

Translating diabetes research into practice to improve health in American Indian and Alaska Native communities: overview and application of dissemination and implementation research

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Webinar outline

Dissemination and implementation (D&I) research

- What is D&I research?
- Differentiate efficacy/effectiveness vs. D&I
- Core components of D&I research

Example study: application of D&I research within Alexis Nakota Sioux Nation (Canada)

D&I resources

D&I research

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 (EBI) into clinical and community settings in order to improve patient outcomes and benefit population health.

US NIH PAR-18-007 <https://grants.nih.gov/grants/guide/pa-files/PAR-18-007.html>

D&I, also known as...

Knowledge exchange

Knowledge transfer

Knowledge translation

Implementation science

Research utilization

Scale up

Too often, we have assumed... “If you build it...”



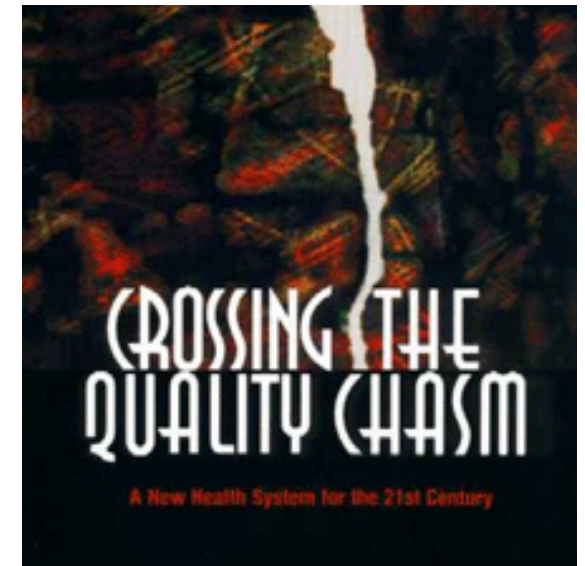
“Know-Do” Gap

Consistent evidence of failure to translate research findings into clinical practice

- 30-40% patients do not get treatments of proven effectiveness
- 20–25% patients get care that is not needed or potentially harmful

Suggests that implementation of research findings is fundamental challenge for healthcare systems to optimize care, outcomes and costs

“Between the health care we have and the care we could have lies not just a gap, but a chasm.” (IOM, 2001)



The push/pull dilemma...



What is “Evidence”?

What is “Evidence”?

Scientific literature in systematic reviews

Scientific literature in one or more journal articles

Public health surveillance data

Program evaluation data

Qualitative data

- Community members
- Other stakeholders

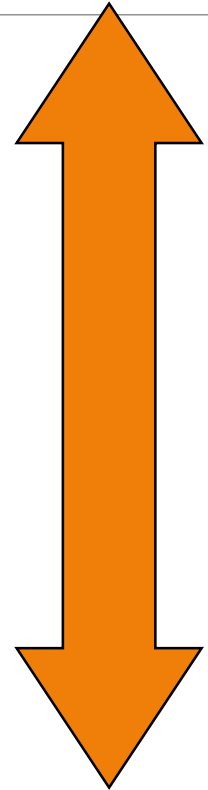
Professional judgment

Media/marketing data

Word of mouth

Personal experience

Objective



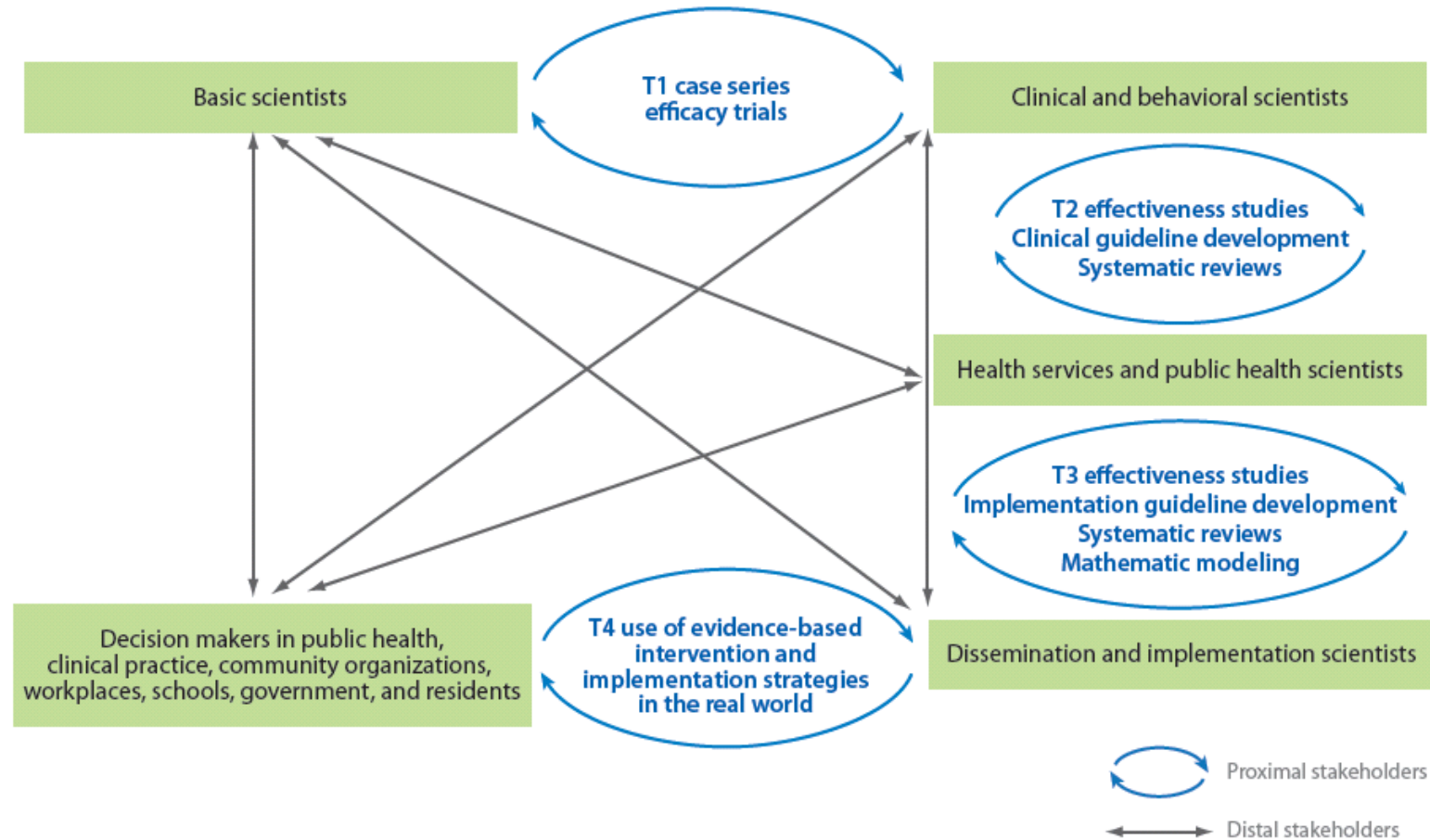
Subjective

Like beauty, it's in the eye of the beholder...

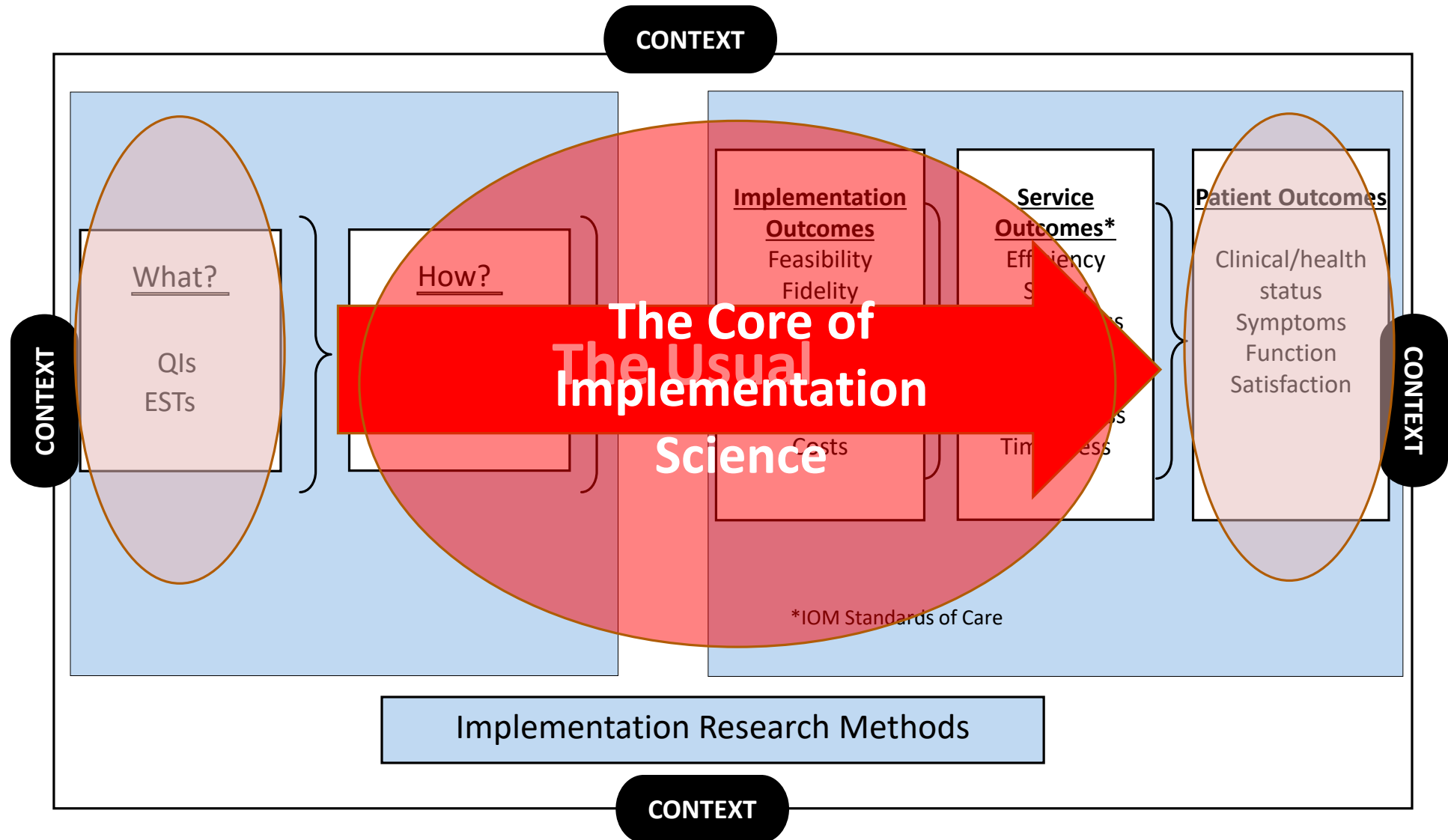
What are the evidence domains?



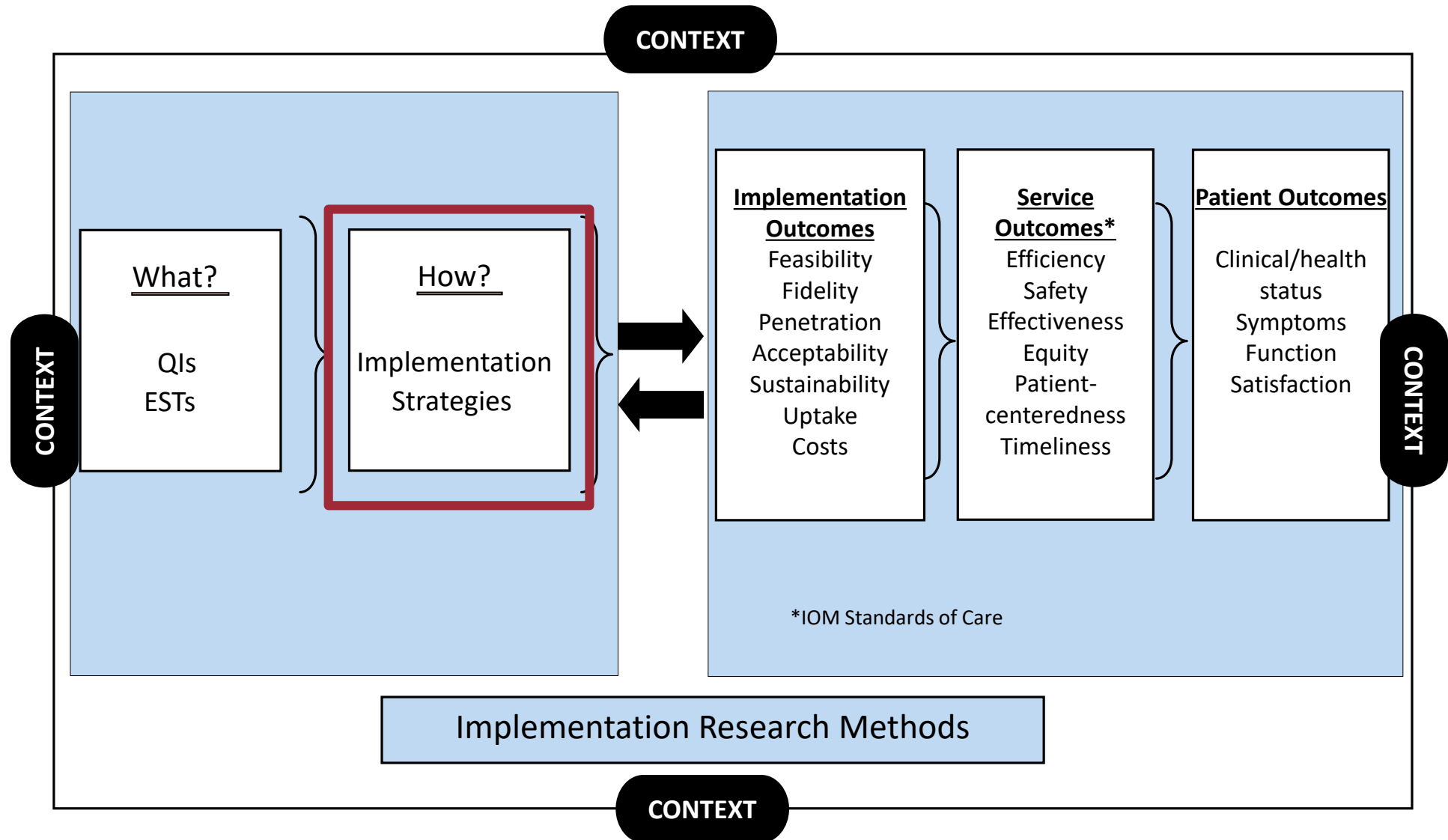
Translating research to practice



Conceptual Model of Implementation Research



Conceptual Model of Implementation Research



Implementation strategies

- Use evaluative and iterative strategies
- Provide interactive assistance
- Adapt and tailor to context
- Develop stakeholder interrelationships
- Train and educate stakeholders
- Support clinicians
- Engage consumers
- Utilize financial strategies
- Change infrastructure

Powell et al. *Implementation Science* (2015) 10:21
DOI 10.1186/s13012-015-0209-1



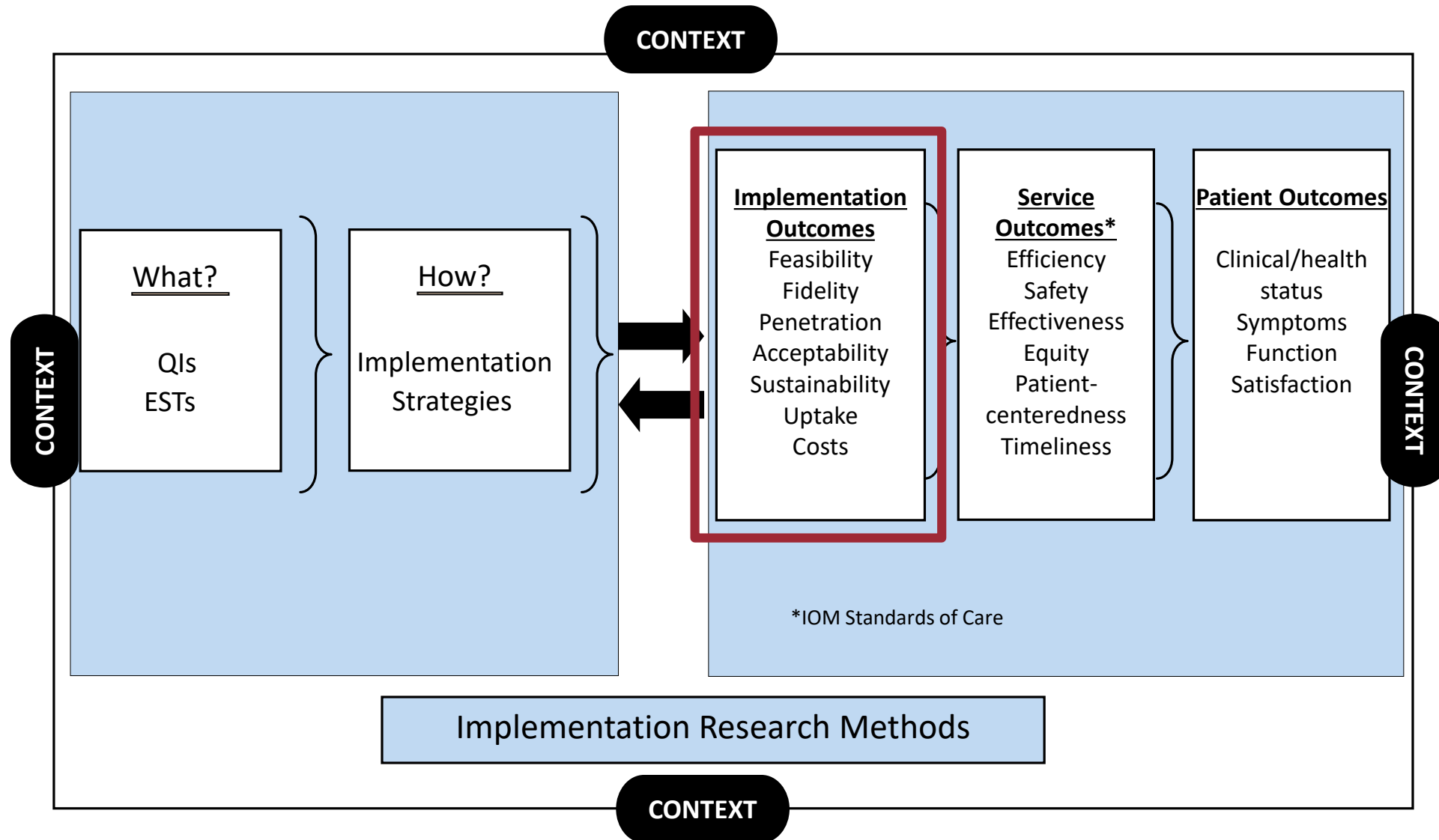
RESEARCH

Open Access

A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell^{1*}, Thomas J Waltz², Matthew J Chinman^{3,4}, Laura J Damschroder⁵, Jeffrey L Smith⁶, Monica M Matthieu^{6,7}, Enola K Proctor⁸ and JoAnn E Kirchner^{6,9}

Conceptual Model of Implementation Research



Implementation outcomes

- Acceptability
- Adoption
- Appropriateness
- Feasibility
- Fidelity
- Implementation Cost
- Penetration
- Sustainability

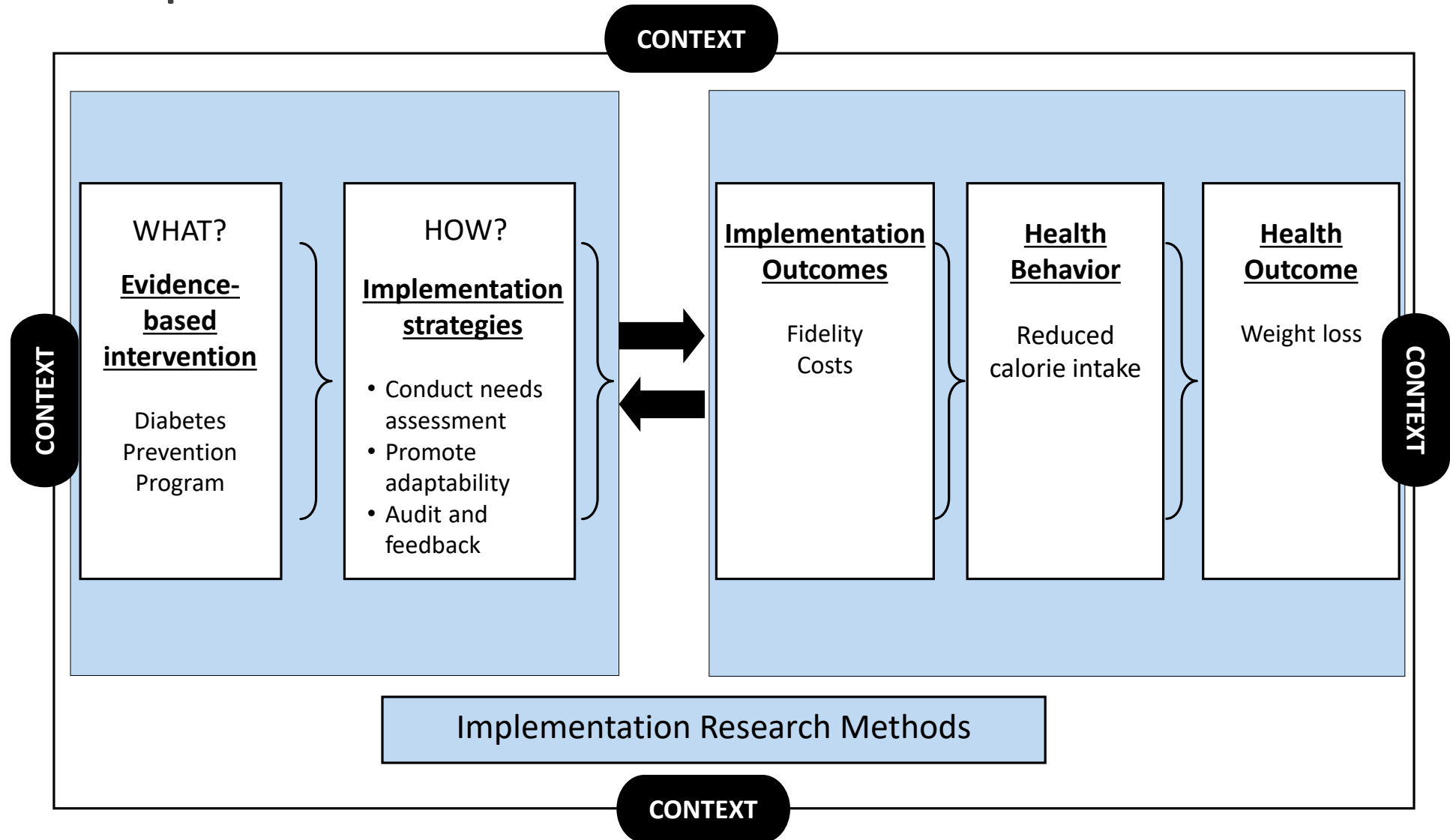
Adm Policy Ment Health (2011) 38:65–76
DOI 10.1007/s10488-010-0319-7

ORIGINAL PAPER

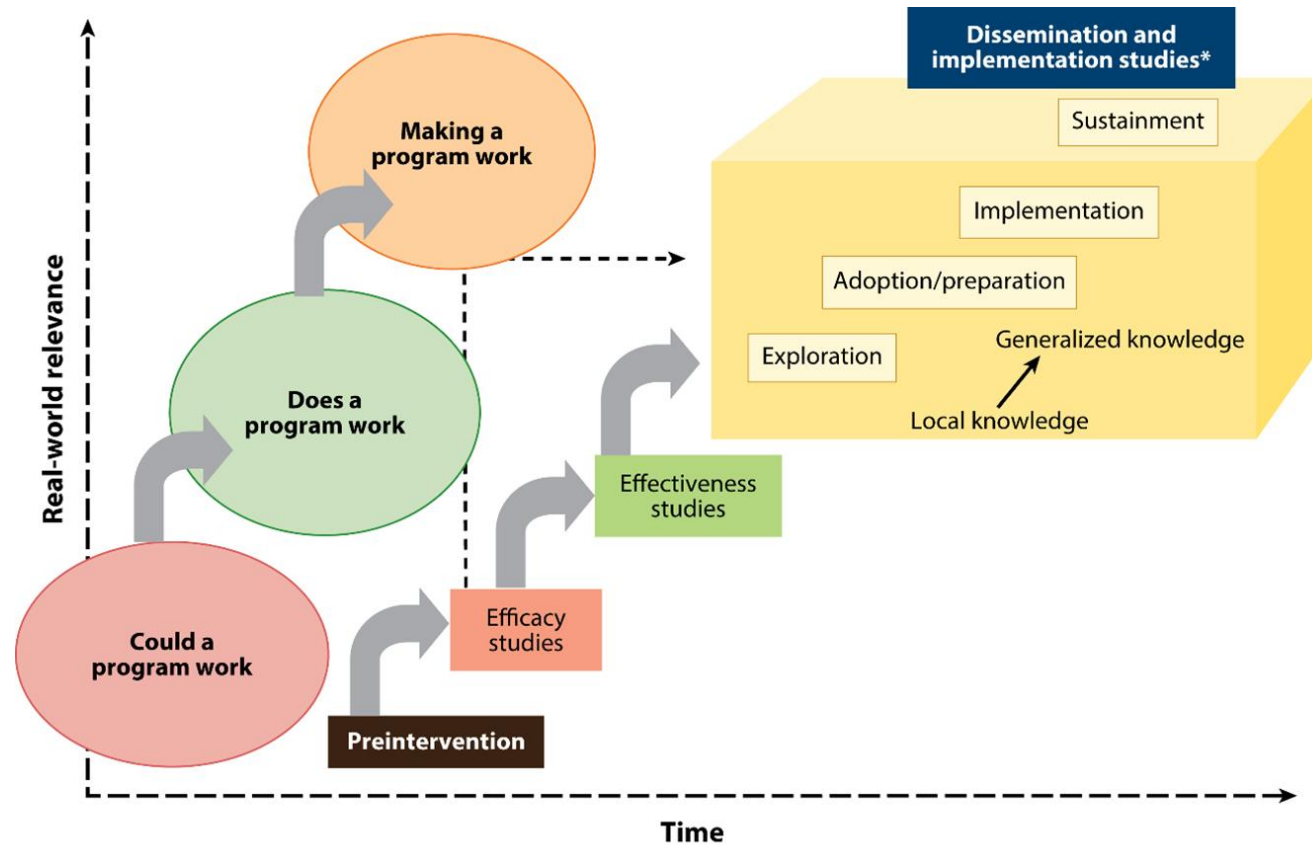
Outcomes for Implementation Research: Conceptual Distinctions, Measurement Challenges, and Research Agenda

Enola Proctor · Hiie Silmere · Ramesh Raghavan ·
Peter Hovmand · Greg Aarons · Alicia Bunger ·
Richard Griffey · Melissa Hensley

Example from Public Health



From efficacy to implementation



What D or I strategy is most relevant to the population and the EBI?

What factors impact the decision to disseminate or implement?

Does D or I of the EBI work with the chosen strategies?

What strategies are needed to maintain or extend use of the EBI?

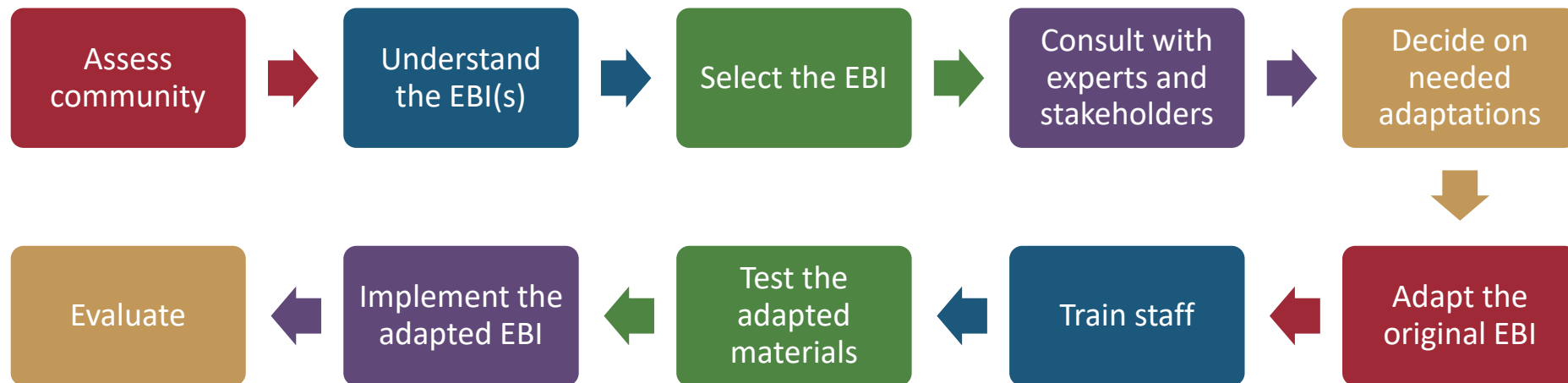
Fidelity vs adaptation

Fidelity: extent to which the intervention was delivered as planned

Adaptations are necessary when moving an EBI to a new community/setting, but need to be planned and made thoughtfully

- Unplanned adaptations cannot be accounted for and can potentially reduce the impact of the EBI

Frameworks are available for adapting interventions (Escoffery 2018)



Applying D&I principles to health promotion of the Alexis Nakota Sioux Nation

Partnership, Knowledge Translation, and Substance Abuse Prevention With a First Nations Community

Lola Baydala¹, Fay Fletcher¹, Stephanie Worrell¹, Tania Kajner¹, Sherry Letendre¹, Liz Letendre², Carmen Rasmussen¹

(1) University of Alberta; (2) Alexis Heritage Program, Alexis Nakota Institute

Submitted 21 August 2012, revised 5 February 2013, accepted 19 March 2013.

Identifying the public health problem

The Nation and academics from University of Alberta created a partnership to improve children's education and behavioral outcomes

- Initial assessments = many children with fetal alcohol spectrum disorder
- Partnership wanted a solution to address a root cause of fetal alcohol spectrum disorder

Used a community-based participatory research (CBPR) approach to identify, adapt, implement, and evaluate an evidence-based, substance-abuse program

- CBPR expected based on Canada's Tri-Council Policy statements

Identifying the EBI

Conduct literature review to identify evidence-based interventions

Identified the Life Skills Training (LST) program, a classroom-delivered program focused on personal self-management skills, general social skills, and drug resistance

- Prior research showed it was effective in many communities, including ethnic minorities
- Designed for grades 3-8, with different lengths for each year (8 to 14 one-hour sessions)

Alexis Working Committee to oversee project timelines, funding, expenditures, operations, and interpretation and presentation of results

Partnership objectives

1. Review and cultural adaptation of the elementary and middle school LST programs

- Adaptation Committee: school personnel, community representatives, and Elders
- Membership was fluid; open sessions for all community members to voice opinions on adaptations
- Health self-esteem redefined to incorporate importance of history, culture, and identity to self-esteem based on community input
- Example adaptation: designed a module to distinguish “tobacco” used for ceremonial purposes from “poisoned tobacco” (e.g., smoking cigarettes)

2. Delivery of the adapted program (*Nimi Icinohabi*)

- Feasibility testing for 1 year to see if adaptations were appropriate
- Full scale study then implemented
 - Modifications to the study design were needed based on low retention of students in schools. Flexibility is important!
- Protocols were approved by both university and First Nation bodies

Partnership objectives, cont'd

3. Measurement of changes in student knowledge of the negative effects of drug and alcohol use, attitudes toward drug and alcohol use, drug and alcohol refusal skills, and changes in self-esteem/self-concept

4. Documentation of the community's experience of and responses to the program adaptation and delivery

For both objectives,

- Qualitative (focus groups and Elder interviews) and quantitative data collection methods
- Validated measures to assess changes in child-level outcomes
 - Questionnaires specifically did not ask about drinking or drug use (culturally inappropriate)
 - Modifications to questionnaires were made towards the end of the program b/c of cultural adaptation
 - Ideally, this would have been done beforehand

Results and future directions

Results of the feasibility study

- Positive changes in students' drug and alcohol refusal skills, self-beliefs, and knowledge of the negative effects of drug and alcohol use
- Ownership of and investment in the program by the community
- Teaching approaches appropriate for learning contexts, worldview, and relationships of the community
- Support and participation of community Elders

Full-scale study showed similar results

- Program was delivered as often as was intended (fidelity)
- Mixed results in surveys because of sample issues

Formal commitment made by the Nation's leaders to continue implementing the program, expand to include a parent component

Summary points

D&I

- is a growing area of research to encourage fast, effective translation of evidence-based programs into practice
- is distinct from other phases of research but should be considered along the way (practice-informed research)
- works best with input/expertise of researchers AND practitioners/community members

Adapting and evidence-based intervention

- Takes time, patience, and open communication
- Can improve the fit of an EBI in your community and its effectiveness
- Should be planned and not done at the expense of fidelity

Resources for D&I research

D&I Resources

DIRC toolkits

- Intro to D&I, Aims, Barriers & Facilitators, Implementation Outcomes, Designs, Implementation Organizational Measures, Implementation Strategies, Guidelines, Checklist for writing IR proposals
- <https://sites.wustl.edu/wudandi/di-toolkits/>

Penn State Methodology Center

- Support for SMART, MOST, factorial designs
- <https://methodology.psu.edu/>

Implementation Science Webinar Series

- National Cancer Institute (NCI) Division of Cancer Control & Population Sciences Implementation Science Team
- <https://cyberseminar.cancercontrolplanet.org/implementationscience/>

2014 Training Institute for Dissemination and Implementation Research in Health (TIDIRH) presentations

- <http://conferences.thehillgroup.com/OBSSRinstitutes/TIDIRH2014/agenda.html>
- Designs for D&I Research, Dr. David Marrero
 - http://conferences.thehillgroup.com/OBSSRinstitutes/TIDIRH2014/Presentations/July%2021/4_Marrero_DesignsforD&IResearch.pdf

D&I Resources

Veteran Affairs' Quality Enhancement Research Initiative

- http://www.queri.research.va.gov/implementation/quality_improvement/default.cfm
- <http://www.queri.research.va.gov/implementation/ImplementationGuide.pdf>

National Cancer Institute's Implementation Science Team

- <http://cancercontrol.cancer.gov/is/>

Canadian Knowledge Translation Clearinghouse website

- <http://ktclearinghouse.ca>

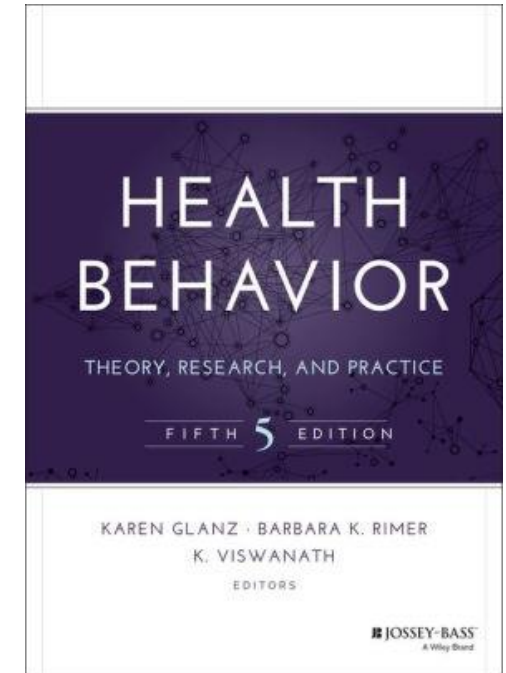
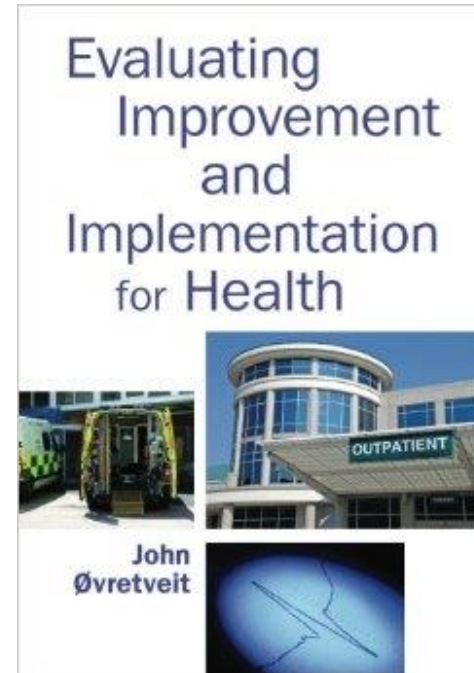
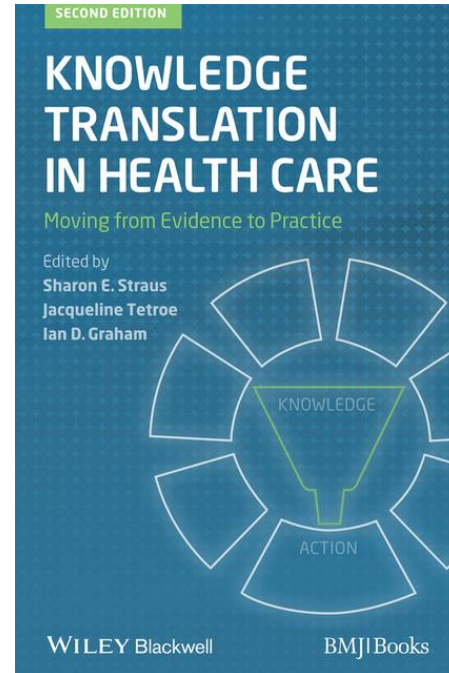
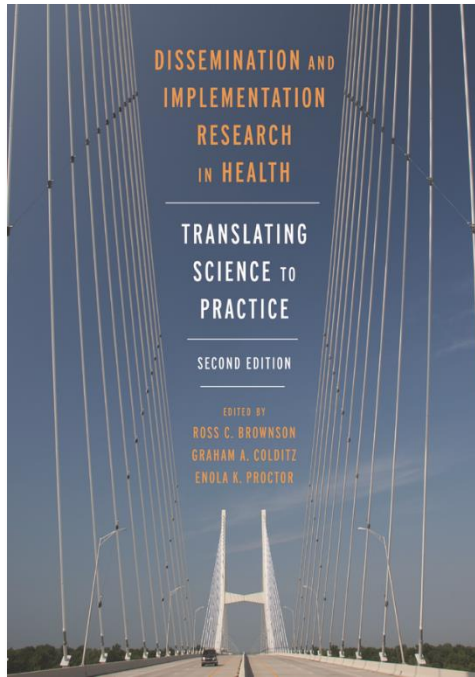
Grid-Enabled Measures developed by the National Cancer Institute

- <https://www.gem-beta.org/public/MeasureList.aspx?cat=2>

Society for Implementation Research Collaboration

- <https://societyforimplementationresearchcollaboration.org/>

Textbooks





EVENT

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

A decade of progress and the path forward

DATE & TIME December 4-6, 2017 LOCATION Crystal Gateway Marriott, Arlington, VA

Dissemination & Implementation Models in Health Research & Practice

Need Help?

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This interactive website was designed to help researchers and practitioners to select the D&I Model that best fits their research question or practice problem, adapt the model to the study or practice context, fully integrate the model into the research or practice process, and find existing measurement instruments for the model constructs. The term 'Models' is used to refer to both theories and frameworks that enhance dissemination and implementation of evidence-based interventions more likely.

Select

Search, view, and select
D&I Models

Adapt

Read strategies for
adapting D&I Models to
research or practice
context

Integrate

Read strategies for
incorporating D&I Models
into the full spectrum of
your project

Measure constructs

Find a list of constructs
and links to measurement
tools associated with the
D&I Models

Dissemination & Implementation Models in Health Research & Practice

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Search D&I Models

You can search for D&I Models by entering a keyword OR by selecting from the categories below.

[Submit Keyword Search](#)

OR

Dissemination & Implementation Models can be searched using individually set criteria.

D And/Or I

☐ Dissemination Only☐ Implementation Only☒ Any

Socio-Ecological Levels

☐ Individual☐ Organization☐ Community☐ System☐ Policy☒ All

Constructs

☐ Acceptability/feasibility☐ Awareness☐ Communication☐ Context☐ Development of an
intervention☐ Barriers and
facilitators☐ Communication
channels☐ Context - Inner
setting☐ Complexity

Searchable website

[http://dissemination-
implementation.org/in
dex.aspx](http://dissemination-implementation.org/index.aspx)

Training opportunities

Training Institute on Dissemination and Implementation Research (TIDIRH), National Institutes of Health

- <https://obssr.od.nih.gov/training/training-institutes/training-institute-on-dissemination-and-implementation-research-tidirh/>

Implementation Research Institute in Mental Health (IRI), Washington University in St. Louis

- <http://iristl.org>

Indigenous Public Health Training Institutes, University of British Columbia Faculty of Medicine

- <http://health.aboriginal.ubc.ca/training/>



NIH Funding Opportunities

Dissemination and Implementation Research in Health

- [R01 PAR-16-238](#)
- [R21 PAR-16-236](#)
- [R03 PAR-16-237](#)
- Standing study section

Acknowledgements

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Thank you! Questions?

