

# Keynote Address

Please submit questions for the panelists to:  
[PragClinTrialsWkshp@nih.gov](mailto:PragClinTrialsWkshp@nih.gov)

# An Orientation to Dissemination, Implementation, Sustainability, De-Implementation and the Science of Making Science Matter

David Chambers, DPhil

Deputy Director for Implementation Science,

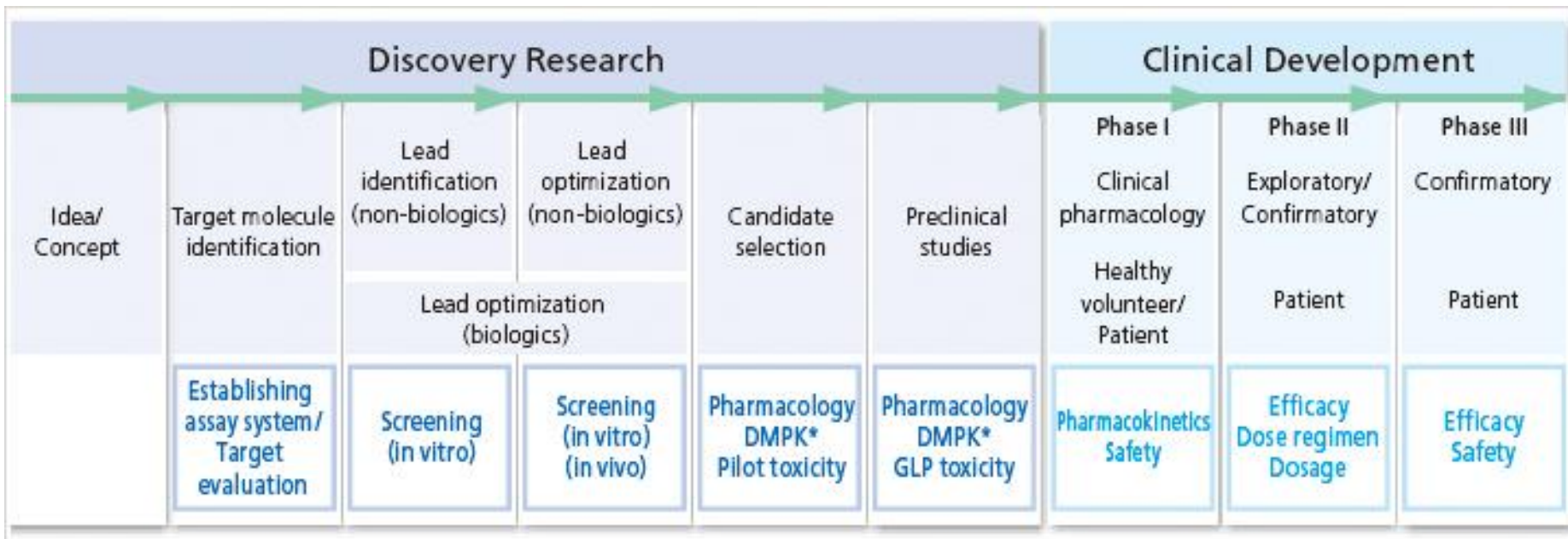
Division of Cancer Control & Population Sciences (DCCPS)

HSC Collaboratory Workshop 2017

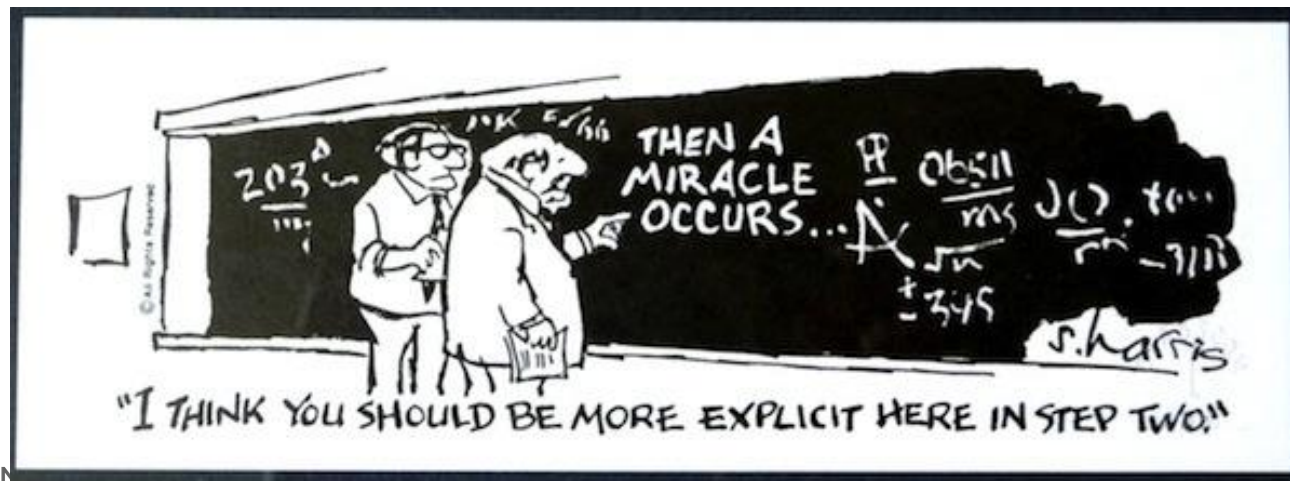
# Presentation Outline

- Conceptualizing the Challenge
- Defining Terms
- Opportunities and Resources
- Framing the Day

# From Discovery to Delivery

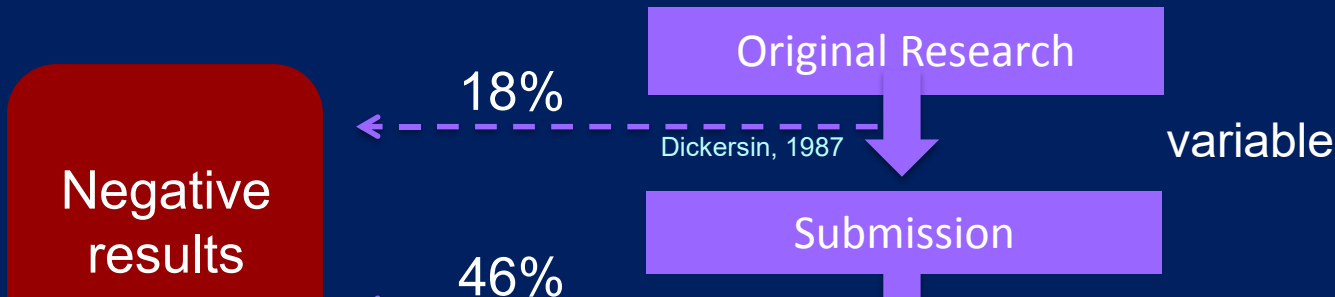


\*Drug metabolism and pharmacokinetics

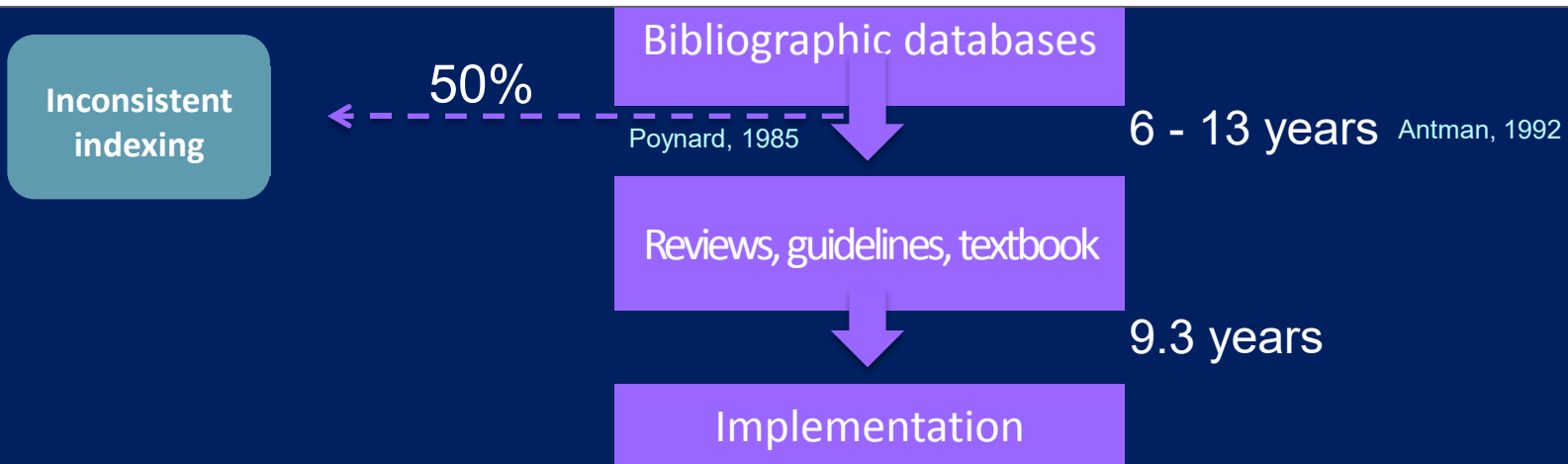


# "PUBLICATION PATHWAY"

Balas & Boren, 2000



**It takes 17 years to turn 14 percent of original research to the benefit of patient care**



We assume... “If you build it...”





...It might take 108 years for this



# An Evidence-Based Health Intervention, no matter how pragmatic the trial...

Is only so good as how and whether...

- It is adopted?
- Providers are trained to deliver it?
- Trained providers choose to deliver it?
- Eligible patients receive it?

If we assume 50% threshold for each step...

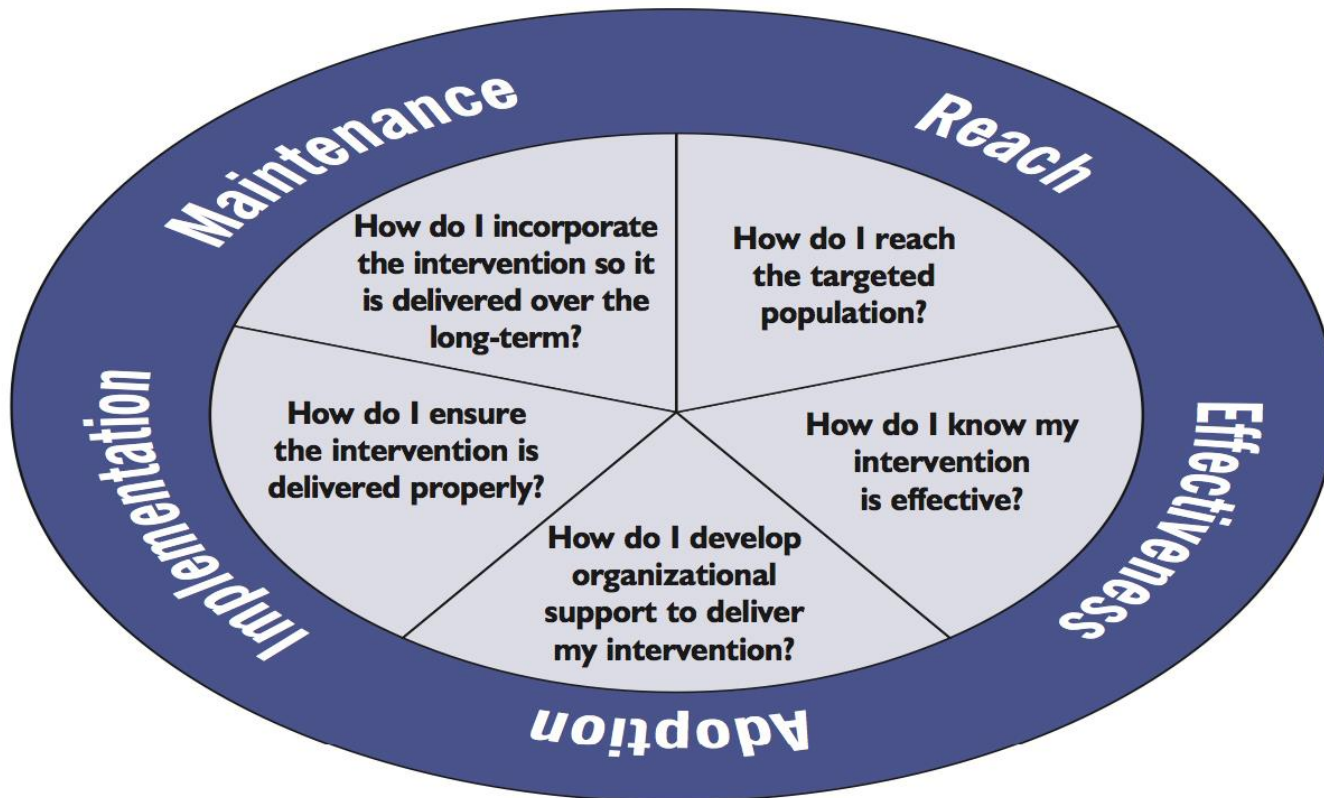
(even w/perfect access/adherence/dosage/maintenance)

Impact:  $.5 * .5 * .5 * .5 = 6\%$  of potential reach



# Beyond efficacy/effectiveness

**FIGURE 1. Elements of the RE-AIM Framework**



# Current Landscape and Progress

# Key Terms

- ***Implementation Science*** is the study of methods to promote the integration of research findings and evidence into healthcare policy and practice.
- ***Dissemination research*** is the scientific study of targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to understand how best to spread and sustain knowledge and the associated evidence-based interventions.
- ***Implementation research*** is the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings in order to improve patient outcomes and benefit population health.

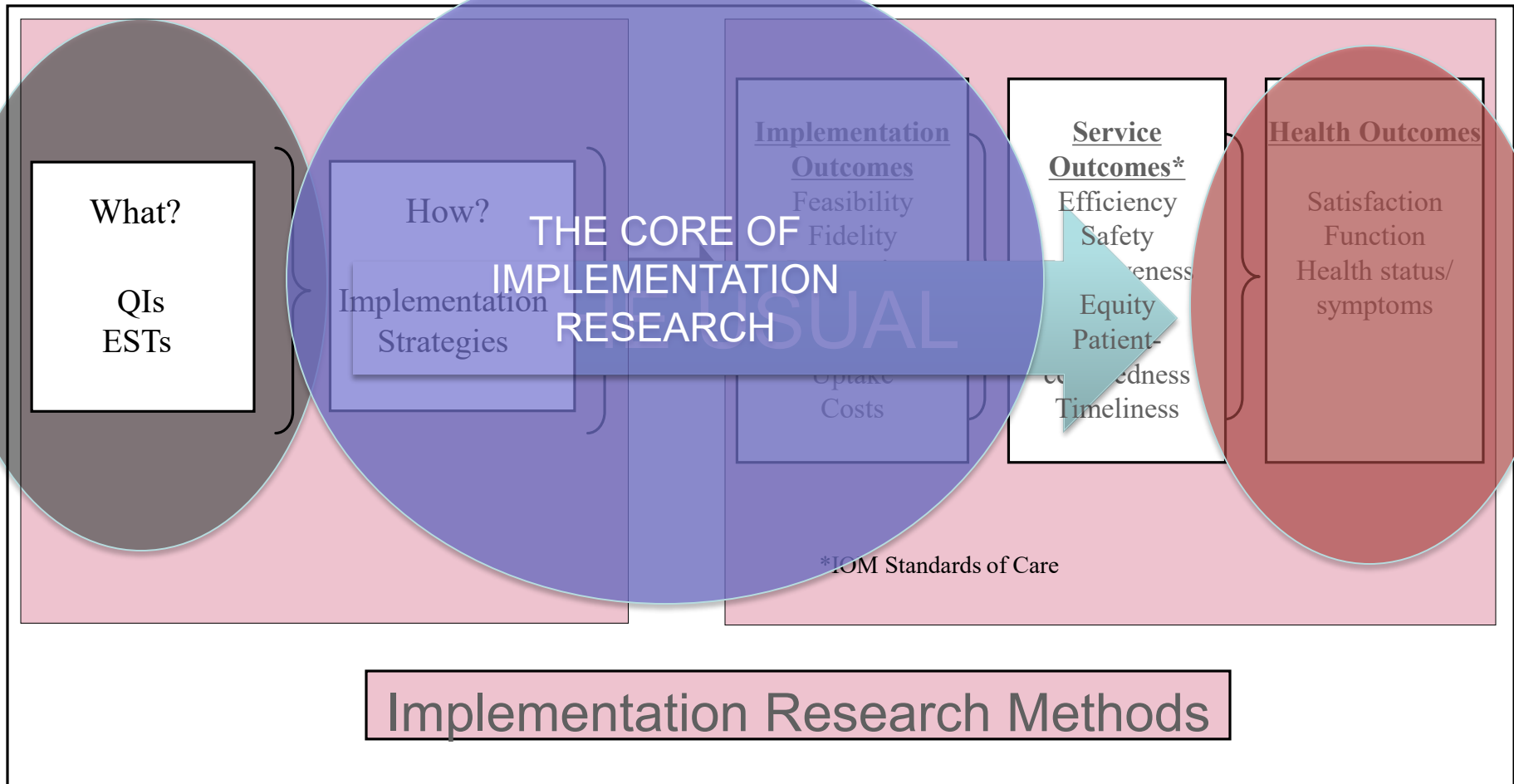
# A big tent of terms (and Circles)\*



# Dissemination Research

- How the “evidence” is created?
  - Packaging
  - Transmitting
  - Receiving
  - Turning Information into Action
- 
- Many of our early efforts in “translating research into practice” jumped over these steps.

# Studying Implementation



Proctor et al 2009 *Admin. & Pol. in Mental Health & Mental Health Services Research*



# D&I Research Studies

## → NIH PARs 16-237/237/238

> 150 projects through trans-NIH D&I announcements (17 Institutes & Centers)

## → CER of implementation approaches

Quality Improvement, Org. Change, Provider Training and Supervision, Financing/Policy Change

## → Emerging approaches

Learning Collaboratives, tech as D&I driver

## → Methods Devl., System Science, Genomic Medicine

# Areas Ripe for Further Research

- **Sustainability** of EBPs in a changing context
- Implementation of **a set of ITVs**
- Impact of **dissemination strategies** on practice
- **Scaling up practices** across health plans, systems, networks, and nations
- **De-Implementation/Exnovation**

PAR-16-238: Dissemination and Implementation Research in Health (R01)



EVENT

# 10th Annual Conference on the Science of Dissemination and Implementation in Health

The pre-eminent event to bridge the gap between evidence, practice, and policy in health and medicine.

Learn More

## DATE & TIME

December 4-6, 2017

## LOCATION

Marriott Crystal Gateway,

Quality research generates the evidence needed to optimize health and health care in the United States and elsewhere. However, the full potential of evidence can only be realized if it is effectively incorporated into health practice and policy.

A decade since its inception, the Annual Conference on the Science of Dissemination and Implementation in Health (D&I), co-hosted by the National Institutes of Health (NIH) and AcademyHealth has become the pre-eminent event to bridge the gap between evidence, practice, and policy in health and

**10th Annual Conference on the Science of Dissemination and Implementation in Health**

2017 D&I Call for Abstracts

<http://www.academyhealth.org/events/site/10th-annual-conference-science-dissemination-and-implementation-health>

# Implementation Science Training...



September 16, 2016 – December 13, 2016

← Training Institute for  
 ← Dissemination and  
 ← Implementation  
 ← Research in Health

Washington, D.C.

**Middle East and North Africa (MENA)  
 Implementation Science (IS) Training Course - Principles and Practice**

 **Apply Now**

Application Opens: 5 July 2016  
 Application Closes: 1 August 2016 11:59 PM EDT  
 Questions? Email [PEER@nas.edu](mailto:PEER@nas.edu)



Participants from Bangkok 2015 Training Course present the "abc's" of implementation science. (Photo courtesy of Robert Gasior)

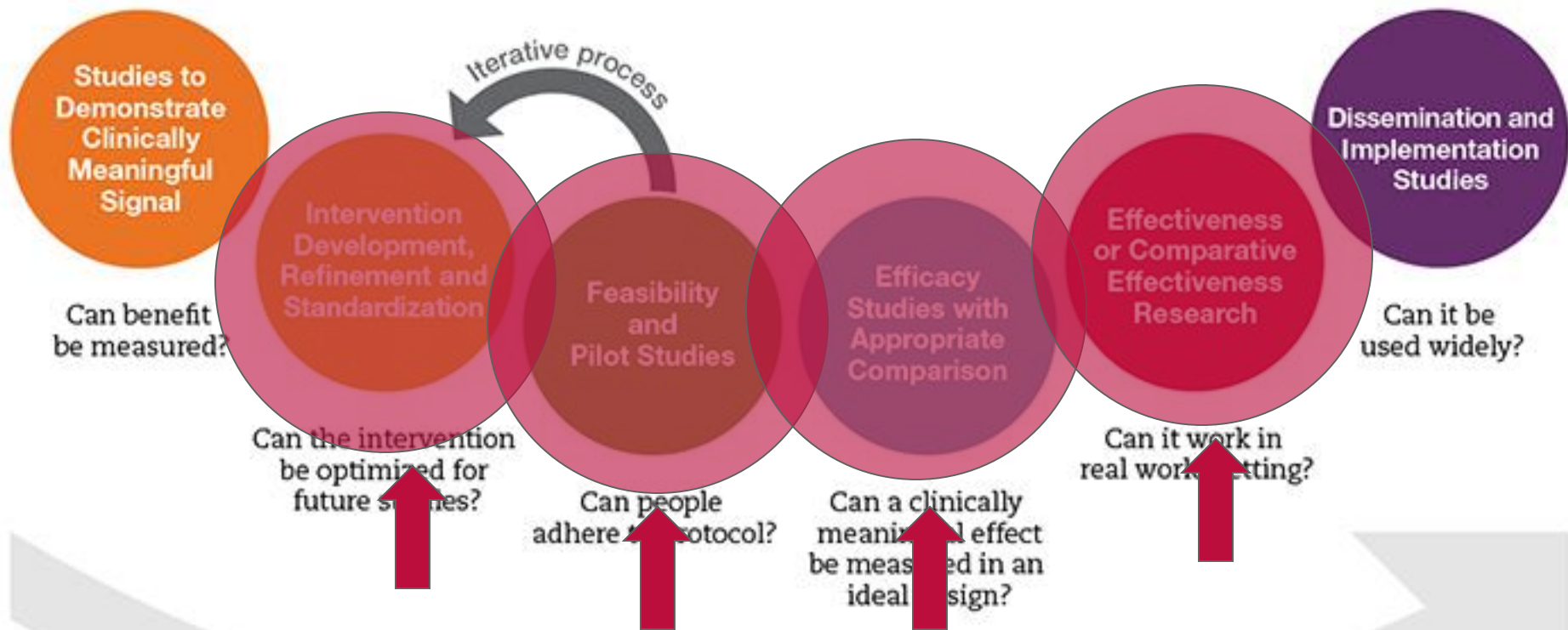
# Framing the Day

# Considering Fit Between Interventions and Settings...





# Session One: Designing for Dissemination and Implementation

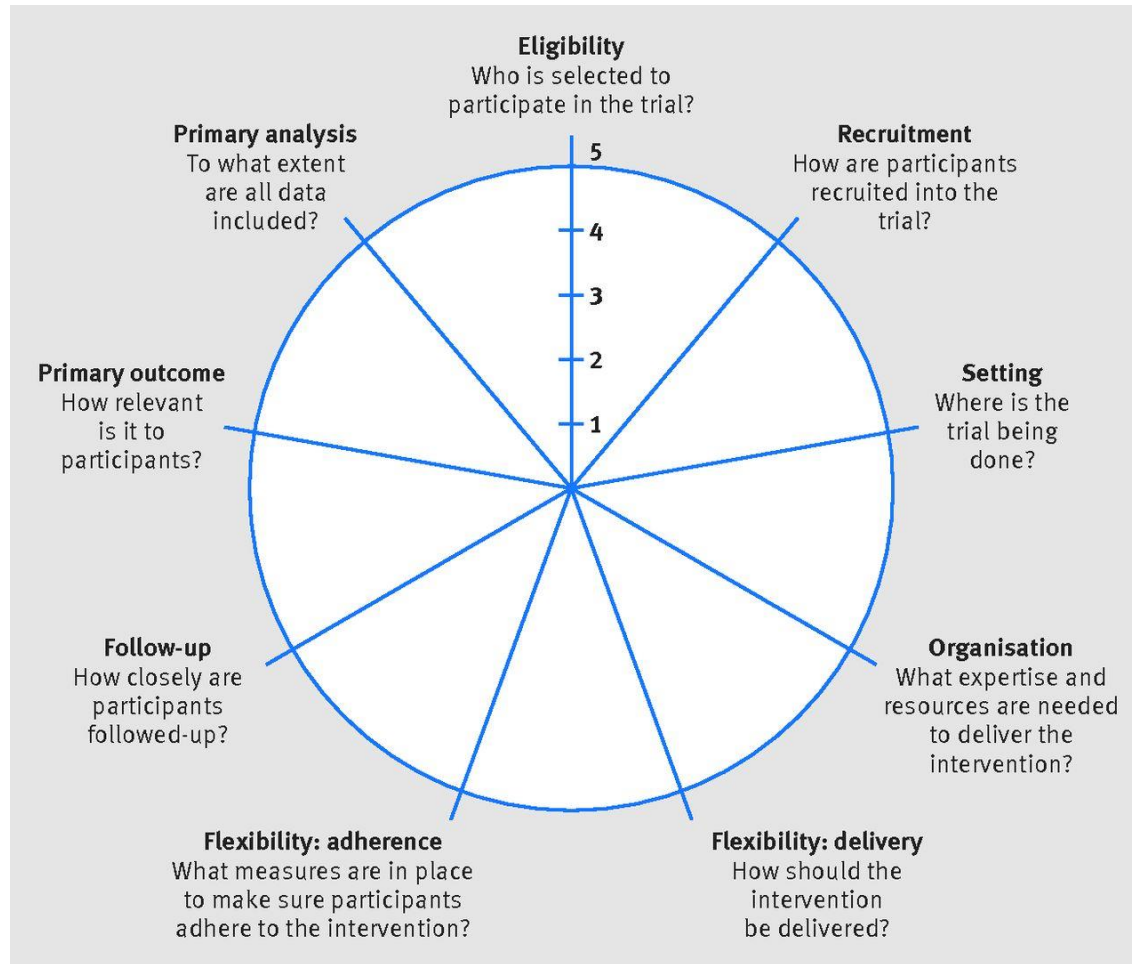


## Designing for Dissemination and Implementation

- Who's going to deliver it?
- Fit with ultimate patient population
- Building in tests of training, support, adherence, mediators and moderators to high quality delivery
- Hybrid designs

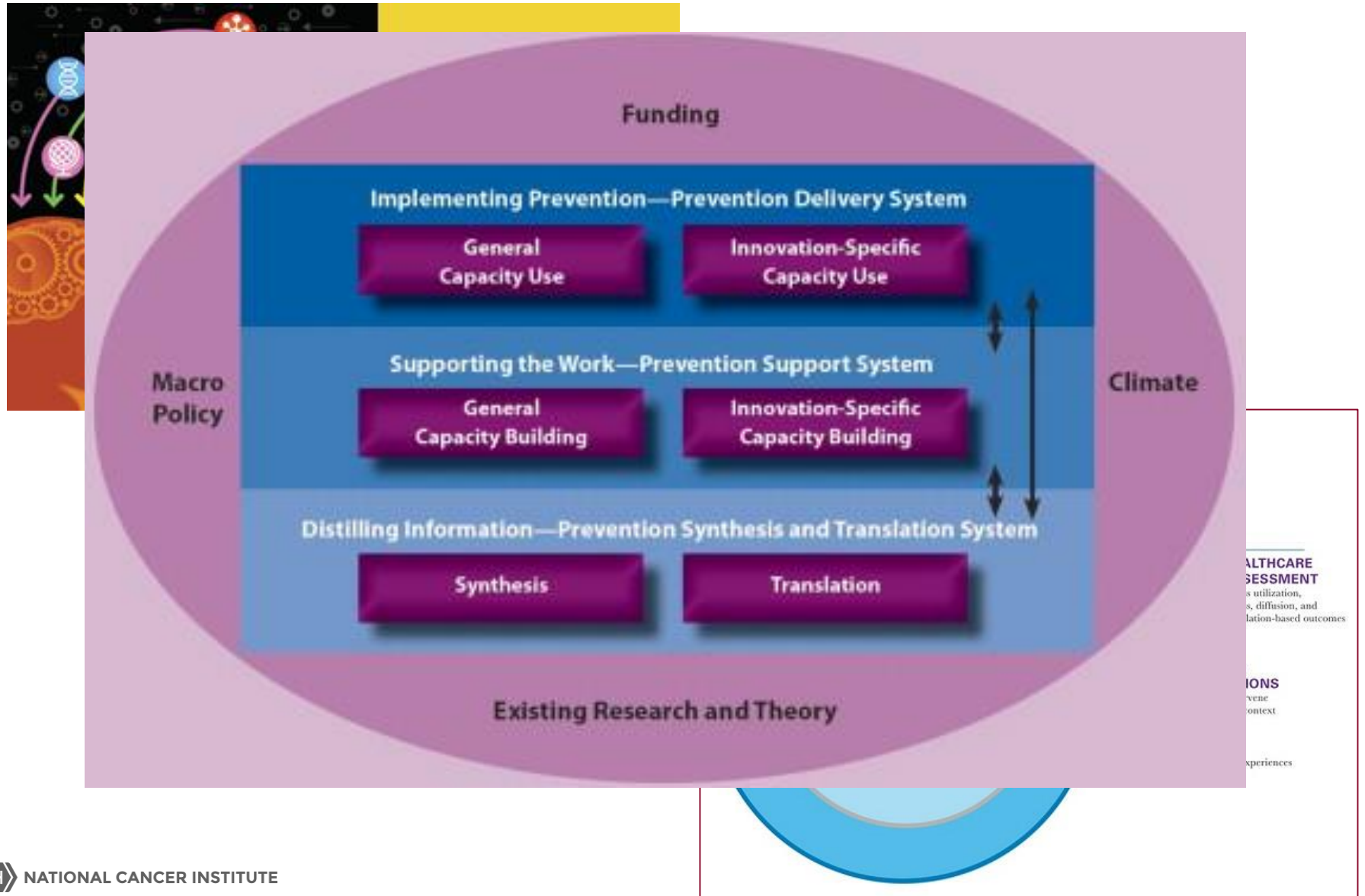
<https://nccih>

# The PRECIS-2 Tool



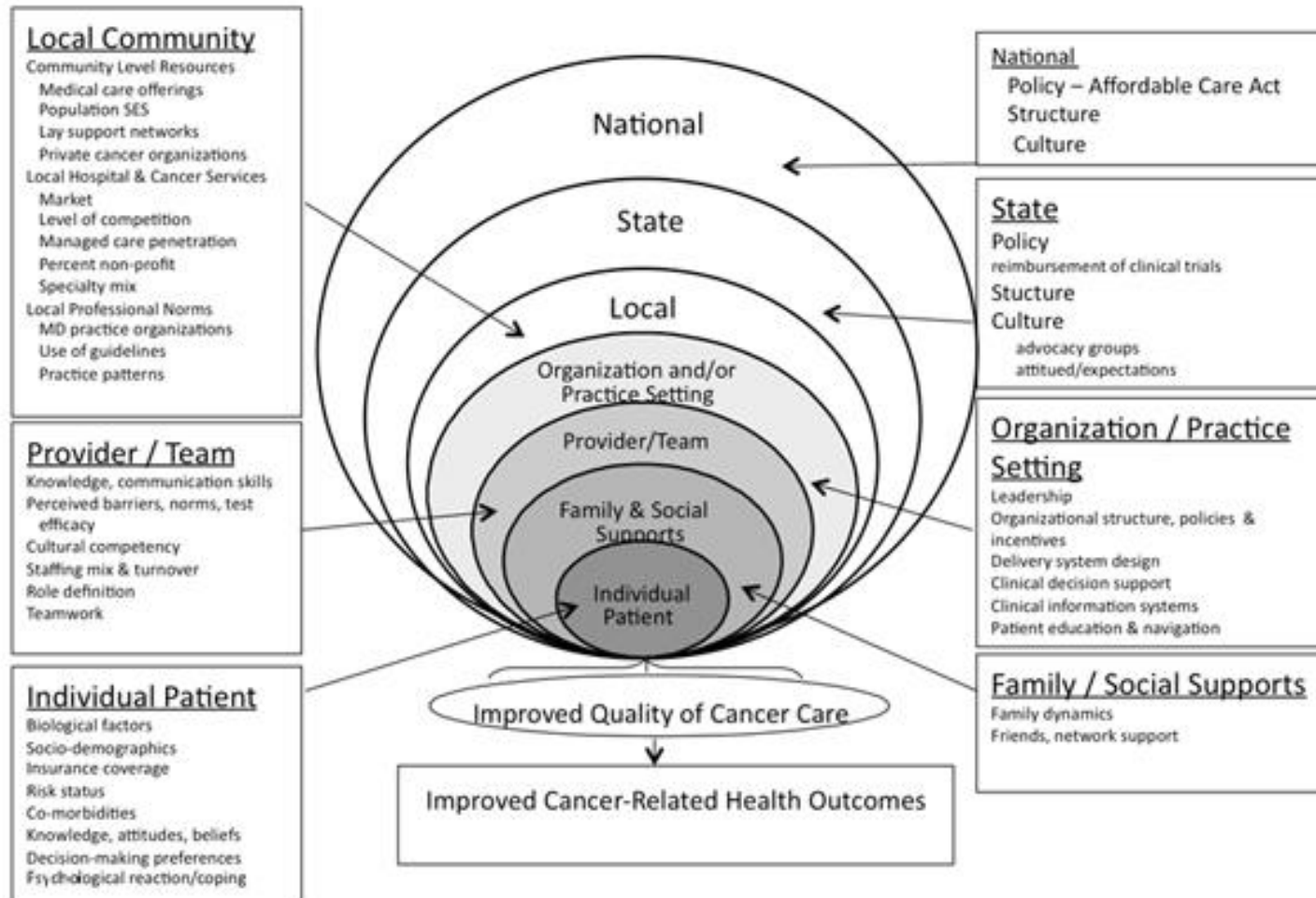
Loudon et al, *BMJ*, 2015; Johnson, Neta et al, *Trials*, 2016

# Session Two: The Importance of Partnerships



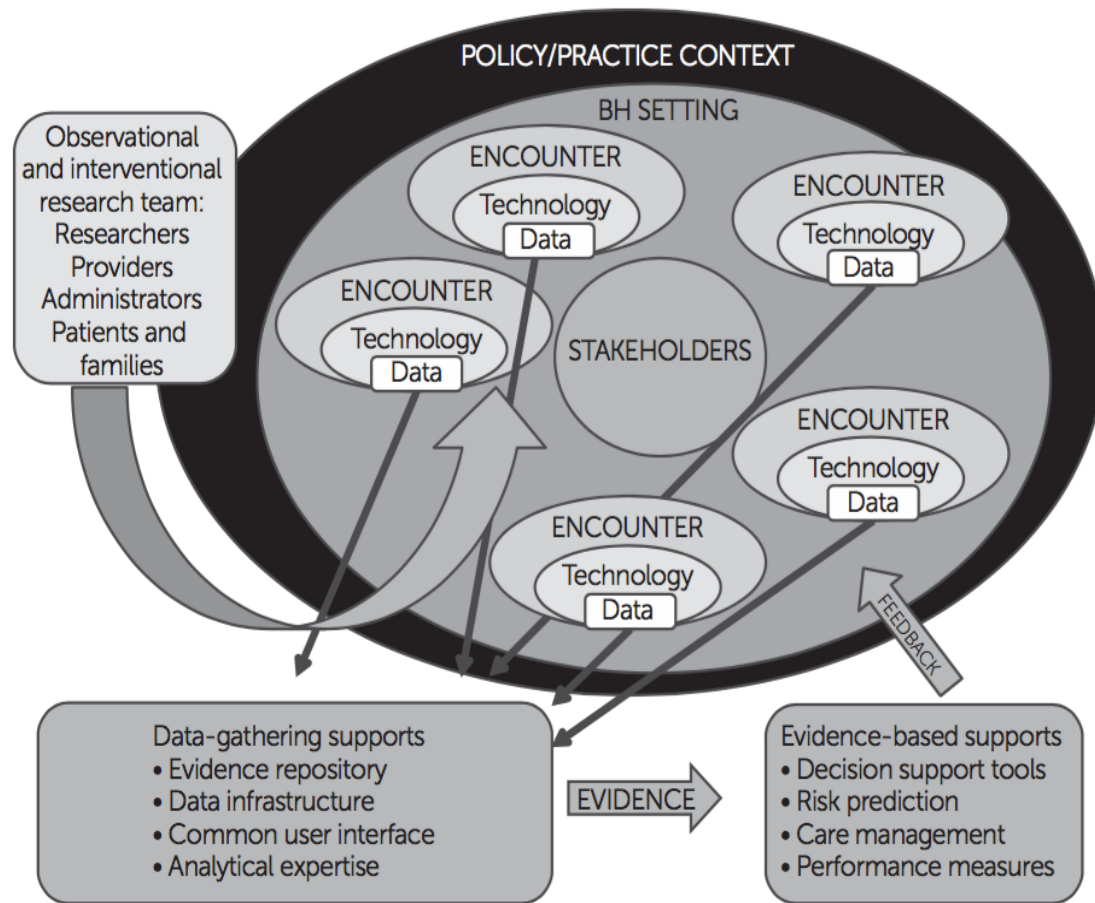
# Partnerships Needed at Multiple Levels...

## Figure 1: The multilevel context of care



# Towards a learning health care system...?

**FIGURE 1. Collection and use of data to inform decision making by stakeholders in a learning behavioral health care (BH) system<sup>a</sup>**



Stein, Adams, Chambers. *Psychiatric Services*, 2016.



# Might this happen at lunch?



They did ask me  
to let him in the  
tank...



# Session Three: Towards Sustainability?

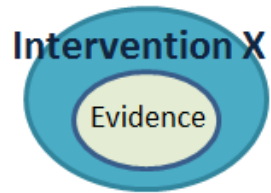
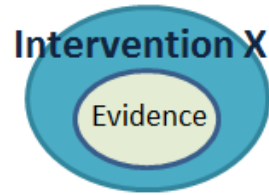
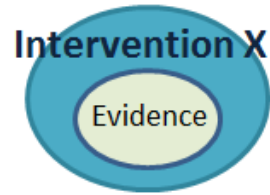
## To Sustain:

- 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>

(Merriam-Webster, 2011)

# Valuing Consistency

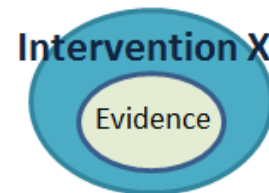
ITV Development → Efficacy → Effectiveness → Implementation



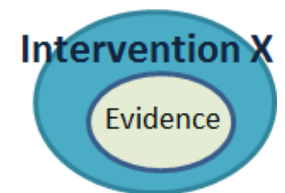
Site 1



Site 2

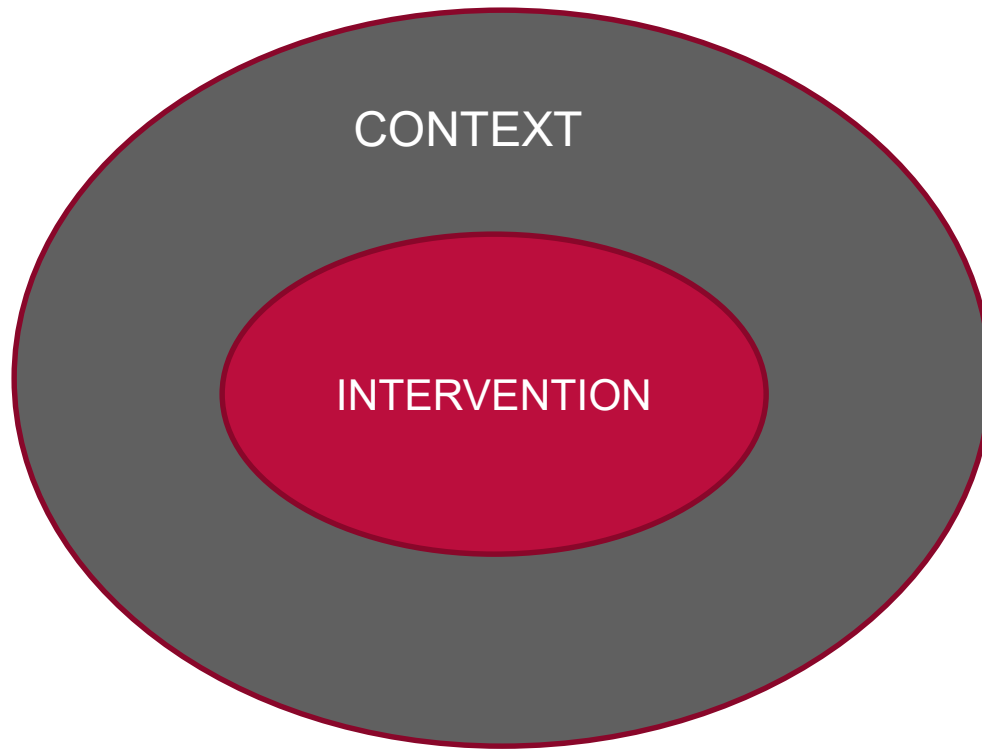


Site 3

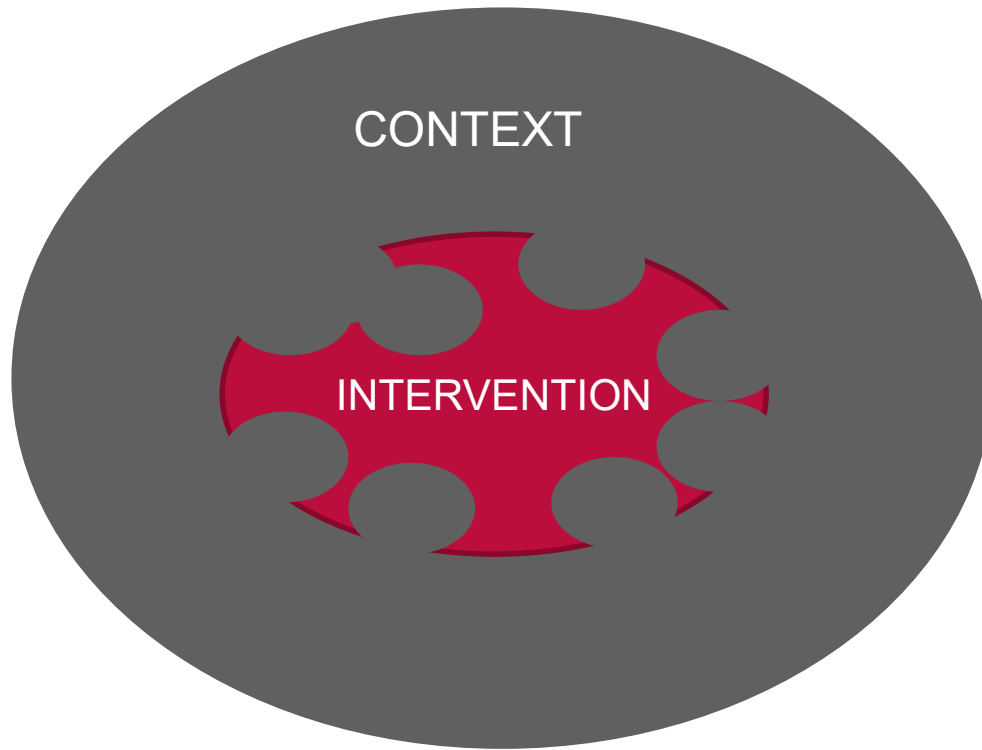


Site 4

# Relative Weights?

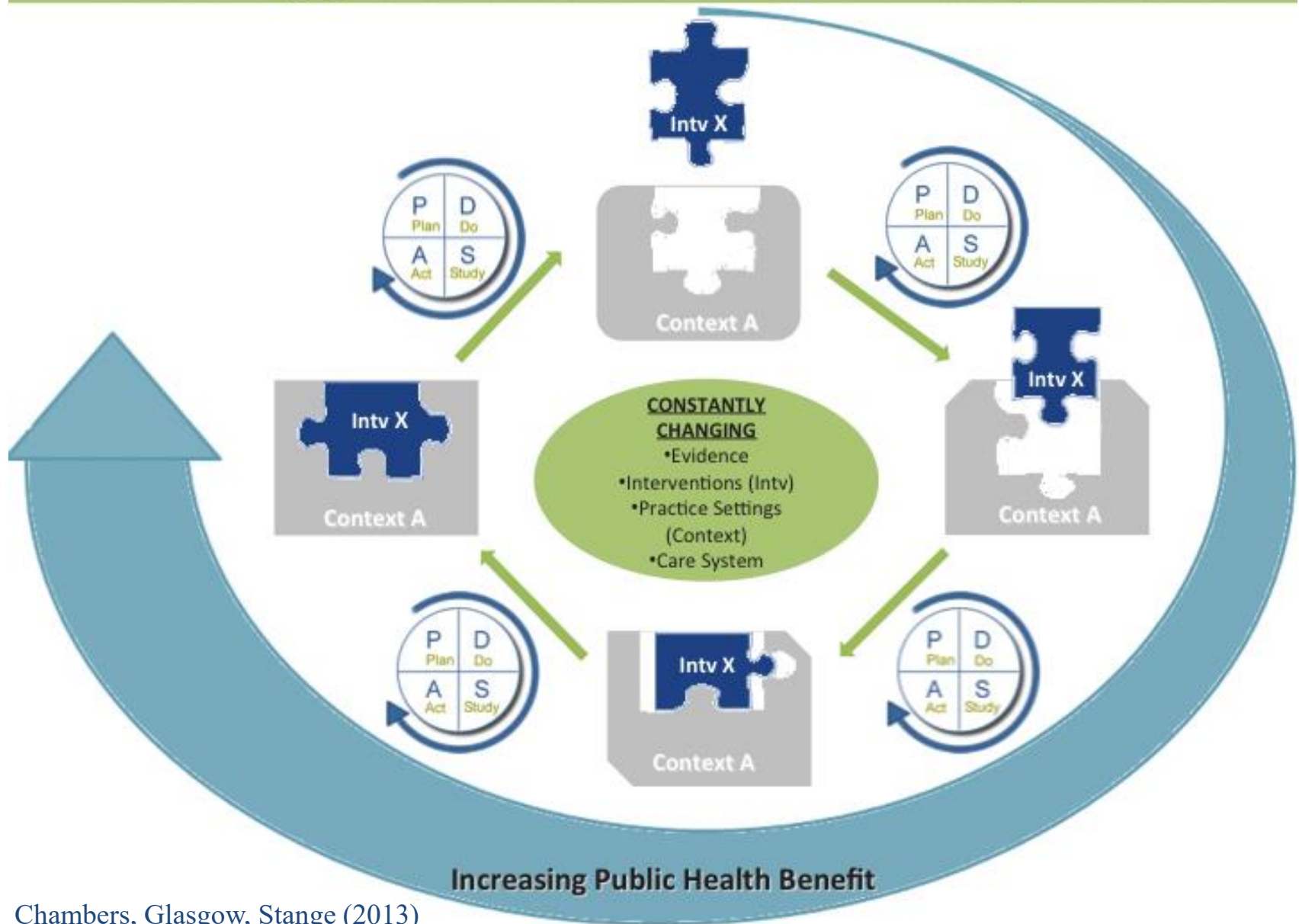


# A Natural Process



Adaptation is Inevitable...

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



Chambers, Glasgow, Stange (2013)

# Sustainability or Evolution?



- IF EVIDENCE CONTINUES TO EVOLVE, SHOULD EXISTING INTERVENTIONS BE SUSTAINED IN THE SAME FORM THAT WE'VE CREATED THEM?
- HOW DOES THE SYSTEM COPE WITH A DYNAMIC FIELD THAT IS CONSTANTLY CHANGING?
- WHERE DO WE GO FROM HERE?



# Fidelity vs Adaptation?





## On De-Implementation

Happy Spring everyone!

After a long and winding wintery season, it's nice to see some generally springy weather reaching many of our communities. As the remnants of record cold and snowfalls start to fade from memory, we find increasing discussion of an area of the implementation life cycle much less represented in our collective research portfolios—de-implementation. De-implementation has been defined as “stopping practices that are not evidence-based” ([Prasad & Ioannidis, 2014](#)), but perhaps more comprehensively can be considered the removal of interventions that do not appear to provide optimal care to the population and settings in which they are delivered. This distinction may be

- Overuse of evidence-based practices
- Any use of harmful practices
- Mis-use of evidence-based practices



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