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Combining theories, process models, and frameworks to guide implementation



Sobia Khan, MPH, Shusmita Rashid, MPH, Julia E. Moore, PhD, MSc, Melissa Courvoisier, MEd and Sharon Straus, MD, FRCPC, MSc

Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, Canada

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About the Knowledge Translation (KT) Program

- Based at the Li Ka Shing Knowledge Institute at St. Michael's Hospital, Toronto, Canada
- Our goal:
 - To provide tailored support and capacity building to stakeholders who are synthesizing and implementing evidence
- We collaborate with clinicians, managers, policy makers, researchers, patients, and citizens



About the Knowledge Translation (KT) Program

Director: Dr. Sharon Straus

Knowledge Synthesis	Implementation	Capacity Building
Help stakeholders synthesize evidence	Help stakeholders facilitate the uptake of evidence in practice	Help stakeholders build their skills in KT science and KT practice



Why we think understanding theories, models and frameworks is important

- Over 60 implementation theories, models and frameworks (TMFs) exist, but there is little direction on how to apply these.
- In our own work at the KT Program (Practicing Knowledge Translation Course), this gap was very apparent.
- Our aim is to present a combination of TMFs, informed by implementation science, that can be used to guide real world implementation practice.



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Distinguishing between TMFs for implementation

What are the differences between TMFs?

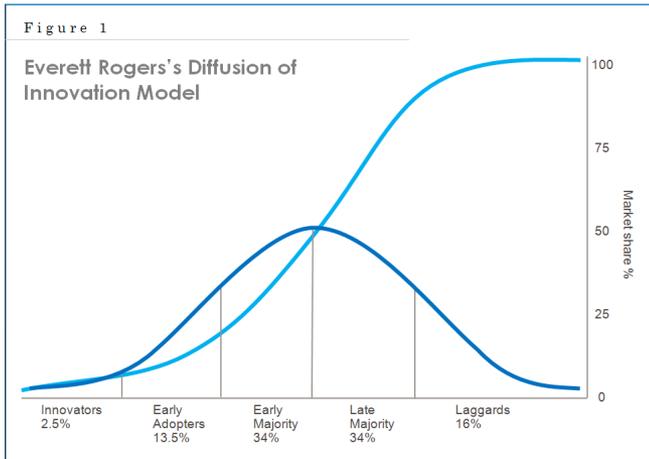
Theories	Describe prediction and causal mechanisms
Models	Specify steps in the process of translating research into practice
Frameworks	Explain factors that influence implementation and outcomes

Source: Nilsen, P. Making sense of implementation theories, models and frameworks. *Implementation Science* 2015 **10**:53
doi:

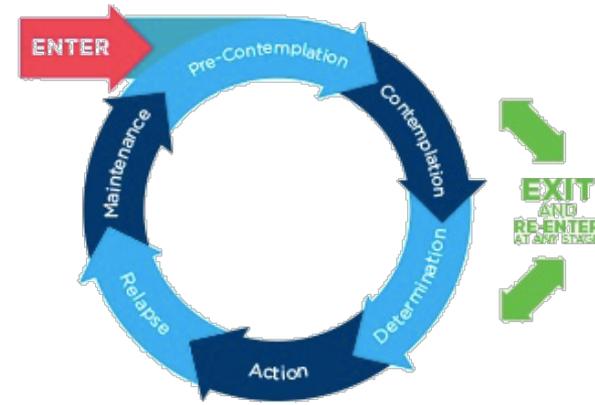


Theories (classic and implementation)

Diffusion of Innovations

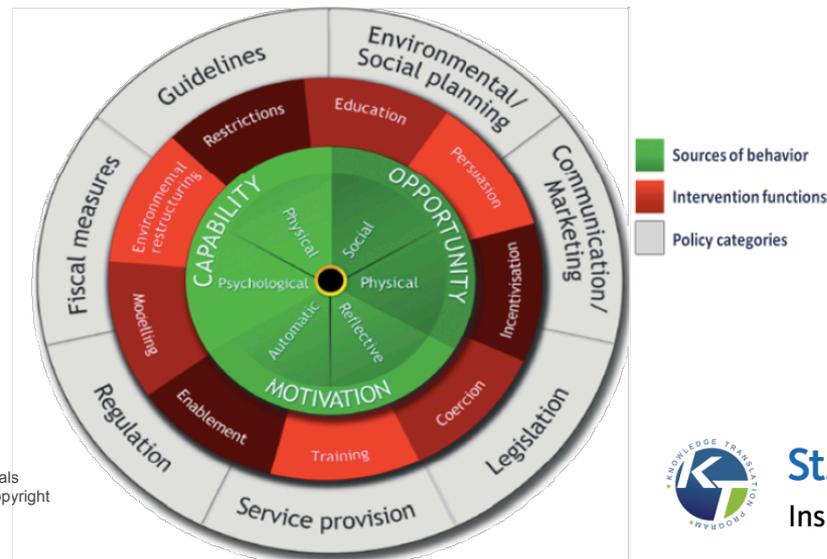


Stages of Change



Source: Prochaska, J. O. & Di Clemente, C. C., (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice*, 19(3), 276-288.

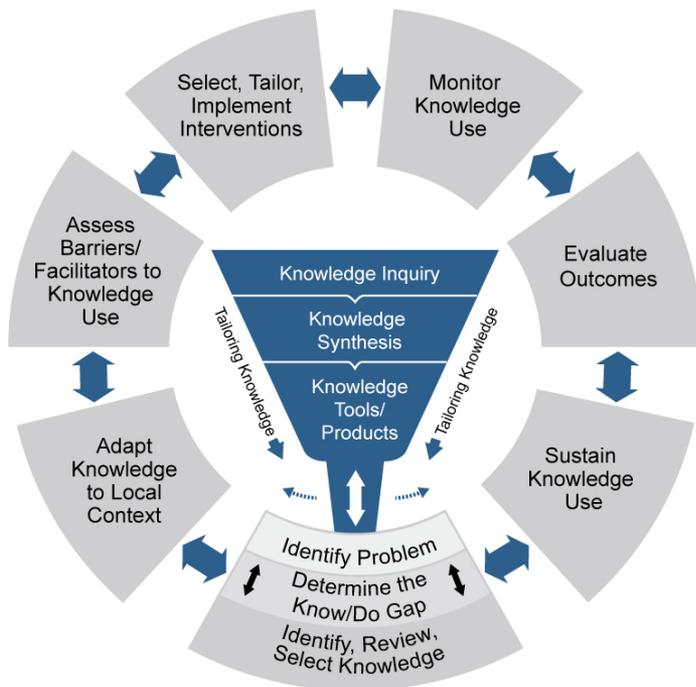
Capability, Opportunity, Motivation - Behaviour



Source: Michie *et al.* *Implementation Science* 2011 6:42 doi:10.1186/1748-5908-6-42

Process Models

The Knowledge-to-Action Cycle



Source: Graham ID et al.
JCHEP 2006;26:13-24.

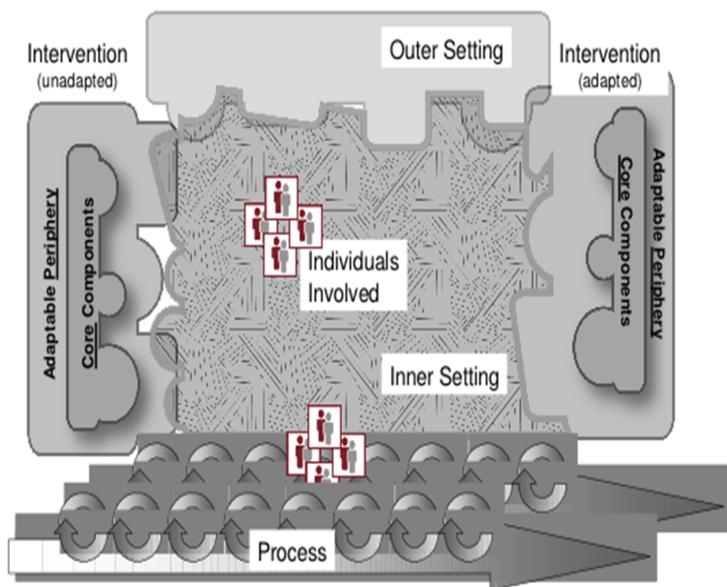
Stages of Implementation - NIRN



Source: Fixsen et al., 2010

Frameworks

Consolidated Framework for Implementation Research (CFIR)



Damschroder et al. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.*;4:50.

Theoretical Domains Framework



Michie et al 2005. *J Qual Safe Health Care*
Cane, O'Connor, Michie. 2012 *Implement Sci*



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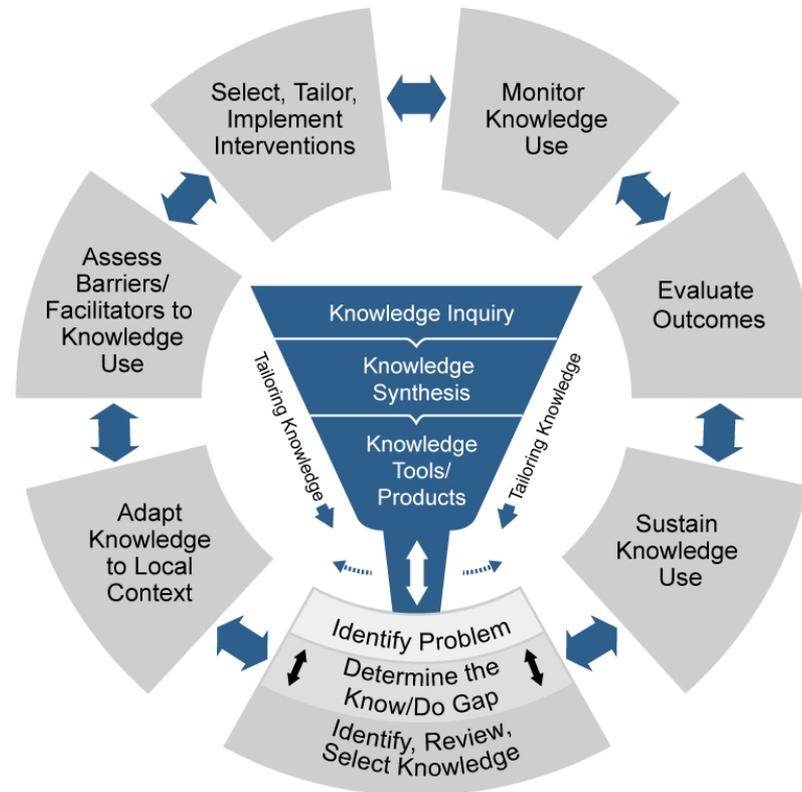
Combining KT models, theories and frameworks

Conceptualizing the process

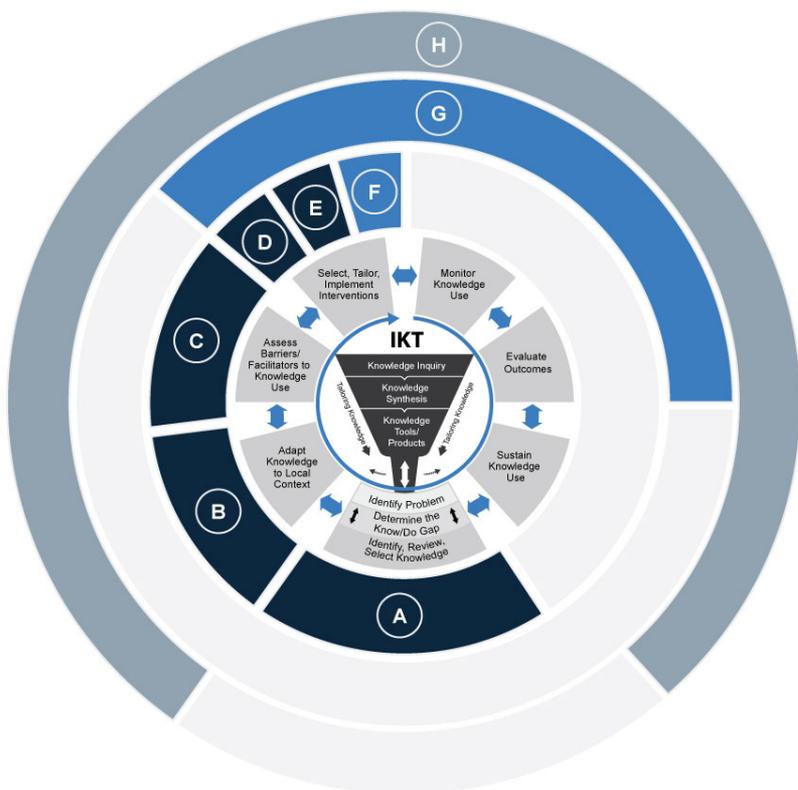
1. Select a process model for implementation
2. Understand what the steps of the process model aim to achieve
3. Select TMFs that can facilitate deeper understanding and completion of the process model steps



1. Select a process model



2. Understand what the steps of the process model aim to achieve



Steps

A

Identify knowledge to action gaps

1. Describe program's long-term goal
2. Identify and consult with key stakeholders
3. Define the practice change
4. Define the gap

B

Adapt knowledge to local context

5. Adapt the practice change

C

Assess barriers and facilitators to knowledge use

6. Identify barriers and facilitators
7. Organize barriers and facilitators to select individual barriers to the practice change
8. Map barriers and facilitators to a behaviour change framework

D

Select implementation strategies

9. Map barriers and facilitators to a behaviour change theory and implementation strategies
10. Select implementation strategies
11. Develop key messages/actions for each selected strategy considering relevant barriers and facilitators
12. Identify tools, technical assistance, training and quality assurance to operationalize each implementation strategy

E

Tailor implementation strategies

13. Assess the implementation context to identify barriers and facilitators to each implementation strategy
14. Proactively tailor implementation strategies to the local context

F

Implement

15. Identify stakeholders who will be involved with the implementation process and create implementation teams
16. Develop a plan that identifies critical steps of the implementation process
17. Implement strategies according to plan

G

Monitor and evaluate implementation

18. Develop a logic model to identify project inputs, activities, outputs, outcomes and impact
19. Monitor implementation by measuring and evaluating implementation quality including output/process indicators
20. Improve implementation quality by completing cycles of continuous quality improvement
21. Evaluate outcomes by measuring and evaluating outcome indicators

H

Sustain knowledge use

22. Plan for sustainability, scale up and spread

3. Select TMFs that can facilitate deeper understanding and completion of the process model steps

Steps	Examples of Theory, Model or Framework that can be used to guide step
A Identify knowledge to action gaps <ol style="list-style-type: none"> Describe program's long-term goal Identify and consult with key stakeholders Define the practice change Define the gap 	<ul style="list-style-type: none">  Health Needs Assessment (HNA) <i>Health Development Agency (2005)</i>  AGREE Tool <i>Brouwers, M., et al. (2010)</i>
B Adapt knowledge to local context <ol style="list-style-type: none"> Adapt the practice change 	<ul style="list-style-type: none">  ADAPTE Process <i>ADAPTE Collaboration (2007)</i>
C Assess barriers and facilitators to knowledge use <ol style="list-style-type: none"> Identify barriers and facilitators Organize barriers and facilitators to select individual barriers to the practice change Map barriers and facilitators to a behaviour change framework 	<ul style="list-style-type: none">  Theoretical Domains Framework (TDF) <i>Cane, J., et al. (2012)</i>
D Select implementation strategies <ol style="list-style-type: none"> Map barriers and facilitators to a behaviour change theory and implementation strategies Select implementation strategies Develop key messages/actions for each selected strategy considering relevant barriers and facilitators Identify tools, technical assistance, training and quality assurance to operationalize each implementation strategy 	<ul style="list-style-type: none"> *  Capability, Opportunity, Motivation – Behaviour (COM-B) <i>Michie, S. et al. (2011)</i> *  Stages of Change/Transtheoretical Model (TTM) <i>Prochaska, J.O. & Velicer, W.F. (1997)</i> *  Theory of Planned Behaviour <i>Ajzen, I. (1988)</i> *  Effective Practice and Organisation of Care (EPOC) Taxonomy of Implementation Strategies <i>EPOC Taxonomy (2015)</i> *  Expert Recommendations for Implementing Change (ERIC) Implementation Strategies <i>Powell, B. J. (2012)</i> *  Behaviour Change Techniques (BCT) <i>Michie, S. et al. (2011)</i> *  APRAISE Criteria <i>Adapted from Michie, S. et al. (2011)</i> *  Evidence-based System for Innovation Support (EBSIS) <i>Wandersman, et al. (2012)</i>
E Tailor implementation strategies <ol style="list-style-type: none"> Assess the implementation context to identify barriers and facilitators to each implementation strategy Proactively tailor implementation strategies to the local context 	<ul style="list-style-type: none"> *  Consolidated Framework for Implementation Research (CFIR) <i>Damschroder, L., et al. (2009)</i> *  Social Ecological Model (SEM) <i>Bronfenbrenner, U. (1994)</i>
F Implement <ol style="list-style-type: none"> Identify stakeholders who will be involved with the implementation process and create implementation teams Develop a plan that identifies critical steps of the implementation process Implement strategies according to plan 	<ul style="list-style-type: none">  Interactive Systems Framework for Dissemination and Implementation (ISF) <i>Wandersman, A., et al. (2008)</i>  Quality Implementation Framework (QIF) <i>Wandersman, A., et al. (2012)</i>
G Monitor and evaluate implementation <ol style="list-style-type: none"> Develop a logic model to identify project inputs, activities, outputs, outcomes and impact Monitor implementation by measuring and evaluating implementation quality including output/process indicators Improve implementation quality by completing cycles of continuous quality improvement Evaluate outcomes by measuring and evaluating outcome indicators 	<ul style="list-style-type: none">  Ecological Framework <i>Durtak, J.A. & DuPre, E.P. (2008)</i>  Plan-do-study-act (PDSA) <i>Deming, W.E. (1993)</i> *  RE-AIM Framework <i>Glasgow, R. E. et al. (1999)</i> *  PRECEDE-PROCEED Model <i>Green, L. (1968)</i>
H Sustain knowledge use <ol style="list-style-type: none"> Plan for sustainability, scale up and spread 	<ul style="list-style-type: none">  Dynamic Sustainability Framework <i>Chambers et al. (2013)</i>  NHS Model of Sustainability <i>NHS Institute for Innovation and Improvement, (2006-2013)</i>  Theory of Diffusion <i>Rogers, E. (1976)</i>

*Select one

Legend:

-  Framework – a structure with descriptive categories to help understand and/or explain influences on implementation and outcomes.
-  Theory– principles or statements designed to predict and show causal mechanisms.
-  Process Model – a deliberate simplification of a phenomenon to describe and/or guide specific aspects of a phenomenon.
-  Other – Tool, Checklist, Criteria, etc.



A closer look: developing a program

Effective Practice and Organisation of Care (EPOC)
Taxonomy of Implementation Strategies *EPOC Taxonomy (2015)*

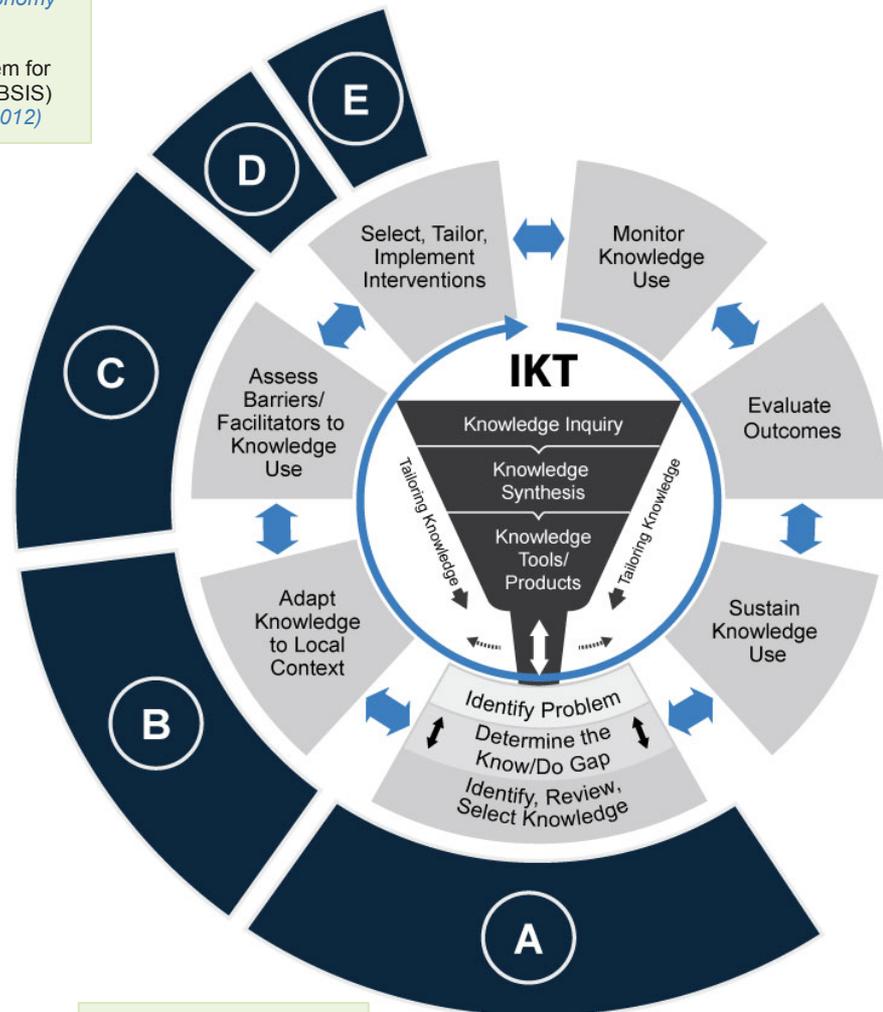
Evidence-based System for Innovation Support (EBSIS)
Wandersman, et al. (2012)

Theoretical Domains Framework (TDF) *Cane, J., et al. (2012)*

Capability, Opportunity, Motivation – Behaviour (COM-B) *Michie, S. et al. (2011)*

Consolidated Framework for Implementation Research (CFIR) *Damschroder, L., et al. (2009)*

ADAPTE Process
ADAPTE Collaboration (2007)



Health Needs Assessment (HNA) *Health Development Agency (2005)*



A closer look: planning for implementation

Interactive Systems
Framerwork *Wandersman, et al. (2012)*



WHO

- Create implementation teams
- Obtain stakeholder buy-in and foster a supportive climate
- Technical assistance/coaching



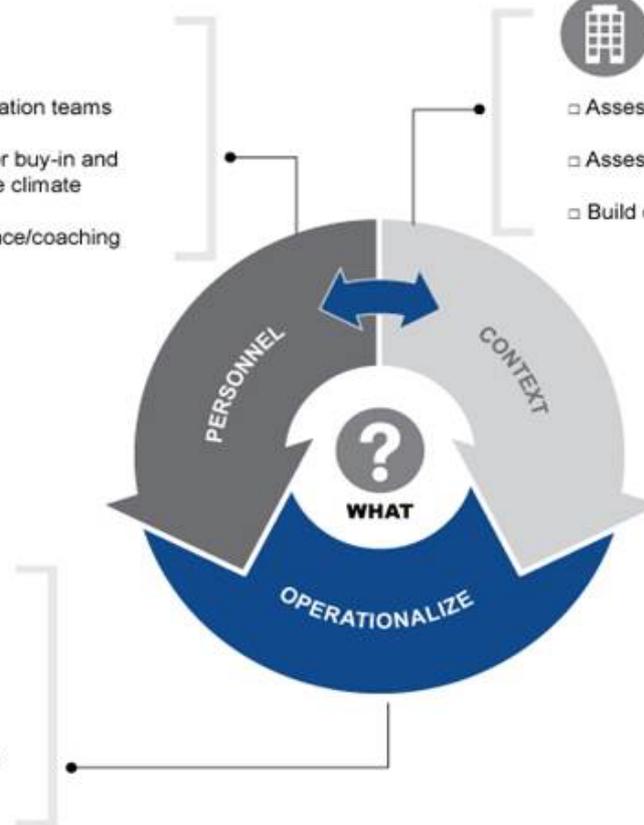
WHERE

- Assess needs and resources
- Assess readiness and capacity
- Build organizational capacity



HOW

- Assess fit
- Proactive tailoring



Consolidated Framework for
Implementation Research
(CFIR) *Damschroder, L., et al. (2009)*

Readiness Assessment
Measures

Adapted from Meyers D, Durlak J, Wandersman A: **The Quality Implementation Framework: A Synthesis of Critical Steps in the Implementation Process.** *Am J Community Psychol* 2012, **50**(3-4):462-480.



Practical implications

Implications for researchers	Implications for practitioners	General implications
Identify and combine selected TMFs to develop and evaluate programs	Identify and combine selected TMFs pragmatically to develop and implement programs	TMFs are interchangeable Method of combining TMFs can be applied across multiple implementation settings at the micro, meso and macro levels.

KT Support: Services

- Synthesizing evidence
 - E.g., Conducting systematic reviews and network meta-analyses
- Developing KT tools
 - E.g., Developing printed and online educational materials tailored to end users
- Preparing and evaluating KT interventions
 - E.g., Conducting a needs assessment and creating an implementation plan
- Engaging patients in research
 - E.g., Conducting citizens' panels and involving patients in guideline development

KTP: Courses and Workshops

- Systematic review course (online)
- KT basics workshop (2 days, soon to be online)
- Practicing KT course (5 days)
- End-of-grant KT workshop (1 day)
- Partners in Research course (online)

More info: knowledgetranslation.net/capacity-building/our-courses



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Thank you!

Contact me at khans@smh.ca