

DEFINING DISSEMINATION AND IMPLEMENTATION RESEARCH QUESTIONS AND SPECIFIC AIMS

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Overview



- Identifying D&I Research Questions
- Writing proposals for D&I research

Types of D&I Research Questions

- Questions about factors influencing adoption, implementation, and sustainability of evidence based programs, policies, practices (or other health care innovations).
 - ▣ Testing of models or frameworks; relationships between constructs; predictors of implementation outcomes; measurement studies

Types of D&I Research Questions (cont.)

- Questions related to the development and evaluation of strategies (or groups of strategies) to increase adoption, implementation, and sustainability.
- Questions related to scale-up
- Questions related to sustainability

Key Implementation Research Questions

- What factors influence the implementation of the evidence-based intervention in a particular setting?
- What are the most effective techniques to improve the distribution and receipt of evidence?
- What are the most effective strategies to incorporate new discoveries and evidence-based practices into care delivery?
- How do contextual factors influence implementation success or failure?
- How can contextual factors be modified to increase chances of success)?
- What are the most effective techniques to de-implement practices that are no longer effective or were never effective in the first place?

Research questions related to sustainment

- Why do established programs lose effectiveness over time?
- What factors influence sustainability?
- How can sustainability or health maintenance be achieved?

Policy implementation research questions:

- ❑ What specific policy or intervention was put into place by the implementers in order to address the NCD issue being tackled?
- ❑ To what extent was the policy or intervention implemented as intended?
- ❑ To what extent was the policy or intervention adopted by implementers?
- ❑ What factors influenced how well a policy or intervention was implemented?
- ❑ To what extent did these factors influence how well a policy or intervention is implemented?
- ❑ What is the association between the health outcomes (i.e. effectiveness) of a policy or intervention and how well this is implemented?
- ❑ Was the implementation approach that was used cost effective?

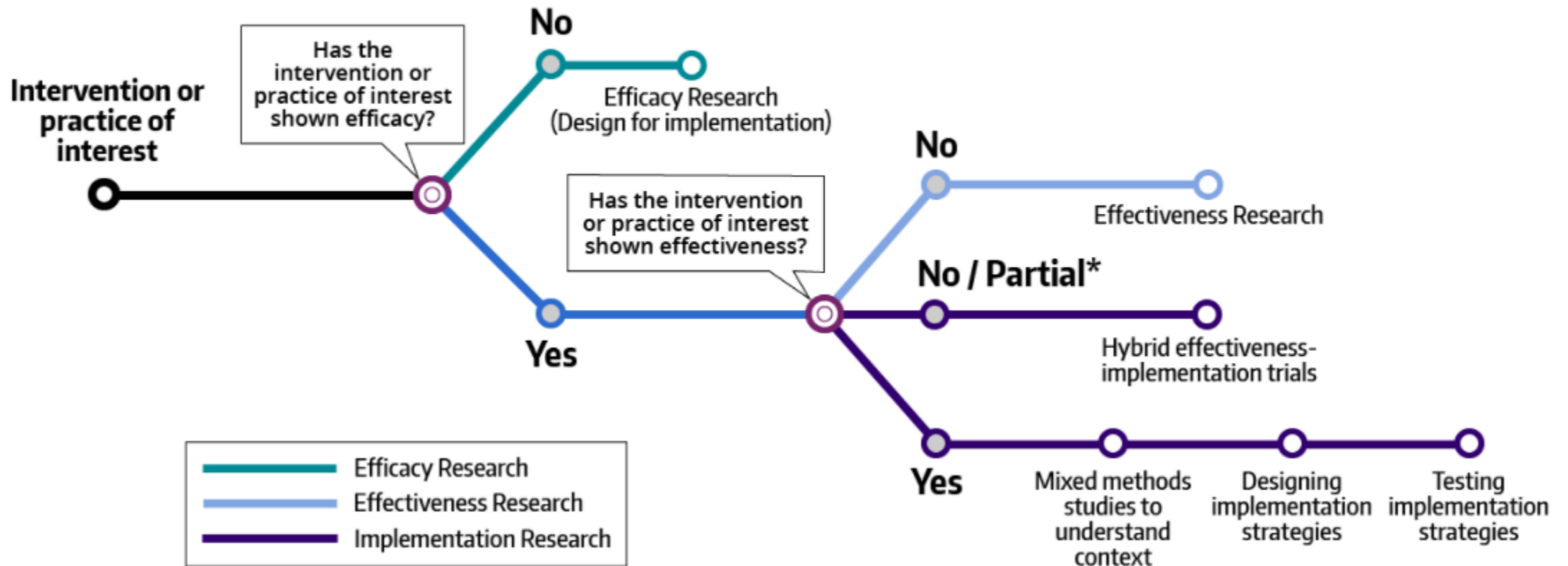
Type of implementation research objective, implementation question, and research methods

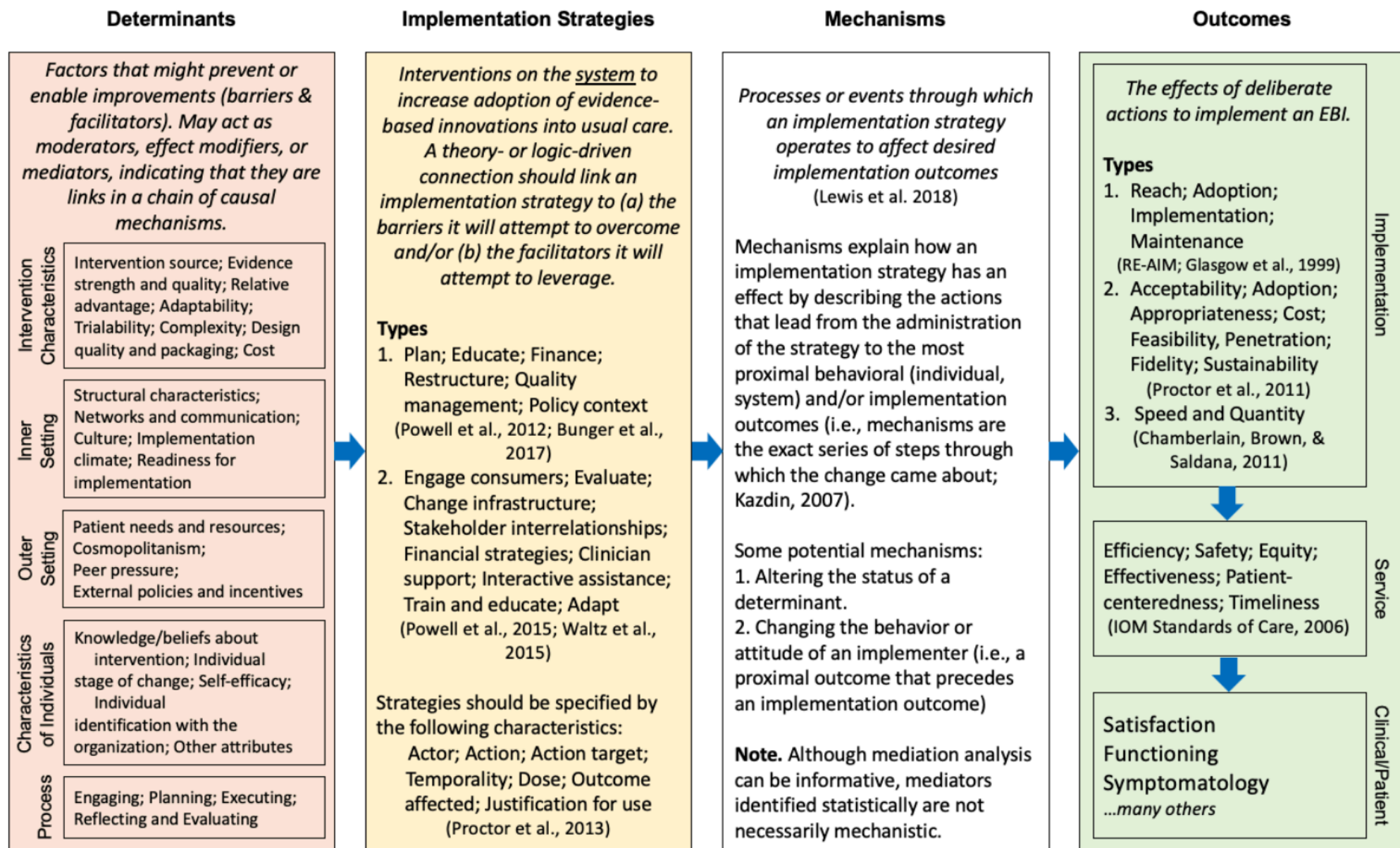
Objective	Description	Implementation question	Research methods and data collection approaches
Explore	Explore an idea or phenomenon to make hypotheses or generalisations from specific examples	What are the possible factors and agents responsible for good implementation of a health intervention? For enhancing or expanding a health intervention?	Qualitative methods: grounded theory, ethnography, phenomenology, case studies and narrative approaches; key informant interviews, focus groups, historical reviews
			Quantitative: network analysis, cross sectional surveys
			Mixed methods: combining qualitative and quantitative methods
Describe	Identify and describe the phenomenon and its correlates or possible causes	What describes the context in which implementation occurs? What describes the main factors influencing implementation in a given context?	Quantitative: cross sectional (descriptive) surveys, network analysis
			Qualitative methods: ethnography, phenomenology, case studies and narrative approaches; key informant interviews, focus groups, historical reviews
			Mixed methods: both qualitative and quantitative inquiry with convergence of data and analyses

Objective	Description	Implementation question	Research methods and data collection approaches
Influence	Test whether an intervention produces an expected outcome		
With adequacy	With sufficient confidence that the intervention and outcomes are occurring	Is coverage of a health intervention changing among beneficiaries of the intervention?	Before-after or time series in intervention recipients only; participatory action research
With plausibility	With greater confidence that the outcome is due to the intervention	Is a health outcome plausibly due to the implemented intervention rather than other causes?	Concurrent, non-randomised cluster trials: health intervention implemented in some areas and not in others; before-after or cross sectional study in programme recipients and non-recipients; typical quality improvement studies
With probability	With a high (calculated) probability that the outcome is due to the intervention	Is a health outcome due to implementation of the intervention?	Partially controlled trials: pragmatic and cluster randomised trials; health intervention implemented in some areas and not in others; effectiveness-implementation hybrids

Objective	Description	Implementation question	Research methods and data collection approaches
Explain	Develop or expand a theory to explain the relation between concepts, the reasons for the occurrence of events, and how they occurred	How and why does implementation of the intervention lead to effects on health behavior, services, or status in all its variations?	Mixed methods: both qualitative and quantitative inquiry with convergence of data and analyses
			Quantitative: repeated measures of context, actors, depth and breadth of implementation across subunits; network identification; can use designs for confirmatory inferences; effectiveness-implementation hybrids
			Qualitative methods: case studies, phenomenological and ethnographic approaches with key informant interviews, focus groups, historical reviews
			Participatory action research
Predict	Use prior knowledge or theories to forecast future events	What is the likely course of future implementation?	Quantitative: agent based modelling; simulation and forecasting modelling; data extrapolation and sensitivity analysis (trend analysis, econometric modelling)

Locating yourself on the “subway line” of translational research





Community-based participatory research (CBPR) and D&I

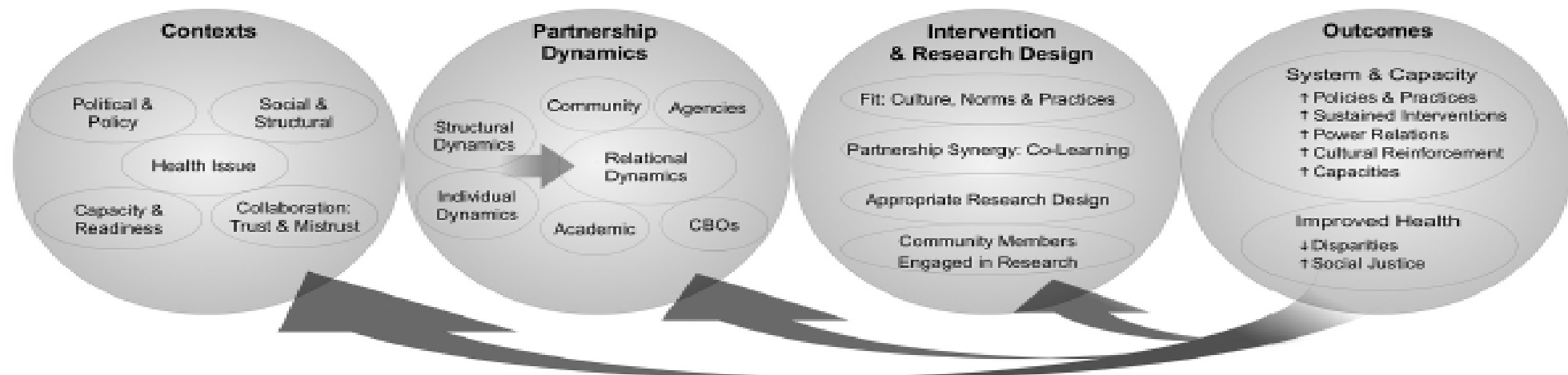
- CBPR is a research approach that emphasizes dialogue between the community and researchers and co-ownership of research.
- CBPR includes stakeholders such as community organizations, community clinics and health centers, social service agencies, faith-based organizations, and lay health workers.

Community-based participatory research (CBPR) and D&I

- CBPR is a natural fit with D&I, as it can:
 - ▣ Ensure scientific discoveries and innovations “fit” with the population they were design for (external validity) so that they can get widely use in practice and be sustainable
 - ▣ Speed the dissemination of innovations, as community partners can disseminate to their networks, which may include potential adopters and implementers of the innovation
 - ▣ Partners who adopt and implement the innovation can serve as role models to others considering adoption of the innovation

CBPR conceptual model

Models of effective CBPR consider similar constructs and determinants of success as D&I research



Contexts	Partnership Dynamics	Intervention & Research Design	Outcomes
<ul style="list-style-type: none"> • Social-Structural: Social-Economic Status, Place, History, Environment, Community Safety, Institutional Racism, Culture, Role of Education & Research Institutions • Political-Policy: National/Local Governance, Policy & Funding Trends • Collaboration: Historic Collaboration & Trust between Community/Academic Partners • Capacity: Community/Academic Partner Capacity & Readiness • Health Issue: Perceived Severity by Community/Academic Partners 	<ul style="list-style-type: none"> • <u>Structural Dynamics</u> <ul style="list-style-type: none"> • Diversity • Complexity • Formal Agreements • Sharing Power/Resource • CBPR Principles Alignment • Time in Partnership • <u>Individual Dynamics</u> <ul style="list-style-type: none"> • Core Values • Participation Motivation • Personal Relationships • Cultural Identities/Humility • Bridge People • Personal Beliefs/Spirituality • Reputation • <u>Relational Dynamics</u> <ul style="list-style-type: none"> • Safety: Community Voice/Language • Trust • Flexibility: Dialogue, Listening & Mutual Learning • Leadership/Influence • Power Dynamics/Stewardship • Self & Collective Reflection • Participatory Decision-making & Negotiation • Knowledge Integration: Group Process • Task Roles & Communication 	<ul style="list-style-type: none"> • Interventions: Cultural Fit & Culturally-Centered • Intervention Informed by Local Settings & Organizations • Partner Shared Synergy & Trust • Language: Academic & Community Terminology • Research & Evaluation Design Reflects Partnership Input • Bidirectional Translation, Implementation & Dissemination • Community Members Engaged in All Research Activities 	<ul style="list-style-type: none"> • <u>CBPR System & Capacity</u> <ul style="list-style-type: none"> • Policy & Practices Changes – In both Universities & Communities • Sustainable/Culturally-Centered Interventions for Broader Reach • Changed Power Relations & Empowerment - Community Voices Heard • Productivity Measures, I.e. Papers, Grant Applications, Grant Awards • Cultural Reinforcement, Revitalization & Renewal • Develops Capacities to Benefit Individuals & Partner Agencies • <u>Improved Health</u> <ul style="list-style-type: none"> • Transformed Social & Economic Conditions • Reduced Health Disparities



Advice for Writing Winning Implementation Research Proposals

Proposal for D&I Research

Does the applicant...

- ❑ State the general problem and their unique contribution?
- ❑ State realistic aims expressed in a logical order but still independent?
- ❑ Use simple language to describe what will be accomplished- not how?
- ❑ Describe how they will accomplish your aims (approach)?
- ❑ Summarize the importance of the proposed study?
 - Implications
 - How the study will advance knowledge and improve health

10 Key Ingredients for Writing Implementation Research Proposals

1) The gap or need– Does the applicant provide clear evidence that a gap in quality exists? Gaps could be measured at population-, organization-, or provider-level.

2) Evidence based treatment or intervention to be implemented – –
Does the applicant demonstrate evidence for what you plan to implement? Is your intervention superior to a placebo or other type of treatment?

What do we mean by evidence?

- Evidence-based interventions
 - The objects of dissemination and implementation are interventions with proven efficacy and effectiveness.
 - To some degree “evidence” is in the eye of the beholder

Brownson describes 4 levels of evidence:

- Evidence-based (review of multiple studies)
- Effective (peer reviewed study)
- Promising (written program evaluation)
- Emerging (on-going work or practice-based summary)

10 Key Ingredients (cont.)

3) Conceptual model and theoretical justification – – Does the applicant use a theory, system, or framework to inform the design or variables you have chosen?

4) Stakeholder priorities, engagement in change – – Does the applicant provide a clear engagement process for stakeholders? Letters of intent are not enough.

5) Setting's readiness to adopt new services/treatments/programs – – Does the applicant provide clear information about the setting's willingness to change? Preliminary data on organizational or policy context can strengthen an application.

10 Key Ingredients (cont.)

6) Implementation strategy/process – – Does the applicant clearly justify the strategies you wish to implement? Strategies should be multifaceted or multilevel, if necessary; robust or adaptable; feasible and acceptable to stakeholders; saleable, triable, and observable; sustainable; and scalable

7) Team experience with the setting, treatment, implementation process – – Does the applicant provide enough detail about team's experience? Does your research team bring depth and experience your PI, alone, may not have? Diverse disciplines and skill sets can enhance a project.

10 Key Ingredients (cont.)

8) Feasibility of proposed research design and methods – – Does the applicant have a detailed methods section? Do they provide alternatives if your plans do not pan out? One of the most important functions of preliminary work is to demonstrate feasibility of a program

9) Measurement and analysis section – Do the key constructs align with the theory/model you have chosen? Is there a measurement plan for each construct? – Does the applicant demonstrate how relationships between the constructs will be tested?

10) Policy/funding environment; leverage or support for sustaining change – Does the applicant address how implementation aligns with policy? Policy can be addressed in the narrative, background literature, letters of support, and/or resource and environment sections.

Dissemination and implementation grant application core competencies, derived from card sorting, 2014.

Grant proposal development		Expertise [*]
Grant section	Competency (number)	
Aims	Create a clear, rationale and realistic action plan for transforming research questions on D&I into grant proposal aims (A1).	B
Significance	Identify how to pose an innovative and significant D&I research question, justify its importance, describe the knowledge gap it addresses, and when possible, connect it to priorities of the funding agency (S1).	B
	Describe how to ground the proposal in an important quality gap that is addressable through the D&I of an evidence-based intervention, program or policy (S2).	B
Innovation	Articulate how to identify products from the D&I study, including implementation toolkits, to guide practice and policy (I1).	A
	Report on the consistency of the proposed practice change (to be addressed in the study) with the policy trends and priorities (I2).	A
Approach	Utilize an appropriate D&I model or framework to organize a proposal and integrate research questions with clear and measurable study objectives; aims; measures, and analysis strategies (AP1).	I
	Explain how to document or propose measurement of the setting's need, appropriateness and readiness of the practice change required through the D&I strategies addressed in the proposal (AP2).	I
	Identify measures that clearly assess the constructs of interest in the proposed study and are practical to apply in the proposed settings (AP3).	I
	Identify how to build a team with the expertise and experience for the proposed research, including D&I expertise and stakeholder experience (AP4).	I
	Create a strategic dissemination plan for various target audiences that goes beyond the traditional publications and presentation at meetings (AP5).	A
	Develop an analysis plan that addresses each specific aim and hypothesis and considers the different levels of analyses (AP6).	A
Human Subjects	Describe the ethical (human subjects) issues that are particular to and relevant for D&I research (HS10).	B

*Statement skill rating: B = beginner; I = intermediate; A = advanced

Research Questions

- What is the reach, effectiveness, adoption, implementation, impact, and maintenance of the proposed intervention? What is the intervention effect on clinic and county CRCs rates? (RE-AIM)
- What is the level of organizational readiness at the clinics?
- What contextual factors (from CFIR) that influence level of implementation?
- What are the mediators and moderators of adoption and implementation?
- What organizational and contextual factors influence sustainability?

Summary

D&I research questions include those related to:

- ▣ factors influencing adoption, implementation, and sustainability of evidence based programs, policies, practices (or other health care innovations).
- ▣ questions related to models or frameworks; relationships between constructs; predictors of implementation outcomes; measurement studies
- ▣ the evaluation of implementation strategies
- ▣ questions related to scale-up
- ▣ questions related to sustainability

Summary

- Successful D&I grant applications should include attention to “key ingredients”- some of which are different from other types of grants.
- D&I research can help us understand and intervene to accelerate the use of evidence and innovations to increase the impact of research on health and quality of life.