uniform, “One-Size-Fits-All” Monitoring:** All entities are subjected to the same level and frequency of inspection, regardless of their compliance history or risk profile.
- **Equal Weighting of Rules:** All regulations are treated as equally important, from minor administrative tasks to critical safety measures.
- **Reliance on Anecdote:** The model was built on expert opinion and established wisdom, not rigorous empirical testing and data.

The core problem: This system is resource-intensive and inefficient. More importantly, it lacks scientific proof that striving for 100% compliance yields the best outcomes for public safety and program quality. It's a paradigm built on logic, but not evidence.



A Paradigm Shift: The Law of Diminishing Returns in Regulatory Compliance



Dr. Richard Fiene's research, spanning over 40 years, revealed a fundamental flaw in the traditional model. The relationship between regulatory compliance and program quality is not linear, but **curvilinear**.

This is the **Diminishing Returns Theory of Regulatory Compliance (TRC+)**: Initial gains in compliance lead to significant improvements in quality and safety. However, as compliance increases, the impact of each additional effort diminishes. A point is reached where striving for the final few percentage points of compliance yields marginal, or even negative, returns on investment.

This discovery introduces a new, smarter goal: **Substantial Compliance**. This is a very high level of adherence (typically 97-99%), where the optimal balance between resources and positive outcomes is achieved. The effort to move from substantial to 100% compliance is disproportionately high for little to no meaningful gain.

The Solution, Part 1: Differential Monitoring – From Uniformity to Targeted Oversight

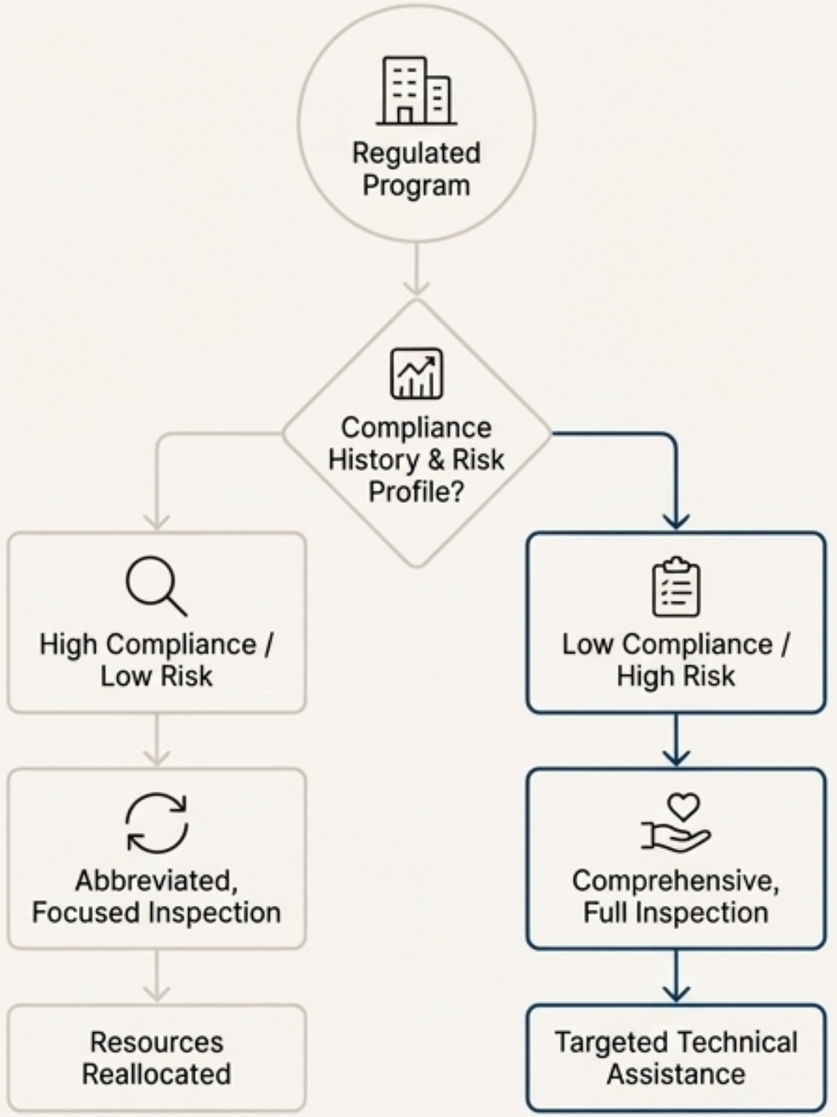
If not all programs require the same level of scrutiny, our monitoring approach must adapt. **Differential Monitoring** is a tailored strategy that adjusts the intensity and frequency of oversight based on an entity's compliance history and risk profile.

The Purpose: To optimize the use of limited regulatory resources by concentrating attention where it's needed most—on programs with a history of non-compliance or those identified as high-risk.

How It Works

* **High-Performing Programs**: Consistently demonstrate substantial compliance and are identified as low-risk. They become eligible for less intensive, abbreviated inspections, freeing up regulatory resources.
* **Low-Performing / High-Risk Programs**: Receive greater support and more frequent, comprehensive oversight to address issues before they escalate.

This represents a proactive shift from a reactive enforcement model to a preventative, data-driven framework.



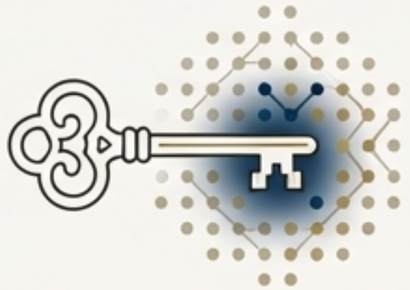
The Solution, Part 2: The Toolkit for Efficient Monitoring

Differential Monitoring relies on two powerful, data-driven methodologies:

1. Risk Assessment: Not All Rules Are Created Equal

This is a systematic process for prioritizing regulations based on their potential impact. It moves beyond treating all rules the same by differentiating between:

- **"Do No Harm" Rules:** Essential for basic health and safety. Non-compliance poses the greatest threat to public well-being. These high-risk rules are prioritized for monitoring and may still require 100% compliance.
- **"Do Well" Standards:** Relate to best practices and promoting positive outcomes (e.g., in early childhood education). Substantial compliance is often the appropriate goal.



2. Key Indicators (KI): The Engine of Efficiency

Key Indicators are a small, statistically validated subset of rules that reliably predict overall compliance with the entire set of regulations.

- By focusing an abbreviated inspection on these proven predictor rules, agencies can gain an accurate understanding of a program's overall status without a costly, time-consuming full review.
- This significantly reduces the burden on both the regulatory agency and high-performing regulated entities.

The Solution, Part 3: Advanced Measurement for Accuracy and Nuance

To support a more sophisticated regulatory approach, we need more sophisticated measurement tools that move beyond simple "yes/no" assessments.

Regulatory Compliance Scale (RCS)

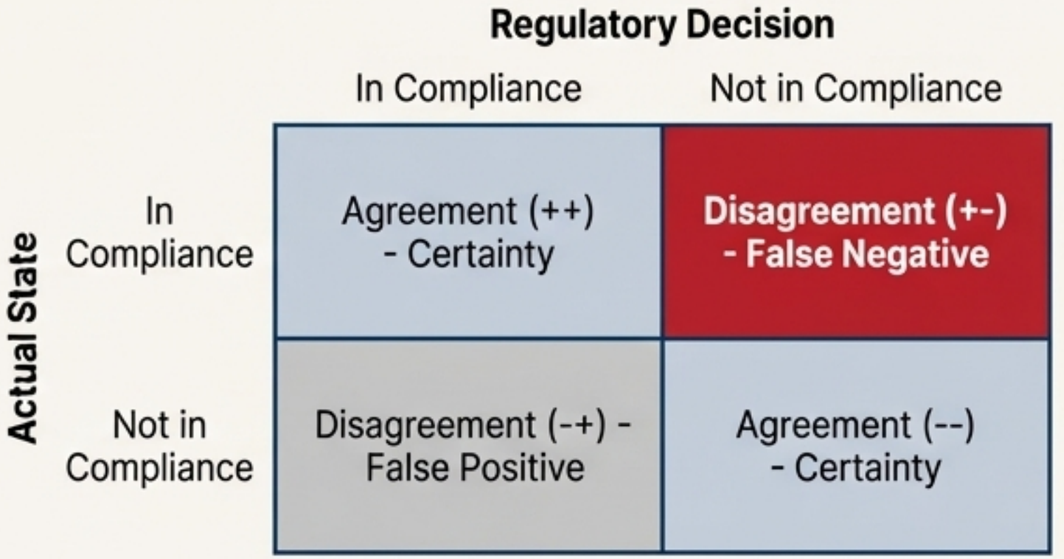
Traditional measurement uses a binary (100 or 0) scoring system. The RCS introduces a more nuanced ordinal scale.

- It measures varying degrees of compliance, capturing partial adherence or differentiating between levels of non-compliance.
- This provides richer data, allowing for more advanced statistical analysis and a better understanding of the relationship between compliance levels and quality outcomes.

Uncertainty-Certainty Matrix (UCM)

The UCM is a quality control framework for evaluating the accuracy of regulatory decisions. It compares the inspector's decision to the actual state of compliance, identifying four possible outcomes.

- Certainty: The decision correctly identifies compliance (True Positive) or non-compliance (True Negative).
- Uncertainty: The decision is incorrect (False Positive or False Negative).
- The primary goal is to minimize False Negatives (+-), where a program is deemed compliant when it is not, as this poses the greatest risk to the public.



Applying the Uncertainty-Certainty Matrix: From Data to Action

The UCM is not just a theoretical model; it generates a quantifiable coefficient that guides action. The UCM Coefficient measures the level of agreement between regulatory decisions and the actual state of compliance, providing a clear indicator of system reliability. The formula for the coefficient is:

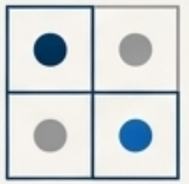
((A)(D)) - ((B)(C)) / sqrt ((W)(X)(Y)(Z))

Where A=True Positives, D=True Negatives, B=False Positives, C=False Negatives, and W,X,Y,Z are row/column totals.

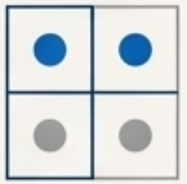
Interpreting the UCM Coefficient:

UCM Coefficient Range	Interpretation	Recommended Action
+.25 to +1.00	Acceptable agreement (certainty)	No immediate action required; the regulatory decision is likely accurate and verified.
+.24 to -.24	Random agreement/disagreement (uncertainty)	Requires focused reliability training for assessors to enhance consistency and reduce randomness in decision-making.
-.25 to -1.00	**Severe disagreement (uncertainty)**	**Demands immediate, thorough review of reliability training and re-evaluation of the rules to ensure clarity and uniform application.**

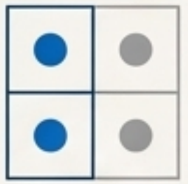
The UCM also reveals inspector bias. A horizontal or vertical pattern in results, rather than a diagonal one, can indicate a tendency to rate programs as compliant or non-compliant regardless of the actual situation.



Reliable



Bias towards "Compliant"



Bias towards "Compliant"

The Synthesis: An Integrated System for Quality Improvement

These methodologies do not operate in isolation. They combine to form a holistic, evidence-based system. In early childhood education, this is expressed as the **Early Childhood Program Quality Improvement and Indicator Model (ECPQIM)**. The ECPQIM is a fourth-generation framework that integrates multiple facets of program performance into one cohesive model. It demonstrates the direct link between smart regulation and the ultimate goal: high-quality programs and positive child outcomes. This logic model shows how the system's components work together:

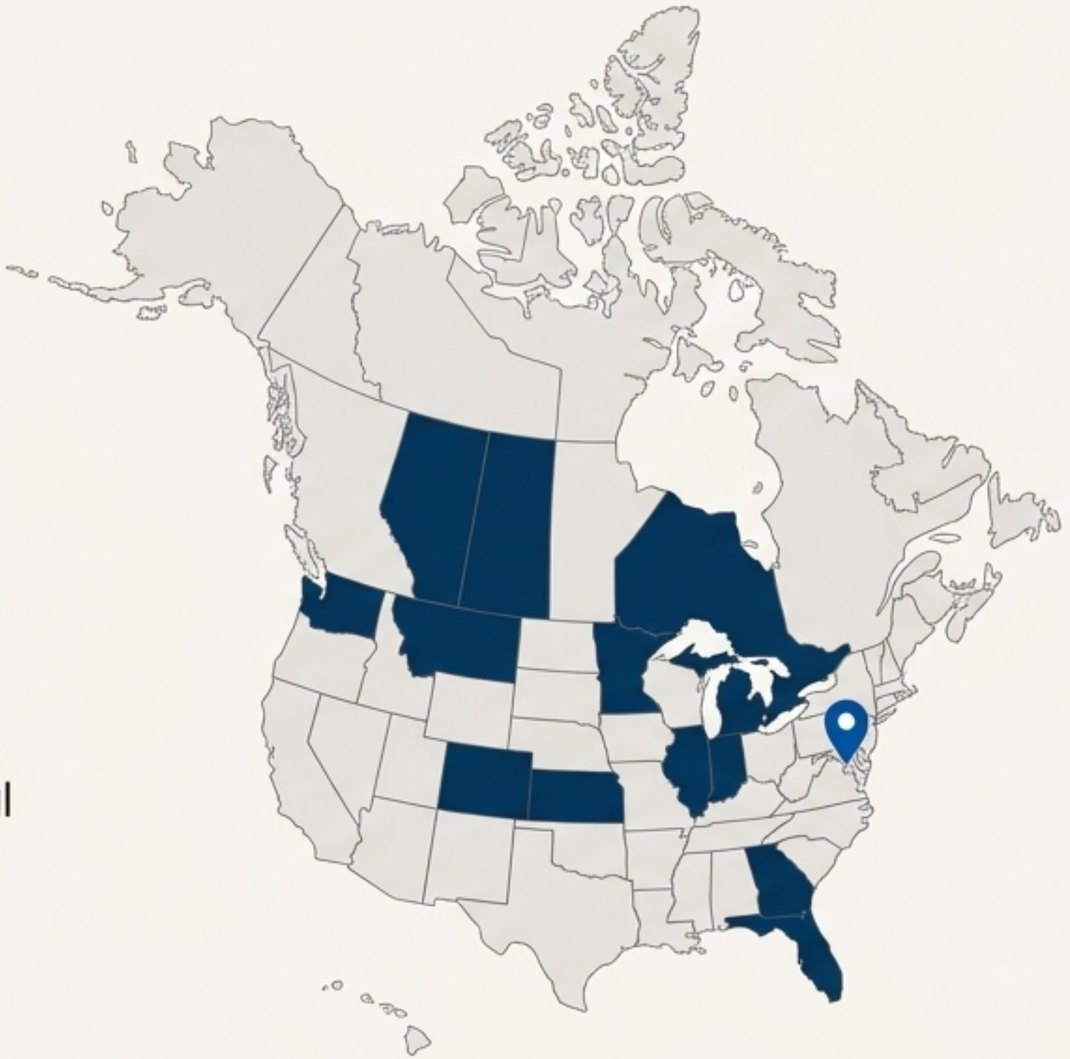
	Inputs	Processes	Outputs	Outcomes
Inputs	Resources, regulations, and data that drive the system.	Activities undertaken within the monitoring system.	Investigations assessments haɓed instances.	The ultimate results and changes due to the system.
Processes	Activities undertaken within the monitoring system.	**Example (Early Childhood):** Conducting risk assessments, key indicators for abbreviated inspections, performing comprehensive inspections for high-risk centers, providing targeted technical assistance.	**Example (Early Childhood):** Risk scores for each center, number and type of inspections conducted (abbreviated vs. comprehensi-ve), number of technical assistance visits.	**Example (Early Childhood):** Improved regulatory compliance rates, enhanced program quality (QRIS ratings), positive trends in child development outcomes, more efficient use of state resources.
Outputs	Direct products of the processes.			
Outcomes	The ultimate results and changes due to the system.			

The Impact: From Theory to Widespread Practice

Dr. Fiene's theory of regulatory compliance has moved beyond academic journals to fundamentally alter regulatory practice. His methodologies have been adopted and implemented by numerous state, provincial, and national agencies seeking a more effective and efficient approach.

The National Association for Regulatory Administration (NARA) has grounded its approach in Fiene's work, leading numerous Differential Monitoring and Key Indicator projects across North America.

This widespread adoption provides powerful evidence that an evidence-based, targeted approach optimizes resources, improves oversight, and achieves better outcomes without increasing costs.



Canadian Provinces

- Saskatchewan
- Alberta
- Ontario

U.S. States

- Florida
- Washington
- Minnesota
- Indiana
- Montana
- Michigan
- Illinois
- Kansas
- Colorado
- Georgia

National Programs

- U.S. Office of Head Start (Washington D.C.)

Navigating the Challenges of a New Paradigm.

Like any significant paradigm shift, the move towards substantial compliance and differential monitoring is not without its challenges and valid criticisms. Acknowledging these is crucial for successful implementation.

Lowering Standards?

A primary concern is that focusing on “substantial” compliance could be misinterpreted as a justification for relaxing standards or reducing necessary oversight.
Response: The model advocates for smarter, not less, oversight, focusing resources on the highest-risk areas.

Measurement Difficulty

Objectively and reliably measuring program quality beyond simple compliance can be complex.
Response: This is why tools like the RCS and validated quality indicators (ECPQIM) are essential for providing robust, multi-faceted data.

Regulatory Capture

Could a focus on substantial compliance lead to increased leniency and reduced enforcement?
Response: Data-driven systems like the UCM provide objective checks to ensure decisions are accurate and unbiased.

Implementation Resistance

Shifting from a traditional “zero-tolerance” culture can present logistical and cultural challenges within agencies.
Response: Successful implementation requires clear policy, staff training, and stakeholder communication.

The Horizon: A Future Where Regulation Enables Quality

Richard Fiene's work has propelled regulatory science into a new era—one that is more evidence-based, efficient, and effective. The journey from a rigid focus on 100% compliance to an intelligent system of targeted oversight represents a fundamental shift. We are moving from a world of 'more is better" to one of 'smarter is better."

The Future of Regulatory Science will be built on these principles, integrating:

- **Advanced Data Analytics:** Using AI and machine learning to more accurately predict compliance risks and identify key indicators.
- **Behavioral Science:** Incorporating insights into how organizations and individuals respond to regulation to design more effective systems.
- **Adaptive Strategies:** Creating regulatory frameworks that can learn and evolve based on a continuous flow of real-world data.

This is the future of regulation: a system not just of enforcement, but of enablement—one that optimizes resources to achieve the highest levels of safety and quality for all.