

Reflections on Implementation Science and Cancer Genomics

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Disclosures

I have no relevant financial relationships to disclose.

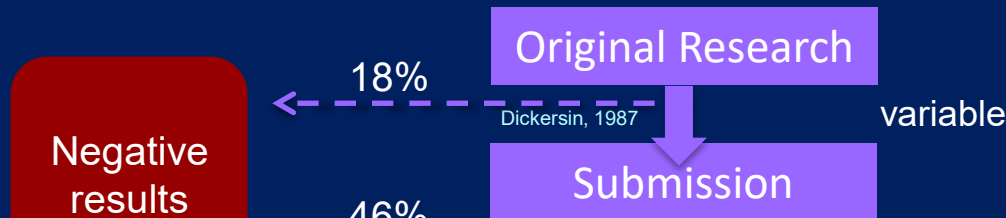
The views expressed in this talk are those of the presenter and not the official positions of the National Cancer Institute or the National Institutes of Health.

Session Outline

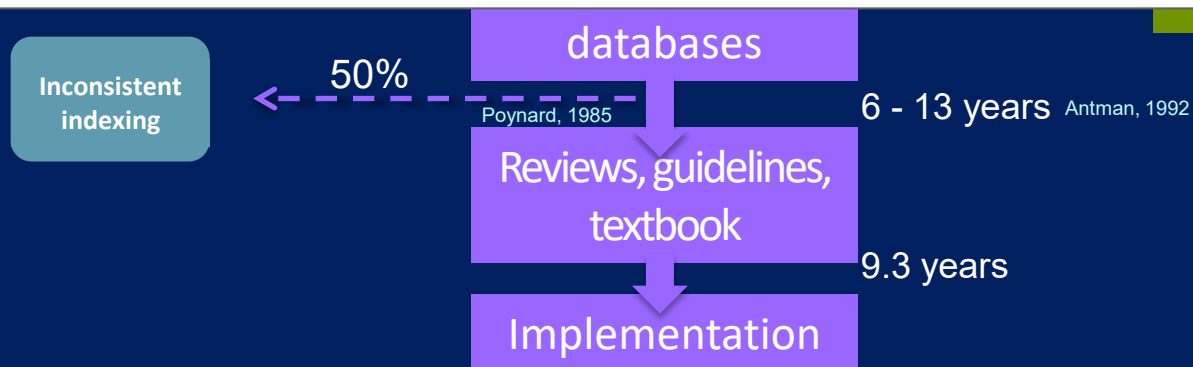
- What is Implementation Science and How Does it Relate to Genomics?
- Implementation of a Full Process
- Tailoring vs. One-Size-Fits-All
- Grappling with a Dynamic World
- Convergence

"PUBLICATION PATHWAY"

Balas & Boren, 2000



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



*15 years avg in Cancer Control Examples (Khan et al, 2021)

IMPLEMENTATION SCIENCE IN AN INFOGRAPHIC



An Evidence-Based Genomic Intervention

- Is only so good as how and whether. . .
 - It is adopted?
 - Providers are trained to deliver it?
 - Trained providers choose to deliver it?
 - Eligible people receive?

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

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

Impact: $.5 \times .5 \times .5 \times .5 = 6\%$ benefit

Adapted from Glasgow, RE-AIM

The Importance of What...

What is the intervention that needs to be implemented?

- A. Genetic/genomic tests
- B. Information Dissemination/educational intervention
- C. Monitoring and Follow-up
- D. Preventive Care
- E. Treatment
- F. All of the above?

Implementation Science Resources



[Register](#) [Event Details](#)

DATE & TIME December 8-11, 2024 LOCATION Crystal Gateway Marriott | Arlington, VA

SHARE



17th Annual Conference on the Science of Dissemination and Implementation in Health

[Registration](#)

[Agenda](#)

[Scholarships](#)

PAR-22-105
(R01, Clinical Trials
Optional)

PAR-22-109
(R21, Clinical Trials
Optional)

PAR-22-106
(R03, Clinical Trials Not
Allowed)

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Implementation Science

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Training Institute for Dissemination and Implementation Research in Cancer (TIDIRC) OpenAccess

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TIDIRC

TIDIRC OpenAccess makes the online training materials used in the TIDIRC Facilitated Course open to the public. The free, online materials provide an overview to dissemination and implementation (D&I) research. Each module serves as an introduction to fundamental terms, concepts, and principles of D&I with examples of their application.

The course includes six modules:

- Module 1: Introduction to Dissemination & Implementation Science
- Module 2: Feasibility & Adaptation of Interventions in Implementation Science
- Module 3: Implementation Science Models, Theories, & Frameworks
- Module 4: Implementation Science Measures
- Module 5: Study Designs in Implementation Science
- Module 6: Implementation Strategies



Webinars

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Register for upcoming webinars and view archived sessions from the Implementation Science Webinars series and Research to Reality.



Implementation Science Webinars

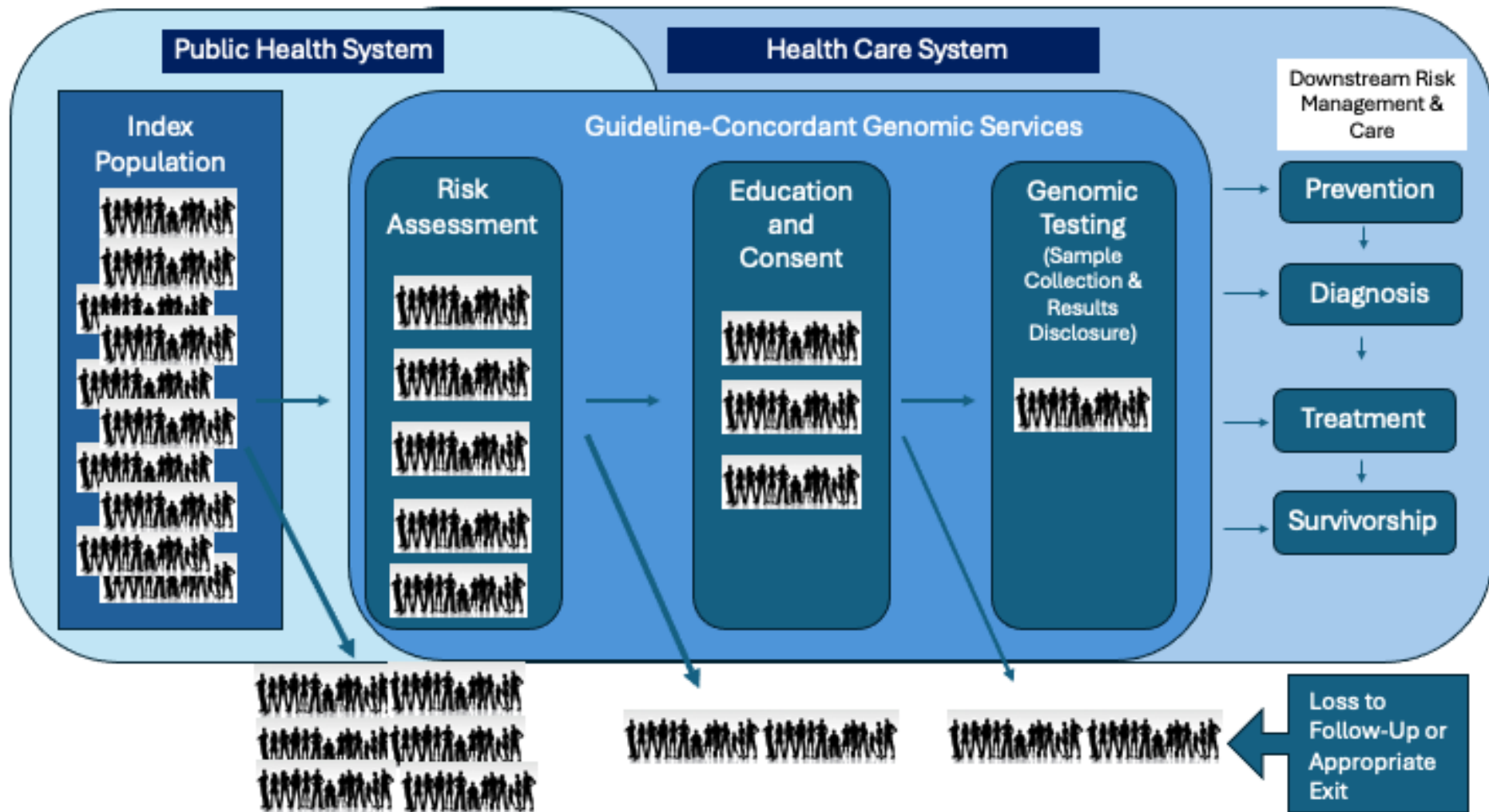
Listen in as leaders in the field discuss advanced dissemination and implementation research topics and answer questions from the community.



Research to Reality (R2R) Cyber Seminars

[Research to Reality](#) (R2R) Cyber Seminars bring together cancer control practitioners and researchers to discuss moving evidence-based programs into practice.

1. Implementation of a Full Process



A Complex Pathway/Process

Diagnostician(s)

Pediatrics

County Services
(Infant &
Toddlers)

Lawyers

Educational
System

Department of
Motor Vehicles

Behavioral
Analysts

Public/Private
Therapist(s)

Physician
Specialists

Insurance
Companies



Who is often in charge of the implementation process?

Diagnostician(s)

Pediatrics

County Services
(Infant & Toddlers)

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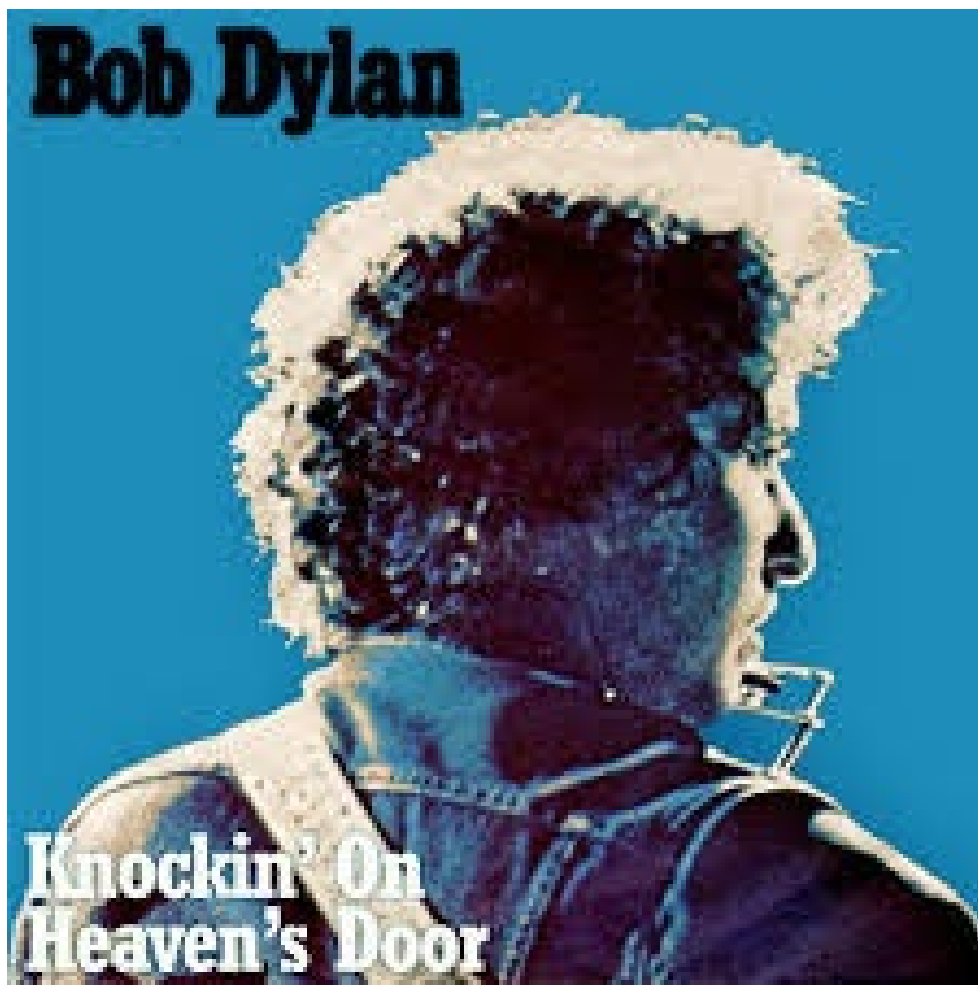
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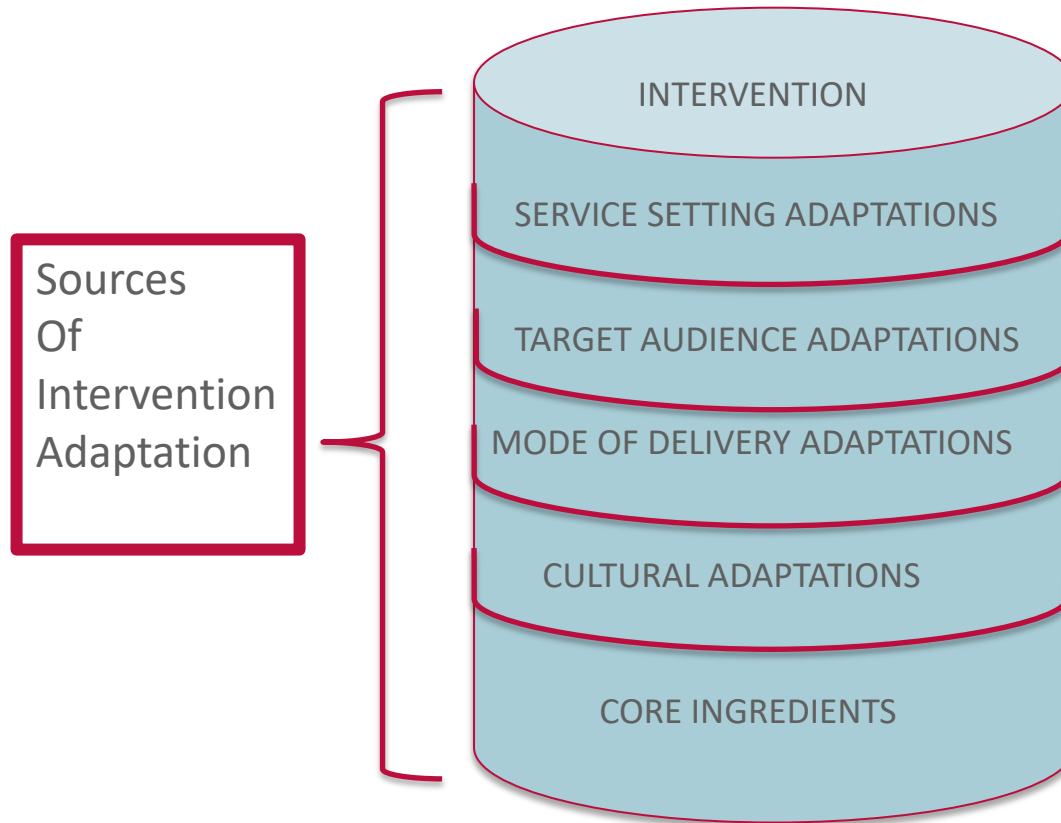


2. Tailoring vs. One-Size-Fits-All



Variable use for variable populations, settings, and purposes...

Adaptability/Evolution

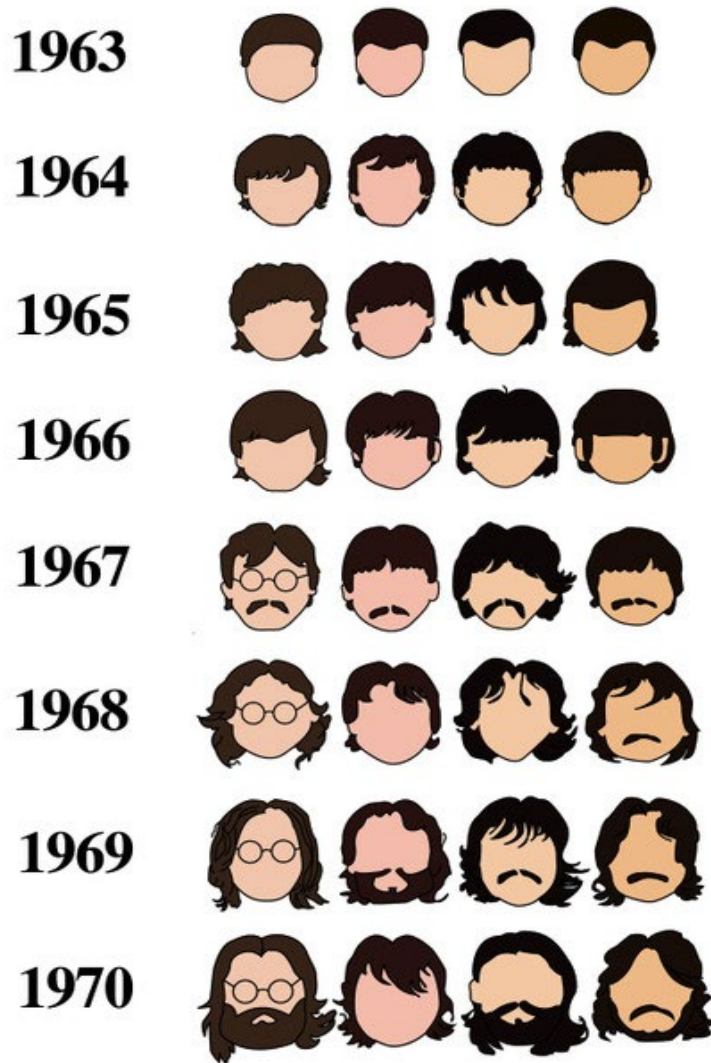


Chambers & Norton, 2016

3. Grappling with a dynamic world

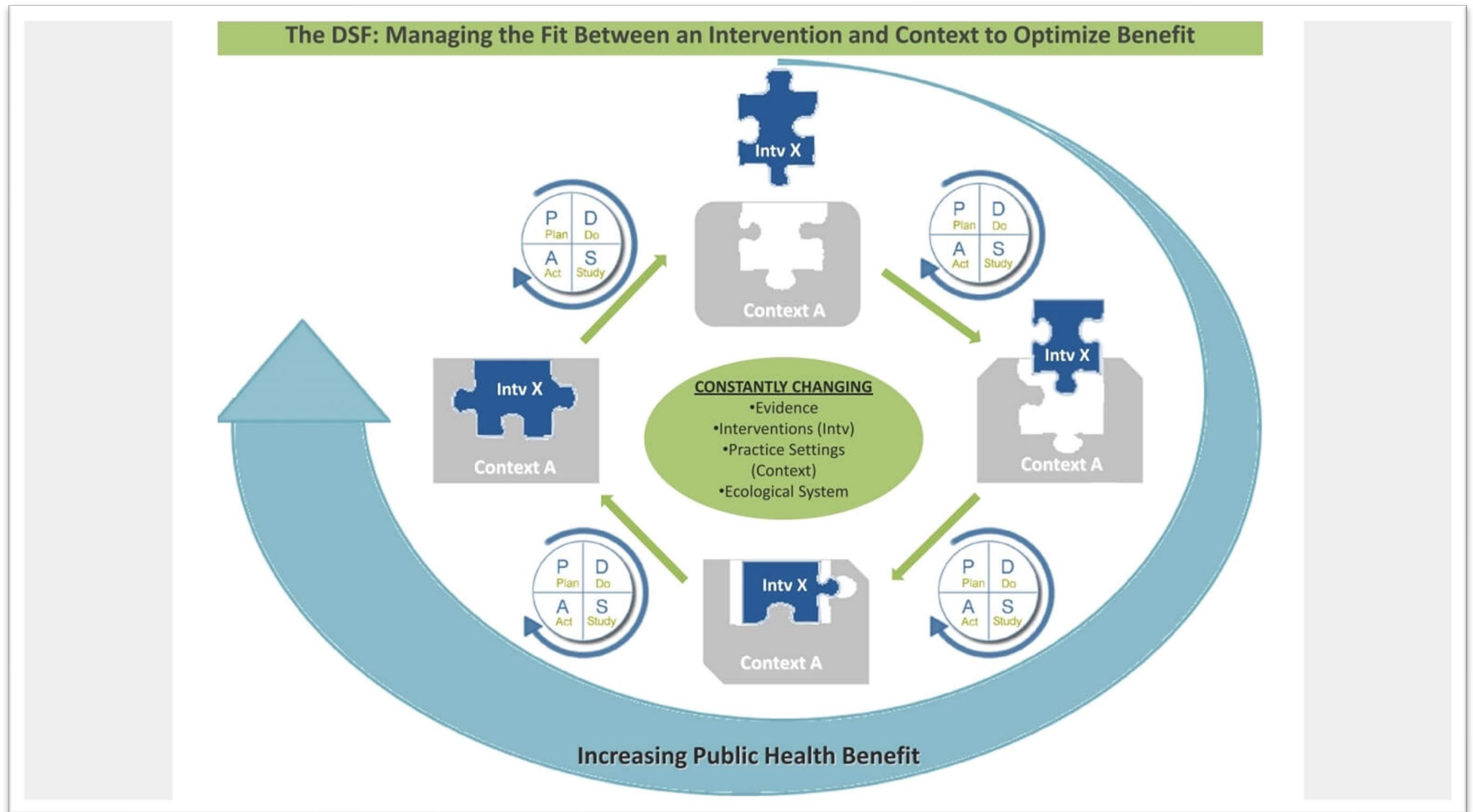


Sustainability or Evolution?



- IF GENOMICS RESEARCH 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?

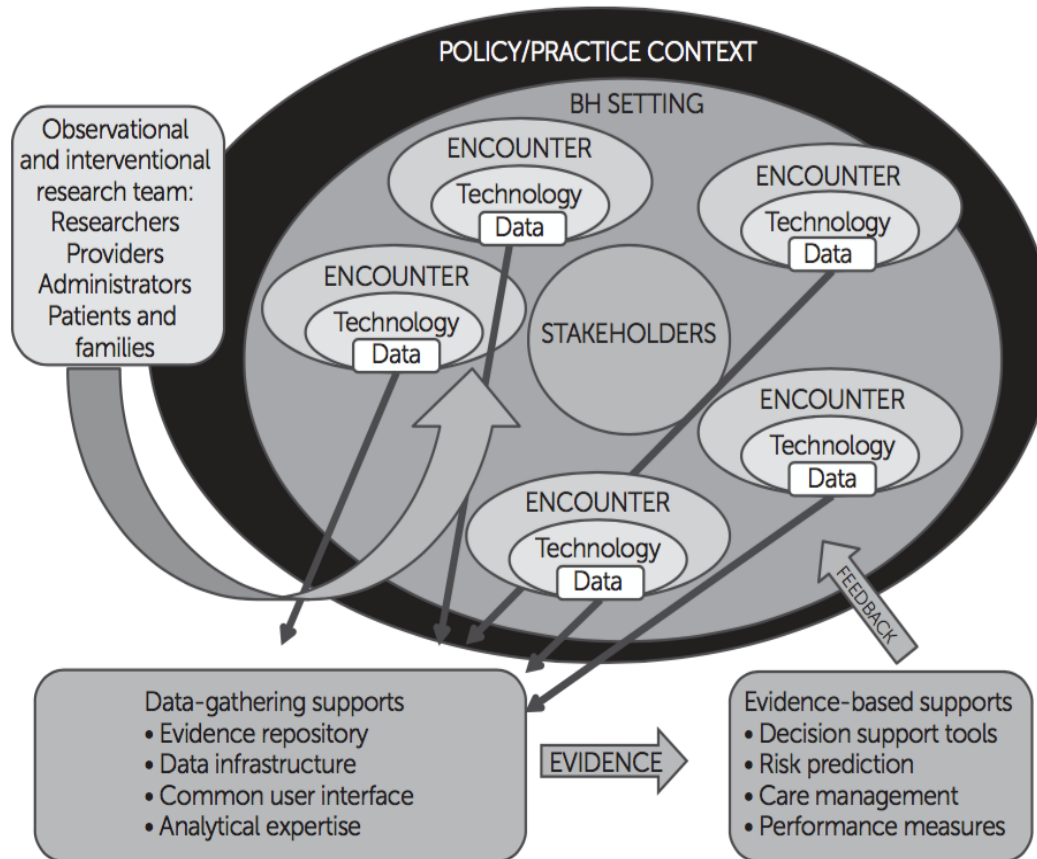
Expecting Dynamism...



Chambers, Stange, & Glasgow, *Implementation Science*, 2013

Implementation Labs = Learning Health Care Systems?

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

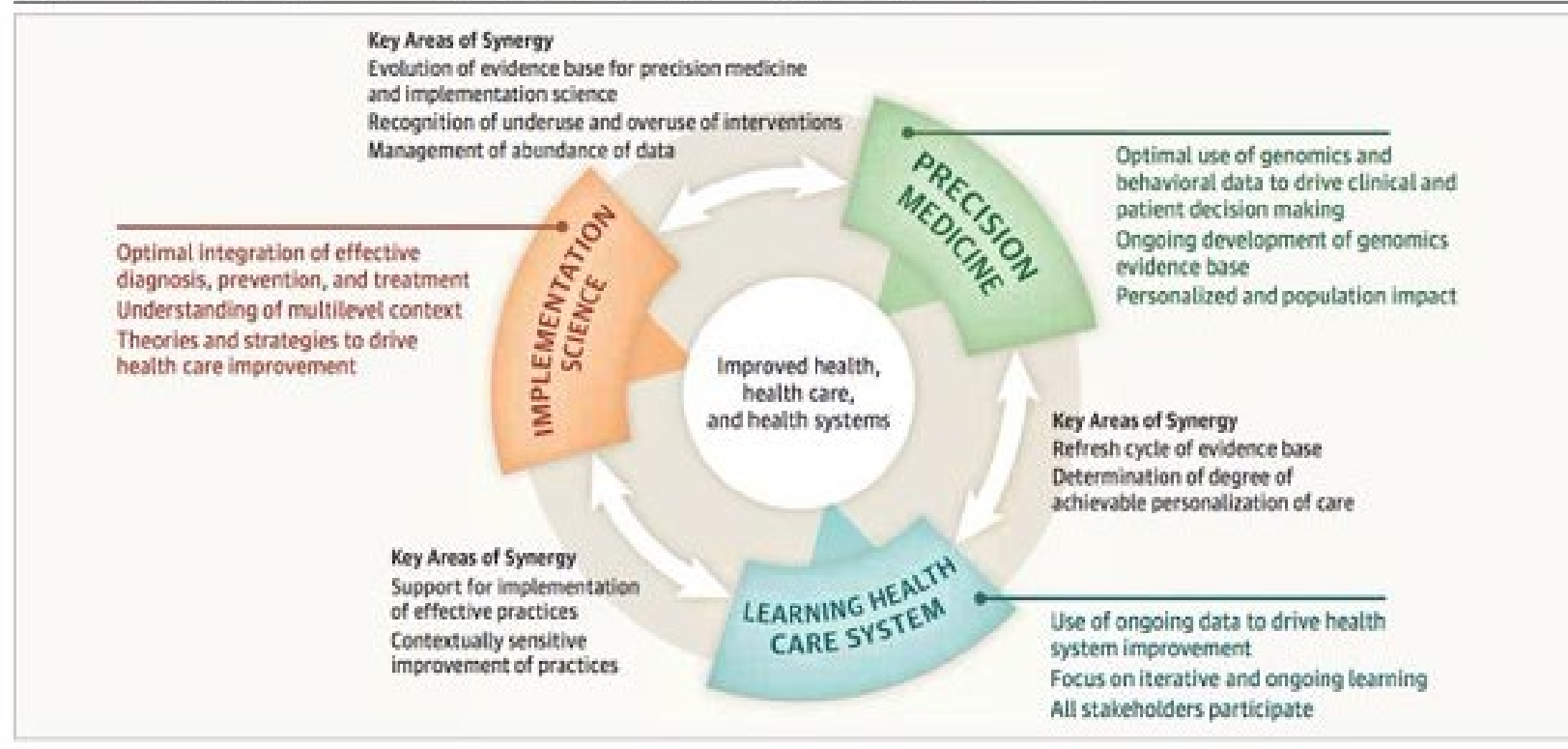


- What is your genomic health system landscape? (e.g. practice partners)
- High priority questions of partners?
- Data and research infrastructure?
- Communication among partner sites?

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

Hope for the future...

Figure. Contributions of Implementation Science, Learning Health Care System, and Precision Medicine



Chambers DA, Fears WD, Khoury MJ. Convergence of Implementation Science, Precision Medicine, and the Learning Health Care System. *JAMA Internal Medicine*. 2016;176(12):1731-1736.

Take Homes

- Attend to implementation of the full genomics care pathway
- Balance the general with the case-specific
- Anticipate ongoing changes
- Many opportunities to continue to advance IS and Genomics

THANK YOU!



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