Applying the Implementation Science Lens to Early Care and Education Research and Evaluation

Child Care Policy Research Consortium Meeting

Bethesda, MD

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Allison Metz, PhD
Frank Porter Graham Child Development Institute
University of North Carolina at Chapel Hill

Tamara Halle, PhD
Child Trends

nirm — National Implement Research N

Child TRENDS

UNC FPG CHILD DEVELOPMENT INSTITUTE

Active Implementation

To successfully implement and sustain evidence-based and evidence-informed innovations in ECE, we need to know:

- **The WHAT –** The effective interventions or approaches that meet the needs of the population of concern

- **The HOW -** Effective implementation and sustainability frameworks (e.g. strategies to change and maintain behavior of practitioners and create hospitable organizational systems)

- **THE WHO** – Organized, expert implementation assistance

And "Why?"

Implementing and supporting high quality practices in early childhood settings will promote optimal development for young children

The Challenge

"*It is one thing to say with the prophet Amos,*
'Let justice roll down like mighty waters' …
… and quite another to work out the irrigation system."

William Sloane Coffin

Social activist and clergyman

Goals for Today's Session

The "What"

- Identify effective strategies that will improve child outcomes in ECE

The "How"

- Install the Implementation Drivers that result in competence and sustainability
- Conduct 'stage-related' work necessary for successful service and system change
- Institute "improvement cycles," align systems, and scale-up implementation capacity

The "Who"

- Understand the roles and responsibilities of program developers, purveyors, technical assistance providers, and implementation teams
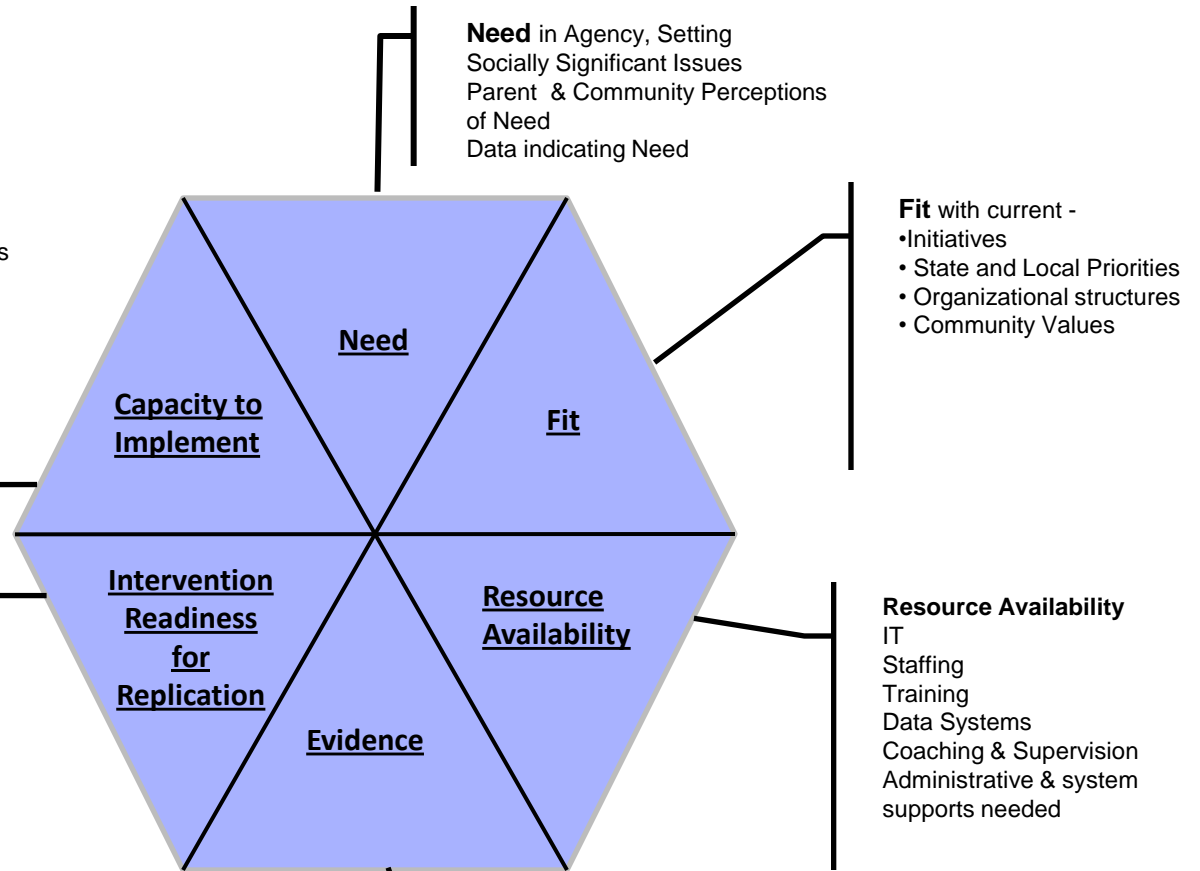
Careful Assessment and Selection of the "WHAT"

- What are the needs of your population?

- What interventions are available to address those needs?

- What is the strength of the evidence of those interventions?

- Which interventions are a good fit for your community?

- Do we have what is required to fully and effectively implement these interventions?

Careful Assessment and Selection

- Is this the right approach for this community? For our needs?

- Is this approach ready for replication?

  - Has the approach been clearly described and operationalized? Are there fidelity measures or ways to assess performance?

- Do we have what is required to fully and effectively implement this approach?
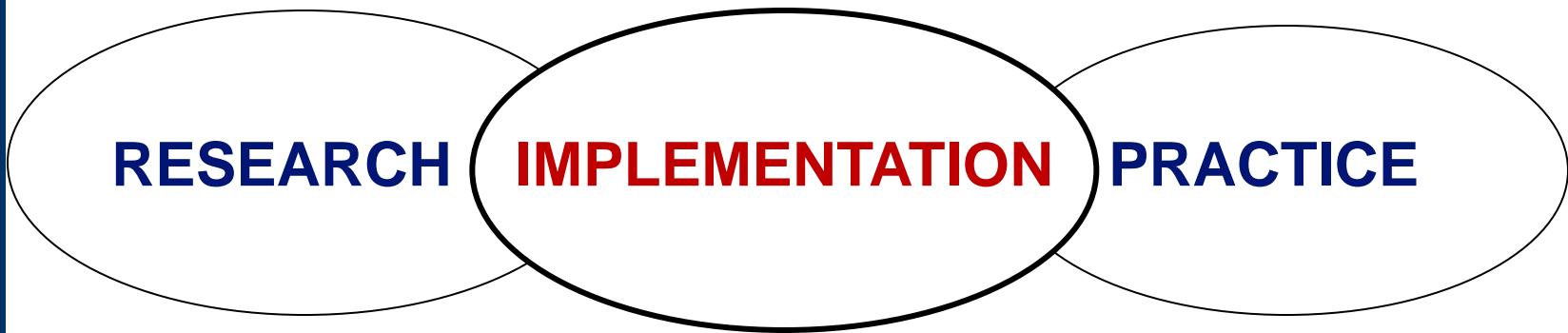
Assessing Evidence-Based Programs and Practices

Need in Agency, Setting
Socially Significant Issues
Parent & Community Perceptions of Need
Data indicating Need

Fit with current -
•Initiatives
• State and Local Priorities
• Organizational structures
• Community Values

Capacity to Implement
Staff meet minimum qualifications
Able to sustain Imp Drivers
• Financially
• Structurally
• Buy-in process operationalized
• Practitioners
• Families
• Agency

Intervention Readiness for Replication
Qualified purveyor
Expert or TA available
Mature sites to observe
# of replications
How well is it operationalized?
Are Imp Drivers operationalized?

Resource Availability
IT
Staffing
Training
Data Systems
Coaching & Supervision
Administrative & system supports needed

Evidence
Outcomes – Is it worth it?
Fidelity data
Cost – effectiveness data
Number of studies
Population similarities
Diverse cultural groups
Efficacy or Effectiveness

Hexagon labels: **Need**, **Fit**, **Capacity to Implement**, **Intervention Readiness for Replication**, **Resource Availability**, **Evidence**

EBP:	5 Point Rating Scale: High = 5; Medium = 3; Low = 1. Midpoints can be used and scored as a 2 or 4.		
	High	Medium	Low
Need			
Fit			
Resources Availability			
Evidence			
Readiness for Replication			
Capacity to Implement			
		Total Score:	

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Adapted from work by Laurel J. Kiser, Michelle Zabel,
Albert A. Zachik, and Joan Smith at the University of Maryland
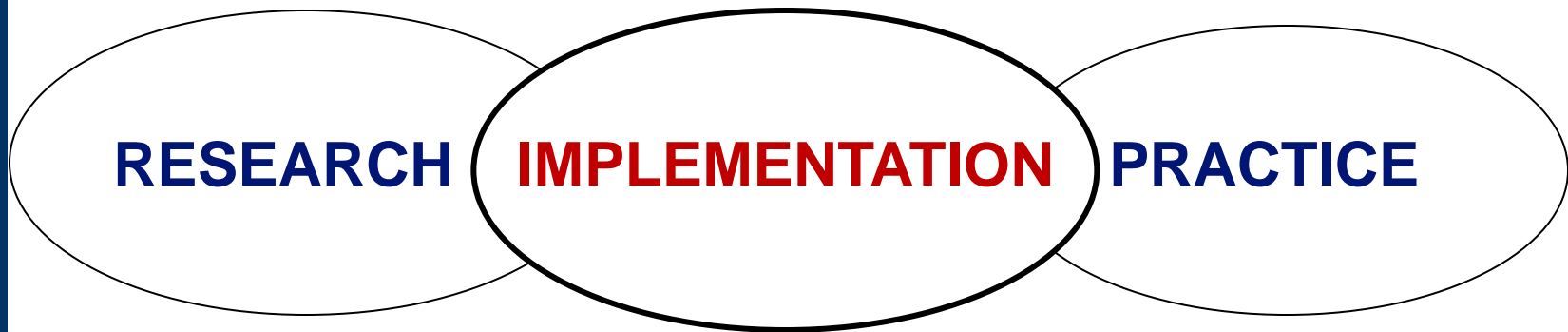
Implementation Gap

RESEARCH (IMPLEMENTATION) PRACTICE

Implementation is defined as *a specified set of activities* designed to put into practice an activity or program of **known dimensions.**

Why Focus on Implementation?

RESEARCH   IMPLEMENTATION   PRACTICE

"Children and families cannot benefit from interventions they do not experience."

Science-to-Service Gap

Implementation Gap

- What is adopted is not used with <u>fidelity</u> and good outcomes

- What is used with fidelity is not <u>sustained</u> for a useful period of time

- What is used with fidelity is not used on a <u>scale</u> sufficient to impact social problems

The Science and Practice of Implementation

Implementation
Research:
A Synthesis of the
Literature

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature.* Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).

Download all or part of the monograph at:

http://www.fpg.unc.edu/~nirn/resources/detail.cfm?resourceID=31

Active Implementation Frameworks

- Theory of Implementation

  - Based on extensive analysis and review of evaluation literature

- Best Practices

  - Intensive concept mapping

  - Nominal group processes

  - Structured interviews

Active Implementation Frameworks

🚩 Testable Hypotheses

🚩 Organize Implementation Knowledge

🚩 Identify Gaps

🚩 Guide Development of Implementation Capacity

Insufficient Methods

- Implementation by <u>laws/ compliance</u> by itself does not work

- Implementation by "<u>following the money</u>" by itself does not work

- Implementation <u>without changing</u> supporting roles and functions does not work

- <u>Diffusion/dissemination</u> of information by itself does not lead to successful implementation

- <u>Training</u> alone, no matter how well done, does not lead to successful implementation

Fixsen, Naoom, Blase, Friedman, Wallace, 2005

Implementation Science

IMPLEMENTATION

	Effective	NOT Effective
INTERVENTION Effective	**Actual Benefit**	
NOT Effective	Unpredictable poor outcome	

(Institute of Medicine, 2000; 2001; 2... Mental Health, 2003; National Comm... Education,1983; Department of Heal...

from Mark Lipsey's 2009 Meta-analytic overview of the primary factors that characterize effective juvenile offender interventions –

". . . in some analyses, the quality with which the intervention is implemented has been as strongly related to recidivism effects as the type of program, so much so that <u>a well-implemented intervention of an inherently less efficacious type can outperform a more efficacious one that is poorly implemented</u>."

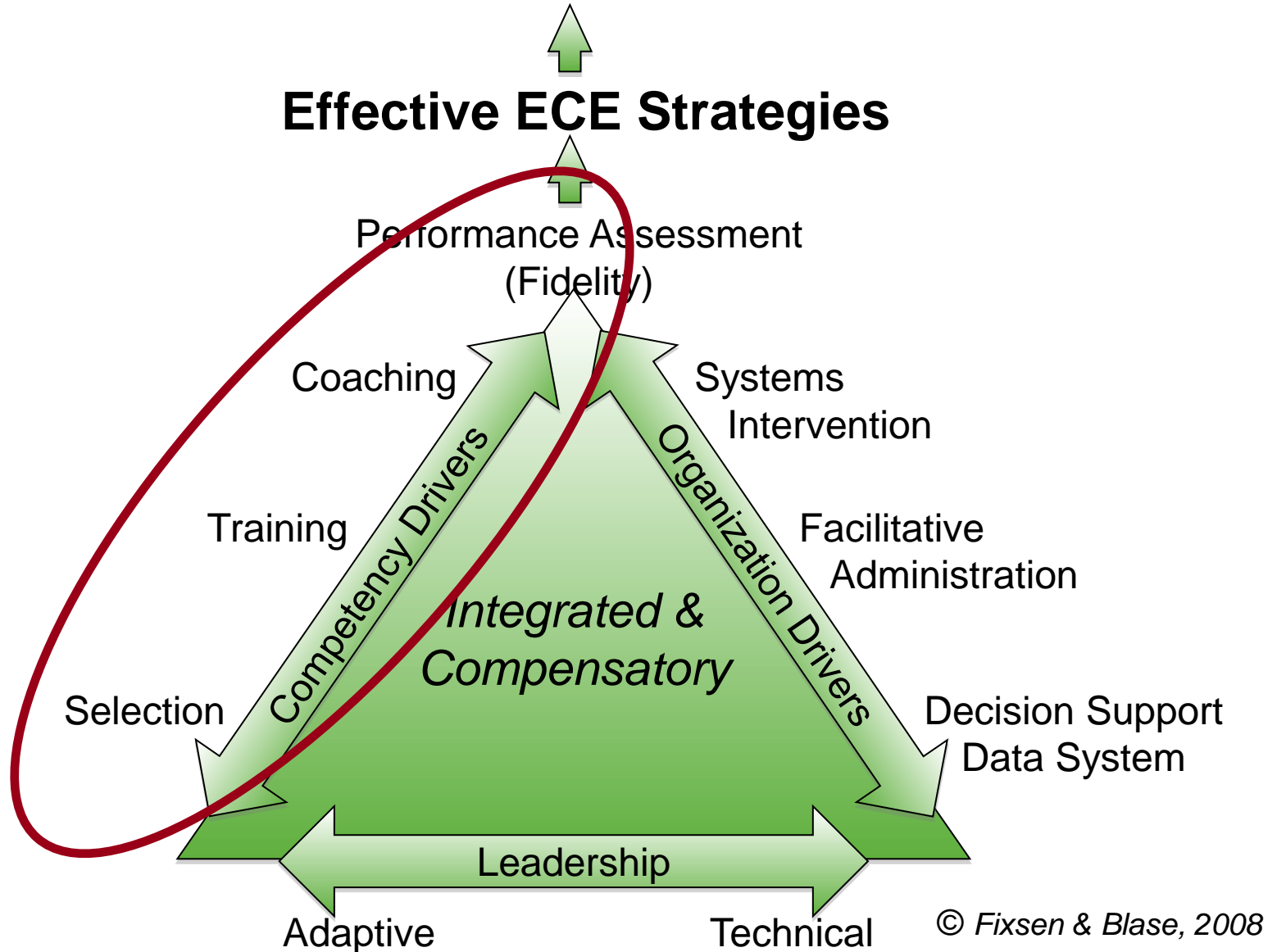# The "How"
Active Implementation Frameworks

- **Successful implementation on a useful scale requires. . .**
  - **Active use of implementation core components "best practices"– "IMPLEMENTATION DRIVERS"**
  - Purposeful matching of critical implementation activities to the stage of the process – "STAGES OF IMPLEMENTATION"
  - A focus on continuous, purposeful improvement – "IMPROVEMENT PROCESSES"

Implementation Drivers

- **Common features of successful supports to help make full and effective uses of a wide variety of innovations**

  - **Build Competency and Confidence**

    - **Develop, improve, and sustain <u>competent & confident use of innovations</u>**

  - **Change Organizations and Systems**

    - **Create and sustain <u>hospitable organizational and system environments</u> for effective services**

Improved Outcomes for Children

Effective ECE Strategies

Performance Assessment
(Fidelity)

Coaching

Systems
Intervention

Competency Drivers

Organization Drivers

Training

Facilitative
Administration

*Integrated &
Compensatory*

Selection

Decision Support
Data System

Leadership

Adaptive

Technical

© *Fixsen & Blase, 2008*

Training and Coaching

	OUTCOMES % of Participants who Demonstrate Knowledge, Demonstrate New Skills in a Training Setting, and Use new Skills in the Classroom		
TRAINING COMPONENTS	Knowledge	Skill Demonstration	Use in the Classroom
Theory and Discussion	10%	5%	0%
..+Demonstration in Training	30%	20%	0%
…+ Practice & Feedback in Training	60%	60%	5%
…+ Coaching in Classroom	95%	95%	95%

Joyce and Showers, 2002

Implementation Science

Longitudinal Studies of a Variety of Comprehensive School Reforms

<u>**Effective Interventions**</u>	<u>**Actual Supports Years 1-3**</u>	<u>**Outcomes Years 4-5**</u>
Every Teacher Trained ↓ **Every Teacher Continually Supported**	**Fewer than 50% of the teachers received some training** ↓ **Fewer than 25% of those teachers received support**	**Fewer than 10% of the schools used the CSR as intended** ↓ **Vast majority of students did not benefit**
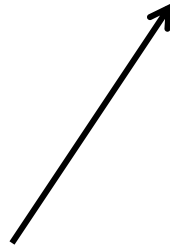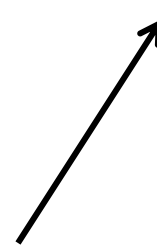
Aladjem & Borman, 2006; Vernez, Karam, Mariano, & DeMartini, 2006

Organizational Change

"*All organizations [and systems] are designed, intentionally or unwittingly, to achieve precisely the results they get.*"

R. Spencer Darling
Business Expert

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System Stability

EXISTING SYSTEM

Effective approaches are Changed to Fit the System

Or Operate in the Shadows

(The Ghost System)

Effective System Change

EXISTING SYSTEM

EXISTING SYSTEM IS CHANGED TO SUPPORT THE EFFECTIVENESS OF THE APPROACH

Effective approaches are Changed to Fit the System
Or Operate in the Shadows
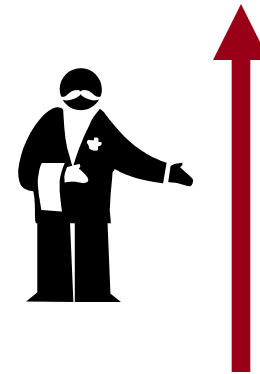
(Ghost System)

(Host System)

EFFECTIVE APROACH

The "HOW"
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- **Successful implementation on a useful scale requires. . .**
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  - A focus on continuous, purposeful improvement – "IMPROVEMENT PROCESSES"

Implementation Takes Time
2 – 4 Years

EXPLORATION

INSTALLATION

INITIAL IMPLEMENTATION

FULL IMPLEMENTATION

Drivers

Drivers
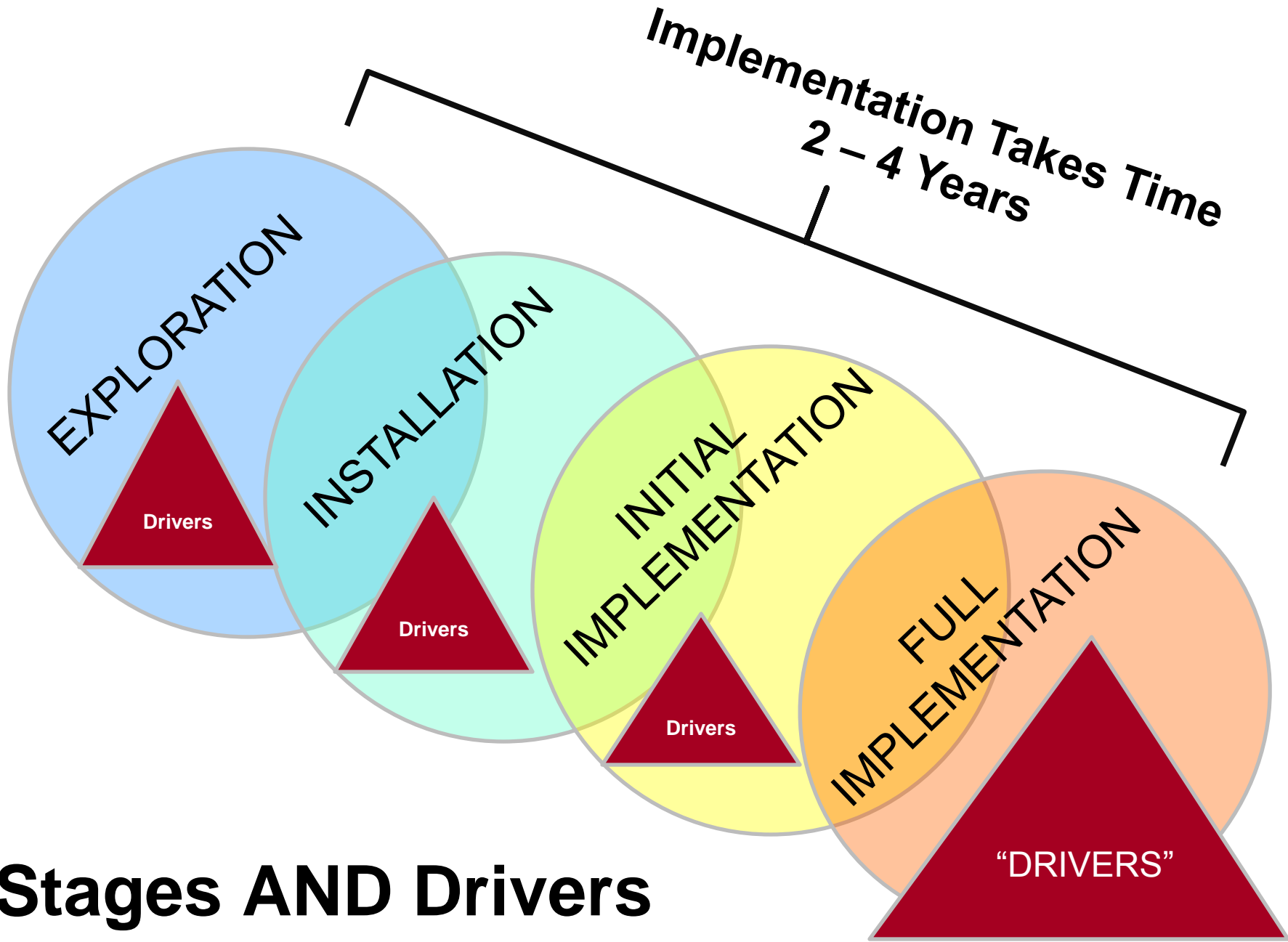
Drivers

"DRIVERS"

Stages AND Drivers

Sustainability

Goals:

- Financial:

    - Ensure funding streams for desired change and necessary infrastructure

- Programmatic:

    - Ensure high fidelity and positive outcomes through infrastructure improvement and maintenance

    - Plan for turnover

"The only thing harder than getting there is staying there."

Change "in order to...."

- **Organization and Systems Change are in service to practice change**

- **Functional Organizational Change**: Purposeful and iterative change in an individual ECE providers' *internal structures and procedures* and in its *external relationships **in order to*** support, sustain, and renew effective delivery of high quality ECE strategies.

- **Strategic Systems Change**: Purposeful and iterative change among interdependent governing, regulatory, funding, and decision-making bodies ***in order to*** create and maintain hospitable conditions for reliable and effective ECE practices.

Cascading Logic Model

Organizations and Systems don't change – people do!
(Jim Wotring)

- ○ How do we identify and measure changes in people's behavior, knowledge, attitudes that relate to better outcomes for children and families?

- ○ How do we evaluate the products/processes they create to support the service or system change?

One measure – two purposes

- ○ Independent variable or process measure at one level

- ○ Dependent variable or outcome measure at the next level

ECE PD Systems Cascading Logic Model

Population	Intervention Strategies (WHAT)	Intervention Outcomes
Children ages 0-5 and families	Early Care Educators fully and effectively use evidence-based practices	High quality early child care and education practices Positive child outcomes

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ECE Provider Supervisors and Managers	Agreements with Trainers, Consultants and Coaches. Plans for release time for training, coaching and ongoing consultation services. Installation of data systems to monitor fidelity	Skillful, timely training, coaching, performance assessments and supportive administrative environments for Early Care Educators

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Regional and State ECE Trainers, Quality Consultants, and Technical Assistance Providers	PD System Planners develop standardized and centralized approach to PD Services in order to develop core knowledge and skills of PD providers.	Timely and skillful provision of services by Regional or State ECE Trainers, Quality Consultants and Technical Assistance Providers

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ECE Policy Makers, Funders, and State Leadership	Common ECE PD Mission developed Formal structures created to build policy-practice feedback loops Changes in funding streams to support new functions and new relationships Collaborative partnerships to build PD System infrastructure Fidelity and outcome data systems developed and maintained	Skillful PD System Leadership and Planning to ensure high quality, consistent training for ECE PD consultants and technical assistance providers.
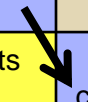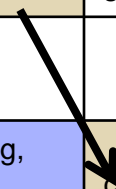
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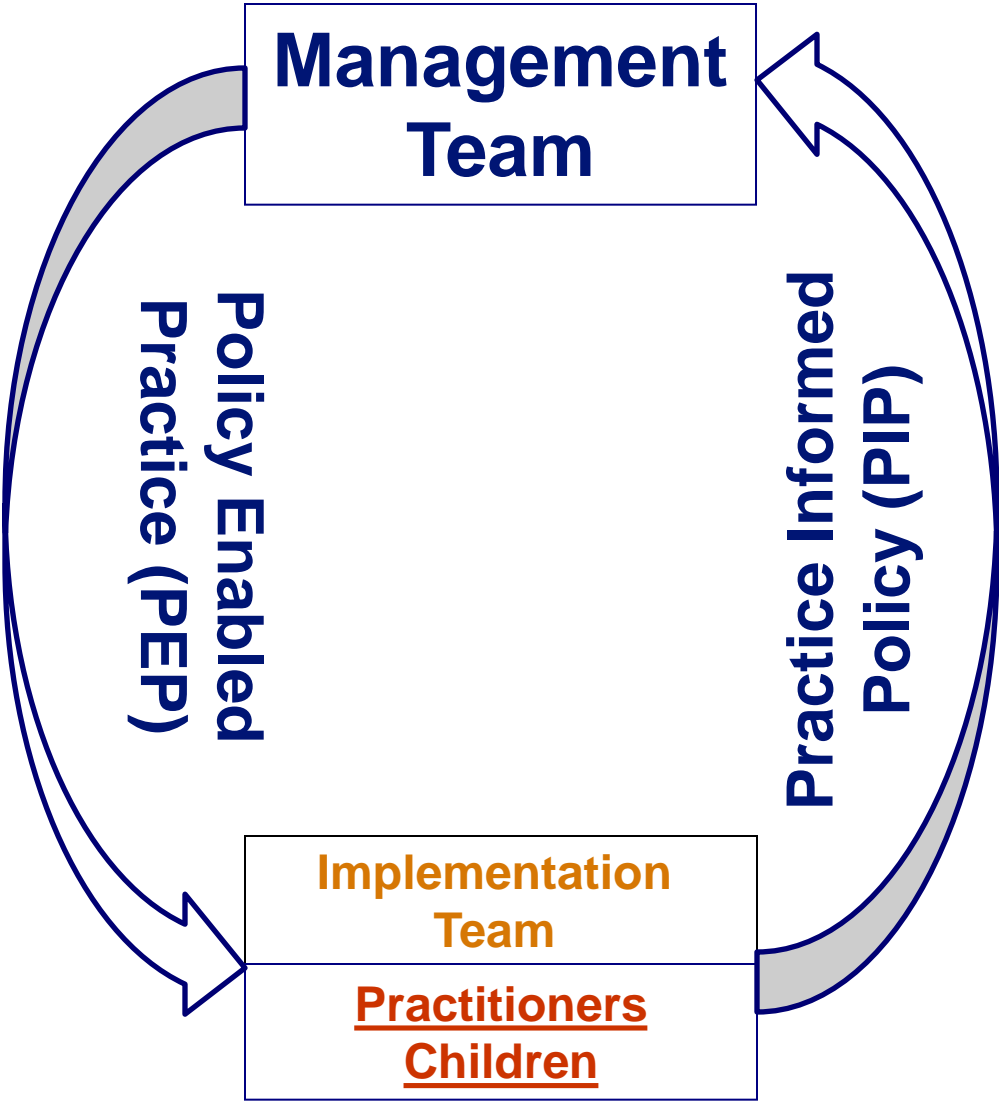
Changing on Purpose

New practices do not fare well in existing organizational structures and systems

- Effective innovations are changed to fit the system, as opposed to existing systems changing to support effective innovations.

People, organizations, and systems. . .

- Cannot change everything at once (too big; too complex; too many of them and too few of us)

- Cannot stop and re-tool (have to create the new in the midst of the existing)

- Cannot know what to do at every step (we will know it when we get there)

- Many outcomes are not predictable (who knew!?)

Practice-Policy Feedback Loops

Practice-Policy Feedback Loops

Organized, "Expert" Assistance

Management Team

Policy Enabled Practice (PEP)

System Change

Practice Informed Policy (PIP)

Implementation Team

Practitioners Children
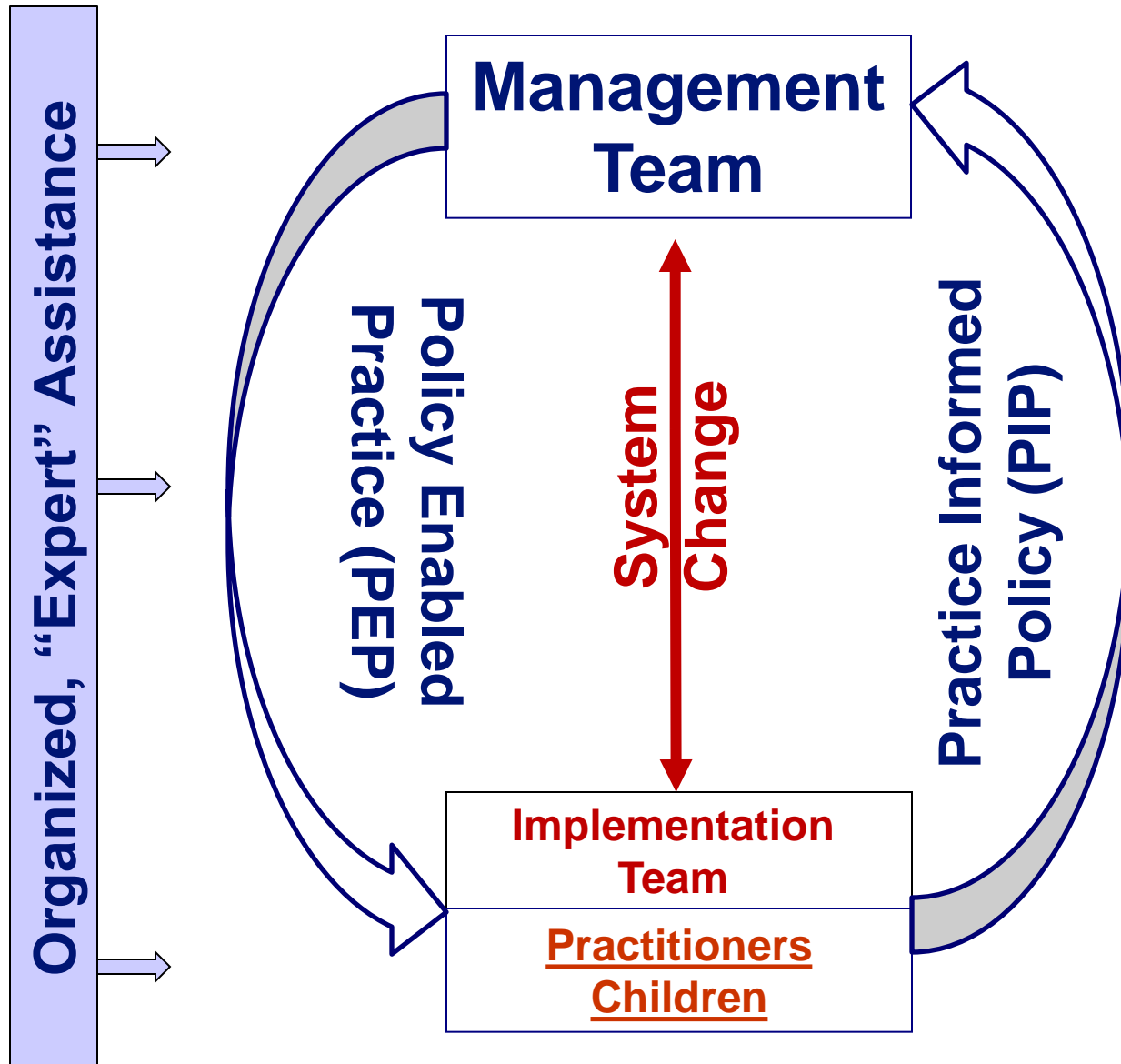
Adaptive Challenges

- RFP methods
- IHE curricula
- Salaries
- Funding
- Credentialing
- Licensing
- Time/ scheduling
- Union contracts
- Duplication
- Fragmentation
- Hiring criteria
- Federal/ State laws
- Silos

Supporting the Change Process

- Letting "It" happen. . .
  - Innovation occurs without intervention

- Helping "It" happen. . .
  - Interested innovators figure it out on their own

- Making "It" happen. . .
  - Active use of strategies to support the adoption of the innovation
  - Active installation of supports for the implementation of the innovation

Based on Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004

"Who" Makes It Happen?

Organized, "Expert" Assistance:

- Purveyors

- Intermediary Organizations

- Implementation Teams

Implementation Science

- **Successful implementation of an EBP or innovation on a useful scale requires a purveyor**

  - An individual or group of individuals representing a program or practice who <u>actively work to help others implement</u> that practice or program with fidelity and good effect

  - Accumulate data and experiential knowledge, and become more effective and efficient over time, and work simultaneously at multiple levels of the system

  - Affiliated with researchers, researchers who become purveyors, T & TA Centers, private consultants sanctioned by developers.

Implementation Teams

- Provide accountable structure to move intervention through stages of implementation

- Focus is on
  - Ongoing "buy-in" and readiness
  - Installing and sustaining the Implementation Drivers
  - Fidelity & Outcomes
  - Alignment (funding and policy) and Stage-based work
  - Building the new system – linkages
  - Problem-solving and sustainability

Implementation Team

Simultaneous, Multi-Level Interventions

Implementation Team

⟷ **Practitioner Competence**

⟷ **Provider Agency Supports**

⟷ **Management (leadership, policy)**

⟷ **Administration (HR, structure)**

⟷ **Supervision (nature, content)**

⟷ **Regional Authority Supports**

⟷ **State Leadership**

Implications for ECE Research

Questions to think through:

- What **knowledge** and **tools** are needed for researchers to help identify and determine effective practices and programs?
- What **measurement strategies** need to be in place so that we aren't just asking WHAT is effective but HOW is it effective?
  - For whom and under what circumstances?
  - Beyond efficacy of the intervention, what do we need to measure?
  - Are we measuring implementation infrastructure (i.e., each of the Drivers)?
- Are we measuring implementation at **every level of the system**?
- What is the **role** of researchers in providing programs feedback for continuous program improvement?
  - Evaluator vs. purveyor

Implications for ECE Policy & Practice

- What **information** *at each stage of implementation* do program developers and policymakers need to have to make informed decisions?

- What **infrastructure** needs to be in place for successful implementation at each stage?

Summary

Improving ECE practice and outcomes for children through:

- Purposeful selection of an effective and feasible "What"
- Conceptualize a change process *so that* effective teacher practices can become embedded and sustained in socially complex settings
  - "stage-matched activities to guide the process
  - "implementation drivers" to build the infrastructure
- Improvement processes are critical
  - the work is never done because the environment is in motion
- Invest in the development of organized, "expert" implementation support

For More Information

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