

Advancing Cancer Control and Equity through Implementation Science

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*Views are my own and do not reflect
my employer, the National Cancer
Institute, NIH.*

Guiding Questions

1. *What are the primary goals of NCI's investments in research?*
2. *In what ways are these investments designed to support equity?*
3. *How do you attend to diversity, equity, and inclusion in your review processes?*

BUDGET
PROPOSAL

LEADING THE
NATION'S PROGRESS

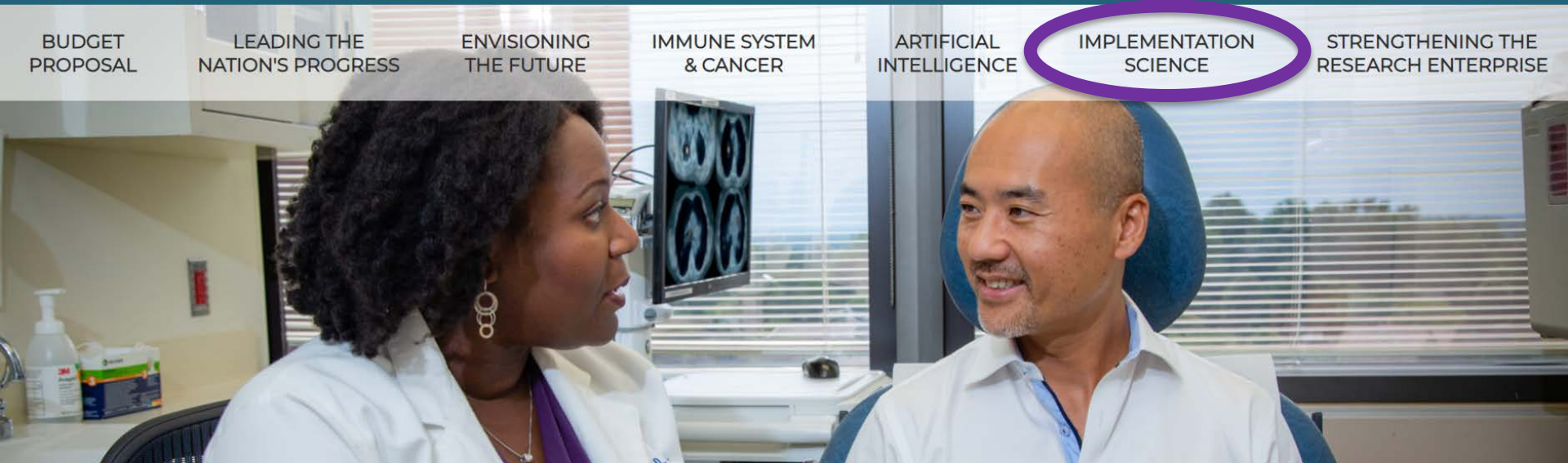
ENVISIONING
THE FUTURE

IMMUNE SYSTEM
& CANCER

ARTIFICIAL
INTELLIGENCE

IMPLEMENTATION
SCIENCE

STRENGTHENING THE
RESEARCH ENTERPRISE



NCI Annual Plan & Budget Proposal for Fiscal Year 2021

Implementation Science

“Research discoveries have led to interventions, tools, and programs to better prevent, diagnose, and treat cancer. Yet these innovations can be underused and overused.

“Implementation science is a research endeavor that studies ways to optimally deliver these innovations to those who will benefit.”



Implementation Science (IS)

cancercontrol.cancer.gov/IS



About IS

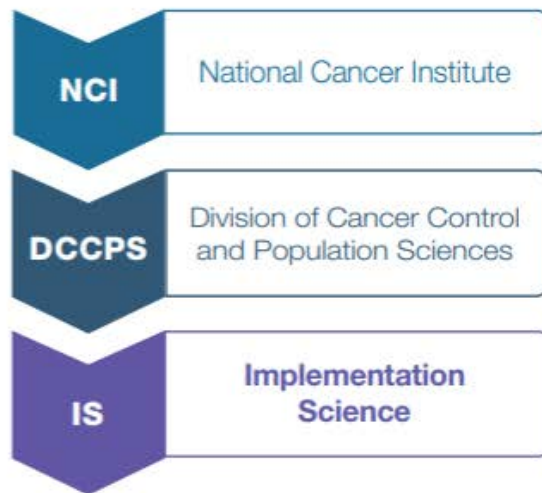
Mission

The mission of the IS team at the National Cancer Institute (NCI) is to develop and apply the implementation science knowledge base to improve the impact of cancer control and population science on the health and health care of the population, and foster rapid integration of research, practice, and policy.

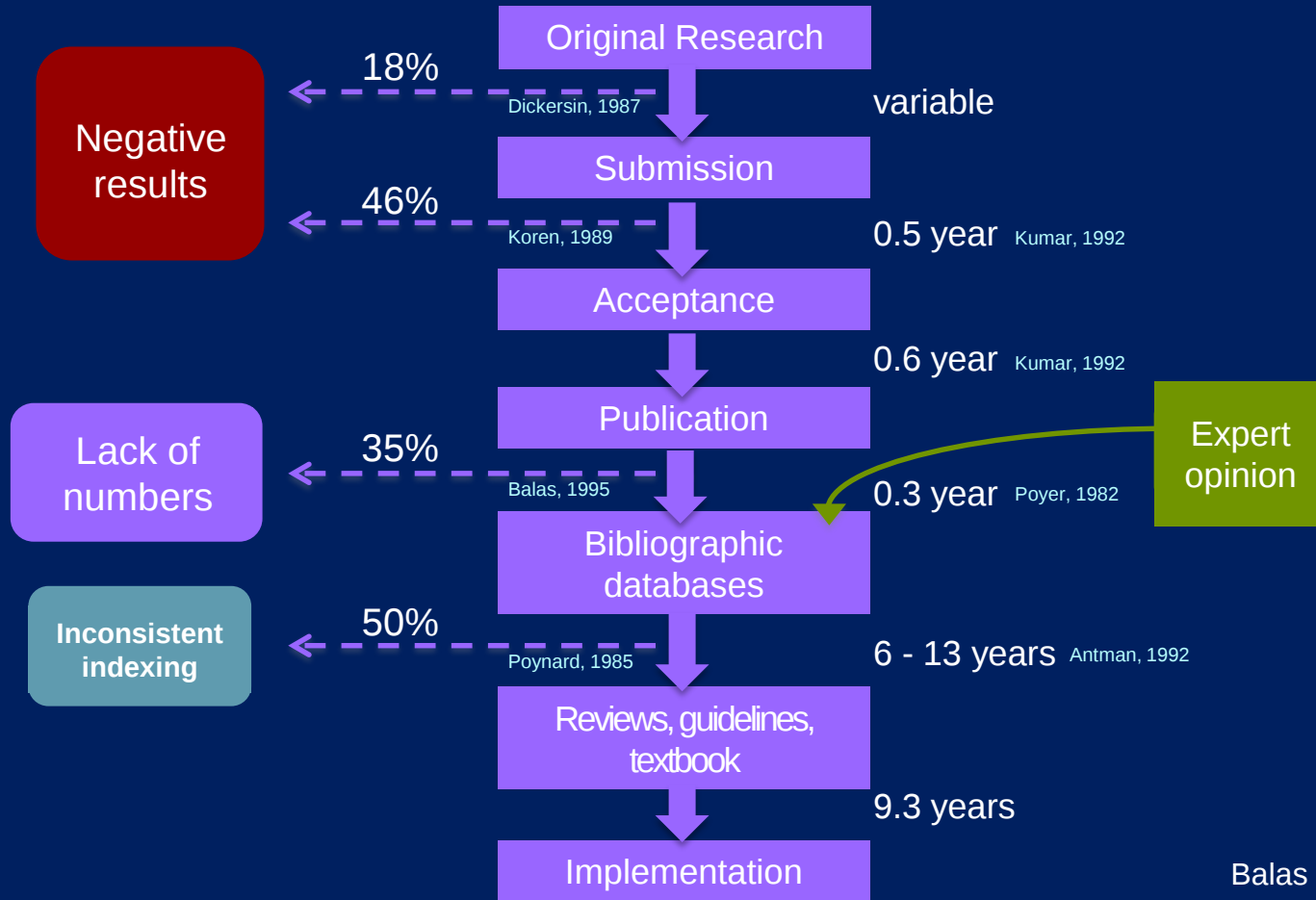
The IS team seeks to:

- advance the science of implementation;
- integrate implementation science into research across the cancer control continuum to improve the relevance to health care systems and population and public health; and
- foster engagement among research, practice, and policy stakeholders to systematically improve uptake of evidence and evidence-based interventions.

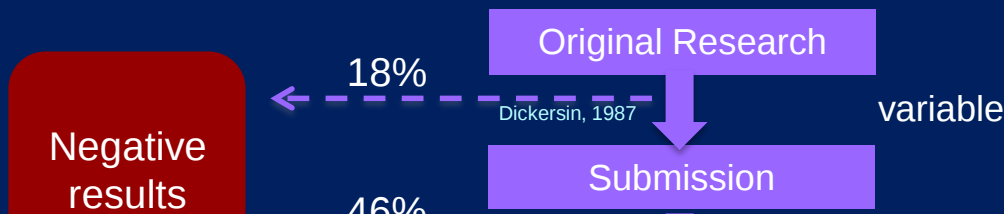
Organizational Structure



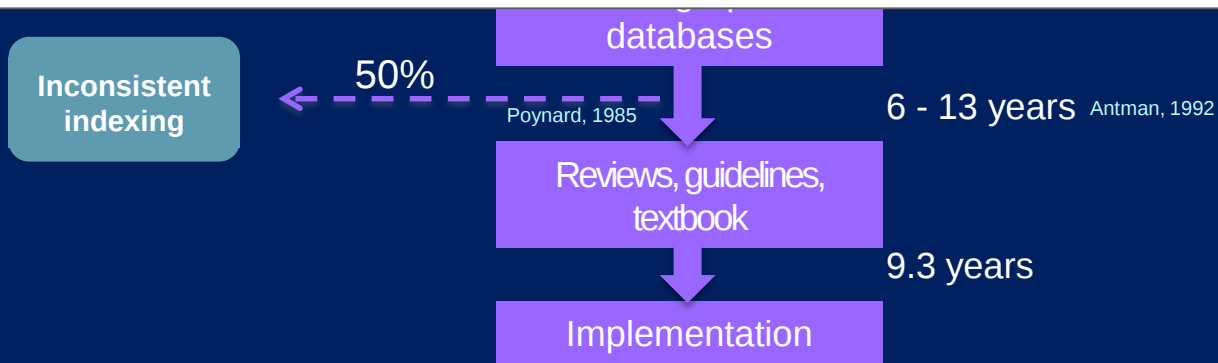
"PUBLICATION PATHWAY"



“PUBLICATION PATHWAY” (2)

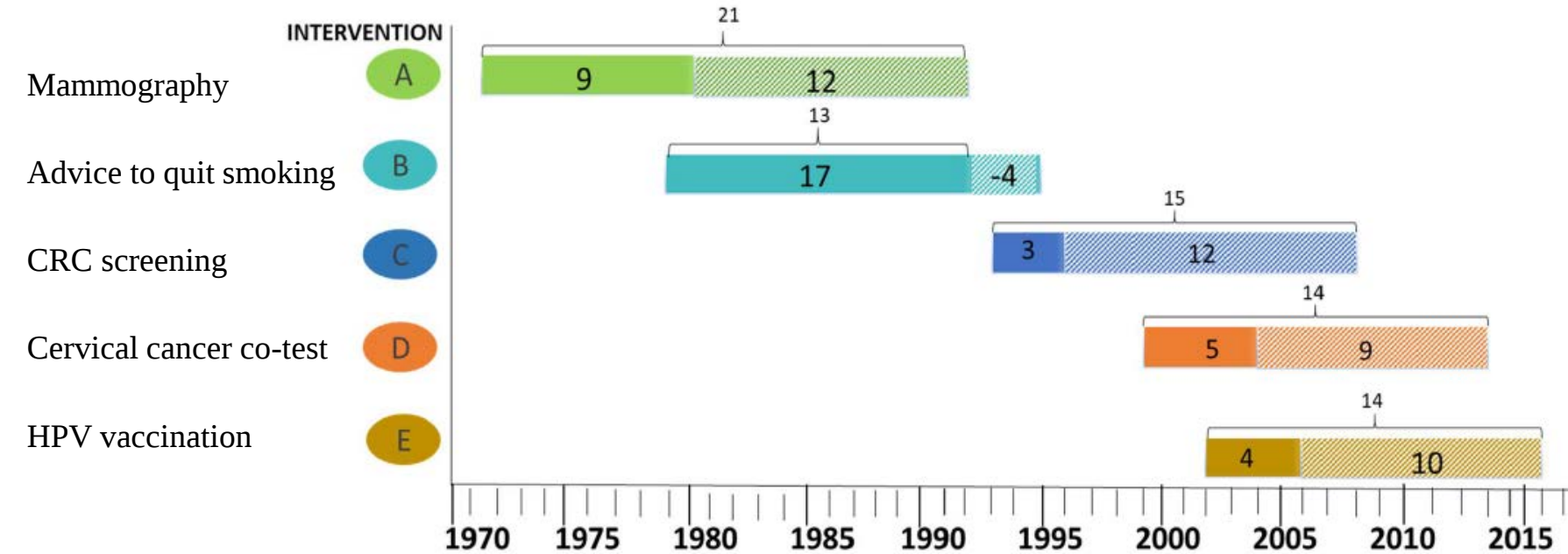


It takes 17 years to turn 14 percent of original research to the benefit of patient care



Time-to-Translation in Cancer Control

Average time from landmark publication to implementation (50% uptake): **15 years**



Khan, Chambers, & Neta, 2021

Beyond effectiveness

- Effective interventions (including practices, programs, tools, policies, etc.) can only be as good as whether and how they are used...
- How do we do that most effectively?
 - A. Not thinking about implementation; no plan
 - B. Thinking about implementation; plan informed by intuition
 - C. Thinking about implementation; plan informed by empirical evidence (e.g., the science of implementation)

Beyond effectiveness (1)

Evidence is only as good as how and whether...

- It is adopted?
- Practitioners and communities are trained to use it?
- Trained practitioners and communities choose to use it?
- Eligible populations/patients benefit from it?

Beyond effectiveness (2)

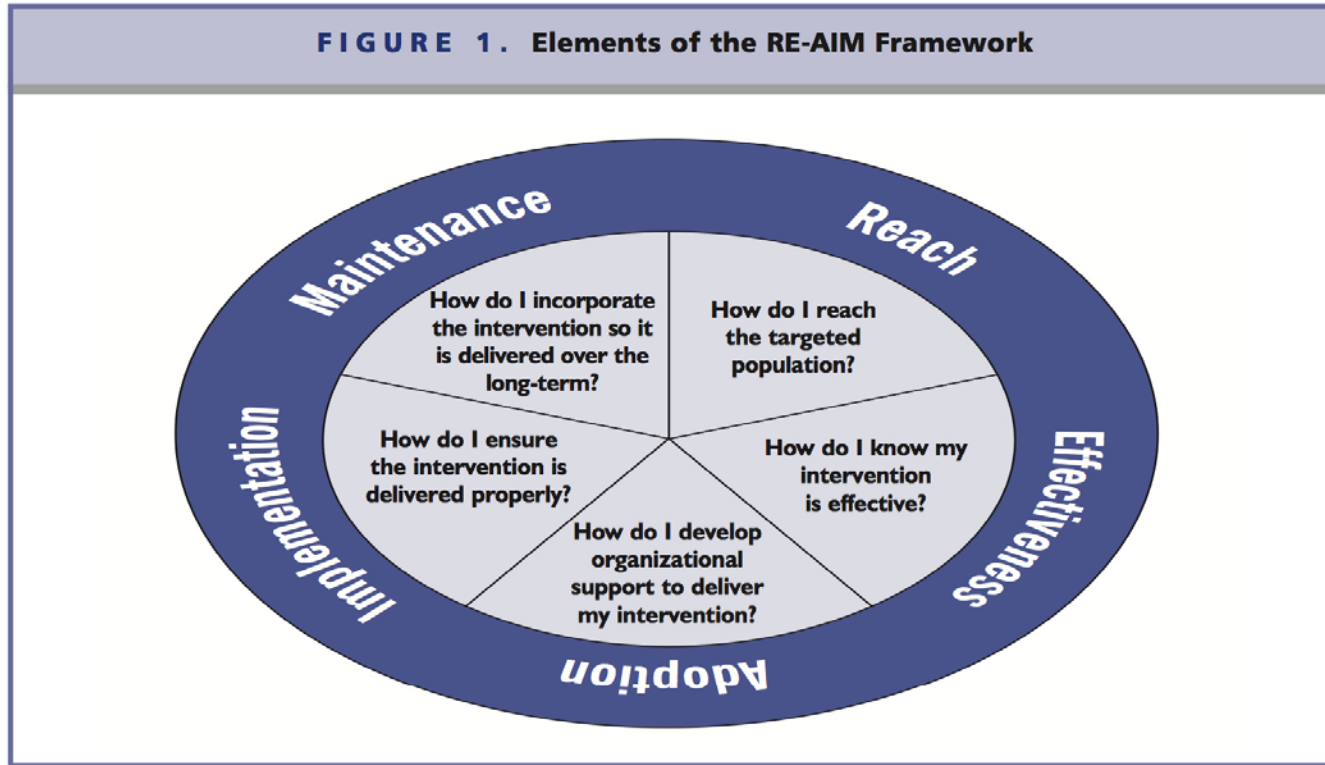
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If we assume 50% threshold for each step...
(even w/perfect access/adherence/dosage/maintenance)

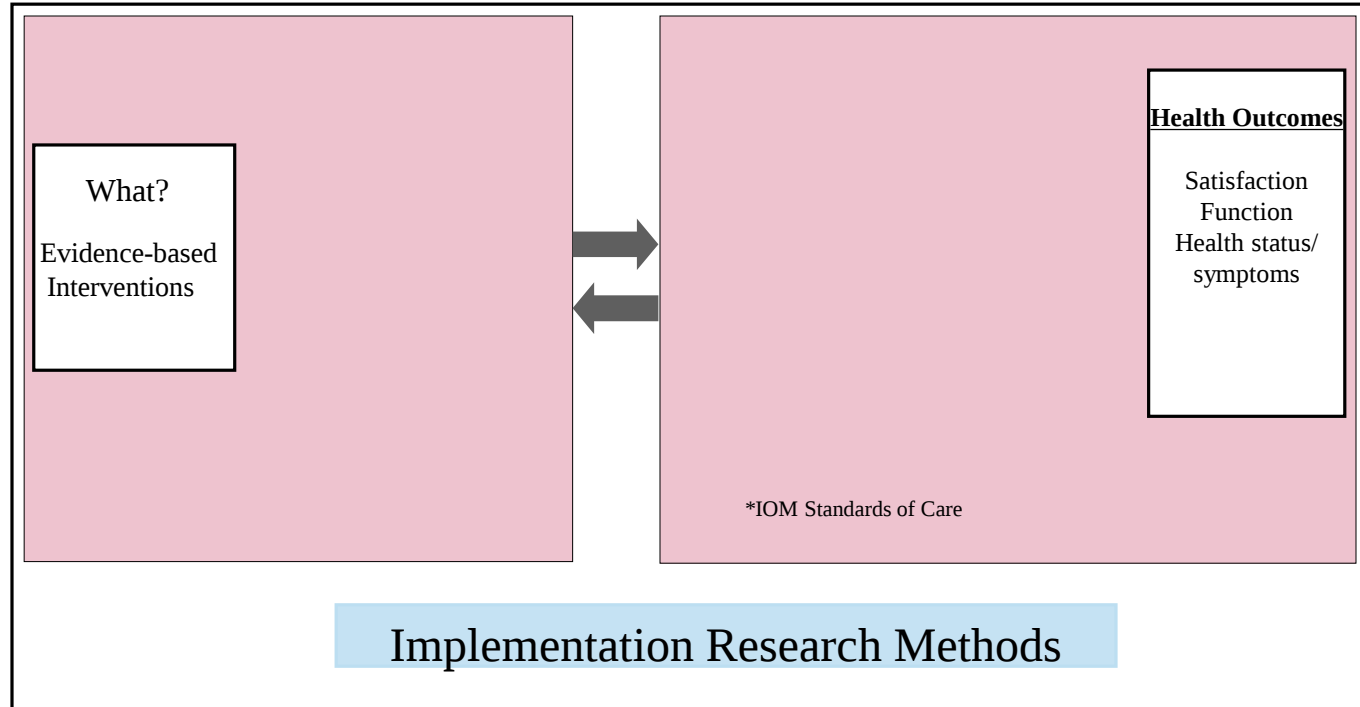
Impact: $.5 * .5 * .5 * .5 = 6\%$ benefit

Beyond effectiveness (3)



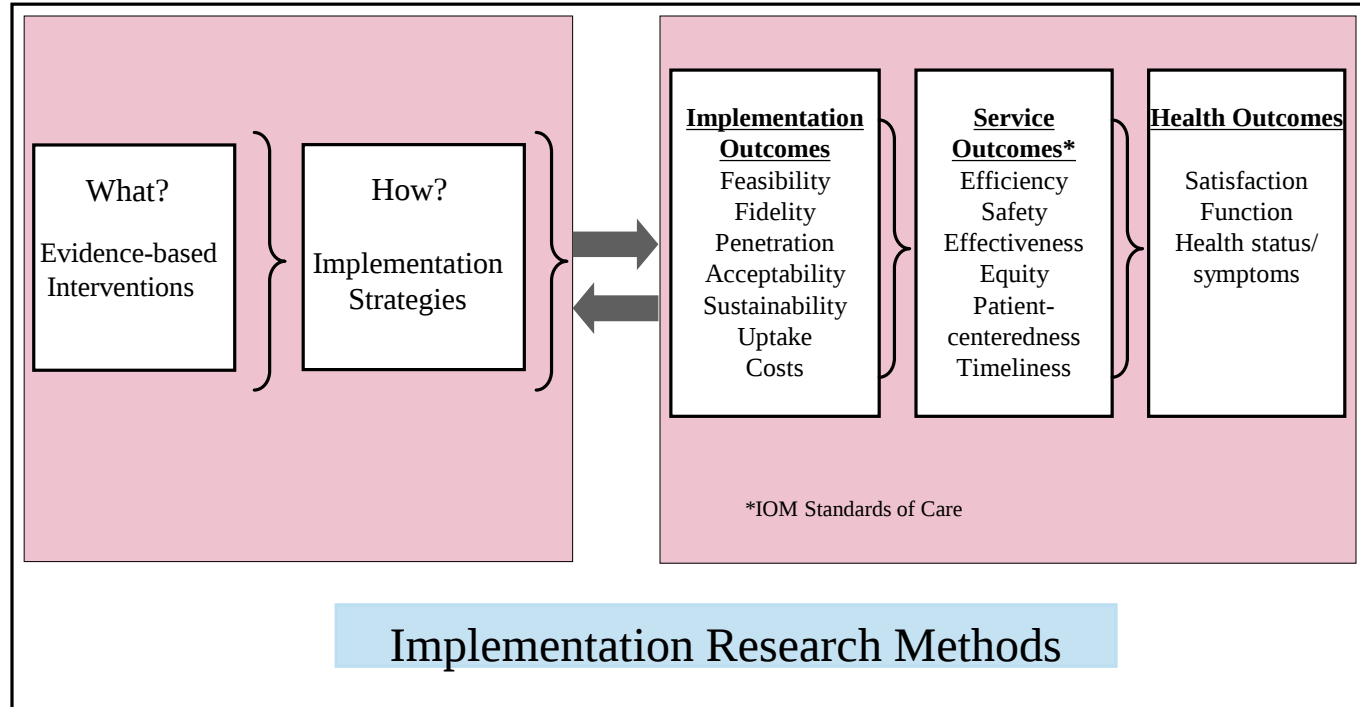
Glasgow & Estabrooks, 2018

Implementation science



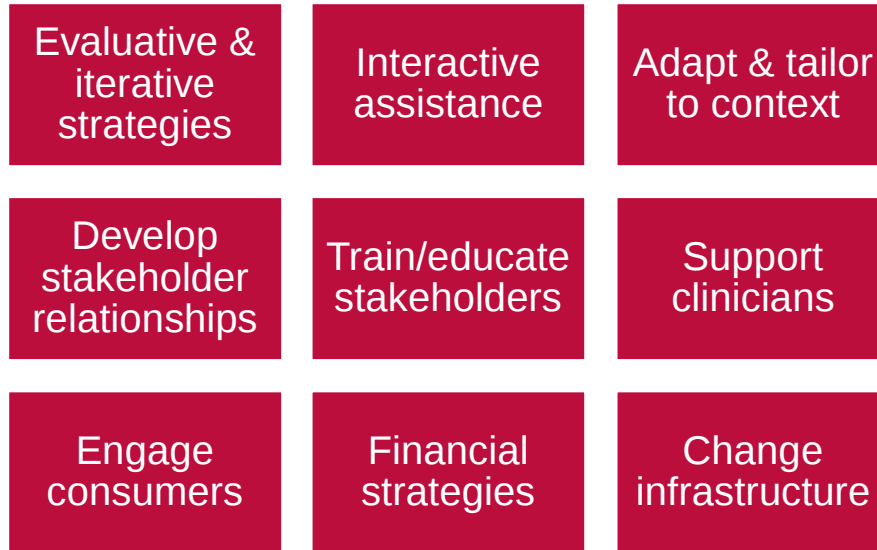
Proctor et al 2009 *Admin. & Pol. in Mental Health & Mental Health Services Research*

Implementation science



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

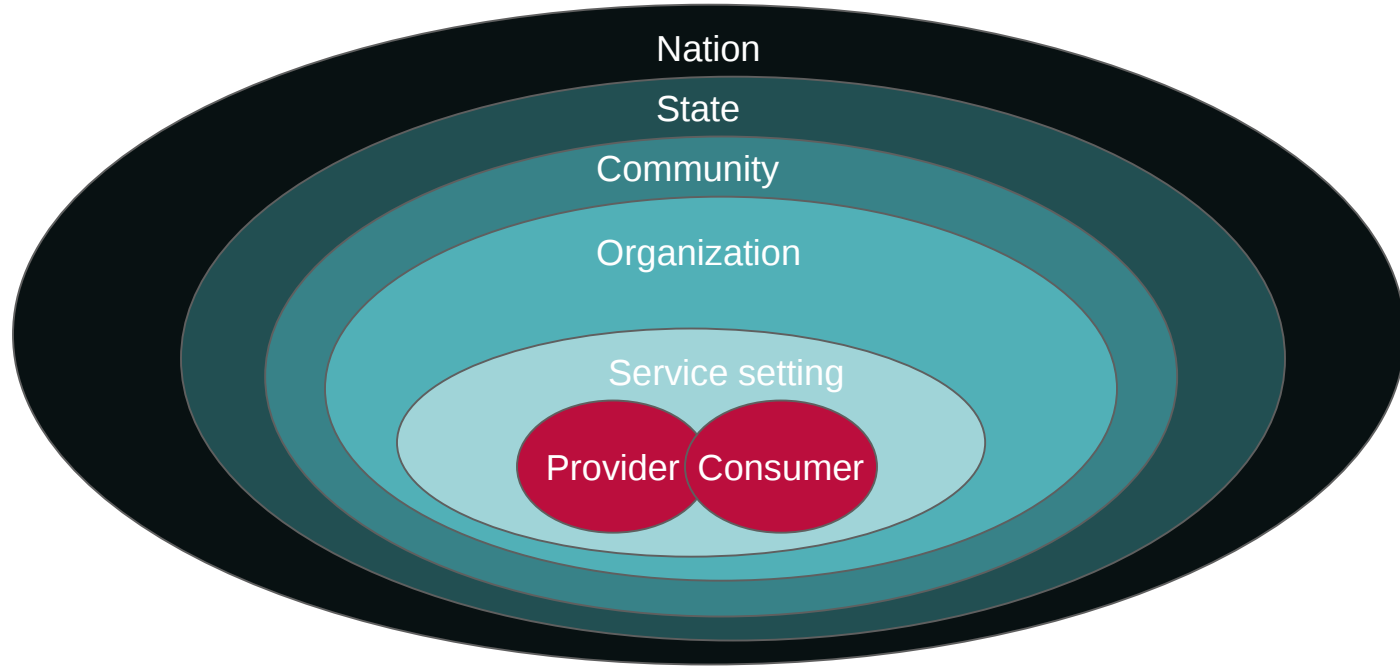
Implementation strategies



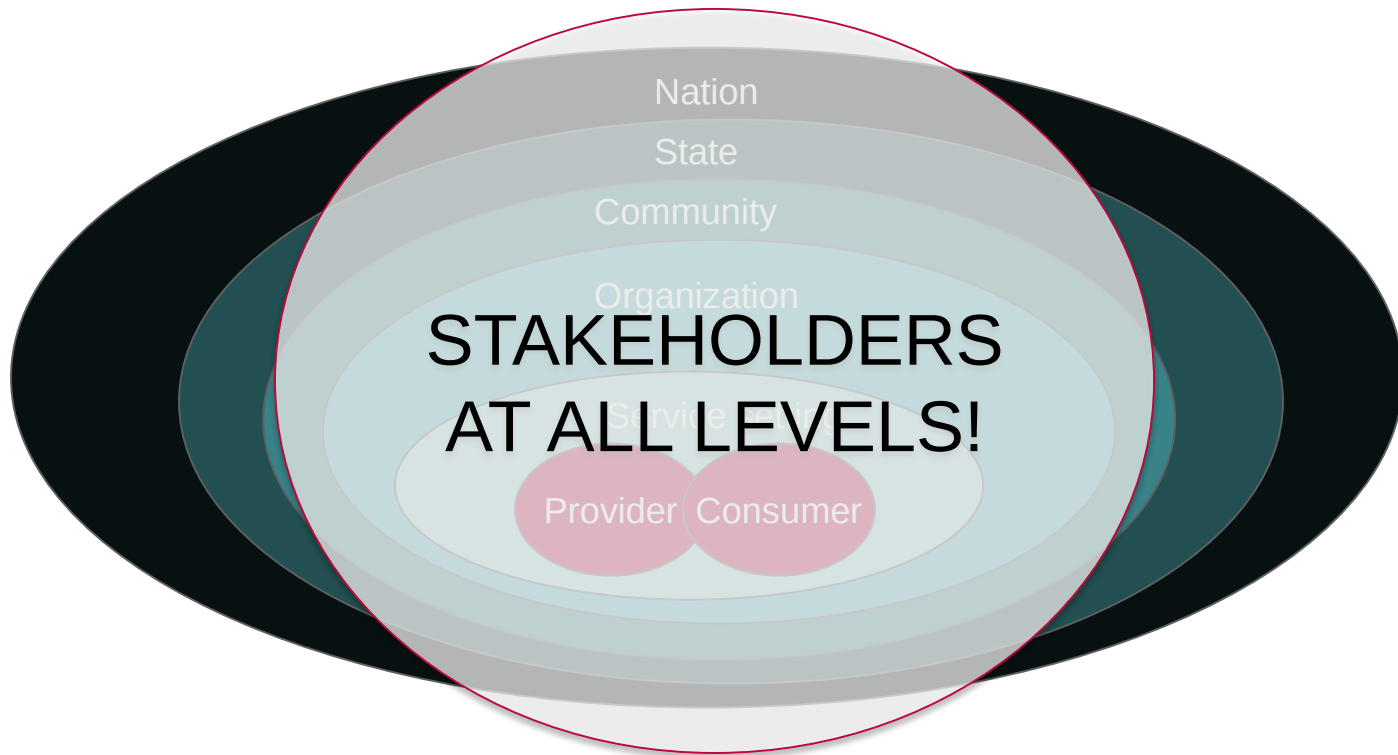
- What barriers are you trying to overcome?
- What resources are you able to leverage?
- Who are your stakeholders?

Powell, et al., 2015.

Context dependent & multi-level factors (1)



Context dependent & multi-level factors (2)



...As you scale up decision-making from practice to program to policy, does evidence exist to guide implementation?

Source: David Chambers

Funding Opportunities

- Dissemination and Implementation Research in Health
- PAR-19-274 (R01); PAR-19-275 (R21); PAR-19-276 (R03)
- **PURPOSE:** to support innovative approaches to identifying, understanding, and developing strategies for overcoming barriers to the adoption, adaptation, integration, scale-up and sustainability of evidence-based interventions, tools, policies, and guidelines. Conversely, there is a benefit in understanding circumstances that create a need to stop or reduce (“de-implement”) the use of interventions that are ineffective, unproven, low-value, or harmful.



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

[Implementation Science](#) / [Training & Education](#) / [Training in Cancer](#) / [TIDIRC OpenAccess](#)



The modules can be viewed together as a whole or individually by section. In the facilitated course, trainees move through the online modules after establishing a D&I research project idea. Each module consists of viewing videos, completing readings, and responding to assignment questions to build up their project idea. Trainees then workshop their proposed projects by incorporating knowledge gained from each of the online sections.

What Are the Innovations?



Interventions



Tools



Programs

What Are the Implementation Challenges?



Underuse

Failing to deliver the innovation to those who would benefit



Overuse

Delivering the innovation to those who will not benefit

Who/What Is Affected?



Policy



Community



Health Care System



Provider



Individual

How Do We Improve Implementation?



Interactive Assistance

Working with stakeholders during implementation



Adapt and Tailor

Modifying implementation based on needs



Support Practitioners

Empowering them to effectively implement the innovations



Engage Consumers

Involving individuals and families directly

How Do We Know If Implementation Is Successful?



Acceptability

Innovation is perceived to be appropriate to stakeholders



Uptake

Innovation is used



Cost

Acceptable cost of supporting innovation delivery



Fidelity

Innovation is delivered as intended



Sustainment

Innovation is effectively delivered over time

What Are the Desired Outcomes?



Increased Years of Life



Improved Quality of Life



Health Equity

Are innovations addressing or exacerbating disparities?

Are inequalities part of the context creating barriers?

How are key stakeholders engaged and are their needs addressed?

Do strategies mitigate or exacerbate disparities and inequities?

How much and how well was the innovation implemented equitably? Who benefits?

Evaluation of Disparities and Equity

Equitable Implementation



Cell @CellCellPress · Jun 10



@NIHDirector Francis Collins and colleagues outline the @NIH UNITE initiative in this commentary now online. cell.com/cell/fulltext/...

Cell

Dr. Francis Collins

NIH Director



“Through UNITE and other efforts, we at NIH are committed to taking on structural racism directly. We are in a position to effect significant changes to create an inclusive, equitable, and diverse environment – not only at our agency, but throughout the biomedical research enterprise. Our commitment should be measured not just by our words, but by our actions.”

[Read the commentary](#)



CellPress

Affirming NIH's commitment to addressing structural racism in the biomedical research enterprise

Francis S. Collins   • Amy Bany Adams • Courtney Aclin • ... Monica Webb Hooper • Carrie Wolinetz • NIH UNITE •

Table 1. The five committees of the NIH UNITE initiative and their areas of focus

U	Understanding stakeholder experiences through listening and learning
N	New research on health disparities, minority health, and health equity
I	Improving the NIH culture and structure for equity, inclusion, and excellence
T	Transparency, communication, and accountability with our internal and external stakeholders
E	Extramural research ecosystem: changing policy, culture, and structure to promote workforce diversity

A landscape photograph featuring a dirt road that splits into two paths, leading towards a bright sunset. The sky is filled with large, dramatic clouds, and the sun is low on the horizon, creating a strong glow and lens flare. The foreground shows the texture of the dirt road and the green grass on either side.

Thank you!
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**NATIONAL
CANCER
INSTITUTE**

www.cancer.gov

www.cancer.gov/espanol