



Learning Health Sciences  
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# Dissemination and Implementation Frameworks: A User's Guide (Don't Fear the Framework)

# Objectives

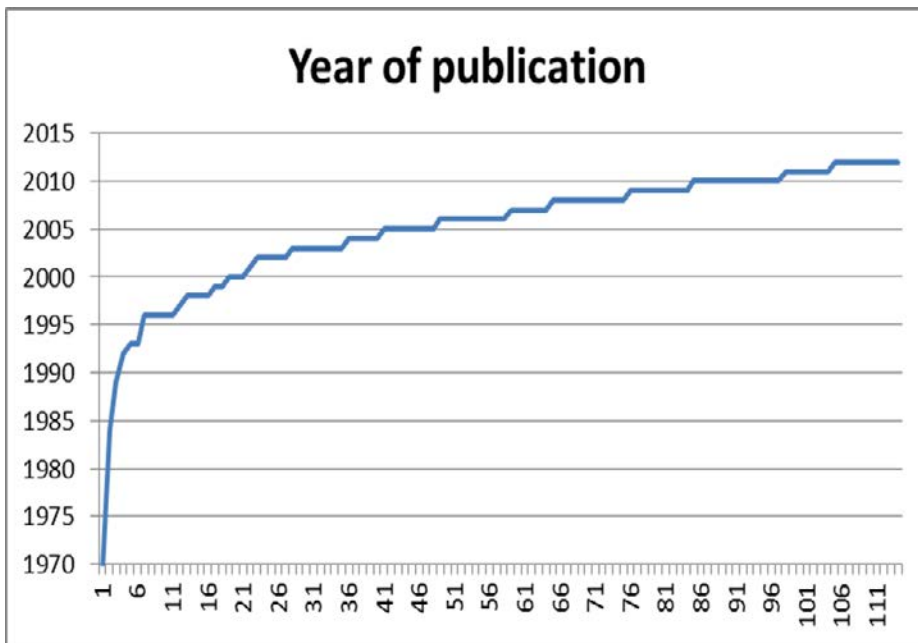
- Describe the range of dissemination and implementation frameworks
  - Explain differences between different types of frameworks
  - Describe criteria for selecting one or more specific frameworks for use in an implementation effort
  - Describe how to apply each of the following types of frameworks in an implementation study
    - Process
    - Determinant
    - Evaluation

# There are a lot of frameworks

- Most recent systematic review identified 61 different models or frameworks for dissemination and implementation
  - Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging research and practice: models for dissemination and implementation research. *Am J Prev Med.* 2012 Sep;43(3):337-50. doi: 10.1016/j.amepre.2012.05.024. Review. PubMed PMID: 22898128; PubMed Central PMCID: PMC3592983
- Previous review (2006) found 41
  - Several efforts to consolidate frameworks
  - Damschroder LJ et al. 2009 <https://implementationscience.biomedcentral.com/article/S10.1186/1748-5908-4-50> The Consolidated Framework for Implementation Research (CFIR)
  - Francis et al. 2012 <https://implementationscience.biomedcentral.com/article/S10.1186/1748-5908-7-35> The Theoretical Domains Framework (TDF)
  - Flottorp et al. 2013 <https://implementationscience.biomedcentral.com/article/S10.1186/1748-5908-8-35> : The Tailored Implementation in Chronic Disease (TICD) checklist



# Exponential growth in publications



- Are all frameworks equally helpful?
  - It probably depends on goals, specificity of what is being implemented or disseminated
  - Depends on whether the focus is dissemination or implementation
  - Some frameworks take you further on the path to achieving implementation than others

# Frameworks and models provide important guidance for doing implementation

- Process frameworks
  - Describing
  - Guiding the process
- Determinant frameworks
  - Understanding
  - Explaining what influences implementation
- Evaluation frameworks
  - How well the process worked

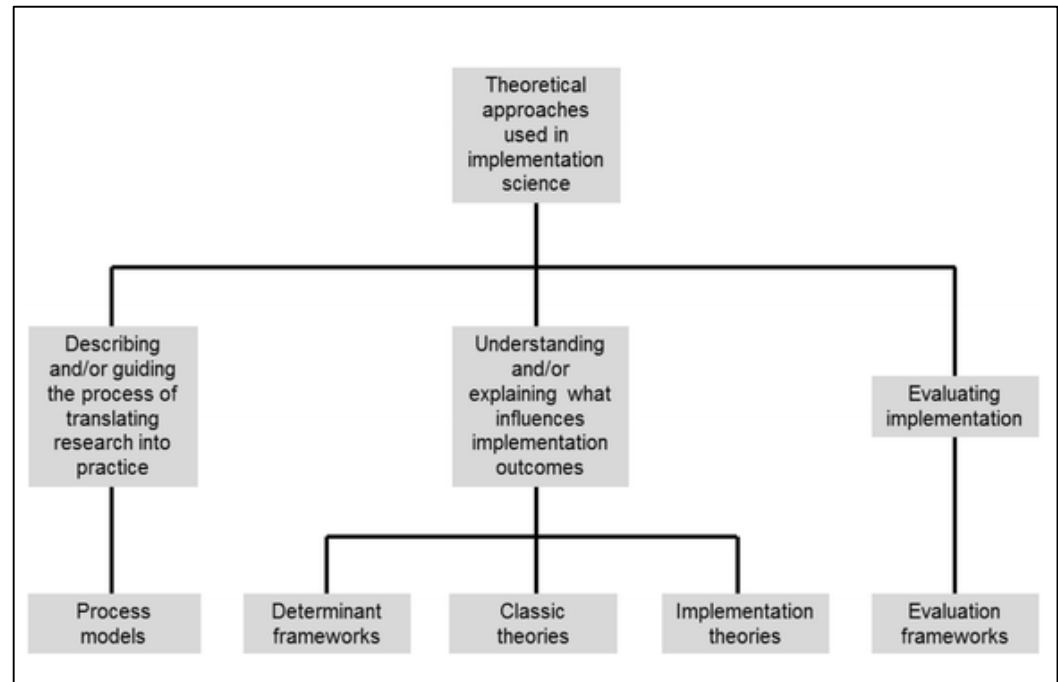


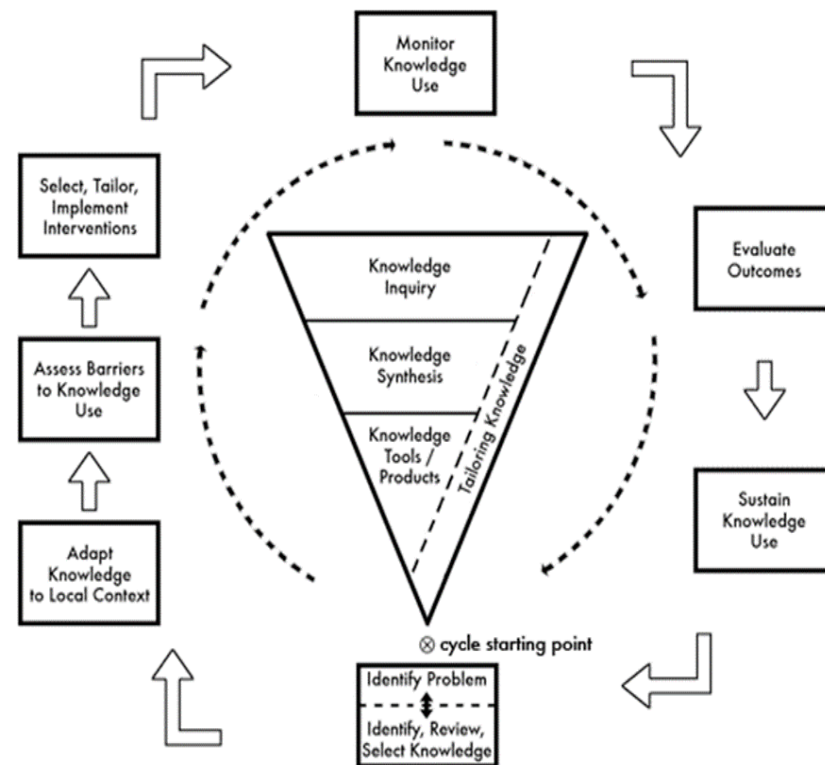
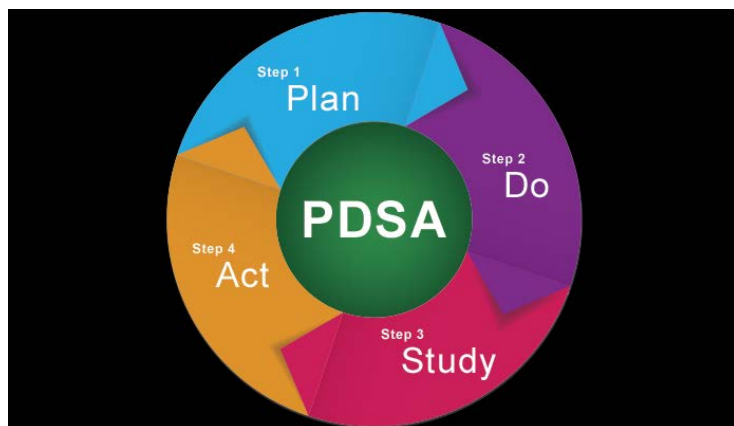
Figure 1. Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

Nilsen, *Implementation Science* 2015

<http://www.implementationscience.com/content/10/1/53>

# Process frameworks

- Describe or guide process of implementation
  - Often steps in a cycle

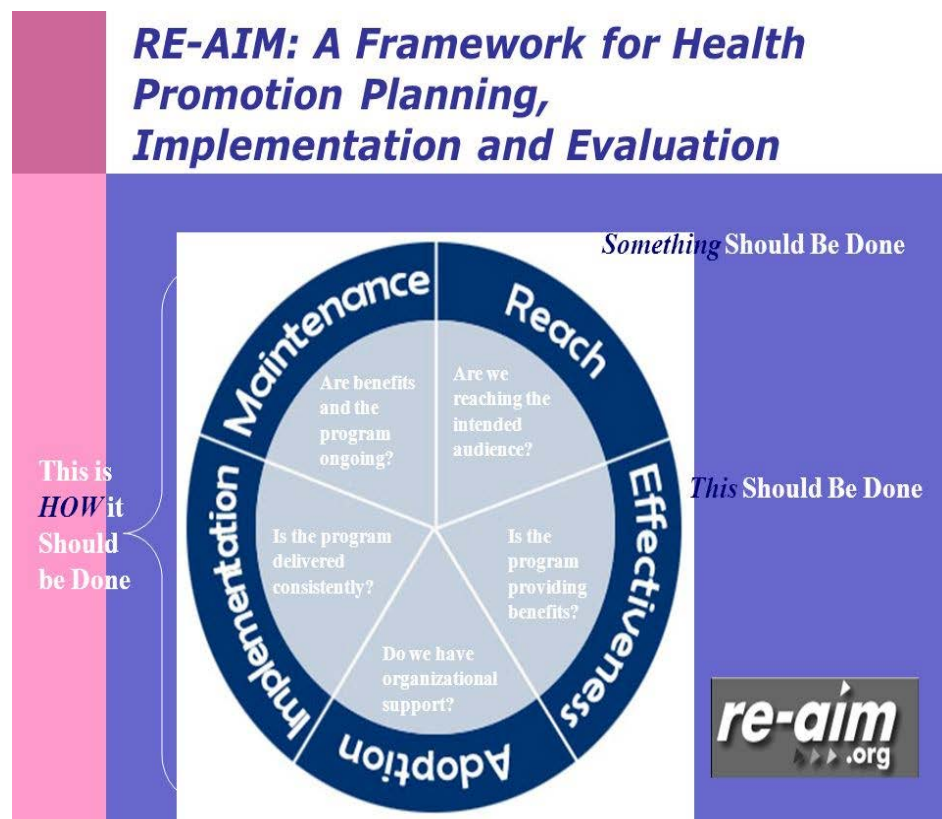


<http://ktclearinghouse.ca/knowledgebase/knowledgetoaction>

# Evaluation frameworks

- Specify aspects of implementation for evaluation
- How do you measure the success of implementation?

## *RE-AIM: A Framework for Health Promotion Planning, Implementation and Evaluation*



# Determinants frameworks

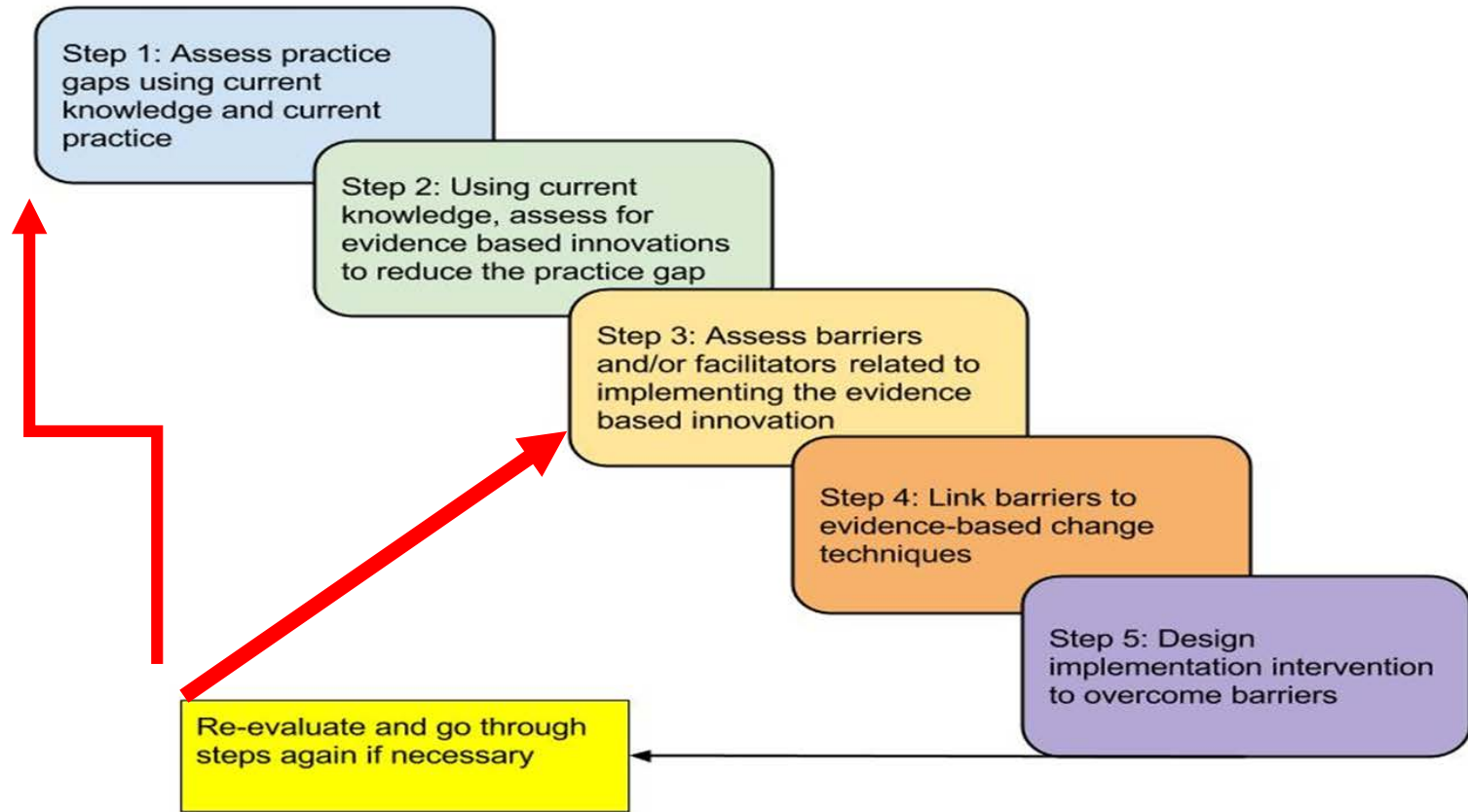
- Specify types/classes/domains of factors that influence the success of implementation
- Damschroder LJ et al. 2009 <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-4-50> The Consolidated Framework for Implementation Research (CFIR)
- Francis et al. 2012 <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-7-35> The Theoretical Domains Framework (TDF)
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# How to use these three types of frameworks

- Process
  - Planning your work
- Evaluation
  - Did your efforts work?
- Determinants
  - Figure out what you need to do
  - Design one or more implementation interventions

# Systematic approaches are important



# Focusing on determinants

- Step 3
  - Assess barriers and facilitators to implementing your innovation/evidence based practice/policy/program
    - Why?

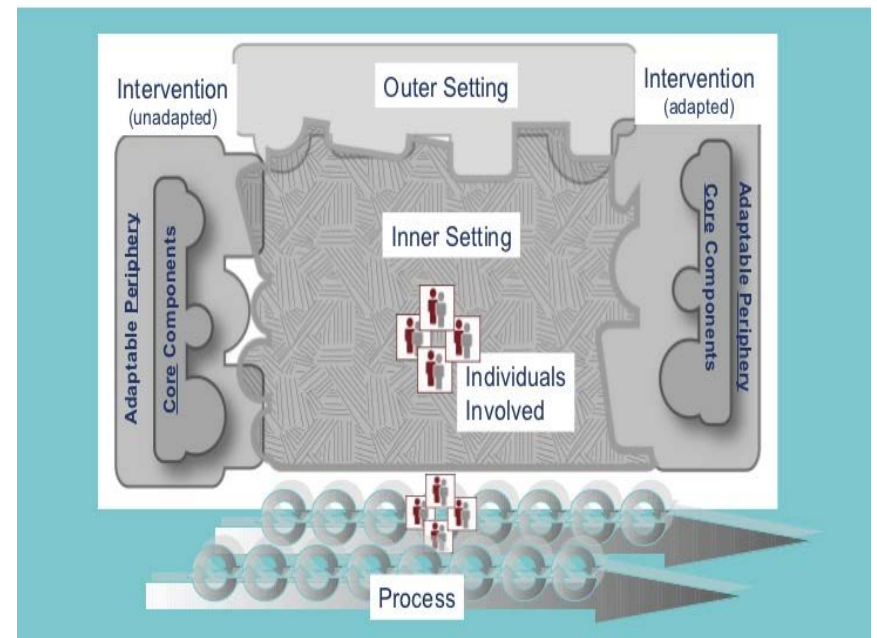
# Reasons to assess barriers and facilitators (**determinants of implementation success**)

- To overcome them
  - Planning
  - Awareness
- To study them
  - We have plenty of catalogs
    - Listing them is not necessarily all that helpful
  - Determinants frameworks are catalogs of barriers and facilitators
    - Organized into some kind of taxonomy or system for classifying them

# CFIR

- Five domains
  - Outer Setting
  - Inner Setting
  - Intervention Characteristics
  - Characteristics of Individuals
  - Implementation Process
- 26 main constructs
- 13 sub-constructs

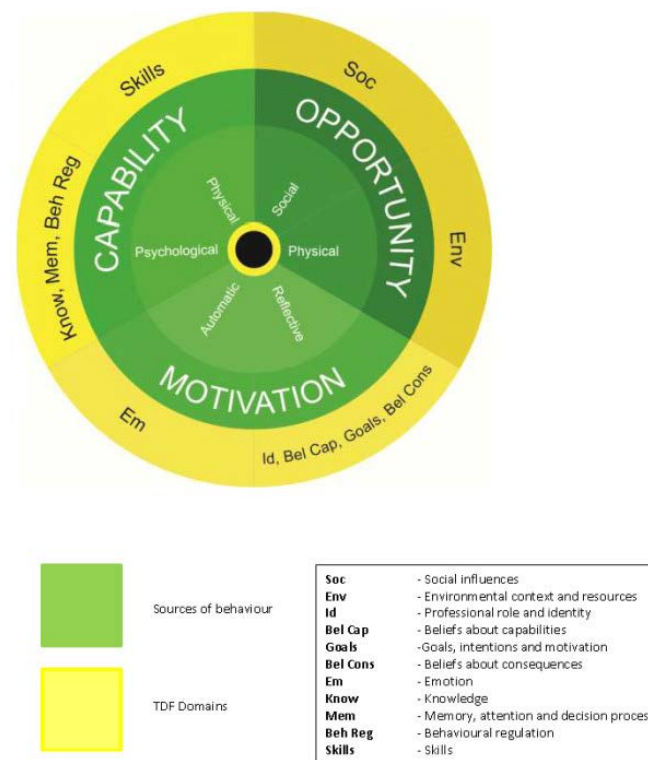
## Consolidated Framework for Implementation Research (CFIR)



[www.cfirguide.org](http://www.cfirguide.org)

# TDF

- Fourteen domains
  - Knowledge
  - Skills
  - Social/professional role identity
  - Beliefs about capabilities
  - Optimism
  - Beliefs about consequences
  - Reinforcement
  - Intentions
  - Goals
  - Memory, attention and decision processes
  - Environmental context and resources
  - Social influences
  - Emotion
  - Behavioral regulation
- 84 constructs



<https://www.biomedcentral.com/collections/tdf>

# TICD

- Seven domains
  - Guideline factors
  - Individual health professional factors
  - Patient factors
  - Professional interactions
  - Incentives and resources
  - Capacity for organizational change
  - Social, political and legal factors
- 37 major constructs
- 26 sub-constructs

TAILORED IMPLEMENTATION FOR CHRONIC DISEASES  
**TICD**

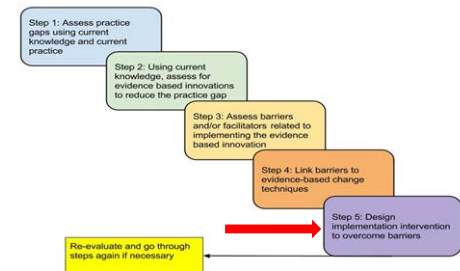
# So how do you use these?

- Assessing barriers and facilitators
  - Conduct interviews guided by your selected framework
  - Analyze interviews using the same (possibly additional) framework(s)
  - Evaluate the types of barriers and/or facilitators that need to be addressed
    - Prioritize– which are most important?
    - Assess feasibility– which can be overcome, and how?
  - If feasible, link to implementation strategies and/or behavior change techniques



# Designing interventions

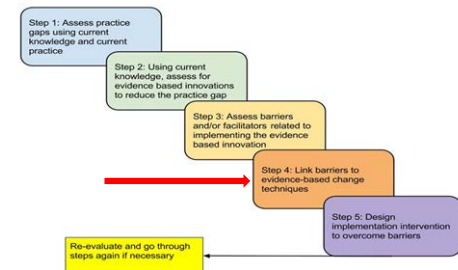
- Current leading edge in implementation research
  - Linking barriers to techniques (at individual level)
  - Linking barriers to strategies (at higher level)
  - Designing interventions from strategies (broad) and techniques (micro) as indicated



# Behavior change techniques

- 93 techniques for changing behavior
  - Operate through specific psychological or social theory
    - Emphasize specific behavior within practices
  - Generally validated through both theory and empirical test
  - Linked to **Theoretical Domains Framework**
  - Examples
    - Self-monitoring of behavior (linked to Motivation and Goals)
    - Instruction on how to perform a behavior (linked to Knowledge)

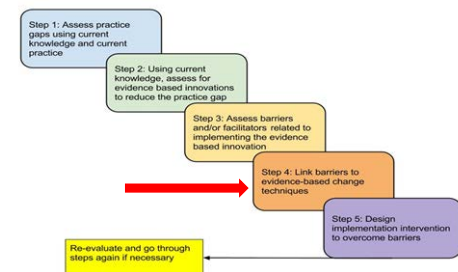
Reference: Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J. & Wood, C. E. (2013). The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions. *Annals of Behavioral Medicine*, 46(1), pp. 81-95. doi: 10.1007/s12160-013-9486-6



# Implementation strategies

- 73 broader, more macro approaches
  - Quite variable in level
  - Linkage to 39 **Consolidated Framework for Implementation Research** constructs currently in progress
  - Example
    - Audit and provide feedback (?linked to Goals and Feedback)
    - Mandate change (?linked to Leadership Engagement)

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



**Example: Implementing  
evidence based practices in  
an ICU**

# How do we get

- From here



- To here



# Problem: Patients are on mechanical ventilation for a long time

- Longer than other comparable units
- Long term outcomes are poor
  - High mortality
  - Loss of functional status
  - Long term impairment
- ABCDE evidence based bundle for improvement
  - Spontaneous Awakening trials
  - Spontaneous Breathing trials
  - Coordination of these two
  - Delirium assessment
  - Early mobilization

# Going from barrier assessment to behavior change technique (using TDF)

- **Barrier: Nurses are not sure they have the skills to handle initial attempts at spontaneous awakening**
  - Barriers: Skills, self-efficacy, action planning
  - Behavior change techniques:
    - Goal/target specified: behavior or outcome
    - Monitoring/self-monitoring
    - Graded tasks
    - Social processes of encouragement, support
    - Prompts, triggers, cues

# More barriers to implementation

- Barrier: Providers are unaware of their actual performance
  - Lack of motivation/goals
  - Behavior change techniques:
    - Goal/target specification
    - Contract
    - Feedback
    - Rewards and incentives
    - Persuasive communication
    - Information about behavior and outcomes



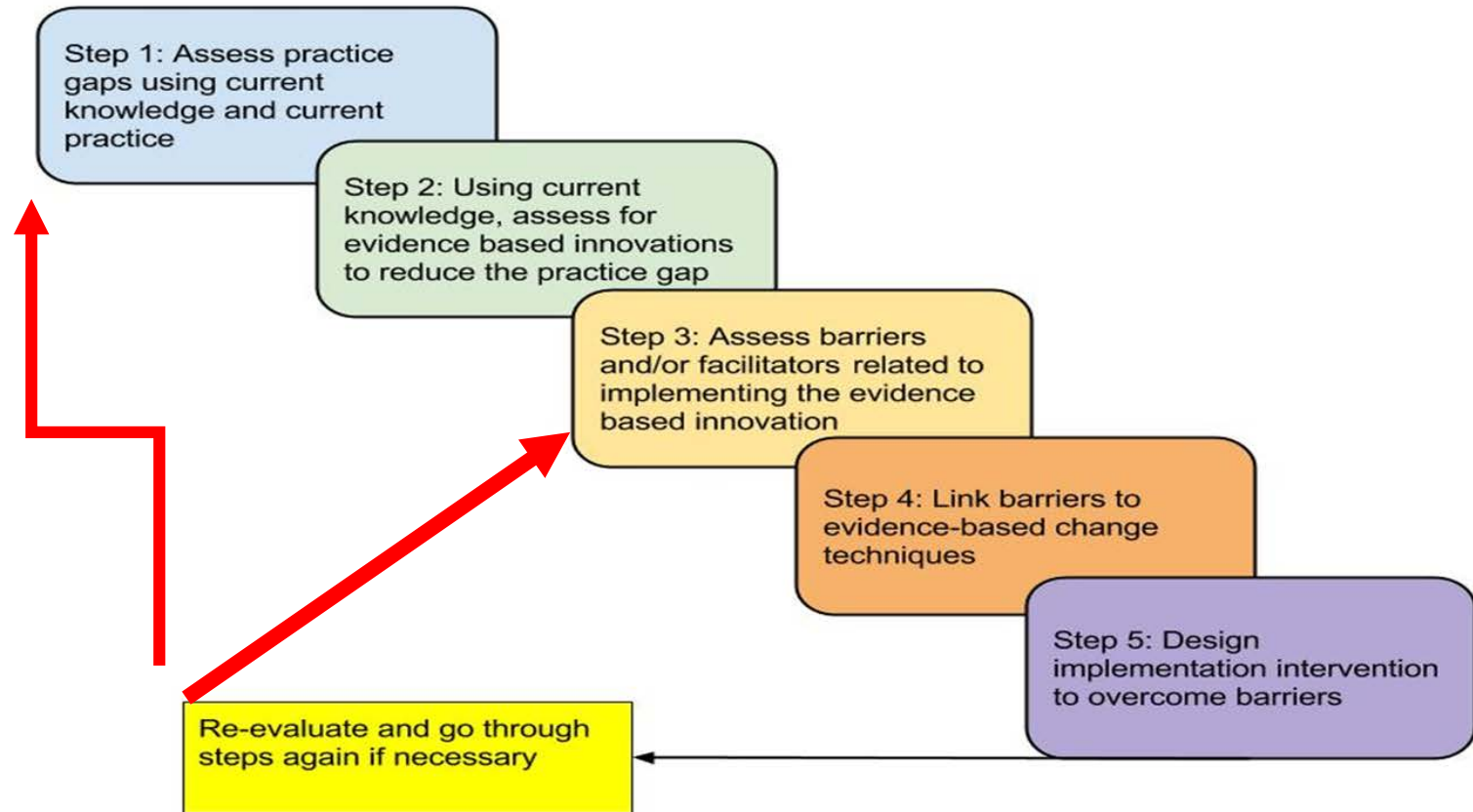
# Consider possible strategies (using CFIR)

- What are the overall goals of the hospital?
  - How does this ICU fit into the hospital as a whole?
  - Key issues:
    - Staffing
    - Continuity of care
    - Morale
    - Previous attempts to change practice
    - Resources
    - Leadership support
    - Organizational readiness to change

# Designing an intervention

- Most relevant issues are self-efficacy on the part of nurses, lack of performance awareness by all staff
  - Intervention could include
    - Feedback component: **Audit with feedback**
      - Ensure that people know what the current status is and what patient outcomes are
    - Specifying the goal or target for improvement: **Goal setting or action planning**
      - Ensuring they know how they are doing in meeting that target
    - **Social processes of encouragement and support**
    - Leadership engagement and coaching: **Mandating change**

# Systematic approaches are still important



# Don't forget process and evaluation

- Process frameworks offer guidance in addition to the very specific use of determinants frameworks in design of implementation interventions
- Evaluation is critical
  - Did it work?
  - Evaluation frameworks are not study designs
    - Generally provide guidance about what to measure
    - Assessing success of implementation

# Take home messages

- We do have a lot of frameworks
  - Understanding the type and how to apply it helps to reduce the complexity of the large number of frameworks
  - Thinking about what you are trying to accomplish, and using appropriate frameworks for the purpose, should demystify framework use
    - You may well want to use as many as 3 different frameworks in a project/proposal
- Frameworks are only useful if they're used
  - And more useful if used appropriately, not randomly



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# Questions?

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