

Understanding Barriers and Facilitators for Implementation Across Settings

María E. Fernández, PhD

Lorne Bain Distinguished Professor in Public Health and Medicine

Professor of Health Promotion and Behavioral Sciences

Director, Center for Health Promotion and Prevention Research

Founding Co-Director, UTHealth Institute for Implementation Science

UTHealth & WHO Implementation Research Training

June 3rd, 2022

Overview

- Explain how barriers and facilitators can influence implementation
- Describe a process for identifying barriers and facilitators to implementation
- Discuss how constructs from theories, models, and frameworks can help inform the identification of barriers and facilitators to implementation
- Explain how to assess and prioritize the importance of barriers and facilitators to implementation.
- Walk through an example in chronic disease prevention

What is Context?

- The various factors influencing implementation are often referred to as barriers and facilitators or, more broadly, context.
 - *Context: 'a multi-dimensional construct...anything that cannot be described as an intervention or an outcome.'*
- When determining which contextual factors will or did influence implementation, keep in mind:
 1. context is multilevel,
 2. contextual factors can serve as barriers or facilitators to implementation,
 3. context can change over time, and
 4. some contextual factors are modifiable, others are not.



Why & When Should We Consider Context?

- **Context Matters!** The context in which interventions are implemented influences implementation.
- Assessing and reporting contextual factors that influence implementation is important for
 - 1) improving specific implementation efforts,
 - 2) contributing the knowledge that can be applied to other settings.
- **Retrospective** – can help determine what went wrong, and what we can do to improve future efforts.
- **Prospective** – to identify barriers or facilitators to implementation and inform the development or selection of strategies to increase adoption, use, and/or maintenance of the intervention.

Considerations for Assessing Context

- Involve **key stakeholders and partners** (at multiple levels) in the process of prioritizing and identifying the most important contextual factors that may help or hinder implementation.
- Combine **survey** (quantitative) **and interview** (qualitative) **data** to obtain a comprehensive and in-depth understanding of the contextual factors influencing implementation.
- Follow the core processes and incorporate **theory, experience, community feedback**, and **new data** to gain a better understanding of all factors influencing implementation.
- Use **logic models** to help illustrate how various factors influence implementation and health outcomes.

Case study: using the CFIR to plan TLC implementation

- Telephone Lifestyle Coaching (TLC) program – 2-year pilot project to implement a 6-month evidence-based telephone-based coaching program
- 25 Medical centers were used to identify and refer patients who would benefit from TLC.
- During the evaluation implementation of the TLC program, it was discovered that medical centers varied widely in number of referrals made.
- Researchers were interested in the contextual differences between medical centers that contributed to these differences.

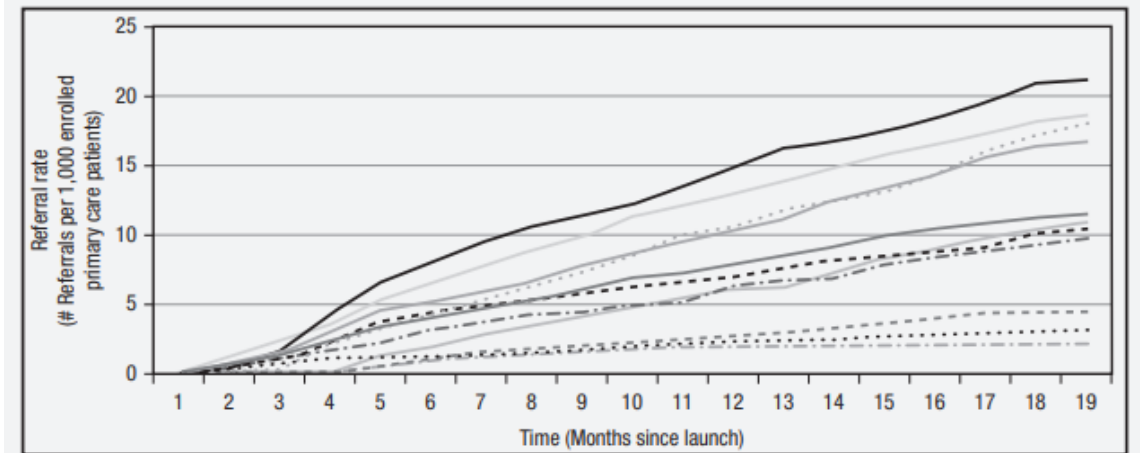


FIGURE 5.1 Variable referral rates from the TLC implementation study.

Damschroder, L. J., Reardon, C. M., Sperber, N., Robinson, C. H., Fickel, J. J., & Oddone, E. Z. (2017). Implementation evaluation of the Telephone Lifestyle Coaching (TLC) program: organizational factors associated with successful implementation. *Translational behavioral medicine*, 7(2), 233–241. <https://doi.org/10.1007/s13142-016-0424-6>

Case study: using the CFIR to plan TLC implementation

- The Consolidated Framework for Implementation Research (CFIR) was developed to better understand and communicate complex factors arising from settings within which implementations occur.
- During implementation of the TLC program, the research team engaged national policy leaders in a series of consensus discussions to identify a shortlist of the CFIR constructs that were most likely to influence on implementation outcomes.
- Past on-the-ground experiences with implementing similar programs and early research findings from other similar studies were used to inform the choice of constructs, e.g., champions.
- The CFIR was used to guide methodically identify and understand barriers and facilitators that might explain why the rate at which patients were referred to the TLC program varied within medical centers.

Damschroder, L. J., Reardon, C. M., Sperber, N., Robinson, C. H., Fickel, J. J., & Oddone, E. Z. (2017). Implementation evaluation of the Telephone Lifestyle Coaching (TLC) program: organizational factors associated with successful implementation. *Translational behavioral medicine*, 7(2), 233–241. <https://doi.org/10.1007/s13142-016-0424-6>

Case study: using the CFIR to plan TLC implementation

- Some factors influencing success of implementation included:
 - Strong implementation leaders,
 - Effective strategies to engage key stakeholders,
 - Structural characteristics of prevention programming – in one of the centers with highest referral rate, all prevention programming was managed by TLC implementation leader
 - Networks and communications – strong relationships between implementation leaders and primary care leader and providers facilitated success implementation.
 - Compatibility of TLC program with existing program and access to EHRs

Facility	1	2	3	4	5	6	7	8	9	10	11	Pearson Correlation	
Referral Rate (Number of referrals per 1000 Veterans)	2.01	2.32	2.59	6.00	6.04	6.88	7.72	10.24	10.49	12.73	14.53	r	p
Intervention Characteristics Domain													
Evidence Strength & Quality	+1	+1	+1	0	M	+1	+1	+1	+1	+1	+1	0.1233	0.7344
Relative Advantage	+1	+2	+2	+2	+1	+2	+1	+2	+1	+1	+2	-0.0873	0.7986
Adaptability	0	+1	0	+1	0	0	0	+1	0	0	0	-0.1865	0.5829
Complexity	-1	M	-1	M	M	+2	+1	-1	+1	+1	-1	0.1772	0.6746
Design Quality & Packaging	0	+2	+2	+1	+1	+1	+1	+1	+2	+1	+1	-0.0562	0.8695
Outer Setting Domain													
Patient Needs & Resources	-1	+2	+2	+1	+1	-1	-1	+1	+2	-1	+2	0.0156	0.9637
External Policy & Incentives	M	+1	M	M	M	M	M	0	+1	0	+1	-0.2777	0.651
Inner Setting Domain													
Structural Characteristics	-2	-2	-2	-1	0	-1	-1	-1	-1	-1	+2	**0.7343	0.0101
Networks & Communications	-1	+1	M	M	M	-1	-1	0	0	+2	+2	*0.5762	0.1349
Implementation Climate													
Tension for Change	+1	+1	0	M	+1	+1	-1	0	+1	0	+1	-0.2381	0.5373
Relative Priority	-1	-2	M	M	-1	-1	-1	-1	-2	-2	+1	0.3623	0.3379
Compatibility	+1	-1	+1	+1	-1	+1	-1	+1	+2	+2	+2	*0.552	0.0783
Organizational Incentives & Rewards	M	M	-1	+1	M	+1	M	M	M	M	M	*0.9807	0.1254
Goals & Feedback	-1	+1	+1	+2	-1	+1	-1	+1	-1	-1	+1	-0.1068	0.7547
Readiness for Implementation													
Leadership Engagement	1	-2	1	2	M	0	+1	2	0	1	1	0.3141	0.3767
Available Resources	+1	0	0	+2	-1	+1	0	0	+1	+1	0	-0.1661	0.6694
Access to Knowledge & Information	2	+1	1	2	M	+1	+1	+2	+1	-1	1	-0.4227	0.2236
Process Domain													
Planning	+1	+1	+1	+2	+1	0	0	-1	0	M	M	**0.6798	0.044
Engaging													
Implementation Leader	-2	+2	-2	+2	+1	+1	+1	+2	+2	+2	+2	**0.6487	0.0308
Patients	-1	+1	+1	+2	-1	+1	-1	+1	+1	0	+1	0.1414	0.6783
Key Stakeholders	-1	+1	-1	+2	+1	+2	+1	+2	+2	+1	+2	**0.6559	0.0284
Reflecting & Evaluating	M	-1	0	+2	0	-1	+1	+1	+1	+1	0	0.3296	0.3863

Key:
M denotes missing data

Damschroder, L. J., Reardon, C. M., Sperber, N., Robinson, C. H., Fickel, J. J., & Oddone, E. Z. (2017). Implementation evaluation of the Telephone Lifestyle Coaching (TLC) program: organizational factors associated with successful implementation. *Translational behavioral medicine*, 7(2), 233–241. <https://doi.org/10.1007/s13142-016-0424-6>

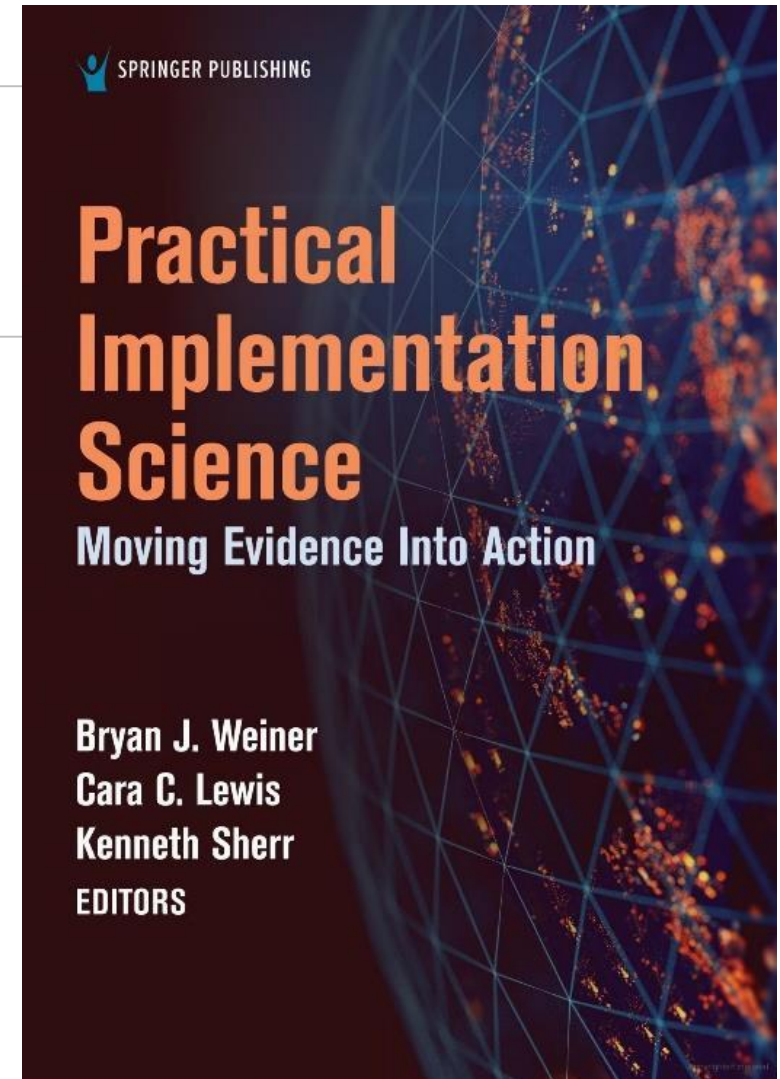
Practical Implementation Science

Moving Evidence into Action

Bryan J. Weiner, Ph.D.
Cara C. Lewis, Ph.D.
Kenneth Sherr, Ph.D.
Editors

Chapter 5: Understanding barriers and facilitators for
implementation across settings

Maria E. Fernandez, Laura Damschroder, Bijal Balasubramanian



Core Processes for Identifying Barriers and Facilitators of Implementation

- Core processes are a set of helpful actions or tools that can provide a systematic way to identify and prioritize potential barriers and facilitators to implementation.
- Community and stakeholder engagement (participatory planning) should be integrated with four main core processes:
 1. Brainstorm potential barriers and facilitators (based on experience, past needs assessments, and published literature)
 2. Use theories and frameworks
 3. Collect new data
 4. Prioritize the most important and changeable factors



Core Process 1: Brainstorm potential barriers and facilitators using experience, evidence, and engagement

- Brainstorming:
 - Uses the experience of the planning team, and other relevant stakeholders, as well as the literature.
 - Considers and integrates the hands-on experience of various stake-holders (e.g., practitioners) and provides an avenue to highlight their rich experiences.
 - Helps determine alignment between practitioner experiences and published evidence.

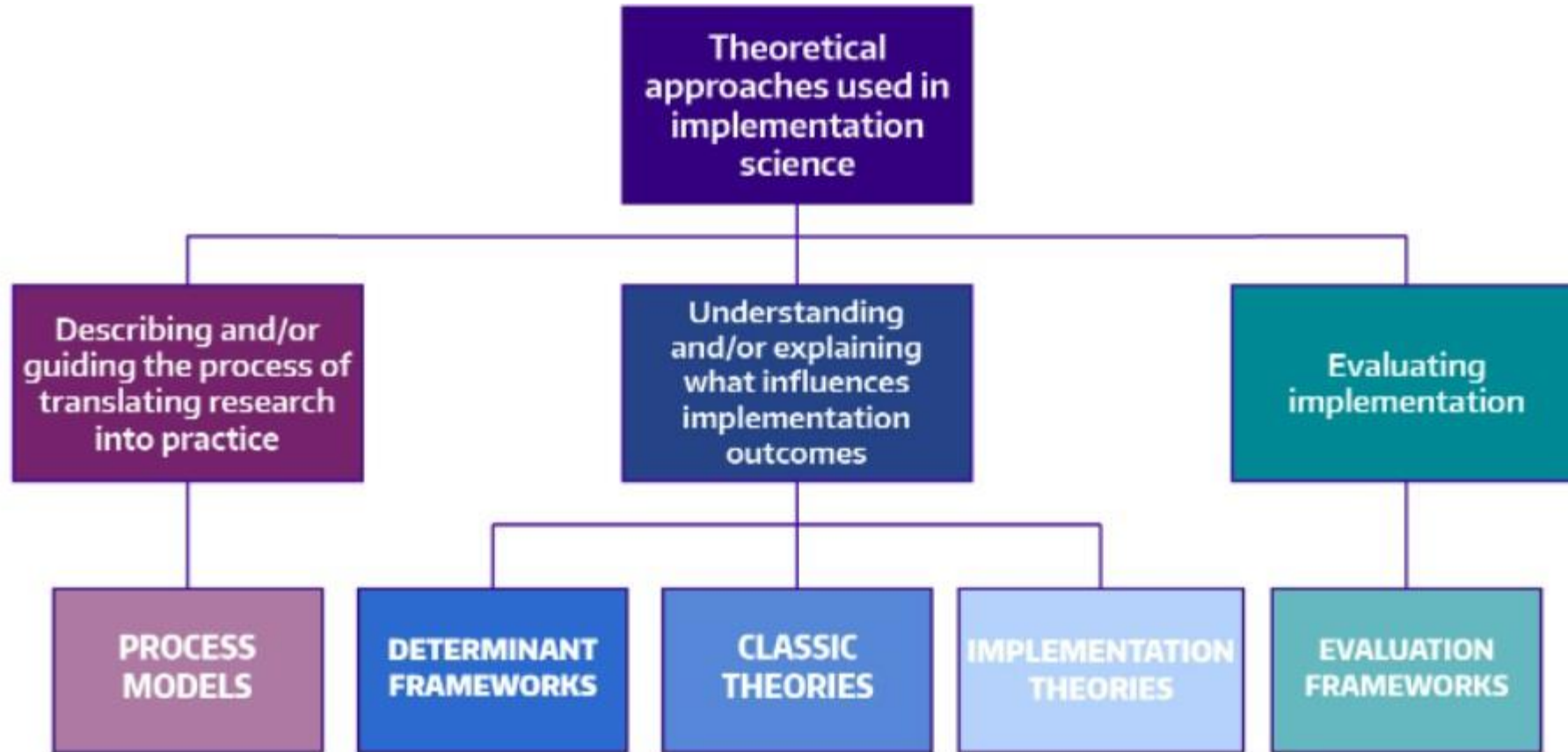


Core Process 2: Using theories, models, and frameworks to identify barriers and facilitators to implementation

Why use theories, models and frameworks (TMFs)?

- Connect findings across implementation studies
- Help explain what outcomes to expect
- Help explain *how* and *why* certain outcomes are achieved

Implementation Science Models and Frameworks



Great Resource for an Overview on TMFs



UNIVERSITY of WASHINGTON

<https://impsciuw.org/implementation-science/research/frameworks/>

Determinant Frameworks



UNIVERSITY of WASHINGTON



HOME / LEARN ▾ / EXPLORE ▾ / RESEARCH ▾ / CONNECT ▾

Implementation Science at UW

The UW Implementation Science Resource Hub



Active Implementation Framework

CFIR

Theoretical Domains Framework

PARIHS

In 2009, Veterans Affairs researchers developed a menu of constructs found to be associated with effective implementation across 13 scientific disciplines. Their goal was to review the wide range of terminology and varying definitions used in implementation research, then construct an organizing framework that considered them all. The resulting Consolidated Framework for Implementation Research (CFIR) has been widely cited and has been found useful across a range of disciplines in diverse settings.

For additional resources, please visit the [CFIR Technical Assistance Website](#). The website has tools and templates for studying implementation of innovations using the CFIR framework, and these tools can help you learn more about issues pertaining to inner and outer contexts. You can read the [original framework development article](#) in the Open Access (OA) journal *Implementation Science*.

Learn More:

- [Evaluating and Optimizing the Consolidated Framework for Implementation Research \(CFIR\) for use in Low- and Middle-Income Countries: A Systematic Review](#) (*Implementation Science*, 2020)
- [A systematic review of the use of the Consolidated Framework for Implementation Research](#) (*Implementation Science*, 2017)
- [Using the Consolidated Framework for Implementation Research \(CFIR\) to produce actionable findings: A rapid-cycle evaluation approach to improving implementation](#) (*Implementation Science*, 2017)

Understanding Determinant Models

- *Determinant models, theories, and frameworks* are used to help understand or describe the factors (barriers and facilitators) for three main purposes:
 1. To understand why things happened
 2. To predict what might happen
 3. To inform the selection or development of implementation strategies to increase
 - ❖ adoption
 - ❖ implementation
 - ❖ maintenance of EBIs

Using theories and frameworks in low- and middle-income countries (LMIC)

- How relevant and useful are these High-income country (HIC)-centered frameworks at identifying barriers and facilitators to implementation in LMICs?
- Implementation science principles and tools such as CFIR have been adapted, sometimes as an intentional precursor to implementation in a specific region or country
 - Means et al., looked at how CFIR had been applied in LMIC contexts in a recent review
 - CFIR was used in 34 studies across 21 countries and applied to 18 different health topics.
 - Identification of new CFIR domain: *characteristics of systems*

Core Process 3: Collecting new data on barriers and facilitators

- Assessing the barriers and facilitators within a multidimensional and multilevel context necessitates the collection of both quantitative and qualitative data.
- Assessment can occur before implementation begins and throughout implementation of the innovation.
- Complementing data gathered through surveys and interviews/observations with community feedback and integrating findings can help to get a more complete picture of contextual factors that may influence implementation.



Core Process 4 - Prioritizing barriers and facilitators to be addressed

- Rating each determinant in terms of importance or relevance (*strength of association with the outcome*) and changeability (*how likely it is that the intervention will influence change in the determinant*)
- Key points to remember -
 - Priority should be given to factors that are both easy to change and important.
 - Those that are more difficult to change but extremely important (*implementation climate, leadership engagement*) should also be prioritized.
 - Some factors may be easy to change, but are not regarded as particularly important because their presence may not (on its own) result in optimal implementation (e.g., *knowledge of an innovation*).
 - Factors that have a low impact and are difficult to change should not be given priority.

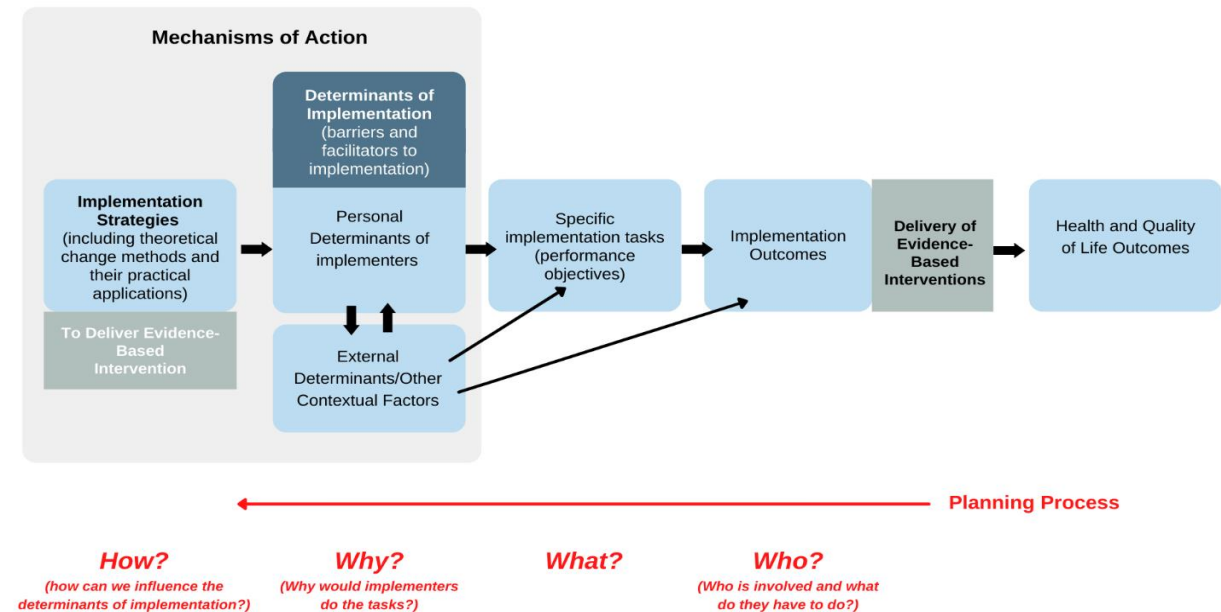
A process for prioritizing contextual factors

- Example of a table to organize the summary of evidence for importance and changeability of contextual factors influencing implementation

Contextual factors influencing implementation (barriers and facilitators)	Importance (0, +, ++)	Changeability (0, +, ++)	Evidence for Importance (Include citations and/or rationale)	Evidence for Changeability (Include citations and/or rationale)

Using implementation mapping to put it all together

- Implementation Mapping (IM) is an evidence-based process to help practitioners plan implementation strategies.
- Tools within IM can also help organize and prioritize information about barriers and facilitators to implementation.
- Implementation logic (IM) models provides a schematic representation of (hypothesized) causal relationship between determinants (e.g., barriers and facilitators) and outcomes.



Implementation Mapping can be used...

- For new programs, demonstration, and research projects:
 - Plan for initial implementation to ensure program is used as intended during the evaluation trial
- For programs that have already been evaluated:
 - Develop or tailor implementation strategies to improve uptake and use
 - Develop dissemination strategies for “scale-up” and widespread use



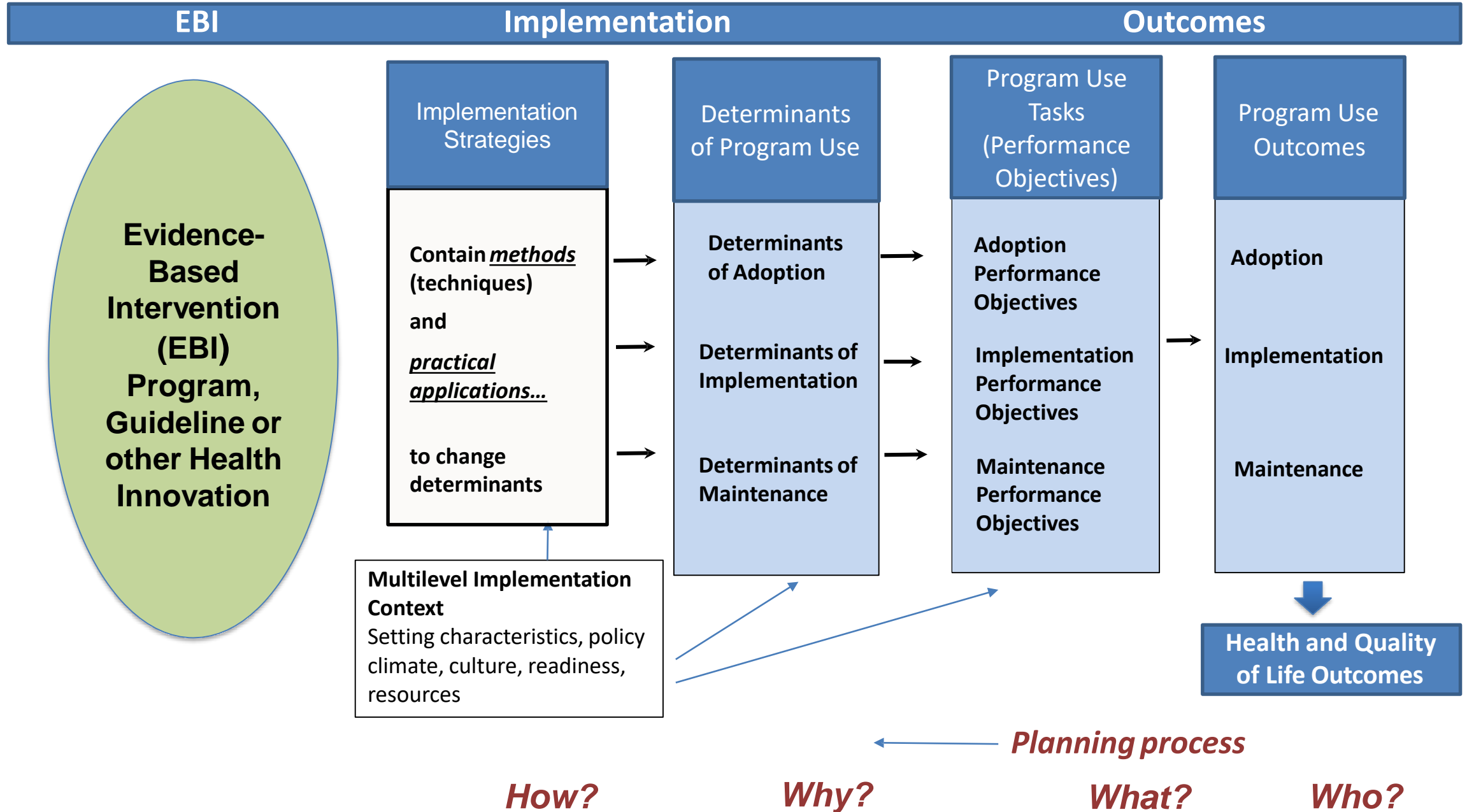
Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies

Maria E. Fernandez^{1*}, Gill A. ten Hoor², Sanne van Lieshout³, Serena A. Rodriguez^{1,4}, Rinad S. Beidas^{5,6}, Guy Parcel¹, Robert A. C. Ruiter², Christine M. Markham¹ and Gerjo Kok²

¹ Center for Health Promotion and Prevention Research, University of Texas Health Science Center at Houston School of Public Health, Houston, TX, United States, ² Department of Work and Social Psychology, Maastricht University, Maastricht, Netherlands, ³ Department of Public Health, Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands, ⁴ Department of Population and Data Sciences, University of Texas Southwestern Medical Center, Dallas, TX, United States, ⁵ Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, United States, ⁶ Department of Medical Ethics and Health Policy, University of Pennsylvania, Philadelphia, PA, United States

Fernández ME, et al. Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies, *Frontiers in Public Health*, 2019, 7:158. doi: 10.3389/fpubh.2019.00158. eCollection 2019. PMID: 31275915; PMCID: PMC6592155.

Implementation Mapping Logic Model



Example – Understanding barriers and facilitators of CVD prevention program in Uganda

- Countries in sub-Saharan Africa have not fully developed health system capacity to deal with chronic conditions such as cardiovascular disease (CVD)
- To address high burden of disease, it is important to implement cost-effective and sustainable community-wide interventions.
- Most studies have not examined implementation processes to inform their scale-up and sustainability.

Ndejjo *et al.* *Implementation Science* (2020) 15:106
<https://doi.org/10.1186/s13012-020-01065-0>

Implementation Science

RESEARCH

Open Access

Barriers and facilitators of implementation of a community cardiovascular disease prevention programme in Mukono and Buikwe districts in Uganda using the Consolidated Framework for Implementation Research



Rawlance Ndejjo^{1,2*} , Rhoda K. Wanyenze¹, Fred Nuwaha¹, Hilde Bastiaens² and Geoffrey Musinguzi^{1,2}

Ndejjo, R., Wanyenze, R.K., Nuwaha, F. *et al.* Barriers and facilitators of implementation of a community cardiovascular disease prevention programme in Mukono and Buikwe districts in Uganda using the Consolidated Framework for Implementation Research. *Implementation Sci* **15**, 106 (2020).
<https://doi.org/10.1186/s13012-020-01065-0>

Example – Understanding barriers and facilitators of CVD prevention program in Uganda

- Program – Empowering Community Health Workers (CHWs) to conduct CVD risk assessments within community and promote knowledge, improved lifestyles, and cardiovascular health. CHWs refer high risk individuals to health facilities and follow-up
- Used consolidated framework for implementation research (CFIR) to examine barriers and facilitators influencing implementation of a community CVD program in Uganda.
- Qualitative data was collected through meetings and focus groups with community health workers (implementation practitioners) during first 6 months of implementation across 20 parishes Mukono and Buikwe districts of Uganda.
- Process evaluation themes and sub-themes were analyzed and mapped onto CFIR domains and constructs.

CFIR Domains

Table 1 CFIR domains and their definitions

CFIR domain	Definition
Intervention characteristics	Features of the intervention that may affect implementation. Has eight constructs: intervention source, evidence strength and quality, relative advantage, adaptability, trialability, complexity, design quality and packaging, and cost.
Outer setting	Characteristics of the external context that might influence implementation. Has four constructs: patient needs and resources, cosmopolitanism, peer pressure, and external policy and incentives.
Inner settings	Characteristics of the organization that may influence implementation with 12 constructs. These are structural characteristics, networks and communication, culture, implementation climate (tension for change, compatibility, relative priority, organizational incentives and rewards, goals and feedback and learning climate) and readiness for implementation (leadership engagement, available resources and access to knowledge and information).
Characteristics of individuals involved	Features of implementers that influence intervention implementation with five constructs: knowledge and beliefs about the intervention, self-efficacy, individual stage of change, individual identification with organization and other personal attributes.
Process factors	Strategies and linkages that may influence implementation including planning, engaging (opinion leaders, formally appointed internal implementation leaders, champions and external change agents), executing, and reflecting and evaluating.

Table 2 Summary of themes and sub themes highlighting barriers and facilitators of CHW CVD prevention intervention implementation

CFIR domain and constructs	Theme	Sub-theme (barriers)	Sub-theme (facilitators)
Intervention characteristics • Design quality and packaging • Complexity • Adaptability • Cost	Design, complexity and adaptability of intervention	<ul style="list-style-type: none"> Intervention is extensive Difficulties with filling forms and doing calculations Intervention activities time consuming Behaviour change is not easy Not finding men at home during their visits and fishing communities being mobile 	<ul style="list-style-type: none"> Incorporated the intervention within other routine activities Focussed education majorly on risks identified during the interheart screening Educated family members together on general risks before individual counselling Utilised public gatherings to supplement house visits which were also done on evenings and weekends
	Quality and supply of inputs	<ul style="list-style-type: none"> Waist and hip ratio tape measure breaking down. Calculators not provided for calculation of waist and hip measures and adding interheart scores. 	<ul style="list-style-type: none"> Waist and hip ratio tape measures replaced with those of better quality. CHWs used phones were available.
	Gradual change process	<ul style="list-style-type: none"> Community behaviour change is slow. 	<ul style="list-style-type: none"> Encouraged incorporation of lifestyle practices into daily routines. Elaborated cost of unhealthy behaviours. Utilised motivational interviewing techniques. CHWs shared experiences among themselves.
Outer settings • External Policy and Incentives • Patient needs and resources	Costs of fieldwork	<ul style="list-style-type: none"> Large distances due to big sparsely populated villages Unfavourable weather Doing fieldwork while sometimes hungry Less time for other responsibilities 	<ul style="list-style-type: none"> Some CHWs had smaller villages easing field work CHWs provided with gumboots and umbrellas to help during harsh weather Planning time and going to the field in the afternoon after lunch.
	Resources availability,	<ul style="list-style-type: none"> Community demands: a playing field and balls to increase their physical activity levels, blood pressure machines to measure blood pressure at home and drugs for treatment, fruits and vegetables and their seedlings to increase supply. 	<ul style="list-style-type: none"> Encouraged community members to start vegetable gardens Provided community members with their own seedlings where possible Encouraged community members to seek care from health facilities which had been strengthened Liaised with health workers to conduct outreaches
	Health services accessibility and quality,	<ul style="list-style-type: none"> Unavailability of required services or their being of poor quality. Health worker negative about CHW referral 	<ul style="list-style-type: none"> Availability of quality health services. Health worker positive about CHW referral Health workers involvement in CHW training Transfer of health workers
	Media reinforcement		<ul style="list-style-type: none"> Media raised awareness on CVDs and reinforced messages passed by CHWs Media message consistency with that passed by CHWs.
Inner settings • Available resources • Access to knowledge and information • Learning climate • Tension for change • Relative priority	Policies and procedures.	<ul style="list-style-type: none"> Non remuneration of CHWs Prioritising existing CHWs for community engagements 	<ul style="list-style-type: none"> Replacement of some CHWs engaged with many activities to devote time to the intervention.
	Training and learning environment		<ul style="list-style-type: none"> CHW training on intervention and its implementation including piloting field work. Presence of training manuals in local language for consultation. Positive learning environment.
	Community awareness and interest	<ul style="list-style-type: none"> Low awareness and perceived risk of CVDs. Uncooperative members and access barriers. 	<ul style="list-style-type: none"> High awareness and perceived risk of CVDs. CVD screening programmes. Use of community strictures such as leaders and groups. Encouraging group activities such as for physical exercise.

Table 2 Summary of themes and sub themes highlighting barriers and facilitators of CHW CVD prevention intervention implementation (Continued)

CFIR domain and constructs	Theme	Sub-theme (barriers)	Sub-theme (facilitators)
	Demographic composition	<ul style="list-style-type: none"> measurements. Physical activity related activities such as running or riding a bicycle was not culturally acceptable. Tendency to cook only one kind of food without balancing diet. Belief that fruits and vegetables are meant for young children and sometimes sold for income. 	<ul style="list-style-type: none"> measurements CHWs providing thorough explanations to community members regarding need for measurements
		Support supervision and feedback	<ul style="list-style-type: none"> Resistance, several questions and less cooperation among youths and males.
Characteristics of individuals involved • Individual stage of change • Other personal attributes • Individual identification with organization • Self-efficacy	Stage of change	<ul style="list-style-type: none"> Lower spectrum to stage of change 	<ul style="list-style-type: none"> Higher motivation to change such as those already hypertensive or diabetic. Community members' testimonies. CHW experiences and exemplariness.
	Competing demands	<ul style="list-style-type: none"> High workload due to several CHW work tasks and other personal responsibilities 	<ul style="list-style-type: none"> Set aside time for intervention implementation. Incorporate intervention duties within similar usual works. Utilise community engagements for example at public events to share intervention message. Setting targets and goals bi-weekly. Flexibility in scheduling the meetings.
	Motivation and commitment	<ul style="list-style-type: none"> Lack of financial incentives 	<ul style="list-style-type: none"> Motivation from non-financial sources including the recognition and respect and project incentives such as t-shirts and training certificate. Observed changes in community behaviours and reported improved health outcomes. Transport refunds for the bi-weekly meetings.
	CHW attributes	<ul style="list-style-type: none"> Being village leaders ensured that CHWs were busy to devote sufficient time to intervention implementation. Low experience in dealing with community. CHW sickness 	<ul style="list-style-type: none"> Some CHWs were village leaders having influence and authority. CHWs supporting referral at health facility. High CHW self-efficacy and experience
	Socio-demographic characteristics	<ul style="list-style-type: none"> Older and female CHWs found it harder to influence the youth and male community members 	<ul style="list-style-type: none"> higher educated CHWs grasped concepts much faster, explained them better and produced data of good quality Personal experiences of CHWs who had CVD risk factors.

Table 2 Summary of themes and sub themes highlighting barriers and facilitators of CHW CVD prevention intervention implementation

CFIR domain and constructs	Theme	Sub-theme (barriers)	Sub-theme (facilitators)
Intervention characteristics and packaging <ul style="list-style-type: none"> • Design quality • Complexity • Adaptability • Cost 	Design, complexity and adaptability of intervention	<ul style="list-style-type: none"> • Intervention is extensive • Difficulties with filling forms and doing calculations • Intervention activities time consuming • Behaviour change is not easy • Not finding men at home during their visits and fishing communities being mobile 	<ul style="list-style-type: none"> • Incorporated the intervention within other routine activities • Focussed education majorly on risks identified during the interheart screening • Educated family members together on general risks before individual counselling • Utilised public gatherings to supplement house visits which were also done on evenings and weekends
	Quality and supply of inputs	<ul style="list-style-type: none"> • Waist and hip ratio tape measure breaking down. • Calculators not provided for calculation of waist and hip measures and adding interheart scores. 	<ul style="list-style-type: none"> • Waist and hip ratio tape measures replaced with those of better quality. • CHWs used phones were available.
	Gradual change process	<ul style="list-style-type: none"> • Community behaviour change is slow. 	<ul style="list-style-type: none"> • Encouraged incorporation of lifestyle practices into daily routines. • Elaborated cost of unhealthy behaviours. • Utilised motivational interviewing techniques. • CHWs shared experiences among themselves.
	Costs of fieldwork	<ul style="list-style-type: none"> • Large distances due to big sparsely populated villages • Unfavourable weather • Doing fieldwork while sometimes hungry • Less time for other responsibilities 	<ul style="list-style-type: none"> • Some CHWs had smaller villages easing field work • CHWs provided with gumboots and umbrellas to help during harsh weather • Planning time and going to the field in the afternoon after lunch.
Outer settings <ul style="list-style-type: none"> • External Policy and Incentives • Patient needs and resources 	Resources availability,	<ul style="list-style-type: none"> • Community demands: a playing field and balls to increase their physical activity levels, blood pressure machines to measure blood pressure at home and drugs for treatment, fruits and vegetables and their seedlings to increase supply. 	<ul style="list-style-type: none"> • Encouraged community members to start vegetable gardens • Provided community members with their own seedlings where possible • Encouraged community members to seek care from health facilities which had been strengthened • Liaised with health workers to conduct outreaches

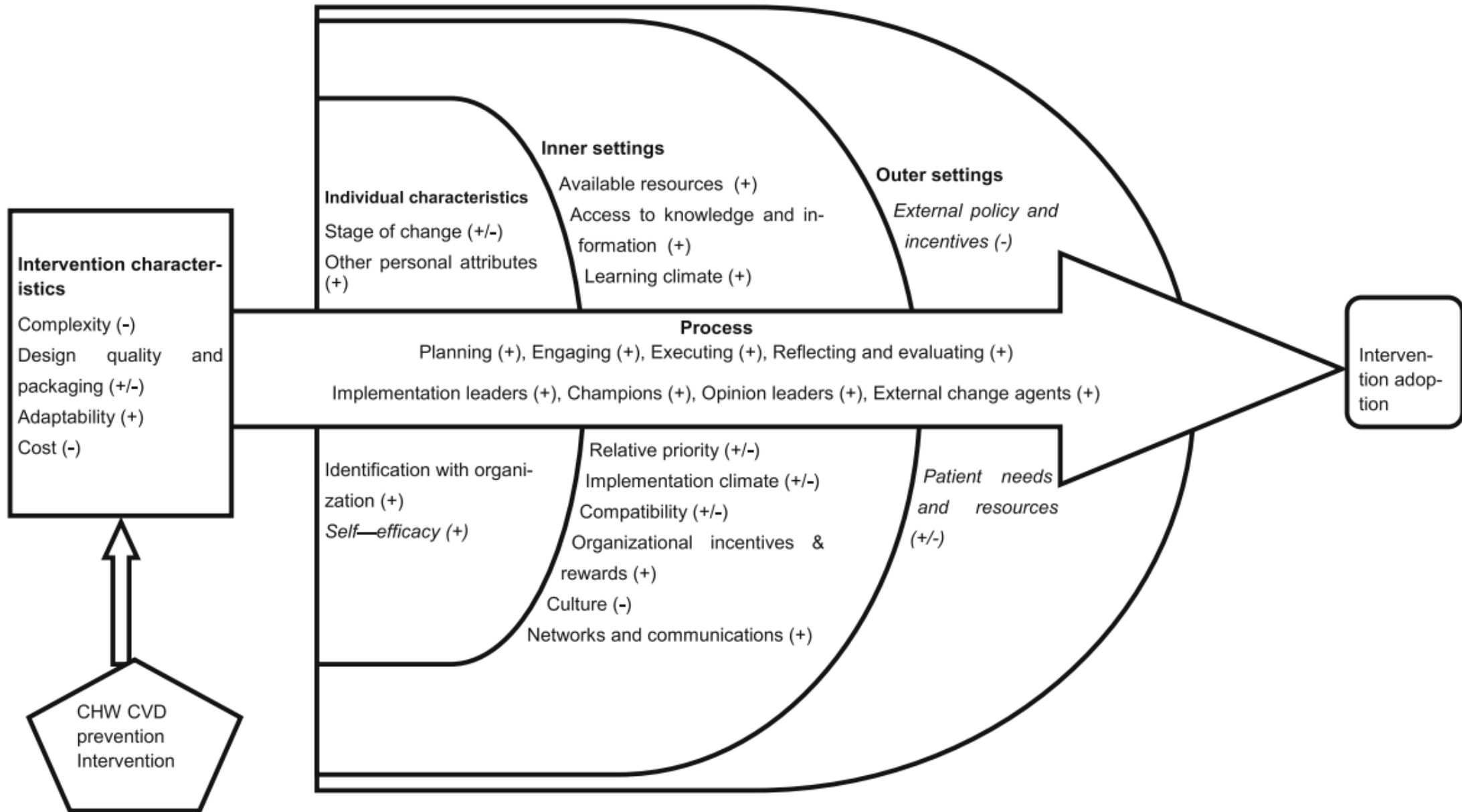


Fig. 1 CFIR constructs and their influence on implementation of a community CVD prevention intervention

Example – Understanding barriers and facilitators of CVD prevention program in Uganda

- 26 of CFIR's 39 constructs were identified as drivers of implementation success or failure.
 - 4 barriers
 - Complexity of intervention leading to high opportunity costs
 - Compatibility - Aspects of the intervention not being compatible with community culture,
 - Lack of enabling environment for behavior change,
 - and some mistrust of CHWs by community members
 - 16 facilitators
 - Including, availability of inputs and incentives, adequate training of CHWs, working with community leaders and groups, and CHW motivation commitment, and other attributes.
 - 6 both barriers and facilitators
- Findings are key to helping inform design of scalable and sustainable CHW led community health chronic disease prevention programs.

Common Pitfalls

- Many people are not sure how to select the best framework and end up "paralyzed" by the wide range of choice
 - Narrow down the frameworks to the one(s) that interest you the most; talk with mentors and peers about their experiences and recommendations before deciding on a theory/framework.
 - Note: More than one theory/framework can be used at a time
- When thinking about context, implementers often think of the organizational factors and miss the individual and team factors

Key Points

- Implementation science frameworks can help guide both researchers and practitioners in the systematic assessment of context that could either hinder or facilitate implementation
- Practitioners should look at the constructs under one or more determinant frameworks prior to brainstorming about potential barriers and facilitators
- After developing a list of possible contextual factors, engagement with key stakeholders and partners can help to prioritize and identify the most important contextual factors
- Using both quantitative (survey) and qualitative (interview) data can provide a more in-depth understanding of the contextual factors
- Utilizing logic models can help to illustrate the influence of multiple factors on implementation and health outcomes

Summary

- Implementation science offers guidance to practitioners for considering the contextual barriers and facilitators
- Although Implementation Science frameworks and theories can be complex, understanding the basic components (constructs) can ensure that implementation efforts address, or are at least aware, of the many factors that can influence implementation success or failure
- A combination of experience, published evidence, stakeholder engagement, theories and frameworks, and new data can help practitioners to develop a robust list of barriers and facilitators
- There is no one correct way to identify, document, and understand all of the potential factors that influence implementation in each setting

Thank You!

Maria E Fernandez, PhD
University of Texas Health Science
Center at Houston
School of Public Health

Maria.E.Fernandez@uth.tmc.edu

713-500-9626

@Maria_e_prof

