

Advancing the Science of Sustainability: A Dynamic Perspective

David A. Chambers, D.Phil.

Associate Director, Dissemination and Implementation Research, NIMH

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Disclosure

David A. Chambers, DPhil

Associate Director, Dissemination and
Implementation Research, NIMH

Speaker Disclosures

- I have no relevant financial or non-financial relationships to disclose.

Outline

- What do we mean?
- Historical Assumptions
- Recent Advances
- Implications for Research

Defining SUSTAIN(ability)

- 1 to give support or relief to
- 2 to supply with sustenance: nourish
- 3 keep up, prolong
 - 4 to support the weight of : to carry or withstand (a weight or pressure)
 - 5 to buoy up <*sustained* by hope>
- 6 a: to bear up under *b* : suffer, undergo <*sustained* heavy losses>
- 7a : to support as true, legal, or just
 - b* : to allow or admit as valid <the court *sustained* the motion>
- 8 : to support by adequate proof : confirm <testimony that *sustains* our contention>

(Merriam-Webster, 2011)

Sustainability & Maintenance: Cousins?

- **main·tain** *verb* \mān-'tān, mən-\ to keep in an **existing** state (as of repair, efficiency, or validity) : preserve from failure or decline
<*maintain* machinery>

(Merriam-Webster, 2011)

Historical Assumptions

- Interventions are developed and “frozen”
- Fidelity to ITV is optimal
- Context is a Threat to Fidelity (“Noise”)
- Sustainability is enemy of Change
- Sustainability determined by a specific time point.

Key Considerations for Sustainability Research

- What constitutes “Sustainability” of an ITV?
 - Level of Fidelity? Provider Adherence? Competence?
- Timeframe
 - When is something considered sustainable?
- Level of Analysis
 - Patient? Provider? Clinic? System?
- Strategy/Intervention
 - Specificity of approach to sustainability vs. implementation?

Signs of Progress: A Conference...

Sustaining the Gains: Advancing Sustainability Research

February 2012, St. Louis

Support:

AHRQ

The Foundation for Barnes Jewish Hospital

The Brown School, Washington University

Conference products:

- Research questions for the sustainability agenda,
- **Priorities** for methodological advances, and
- **Recommendations** for research funding, training, policy and practice.

Conference themes

- (1) advancing definition and conceptualization, including formulating sustainability as an outcome;
- (2) assessing the value of sustainability to various stakeholder groups;
- (3) understanding how an intervention's features affect its sustained use;
- (4) testing theory to explain and predict sustainability;
- (5) identifying the effects of contextual factors (individual, organizational, policy environment) on sustainability.

Selected research questions

1. What is the value of sustainability? (reach, health benefits?)
2. Do interventions vary in sustainability?
3. Sustainability and fidelity:
 - What factors trigger adaptation? (Healthcare environment, efficiency needs such as cumbersome interventions, population characteristics, new evidence & technology (e.g., film to digital mammography)).
4. What theories, frameworks, and models best explain & predict sustainability?
5. What contextual factors affect sustainability?
 - How to sustain in low resource health settings?
 - How to plan/ design for sustainability?

Recent Writings on Sustainability

- Adaptation is essential to sustainability
- Organizational Assessment, Fit is Key
- Process b/w Implementation and Sustainability
- Outcomes assessments inform Sustainability
- Capacity Building Necessary for Success

(Scheirer & Dearing, 2011)

Reasons for Optimism

- More opportunities to look at sustainability following well-documented implementation
- Developing measures (S.I.C., Sustainability Tool)
- Improved ability to track data over time
- Emergent commentaries/theories specifically related to sustainability

Ongoing Studies (NIMH-Funded)

- Patti Chamberlain, “Community Development Teams to Scale-Up MTFC in California”
- Lisa Saldana, “The Stages of Implementation Completion for Evidence-Based Practice”
- Joan Cook, “Sustained Use of Evidence-Based PTSD Treatment in VA Residential Settings (follow-up of VA implementation)”
- Greg Aarons, “Mixed-Methods Study of EBP Sustainment in a Statewide Service System”

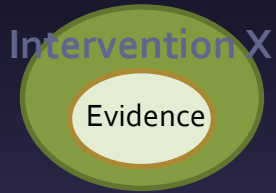
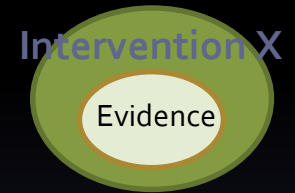
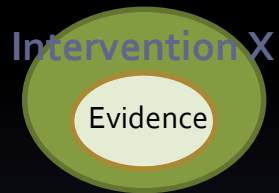
TOWARDS A DYNAMIC VIEW OF SUSTAINABILITY

Evidence from the D and I Field

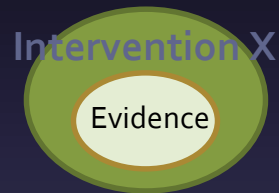
- Service systems are constantly changing
- EBPs are being adapted all the time
- Consumers/patients/providers vary dramatically
- EBPs are not one-size fits all
- Implementation is a process
- Fidelity \neq Optimal Outcomes

Valuing Consistency

ITV Development → Efficacy → Effectiveness → Implementation



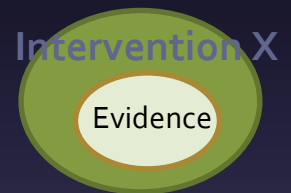
Site 1



Site 2



Site 3



Site 4

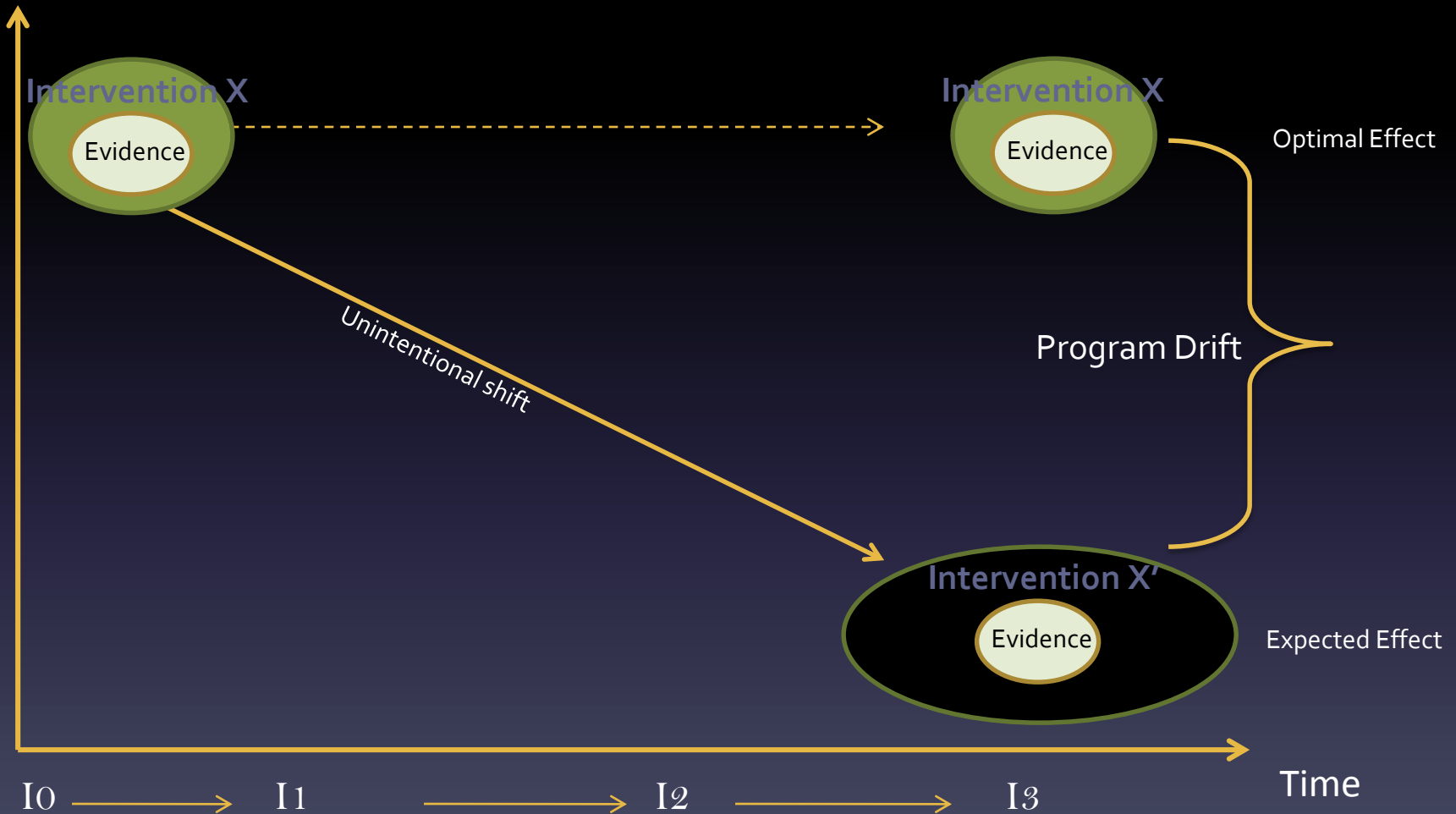
“Voltage Drop” of an intervention as it moves through stages of development

Expected Effect

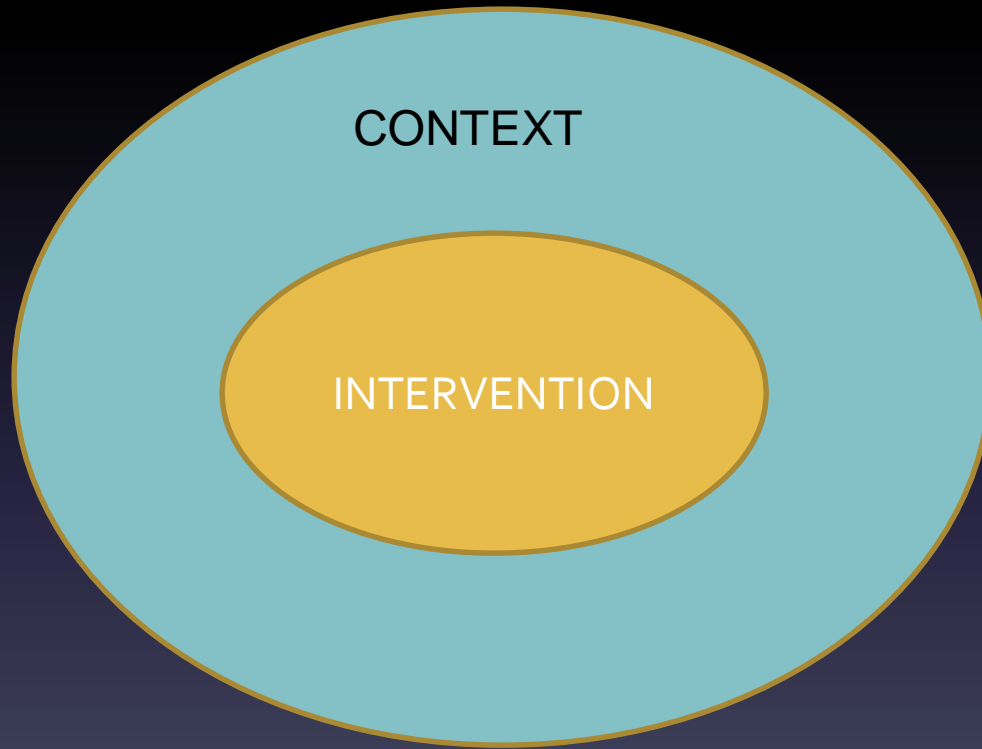


“Program Drift” of a fielded intervention (ITV) over time, with expected decrease of effect

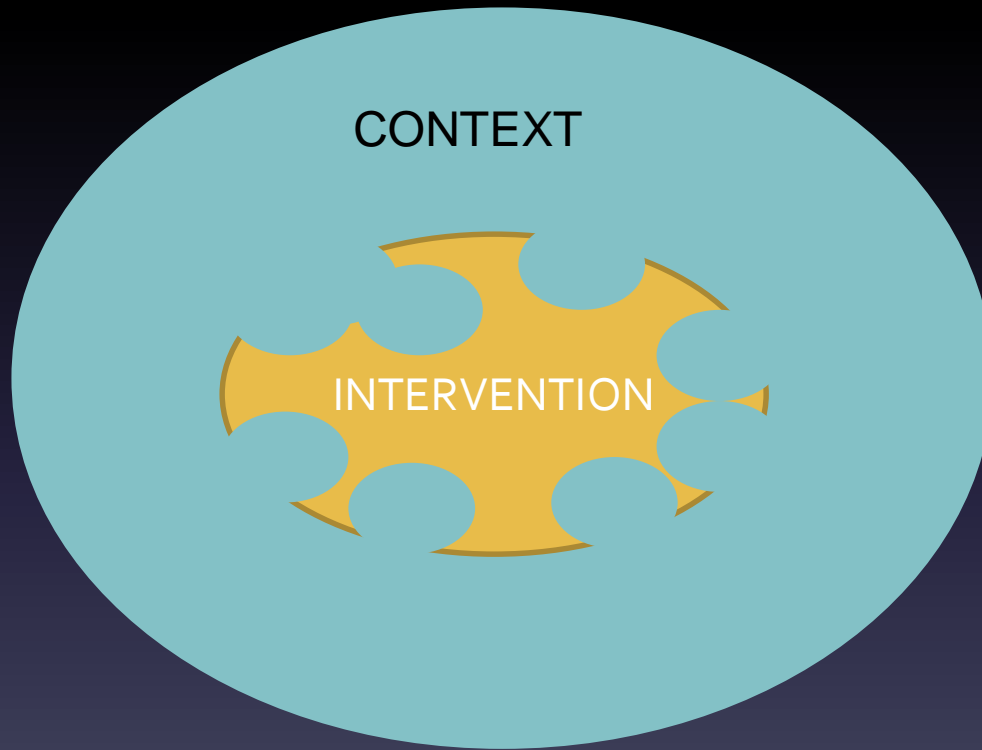
ITV
Effect



Relative Weights?



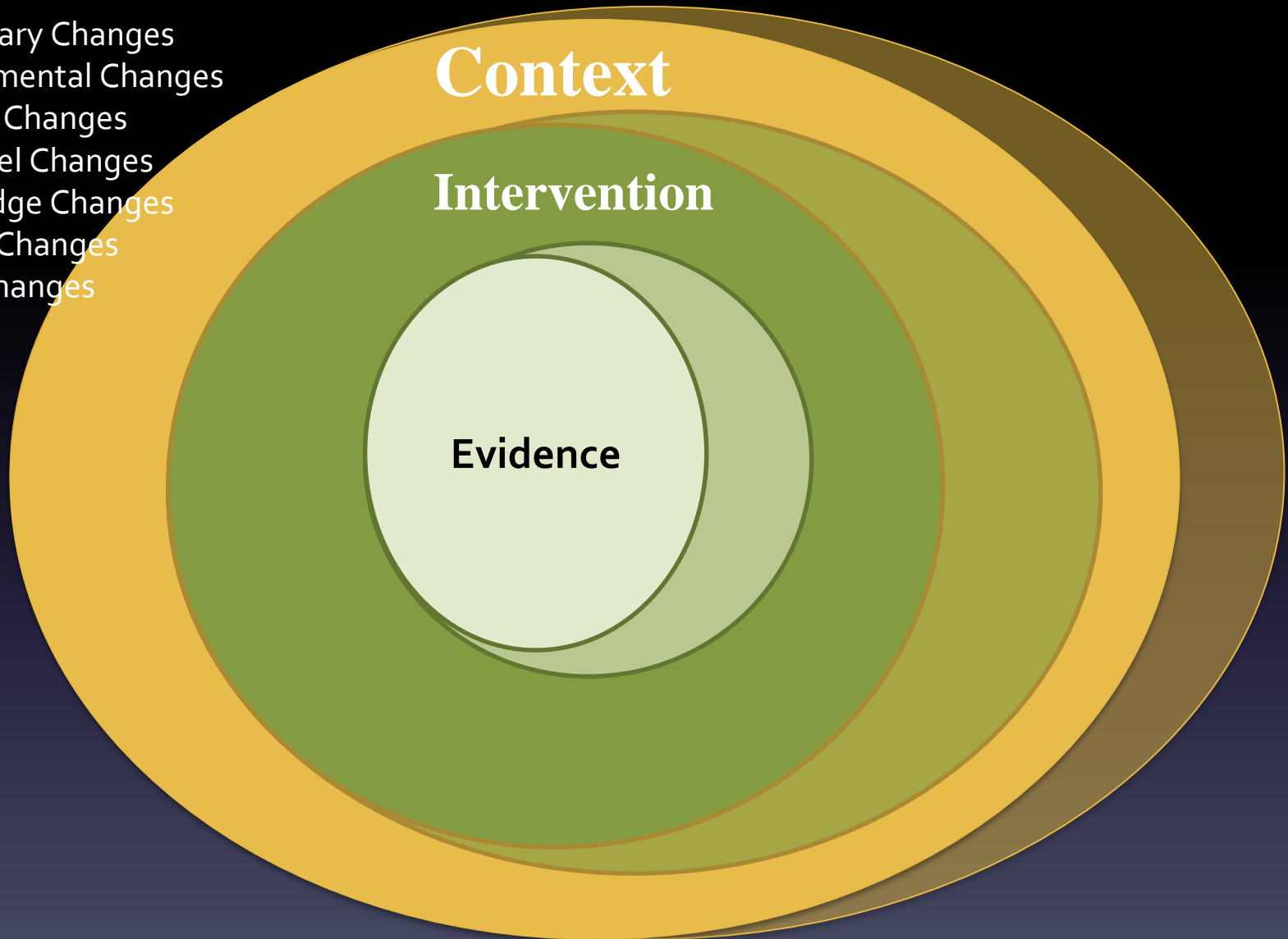
A Natural Process



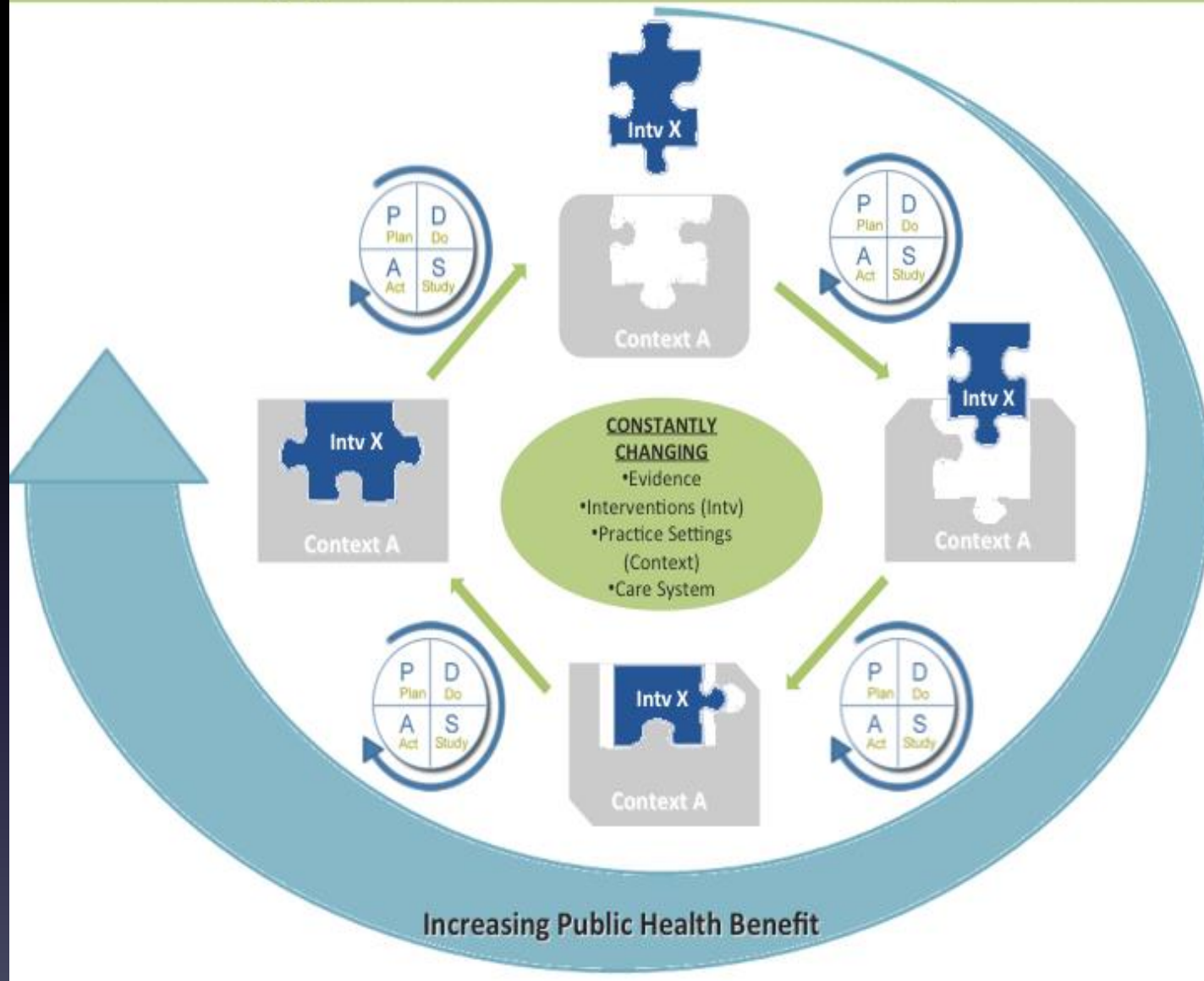
Adaptation is Inevitable...

Emphasizing Multi-level, Multi-Domain Change

- Evidentiary Changes
- Environmental Changes
- Practice Changes
- Personnel Changes
- Knowledge Changes
- System Changes
- Policy Changes



The DSF: Managing the Fit Between an Intervention and Context to Optimize Benefit



Areas Ripe for Exploration

- Sustainability of EBPs in a Changing Context
- Adaptability/Evolution of EBPs over time
- Scaling up practices across health plans, systems, and networks
- Adaptive designs (implementation as a step-wise approach)
- Real-time feedback/monitoring on EBPs
- Studying De-Implementation

Key components of dynamism

- Outcome management system (are the clients/patients/consumers getting better?)
- Quality measurement system (is the ITV being delivered in a high-quality way?)
- Adaptation Monitoring (How is the delivery of the ITV changing?)
- HC setting monitoring (How is the organization changing over time?)

Take Home Messages

- Recent Meeting
- Assessment Tools
- Traditional view of sustainability likely to be limited.
- Great opportunity for further research:
 - Understanding timeframe
 - Adaptation/Evolution versus Fidelity
 - Optimizing the effect of the intervention

Suggested References

- Chambers DA, Glasgow RE, Stange KC. The Dynamic Sustainability Framework: Addressing the Paradox of Sustainment Amidst Ongoing Change. *Implementation Science*. 2013, 8:117.
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- [Spoth R, Guyll M, Redmond C, Greenberg M, Feinberg M](#). Six-Year Sustainability of Evidence-Based Intervention Implementation Quality by Community-University Partnerships: The PROSPER Study. [Am J Commun Psych](#)

Questions?

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Thanks