Combining theories, process models, and frameworks to guide implementation

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Society for Implementation Research and Collaboration Conference
September 8 – 9, 2017
About the Knowledge Translation (KT) Program

• Based at the Li Ka Shing Knowledge Institute at St. Michael’s Hospital, Toronto, Canada

• Our goal:
  o 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

<table>
<thead>
<tr>
<th>Knowledge Synthesis</th>
<th>Implementation</th>
<th>Capacity Building</th>
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<tbody>
<tr>
<td>Help stakeholders synthesize evidence</td>
<td>Help stakeholders facilitate the uptake of evidence in practice</td>
<td>Help stakeholders build their skills in KT science and KT practice</td>
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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.
Distinguishing between TMFs for implementation
What are the differences between TMFs?

<table>
<thead>
<tr>
<th>Theories</th>
<th>Describe prediction and causal mechanisms</th>
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<tbody>
<tr>
<td>Models</td>
<td>Specify steps in the process of translating research into practice</td>
</tr>
<tr>
<td>Frameworks</td>
<td>Explain factors that influence implementation and outcomes</td>
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doi:
Theories (classic and implementation)

**Diffusion of Innovations**

Everett Rogers’s Diffusion of Innovation Model

**Stages of Change**


**Capability, Opportunity, Motivation - Behaviour**


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Process Models

### The Knowledge-to-Action Cycle

- **Identify Problem**
  - Determine the Know/Do Gap
  - Identify, Review, Select Knowledge

- **Knowledge Inquiry**
  - Knowledge Synthesis
  - Knowledge Tools/Products
  - Sustaining Knowledge Use

- **Adapt Knowledge to Local Context**

- **Assess Barriers/Facilitators to Knowledge Use**

- **Select, Tailor, Implement Interventions**

- **Monitor Knowledge Use**

- **Evaluate Outcomes**


### Stages of Implementation - NIRN

1. **Exploration**
   - Decide WHAT to adopt and implement

2. **Installation**
   - HOW will it happen? Plan what needs to be in place to implement the WHAT.

3. **Initial Implementation**
   - Put the plan on the ground and implement the WHAT (continuous PDSA cycles).

4. **Full Implementation**
   - Make sure it works, then do it better (PDSA) and make it "business as usual."

Source: Fixsen et al., 2010
Frameworks

Consolidated Framework for Implementation Research (CFIR)


Theoretical Domains Framework

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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

<table>
<thead>
<tr>
<th>Steps</th>
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<tbody>
<tr>
<td><strong>Identify knowledge to action gaps</strong></td>
</tr>
<tr>
<td>1. Describe program’s long-term goal</td>
</tr>
<tr>
<td>2. Identify and consult with key stakeholders</td>
</tr>
<tr>
<td>3. Define the practice change</td>
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<tr>
<td>4. Define the gap</td>
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<tr>
<td><strong>Adapt knowledge to local context</strong></td>
</tr>
<tr>
<td>5. Adapt the practice change</td>
</tr>
<tr>
<td><strong>Assess barriers and facilitators to knowledge use</strong></td>
</tr>
<tr>
<td>6. Identify barriers and facilitators</td>
</tr>
<tr>
<td>7. Organize barriers and facilitators to select individual barriers</td>
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<tr>
<td>8. Map barriers and facilitators to a behaviour change framework</td>
</tr>
<tr>
<td><strong>Select implementation strategies</strong></td>
</tr>
<tr>
<td>9. Map barriers and facilitators to a behaviour change theory and</td>
</tr>
<tr>
<td>implementation strategies</td>
</tr>
<tr>
<td>10. Select implementation strategies</td>
</tr>
<tr>
<td>11. Develop key messages/actions for each selected strategy,</td>
</tr>
<tr>
<td>considering relevant barriers and facilitators</td>
</tr>
<tr>
<td>12. Identify tools, technical assistance, training and quality</td>
</tr>
<tr>
<td>assurance to operationalize each implementation strategy</td>
</tr>
<tr>
<td><strong>Tailor implementation strategies</strong></td>
</tr>
<tr>
<td>13. Assess the implementation context to identify barriers and</td>
</tr>
<tr>
<td>facilitators to each implementation strategy</td>
</tr>
<tr>
<td>14. Proactively tailor implementation strategies to the local</td>
</tr>
<tr>
<td>context</td>
</tr>
<tr>
<td><strong>Implement</strong></td>
</tr>
<tr>
<td>15. Identify stakeholders who will be involved with the</td>
</tr>
<tr>
<td>implementation process and create implementation teams</td>
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<tr>
<td>16. Develop a plan that identifies critical steps of the</td>
</tr>
<tr>
<td>implementation process</td>
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<tr>
<td>17. Implement strategies according to plan</td>
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<tr>
<td><strong>Monitor and evaluate implementation</strong></td>
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<tr>
<td>18. Develop a logic model to identify project inputs, activities,</td>
</tr>
<tr>
<td>outputs, outcomes and impact</td>
</tr>
<tr>
<td>19. Monitor implementation by measuring and evaluating</td>
</tr>
<tr>
<td>implementation quality including output/process indicators</td>
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<tr>
<td>20. Improve implementation quality by completing cycles of</td>
</tr>
<tr>
<td>continuous quality improvement</td>
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<tr>
<td>21. Evaluate outcomes by measuring and evaluating</td>
</tr>
<tr>
<td>outcome indicators</td>
</tr>
<tr>
<td><strong>Sustain knowledge use</strong></td>
</tr>
<tr>
<td>22. Plan for sustainability, scale up and spread</td>
</tr>
</tbody>
</table>
3. Select TMFs that can facilitate deeper understanding and completion of the process model steps

<table>
<thead>
<tr>
<th>Steps</th>
<th>Examples of Theory, Model or Framework that can be used to guide step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt knowledge to local context</td>
<td>- ADAPTE Process ADAPTE Collaboration (2007)</td>
</tr>
<tr>
<td>Assess barriers and facilitators to knowledge use</td>
<td>- Theoretical Domains Framework (TDF) Cane, J., et al. (2012)</td>
</tr>
</tbody>
</table>
| Select implementation strategies | - Capability, Opportunity, Motivation – Behaviour (COM-B) Michie, S. et al. (2011)  
- Effective Practice and Organisation of Care (EPOC) Taxonomy of Implementation Strategies EPOC Taxonomy (2015)  
- Behaviour Change Techniques (BCT) Michie, S. et al. (2011)  
- APRAISE Criteria Adapted from Michie, S. et al. (2011)  
- PRECEDE-PROCEED Model Green, L. (1968) |
| Sustain knowledge use | - Dynamic Sustainability Framework Chambers et al. (2013)  
- NHS Model of Sustainability NHS Institute for Innovation and Improvement, (2006-2013)  

*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)


Adapt Knowledge to Local Context

Assess Barriers/Facilitators to Knowledge Use

Select, Tailor, Implement Interventions

Monitor Knowledge Use

Evaluate Outcomes

Sustain Knowledge Use

Telling Knowledge

Adapting Knowledge

Identify Problem

Determine the Know/Do Gap

Identify, Review, Select Knowledge

Knowledge Tools/Products

Knowledge Synthesis

Knowledge Inquiry

A

B

C

D

E

IKT
A closer look: planning for implementation

Interactive Systems Framework 
Wandersman, et al. (2012)

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

Readiness Assessment Measures

## Practical implications

<table>
<thead>
<tr>
<th>Implications for researchers</th>
<th>Implications for practitioners</th>
<th>General implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and combine selected TMFs to develop and evaluate programs</td>
<td>Identify and combine selected TMFs pragmatically to develop and implement programs</td>
<td>TMFs are interchangeable</td>
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<tr>
<td></td>
<td></td>
<td>Method of combining TMFs can be applied across multiple implementation settings at the micro, meso and macro levels.</td>
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KT Support: Services

• Synthesizing evidence
  o E.g., Conducting systematic reviews and network meta-analyses

• Developing KT tools
  o E.g., Developing printed and online educational materials tailored to end users

• Preparing and evaluating KT interventions
  o E.g., Conducting a needs assessment and creating an implementation plan

• Engaging patients in research
  o 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
Thank you!

Contact me at khans@smh.ca