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From Implementation to Sustained Behaviour Change: An Introduction to Implementation Science

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Acknowledgements

- Practicing Knowledge Translation Course – Li Ka Shing Knowledge Institute at St. Michael's Hospital
  - Sharon Straus, Julia Moore, Sobia Khan

- Andrea Chambers, IPAC, Public Health Ontario

Plan for today:

- Introduction to Knowledge Translation
  - Dissemination and Implementation Science
- Knowledge to Action Cycle
  - Defining your practice change
  - Assessing barriers and facilitators
  - Plan for implementation considerations & sustainability

- Implementation Science – What does this look like? And how might you apply these principles in practice?

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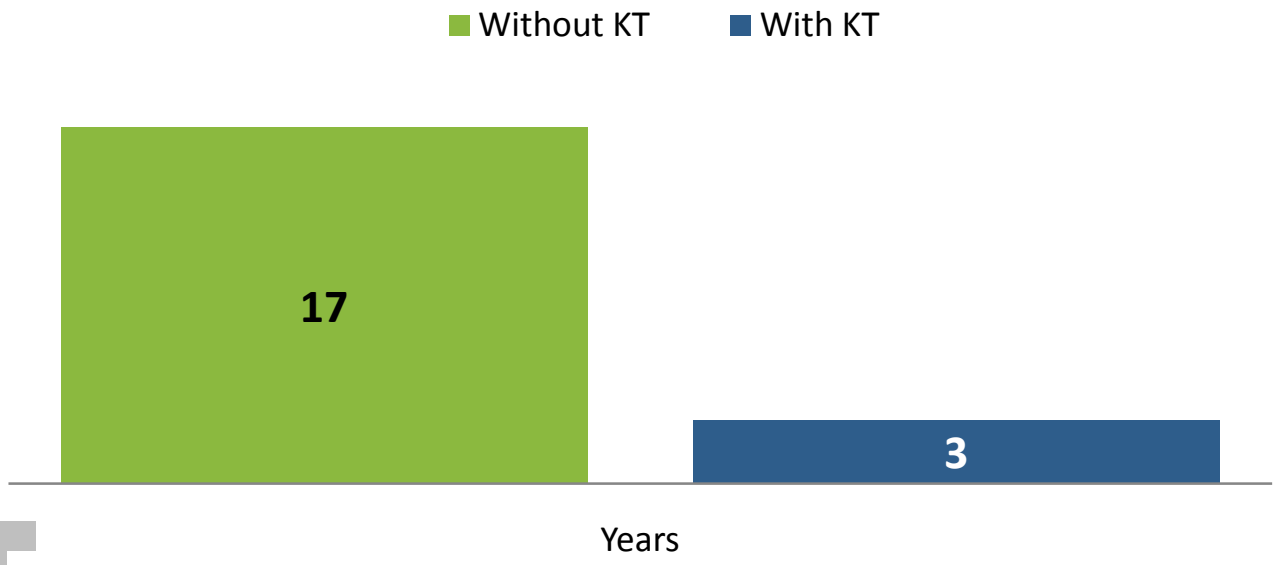
Introduction to Knowledge Translation (KT) and Implementation Science (IS)

Major gaps between evidence and practice

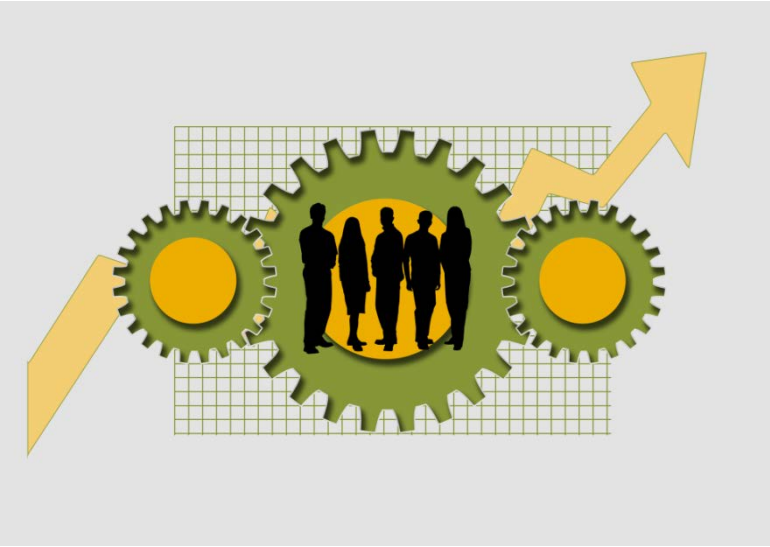


Creating knowledge, developing evidence-based guidelines and evidence-based programs, and dissemination are not sufficient to ensure behaviour change…we need to effectively implement evidence to change behaviour and outcomes!

Balas E, Boren S. Managing Clinical Knowledge for Health Care Improvement. In: van Bemmel JH, McCray AT, eds. Yearbook of Medical Informatics. Stuttgart: Schattauer Verlagsgesellschaft mbH, 2000:65–70

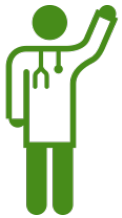
What is Knowledge Translation?

- dynamic and iterative process
- includes **synthesis**, **dissemination**, **exchange** and ethically sound **application of knowledge**
- improves health services and products, and strengthen the health care system
- KT takes place within a **complex system of interactions**



CIHR definition (www.cihr-irsc.gc.ca/e/29418.html)

Knowledge Translation

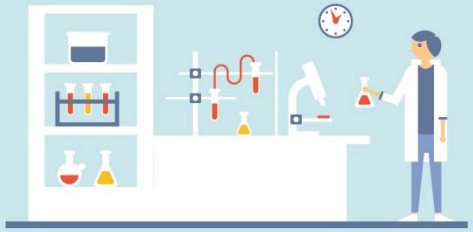
	Dissemination	Implementation
 Practice	**Dissemination Practice** Purposive distribution of information and intervention materials to a specific audience. The intent is to spread information. (NIH)	**Implementation Practice** The use of strategies to adopt and integrate evidence-based interventions and change practice within specific settings. (NIH)
 Science	**Dissemination Science** The scientific study of processes and variables that determine and/or influence the spread/sharing of knowledge to various stakeholders.	**Implementation Science** The scientific study of the methods to promote the uptake of research findings in clinical, organizational, or policy contexts. (Implementation Science journal)

Adapted from the Practicing Knowledge Translation Course, St. Michael's Hospital

How do we see implementation science?

Implementation

The **practical work** involved in developing plans, strategies, infrastructure, and implementation supports to put into practice an activity or program of known dimensions



Implementation Science

A **field of science** that is looking to better understand implementation and sustainability, develop valid measures, understand what influences implementation, what implementation strategies are most effective in supporting practice change, and more!

What does an "Implementation Science focus" look like?

- Acknowledging barriers and facilitators for the required practice change for any stakeholders involved
  - And these may differ by audience…
- Incorporating barriers and facilitators into the products, tools, and programs that are offered
- Measuring quality implementation and identifying factors that influence implementation of knowledge products
  - i.e., Measure what we do, and collect feedback on what works, what doesn't, and why!

So, how do we “do” Implementation science?

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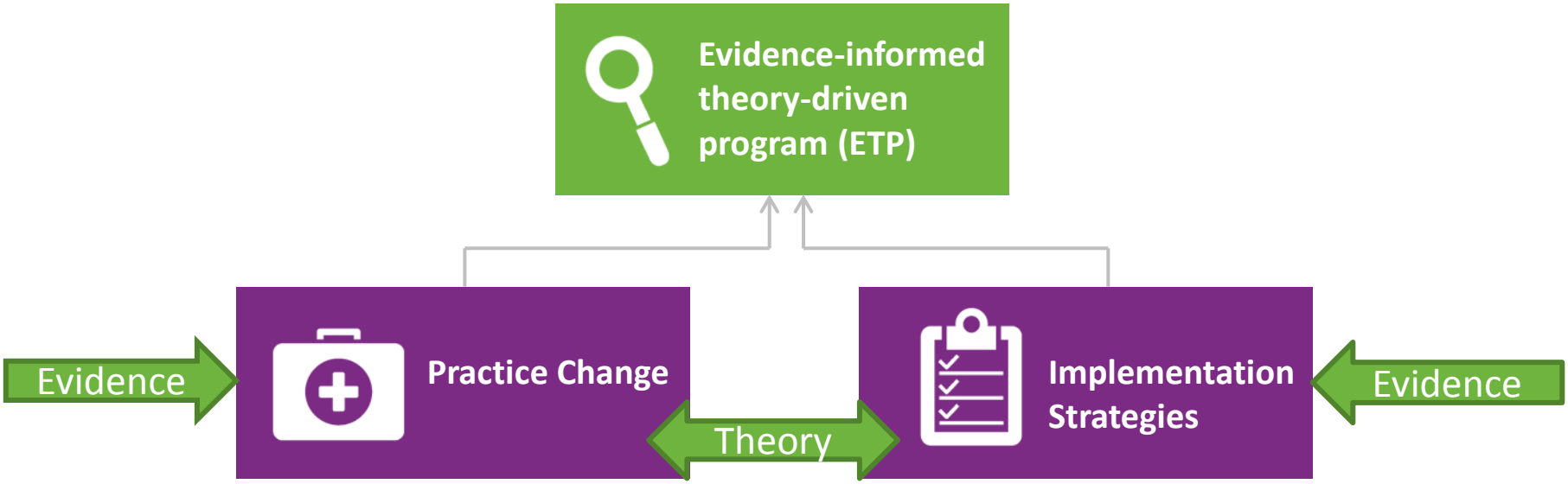
Two concepts which can help to focus our implementation work:

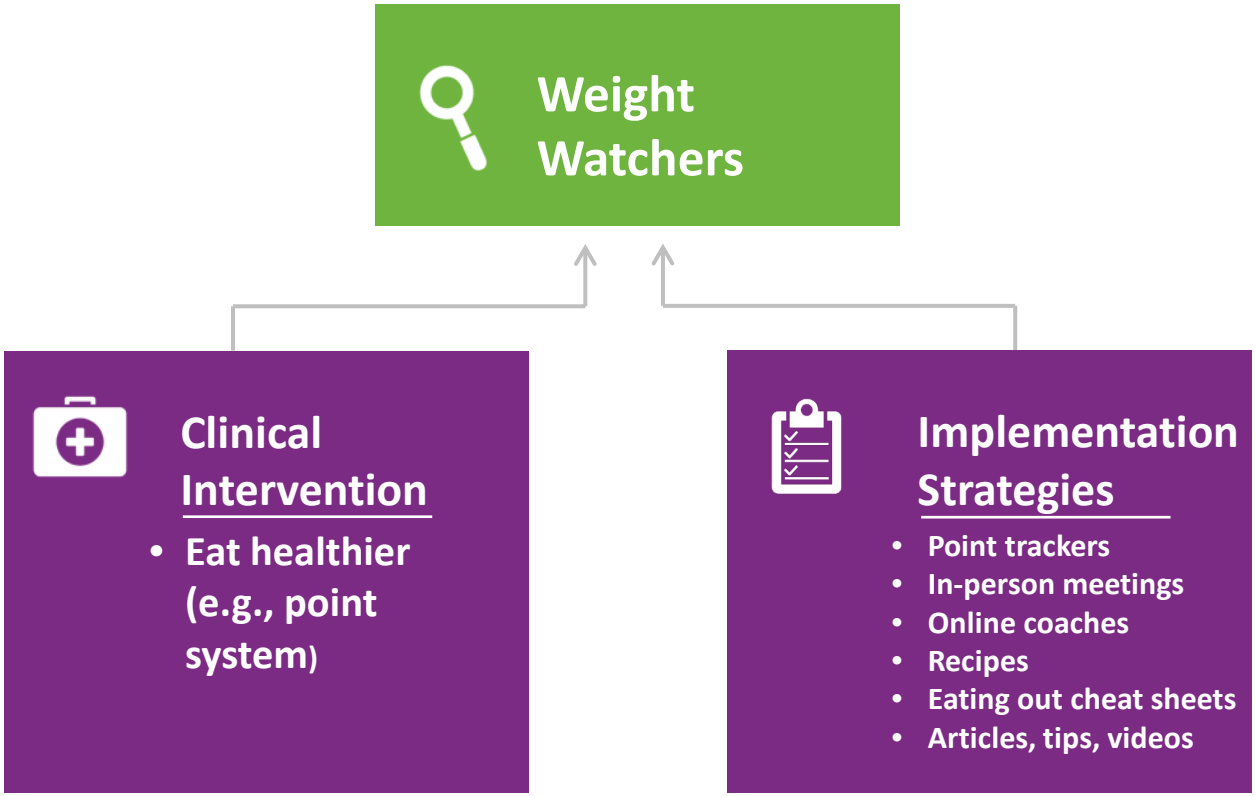
- Evidence-informed and theory driven programs
- Knowledge to Action Cycle

What if there is no evidence-based program?

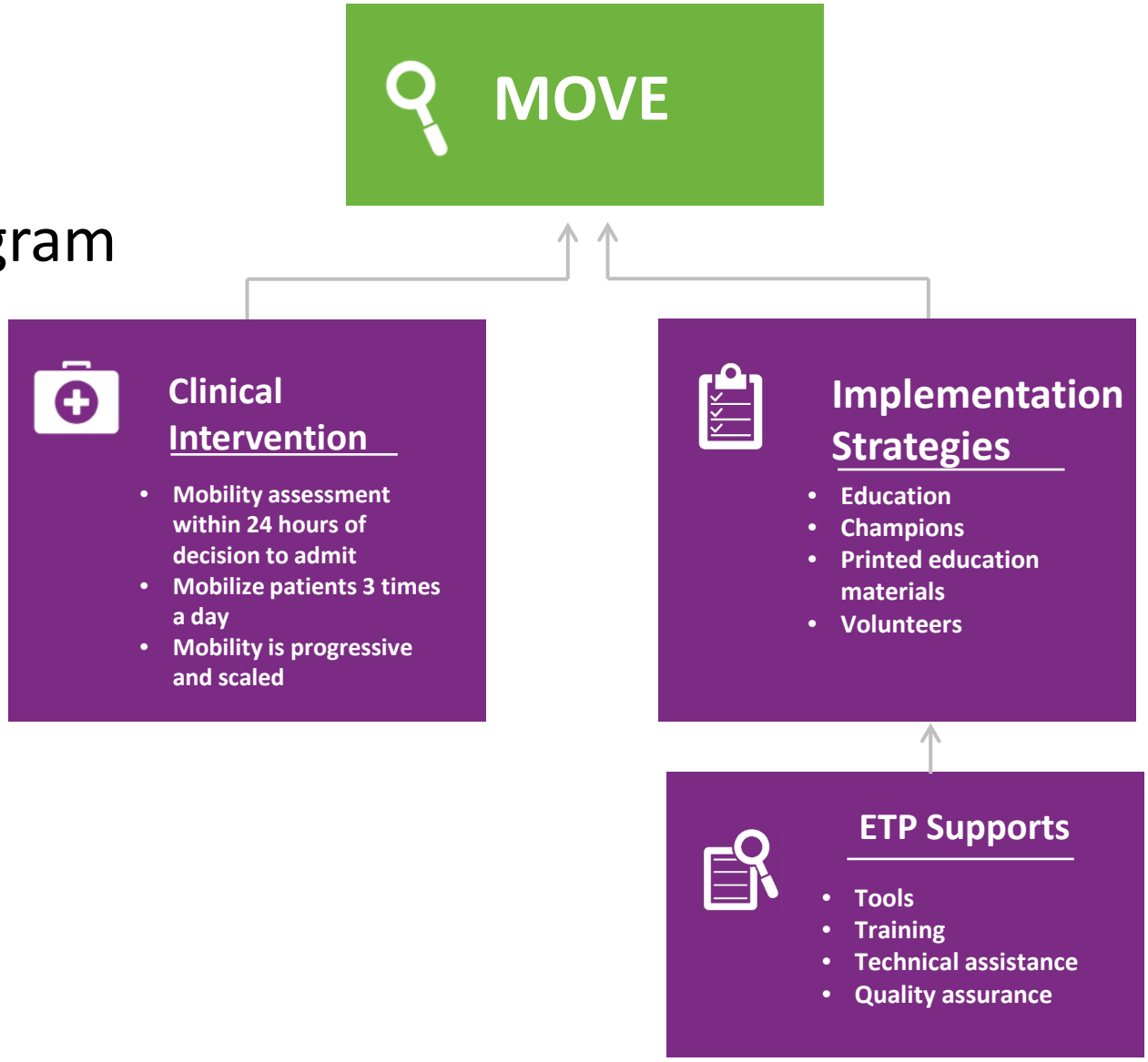


1. **Practice change** must have high-quality research evidence of effectiveness
   - i.e., what are we asking people to do? And is it known to work?
2. **Implementation strategies** must be supported by implementation research evidence
   - i.e., how do people make this change happen?
3. **Use behaviour change theory** to link your change with your strategies
   - i.e., select strategies that should effectively support your desired change

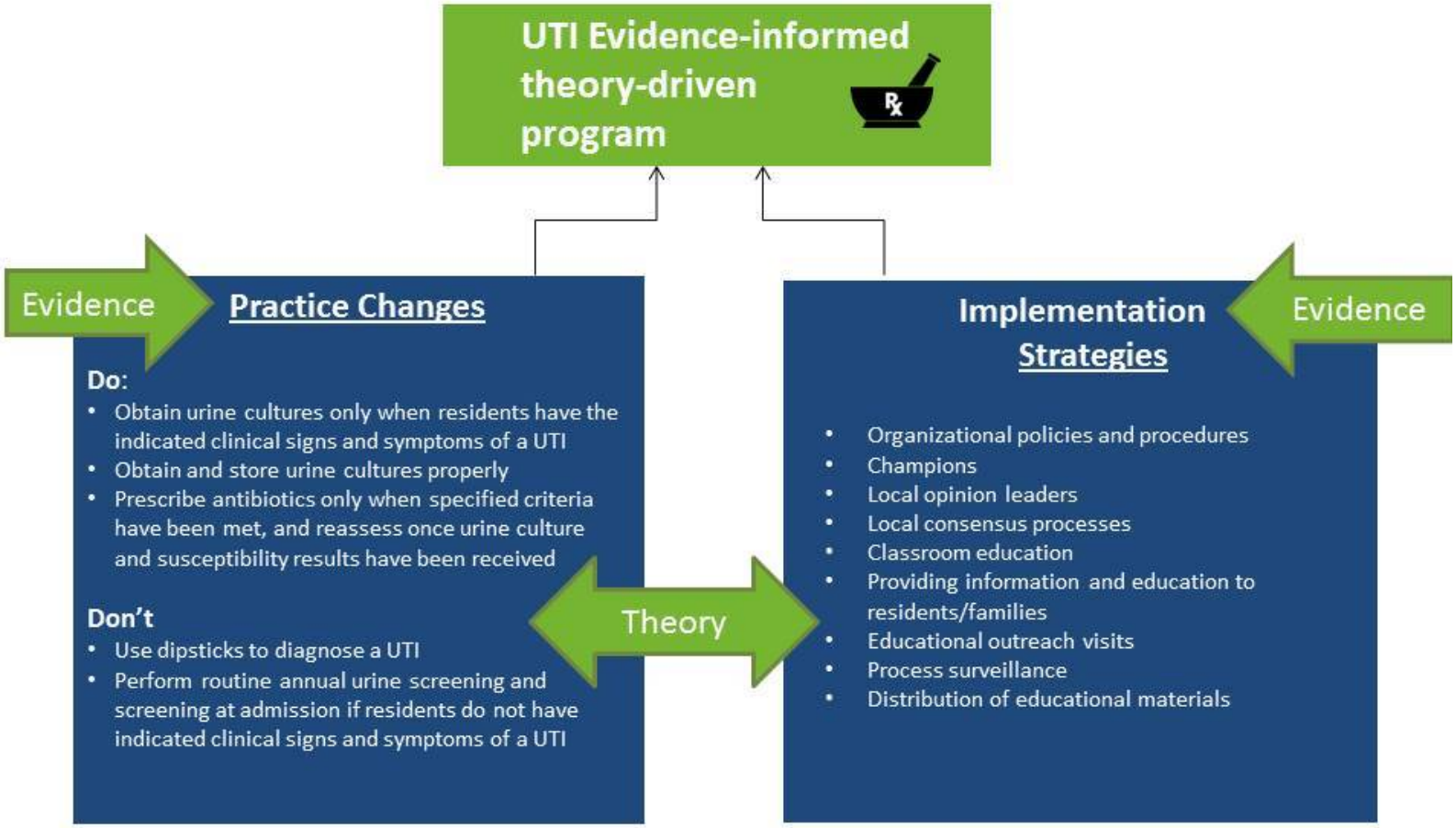
ETP Example: Weight Watchers



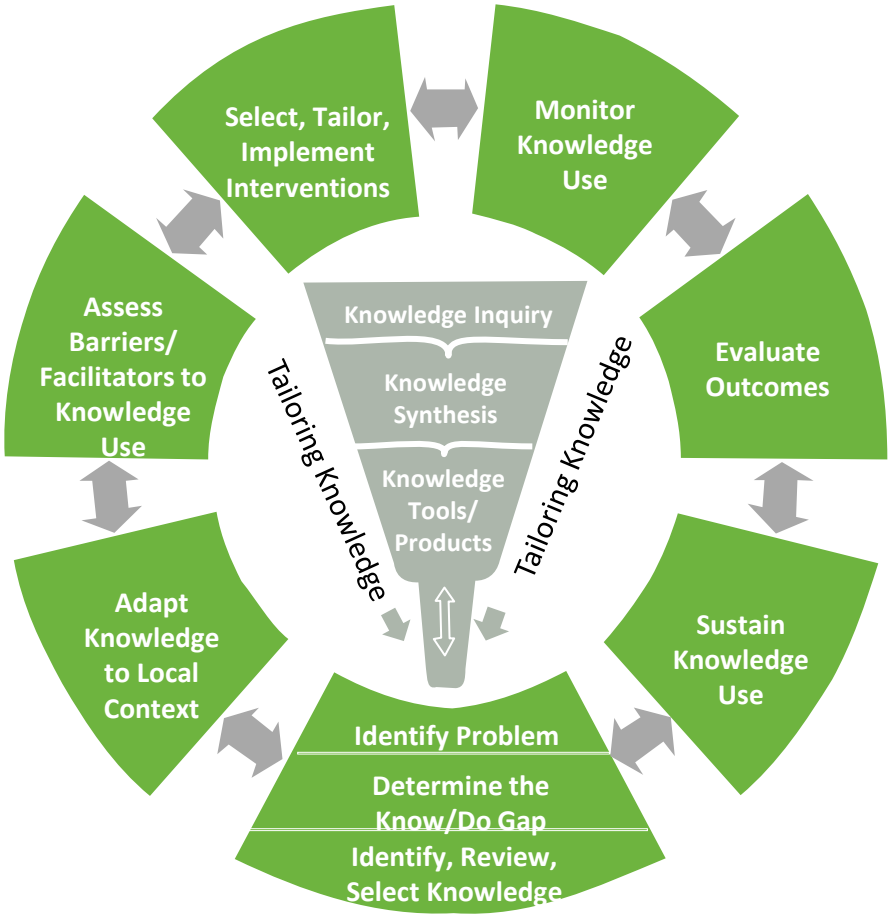
ETP Example: Mobility program for seniors



ETP Example: UTI Pilot Project



The Knowledge to Action Cycle



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

The Knowledge to Action Cycle

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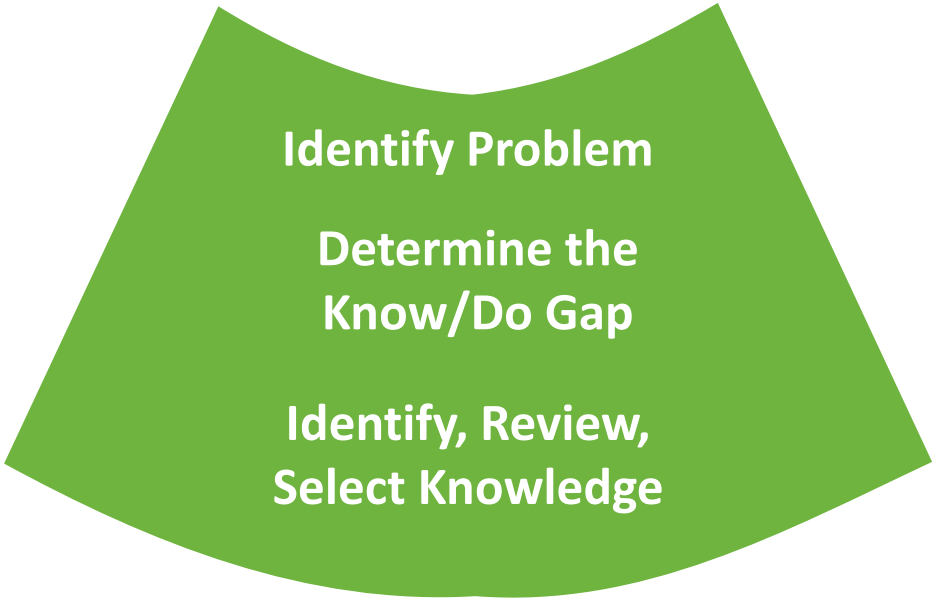
1. Defining the practice change



"Defining the What"

I think there is an opportunity here to apply implementation science… what do you want to change?

- What is your objective? (is there a practice change component?)
- Can we describe what our unit of implementation is?
- How well has "the what" been defined?
- We may be thinking about a program/technology/new approach

Example: Reviewing the Just Clean Your Hand Program

- What do we mean by hand hygiene adherence, specifically?
- What are the core components of the JCYH program?

Just Clean Your Hand Program

Clinical Intervention

- Perform hand hygiene according to the 4 moments
- Proper hand hygiene technique
- Adherence to hand hygiene adornments

Implementation Strategies

- Environmental changes
- Education
- Audit and feedback
- Distribution of educational materials
- Champions
- Providing information/education to patients

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"Defining the What"

- Narrowing down the practice changes
- What would you tell an organization and front-line staff to be doing differently? What is the new way of work?
- Example: UTI Program

Clinical Intervention

Do:

- ✓ Obtain urine cultures only when residents have been determined to have indicated clinical signs and symptoms of a UTI
- ✓ Obtain and store urine cultures properly
- ✓ Prescribe antibiotics only when specified criteria have been met and reassess once urine culture and sensitivity results are received.

Don't:

- ✓ Use dipsticks to screen for or diagnose a UTI
- ✓ Perform routine (i.e., on admission or yearly) urine screening

- Developing clarity around the “what” is critical

- What we need to do:
  - ✓ Describe the what
  - ✓ Define the essential functions / core components – what must be present to say the program exists in a given location / what must happen to say an individual is adhering to practice changes
  - ✓ Include operational definitions – especially when essential functions are hard to specify

- We will practice some “defining the what” exercises today!

(NIRN, 2015)

"Defining the what": Practice Change Questionnaire

1. What is the intended purpose/overall objective of the practice change (i.e., what impact do you hope to see as a result of the practice change)?
2. In which setting(s) is this practice change meant to take place?
3. List all key stakeholders who are expected to change as a result of the implementation

"Defining the what": Practice Change Questionnaire

4. What specific behaviours/practices do each of the stakeholder groups need to make?
5. How often will these stakeholders engage in the changed practice?
6. What is the evidence for this practice change?
7. Who will be involved with implementing this change (i.e., making the change happen)?

The Knowledge to Action Cycle

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

Assessing Barriers and Facilitators to Practice Change

Why consider barriers and facilitators?

- Included in most process models and implementation frameworks

- Uncover underlying reasons people are/are not changing behaviour; challenge our assumptions

How do you assess barriers and facilitators?

Surveys

Interviews/
focus groups

Observations

Discussions with
key stakeholders

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Example: Categories of barriers to guideline adherence based on 293 identified barriers:

- **Lack of familiarity:** volume of information, time needed, guideline accessibility
- **Lack of awareness :** volume of information, time needed, guideline accessibility
- **Lack of agreement with specific guidelines:** interpretation of evidence, applicability to patient, not cost beneficial, lack of confidence in guideline development
- **Lack of agreement with guidelines in general:** too cookbook, too rigid to apply, biased synthesis, challenge to autonomy, not practical
- **Lack of outcome expectancy:** physician believes performance of guideline recommendation will not lead to desired outcome
- **Lack of self-efficacy:** physician believes that he/she cannot perform guideline recommendation
- **Lack of motivation/inertia of previous practice:** habit, routines
- **External barriers/patient factors:** inability to reconcile patient preferences with guideline recommendation
- **Guideline factors:** guideline characteristics, presence of contradictory guidelines
- **Environmental factors:** lack of time, lack of resources, organizational constraints, lack of reimbursement, perceived increase in malpractice liability

Source: Cabana MD, Rand CS, Powe NR, et al. *JAMA.* 1999;282(15):1458-1465.

Examples of barriers from the UTI project:

- Lack of knowledge regarding clinically relevant signs and symptoms of a UTI
- Current practice/policy is misaligned with recommendations
- Lack of local diagnostic tools/algorithms; out of date or not evidence based
- Beliefs and concerns about the consequences of not providing antibiotics to residents

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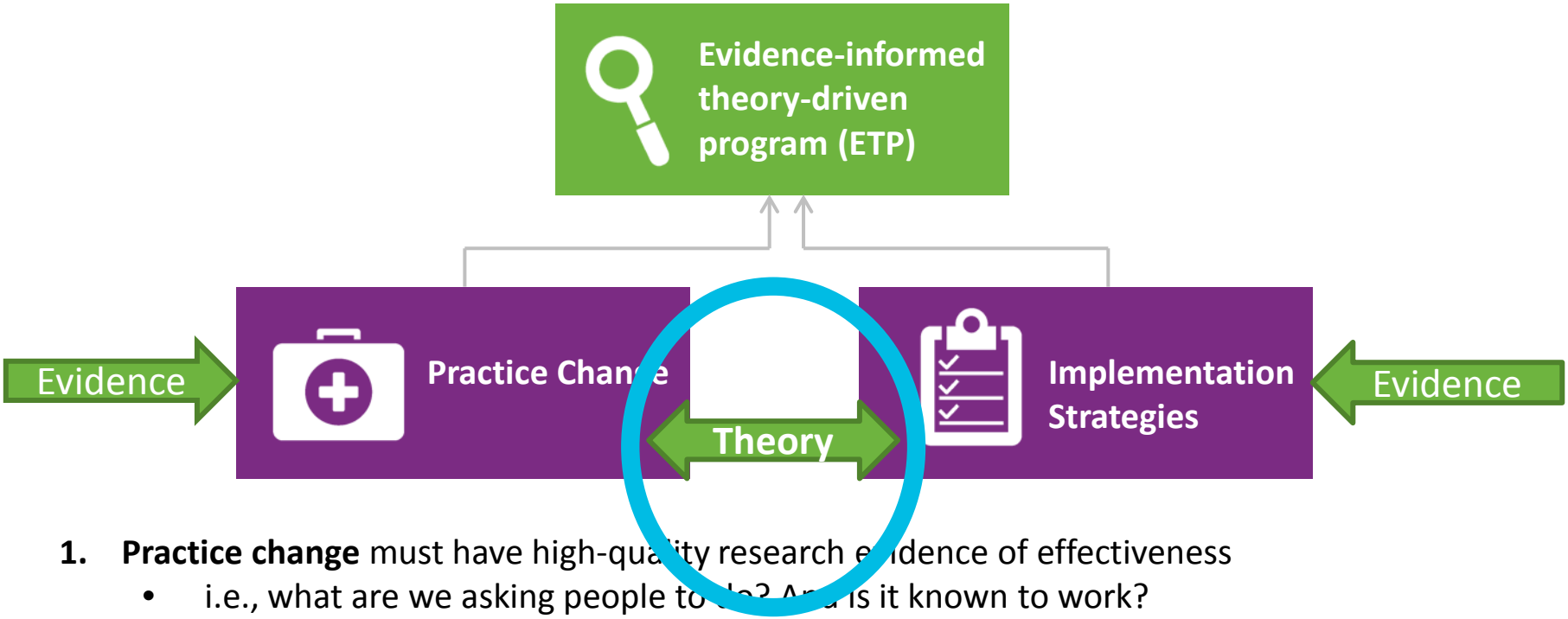
Any examples of common challenges when trying to implement a new program in your home?

Any examples of common facilitators (enablers, supports, wins)?

What do we do once we understand our barriers and facilitators?

What if there is no evidence-based program?



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Mapping: an approach to analyzing barriers & facilitators

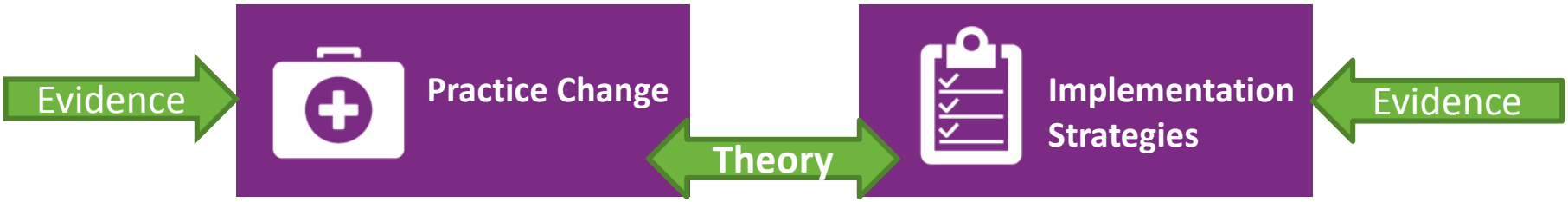
Michie et al 2005 *Qual Saf Health Care*
Cane, O'Connor, Michie, 2012 *Implementation Science*

Examples from the UTI project development:

Barrier: Beliefs and concerns about the consequences of not providing antibiotics

Barrier: Lack of knowledge regarding clinically relevant signs and symptoms of a UTI

Evidence-informed, theory-driven practices



- Mapping your barriers to practice change and implementation, using theory, will result in suggested strategies to use including:
  - Educational meetings
  - Distribution of education materials
  - Coaching
  - Local opinion leaders
  - Audit and feedback
  - Reminders
  - And more!

To recap:

- Implementation science involves trying to better understand what influences implementation and sustainability

- **Defining the practice change** and **assessing for barriers and facilitators** to change is a way to start using an "implementation science lens" with your work

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References

- Balas E, Boren S. Managing Clinical Knowledge for Health Care Improvement. In: van Bemmel JH, McCray AT, eds. Yearbook of Medical Informatics. Stuttgart: Schattauer Verlagsgesellschaft mbH, 2000:65–70
- Cabana MD, Rand CS, Powe NR, et al. 1999. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA.* 1999;282(15):1458-1465.
- Government of Canada, Canadian Institutes of Health Research, Knowledge Translation. "About Knowledge Translation - CIHR". Cihr-irsc.gc.ca. Retrieved 2016-10-24
- Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: time for a map?.*Journal of continuing education in the health professions*, *26*(1), 13-24.
- National Implementation Research Network (NIRN). 2015. “Implementation Defined”. Retrieved from: http://nirn.fpg.unc.edu/learn-implementation/implementation-defined. Retrieved 2016-10-24
- Straus, S.E., Moore, J.E., and Khan, S. 2015. “Practicing Knowledge Translation Course.” Knowledge Translation Program, St. Michael’s Hospital, Toronto, Ontario.
- Wang, Z., Norris, S. L., & Bero, L. (2016). Implementation plans included in World Health Organisation guidelines. *Implementation Science*, *11*(1), 1.

Questions?

Group Activity: Defining the Practice Change

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