



Section for Global Health



MODULE 1 | LECTURE 1C

Approaches and disciplines for implementation research

Rajesh Vedanthan, MD MPH
Director, Section for Global Health
Institute for Excellence in Health Equity
Associate Professor
Department of Population Health
NYU Grossman School of Medicine





Lecture Overview

- **Implementation research—definition and transdisciplinary nature**
- **Steps in implementation research**
 - Identify
 - Analyze
 - Develop
 - Implement
 - Evaluate
- **Example from a GACD-funded DM project (BIGPIC)**

Implementation research



- **Scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice**
- **To improve the quality and effectiveness of health services and public health**

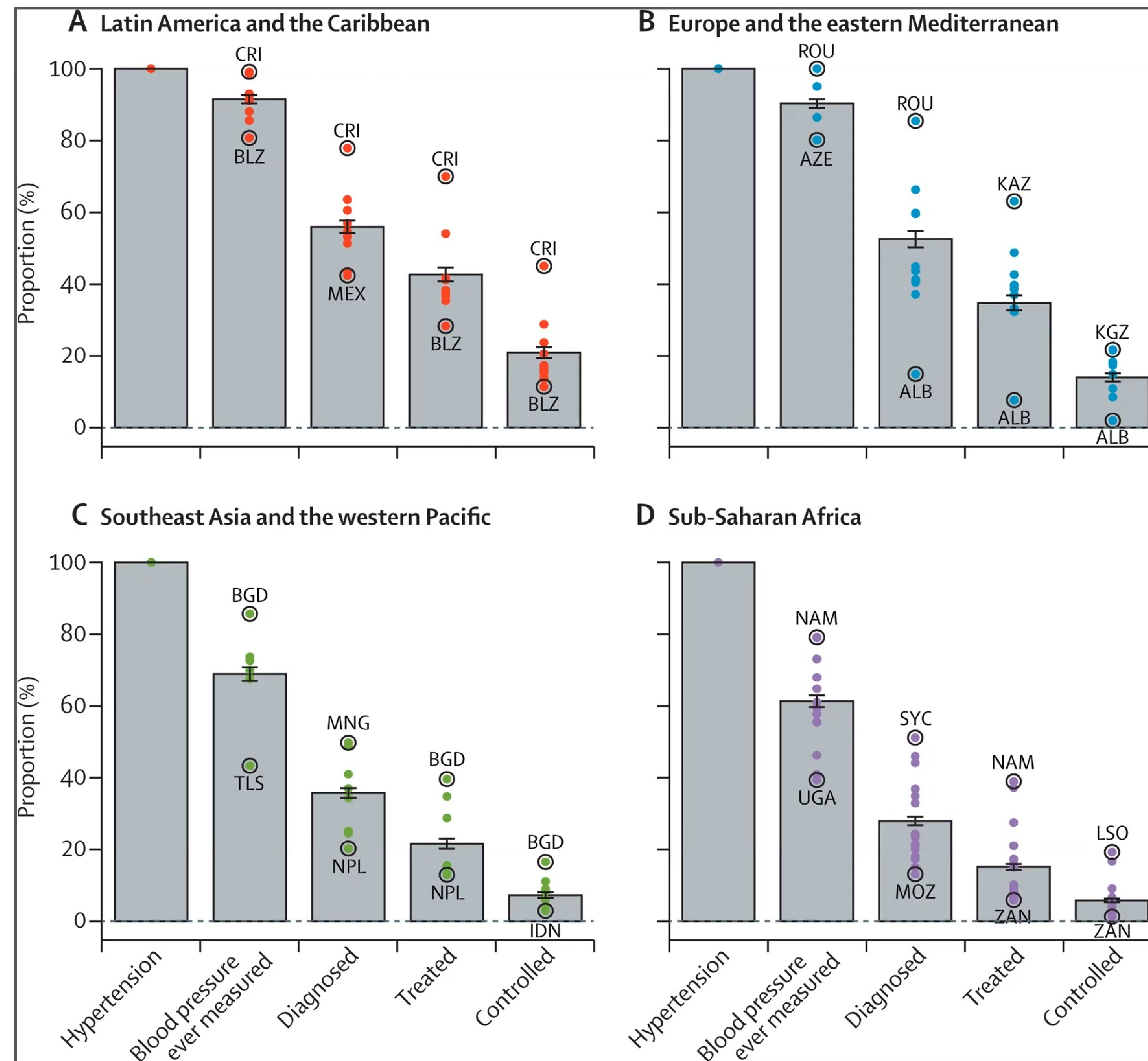


Knowledge-Practice (Know-Do) Gap

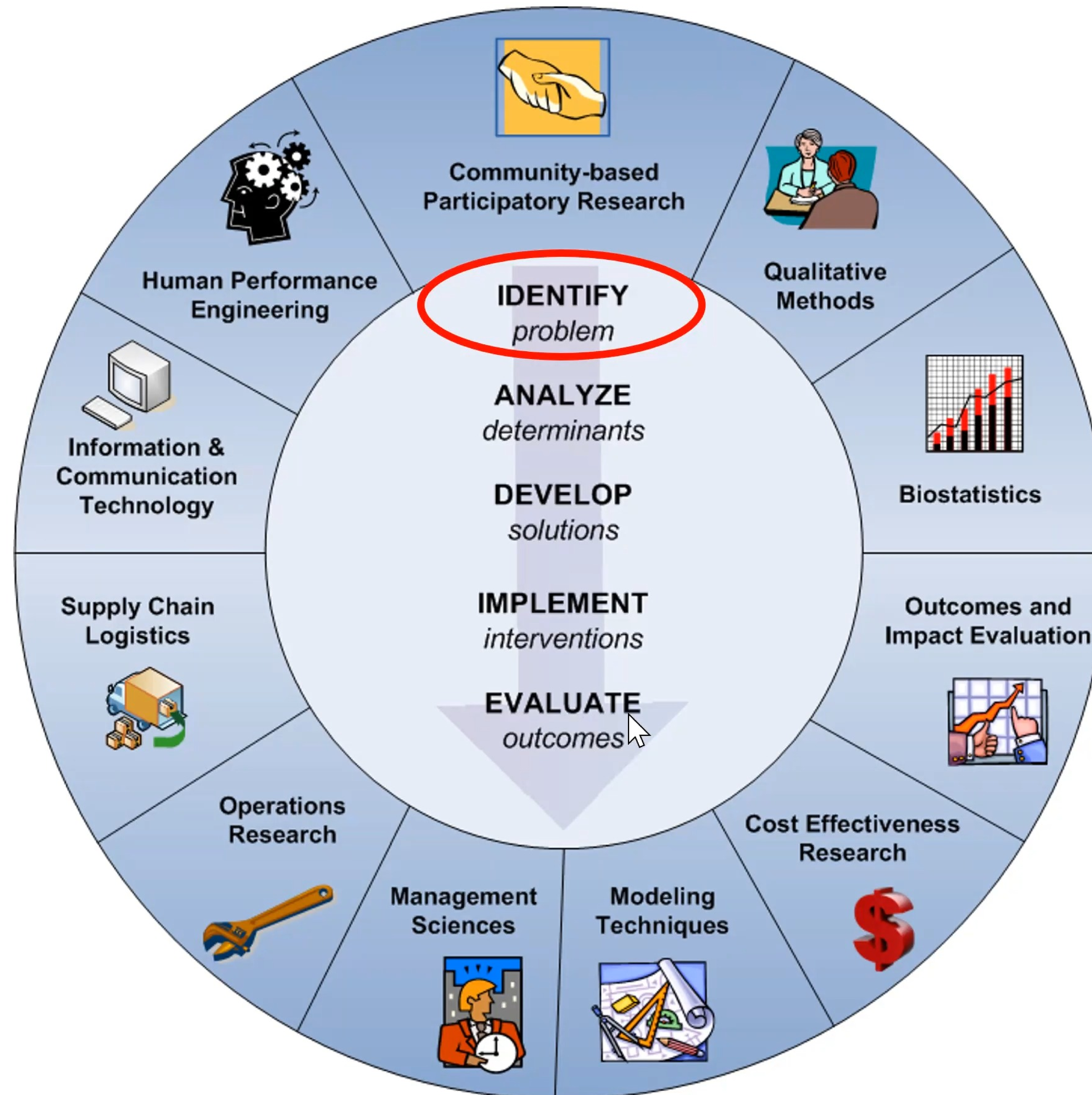
People with previous CVD taking priority medications



Hypertension—Gaps in Awareness, Treatment and Control

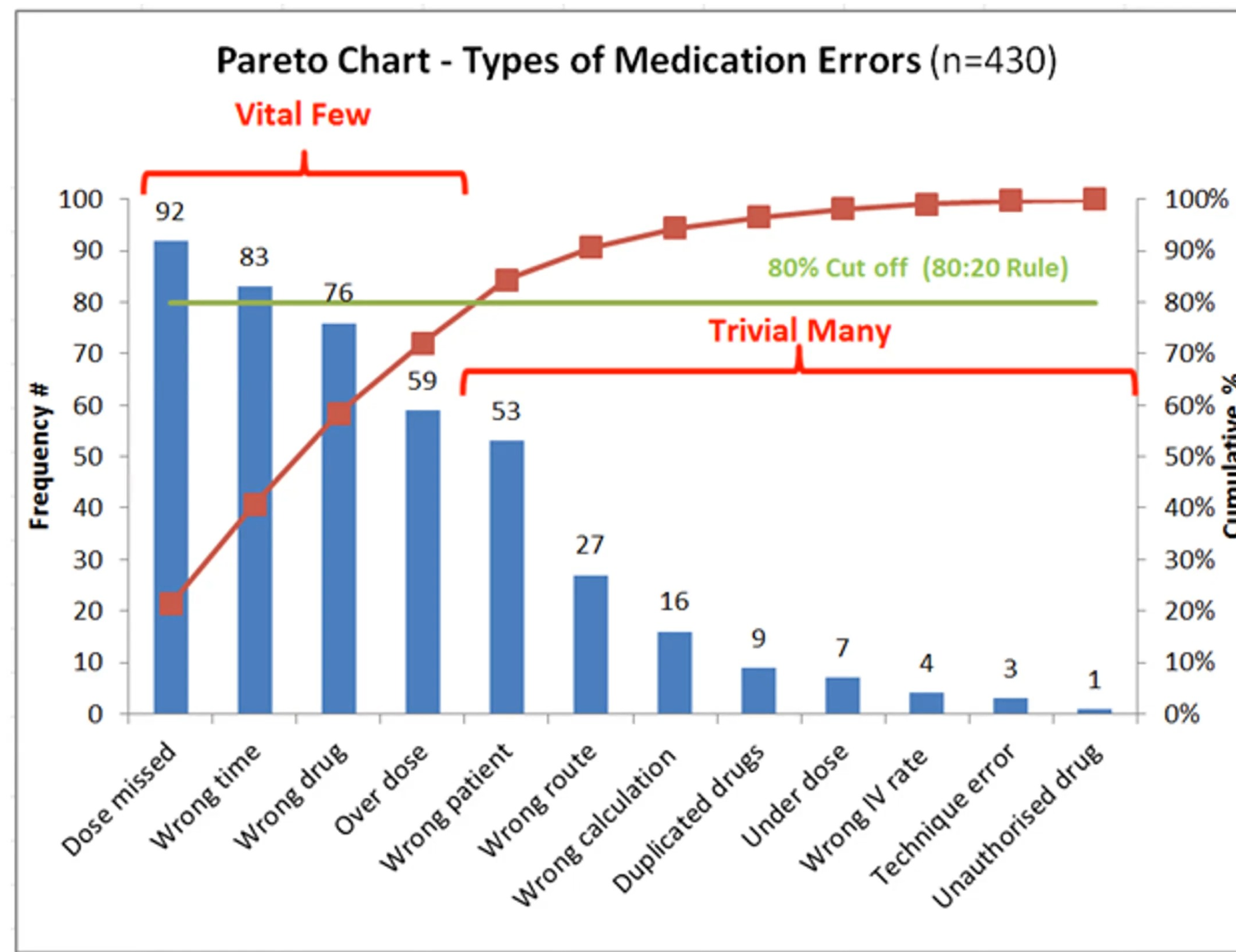


Implementation Research--Transdisciplinary



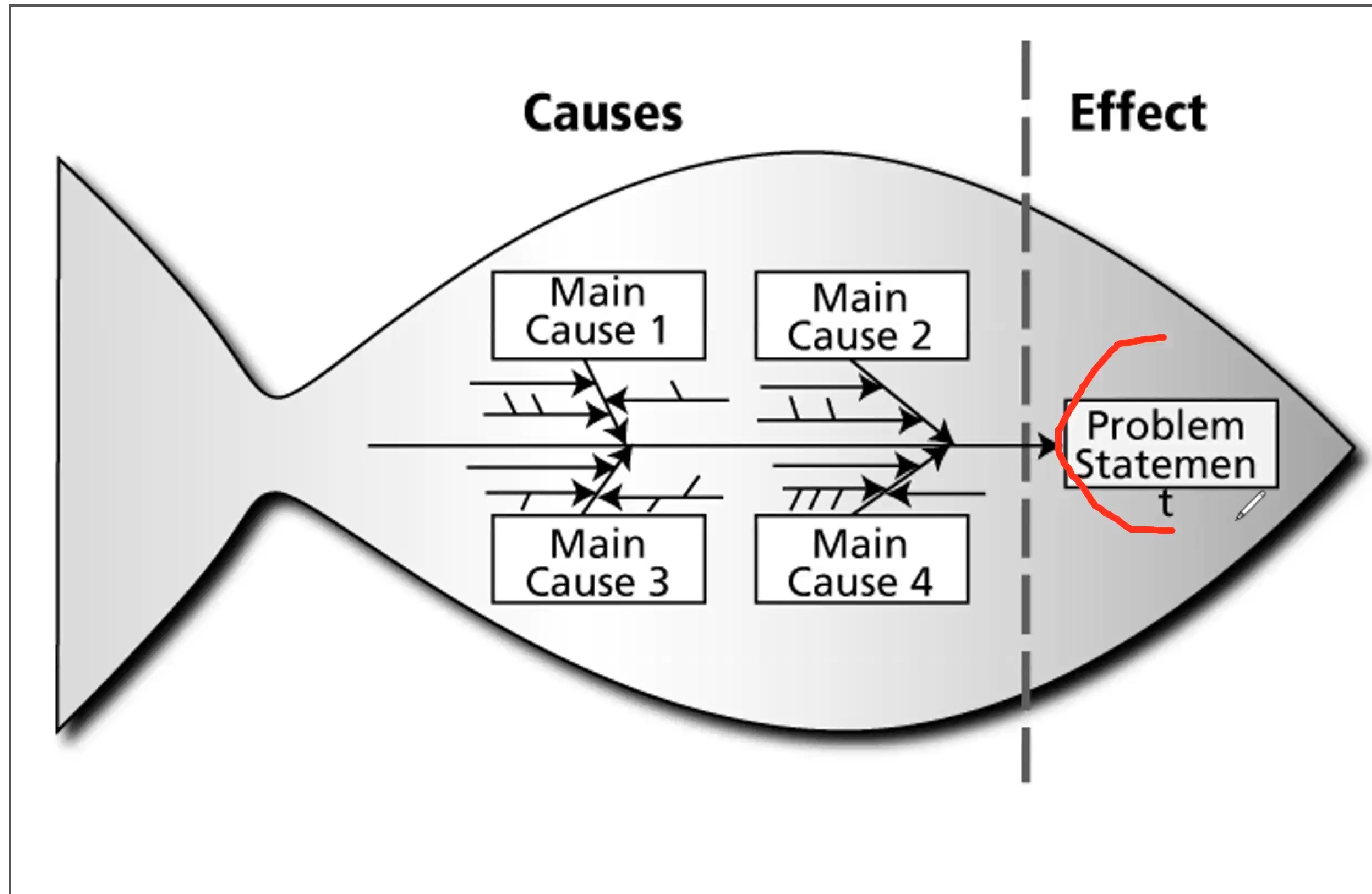


Problem Analysis—Pareto Chart



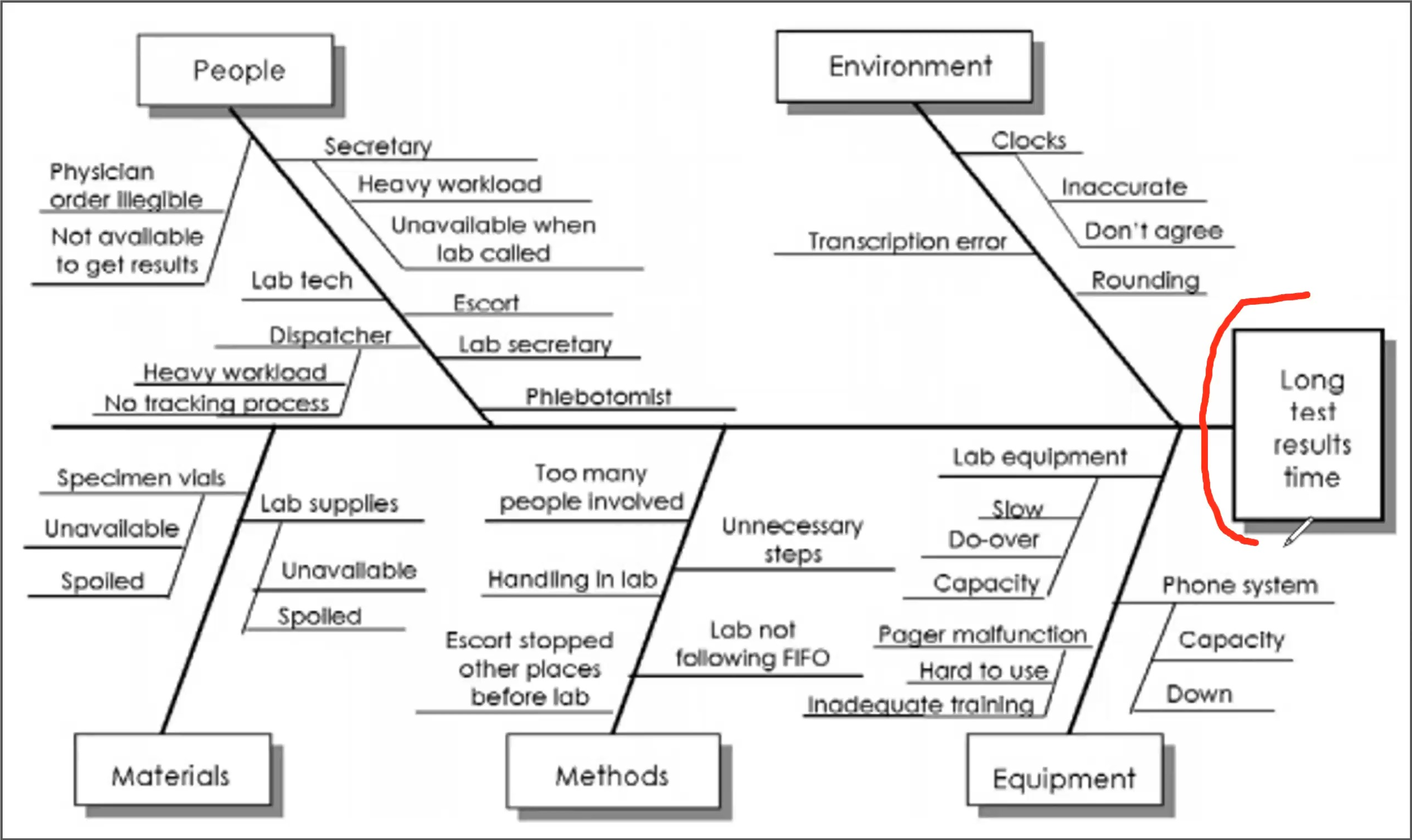


Problem Analysis—Fishbone/Ishikawa Diagram

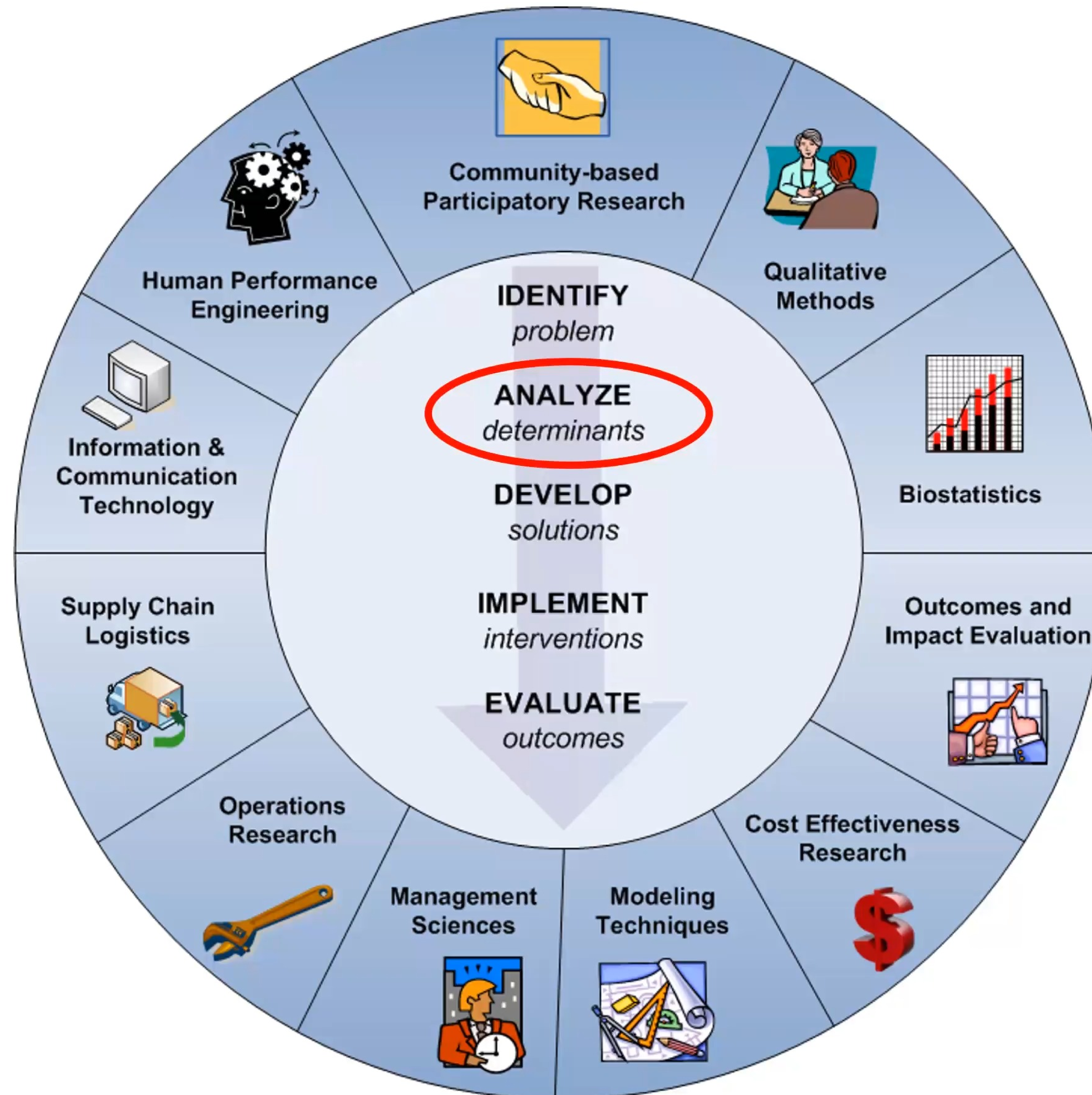




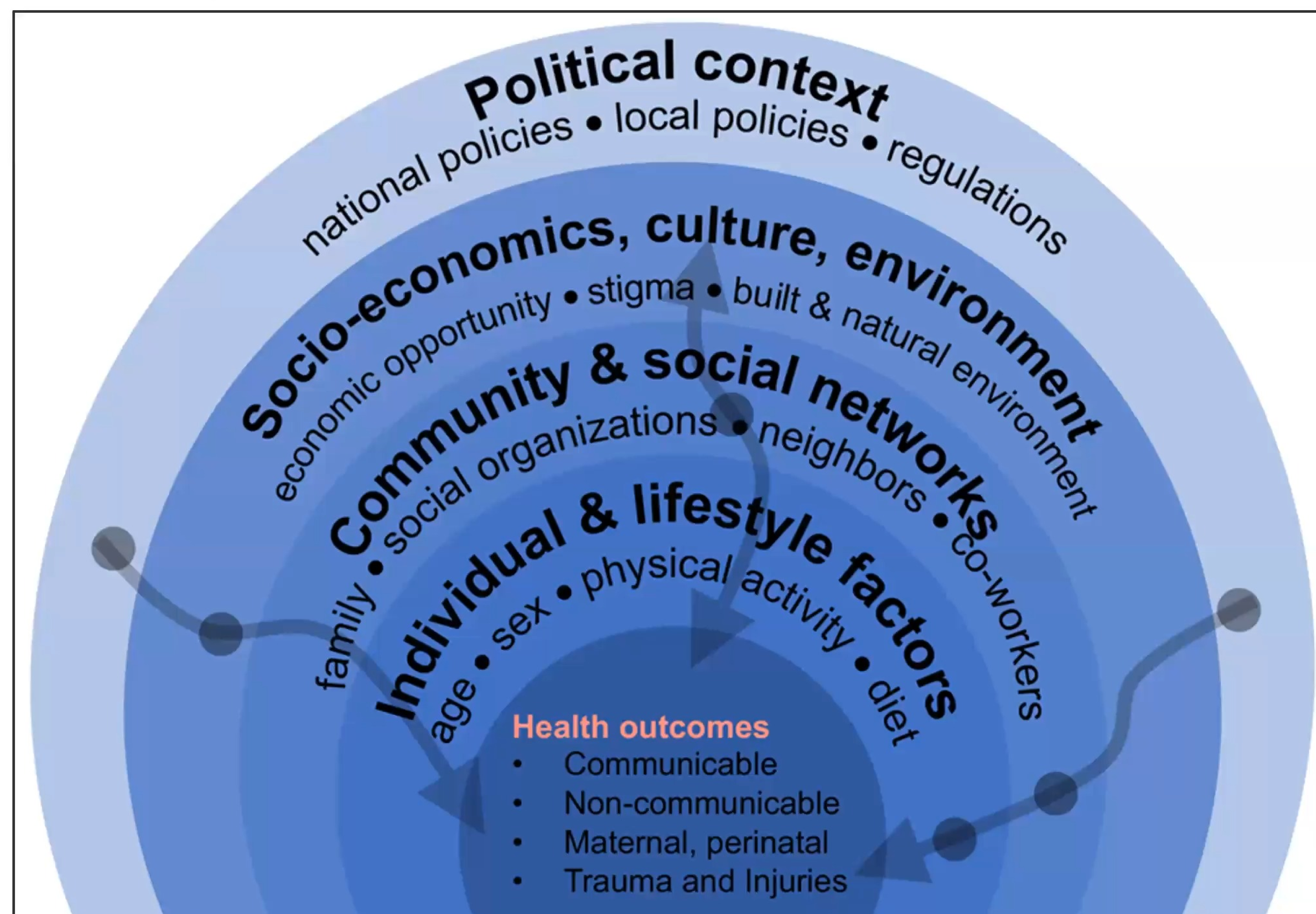
Problem Analysis—Fishbone/Ishikawa Diagram



Implementation Research--Transdisciplinary



Social and Structural Determinants of Health



Δt →

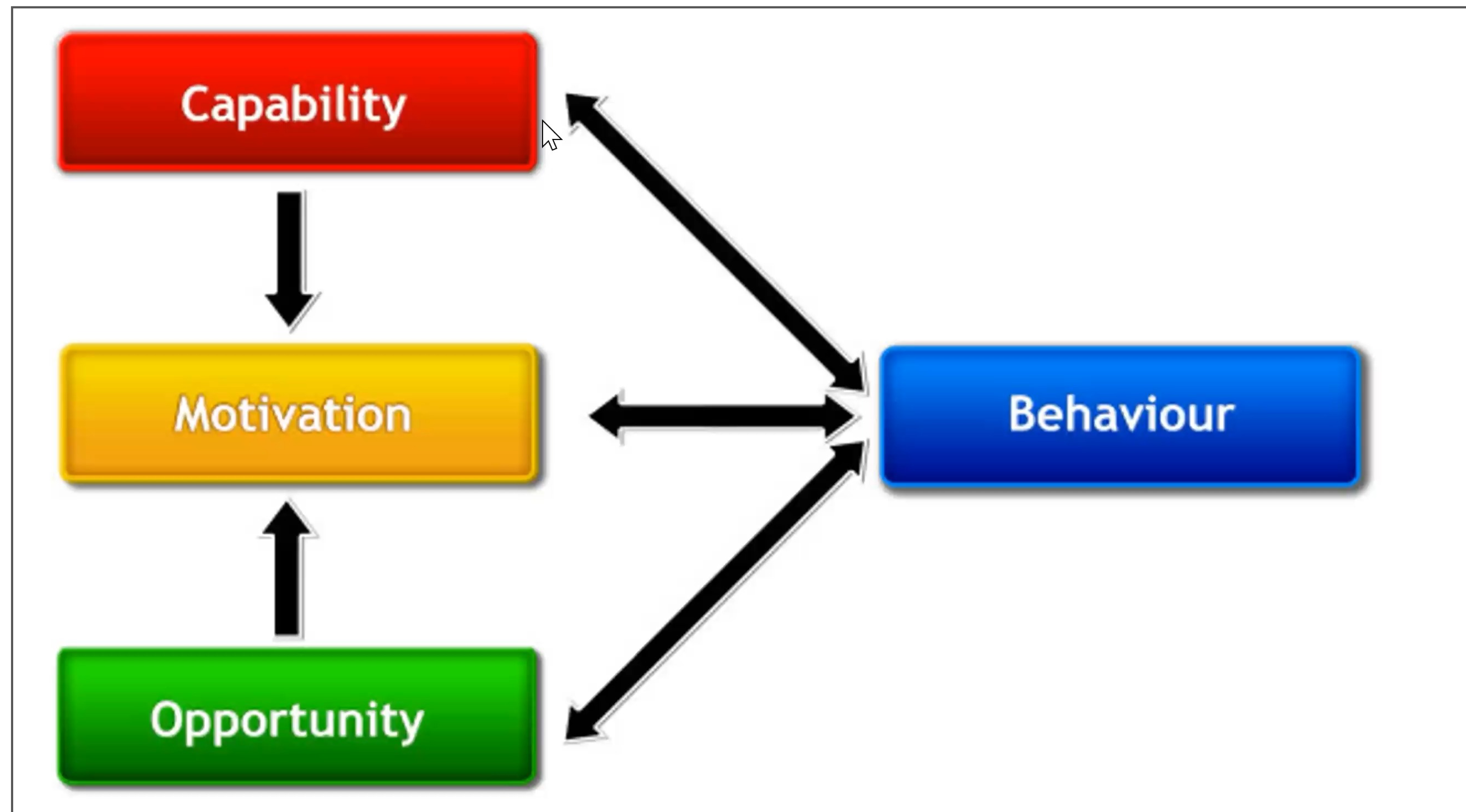
● Challenge 1: Creating culturally-appropriate measures of multi-level social determinants

↗ Challenge 2: Modeling complex, multifactorial causal pathways

Δt Challenge 3: Long time period of action data needs

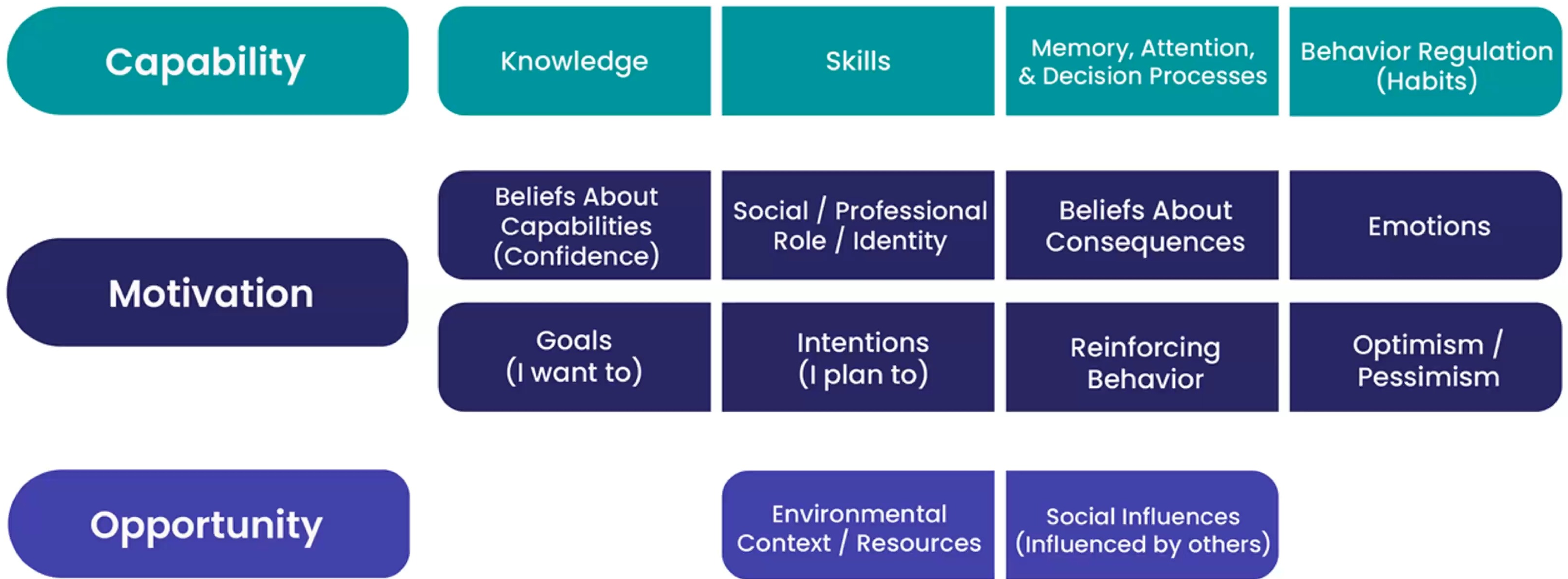


Determinants—Behavior (COM-B)





Capability, Motivation, Opportunity – Behavior + Theoretical Domains Framework



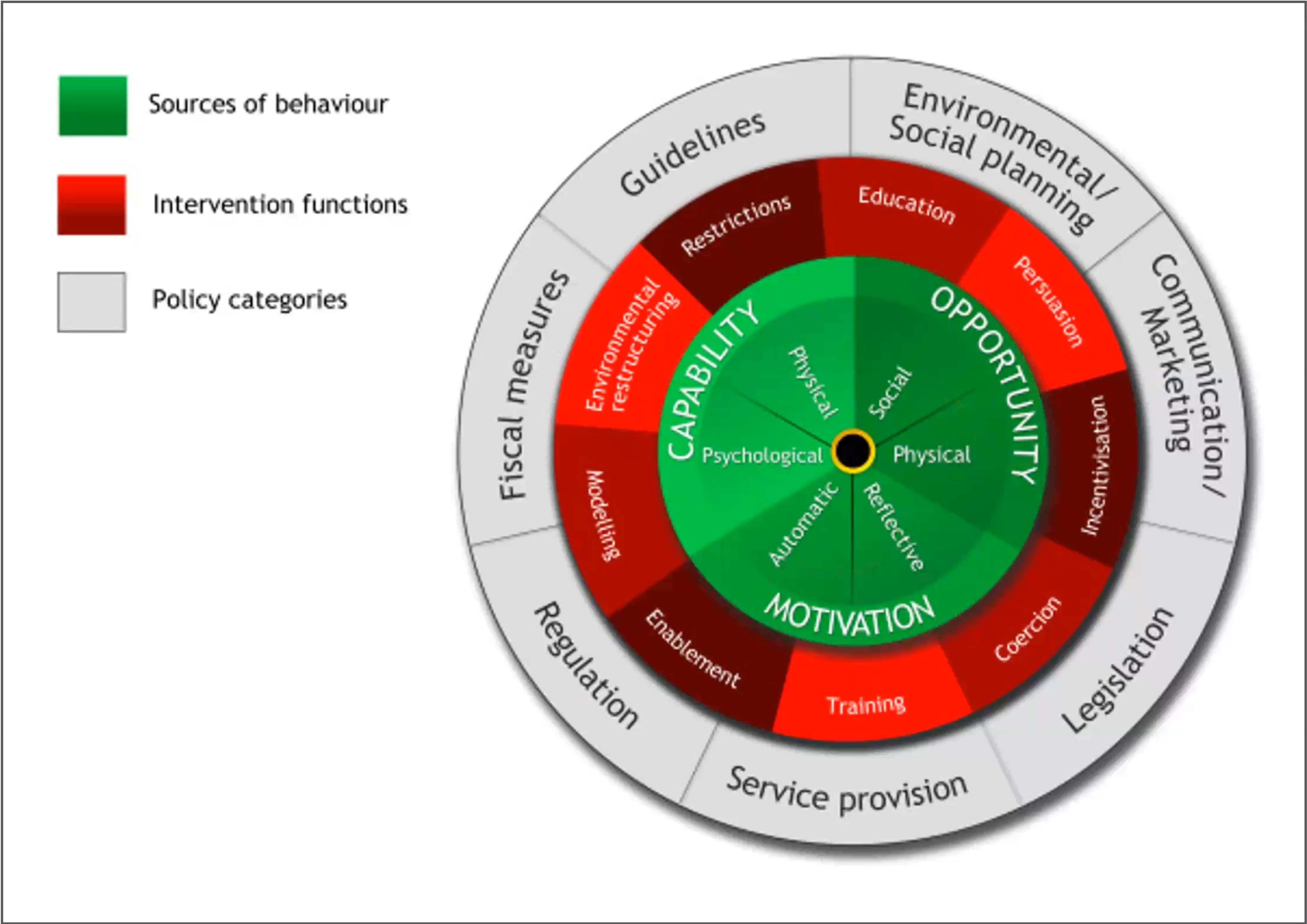
Michie, S., Atkins, L., & West, R. (2014). *The behaviour change wheel: A guide to designing interventions*. Silverback Publishing. www.behaviourchangewheel.com



Figure adapted by The Center for Implementation | V2024.01






Behavior Change Wheel

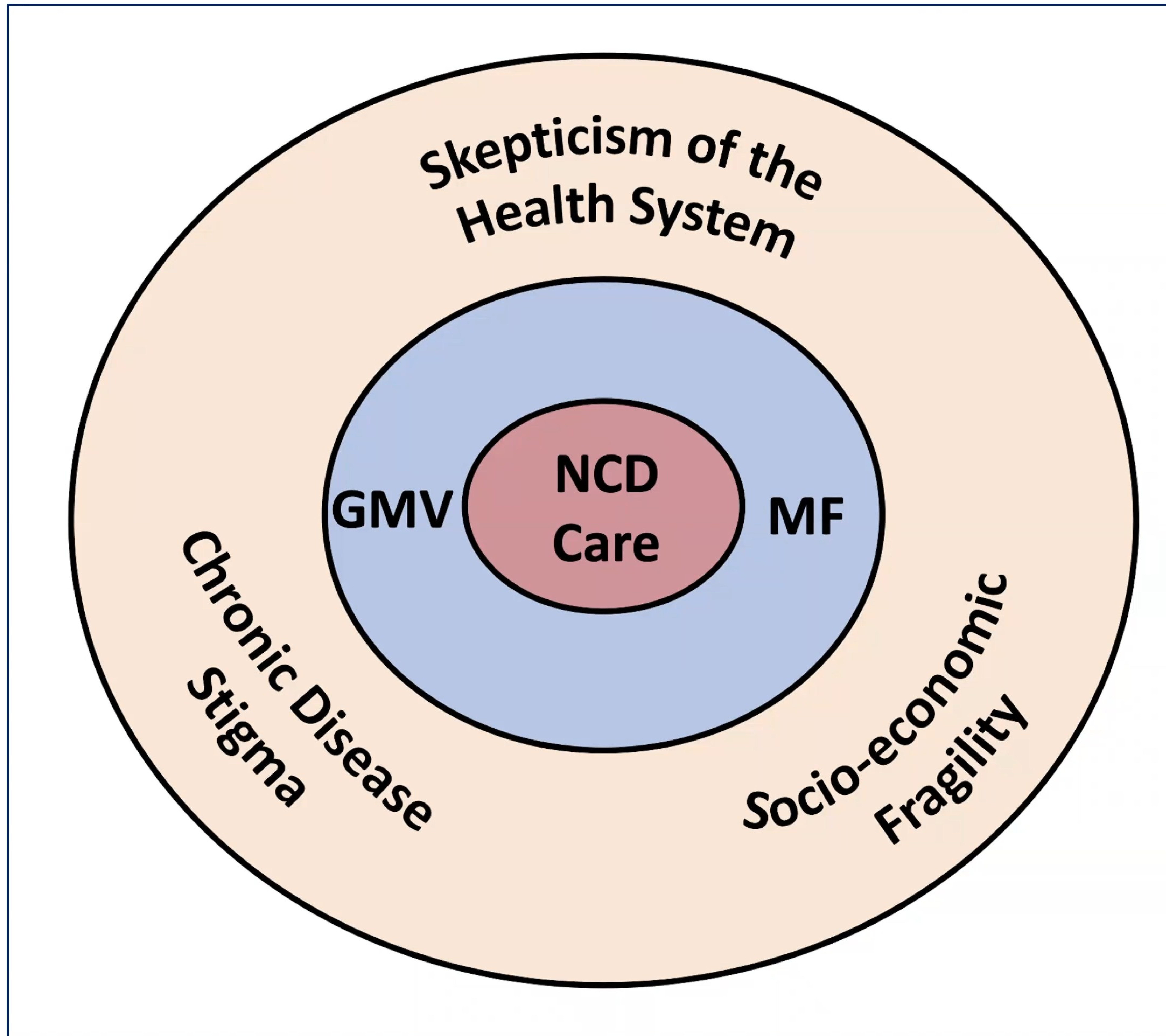




Other examples...

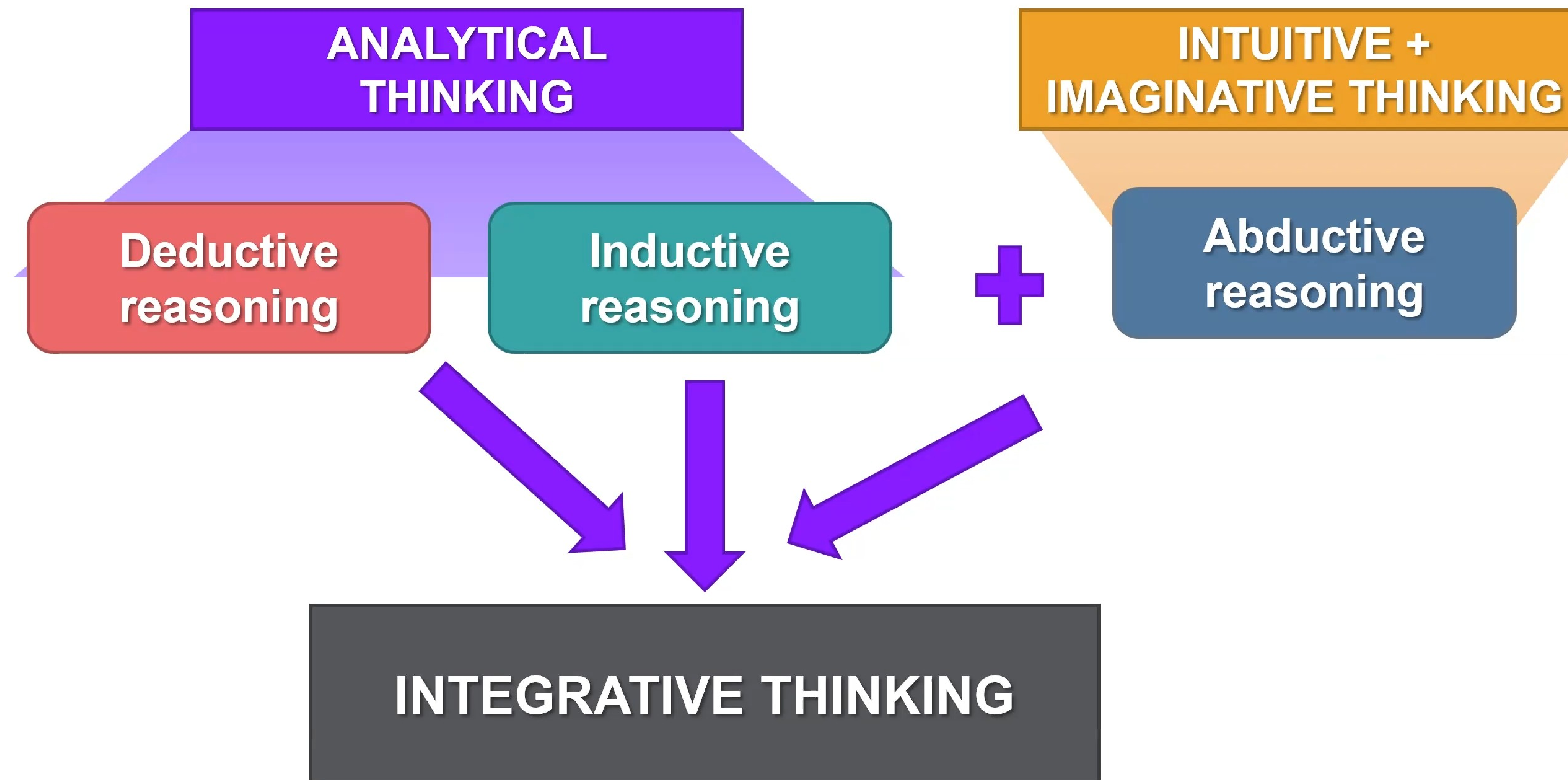
(there are MANY)

SOCIO- ECOLOGICAL LEVEL	THEORY	FOCUS
	Health Belief Model	Individuals' perception of the threat of a health problem and the appraisal of recommended behavior(s) for preventing or managing the problem.
Individual	Theory of Planned Behavior	Individuals' behavioral intention is the most important determinant of behavior.
	Stages of Change (Transtheoretical Model)	Individuals' readiness to change or attempt to change toward healthy behaviors.
Interpersonal	Social Learning Theory	Behavior is explained via a three-way, dynamic reciprocal theory in which personal factors, environmental influences and behavior continually interact.
	Diffusion of Innovation Theory	Addresses how new ideas, products and social practices spread within a society or from one society to another.
Community		





Design Thinking





Bridging Income Generation with Group Integrated Care

NIH/NHLBI R01HL125487

PI (USA): Rajesh Vedanthan, MD MPH

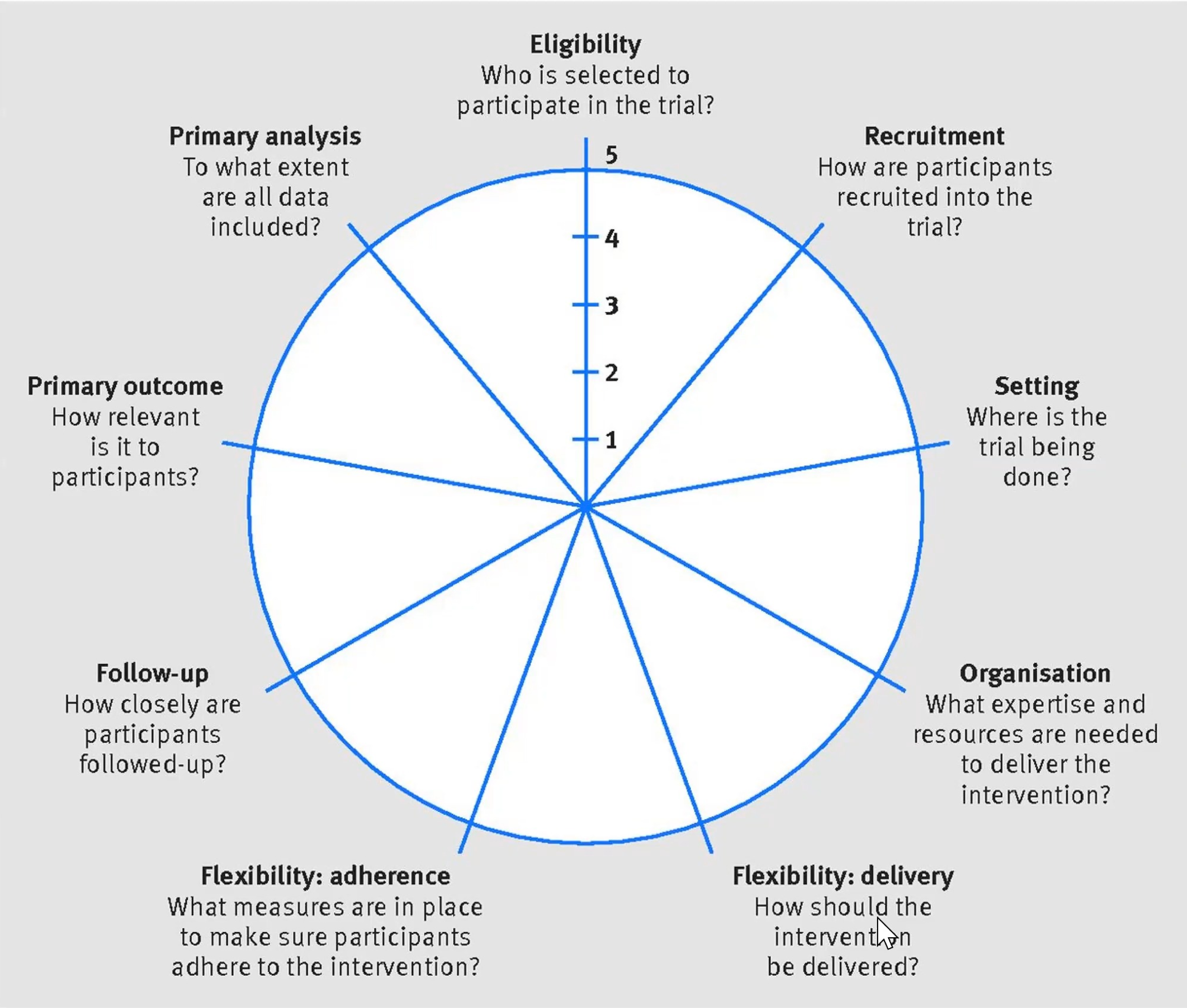
PI (Kenya): Jemima H. Kamano, MMed



Prototype, Feedback, Iterate

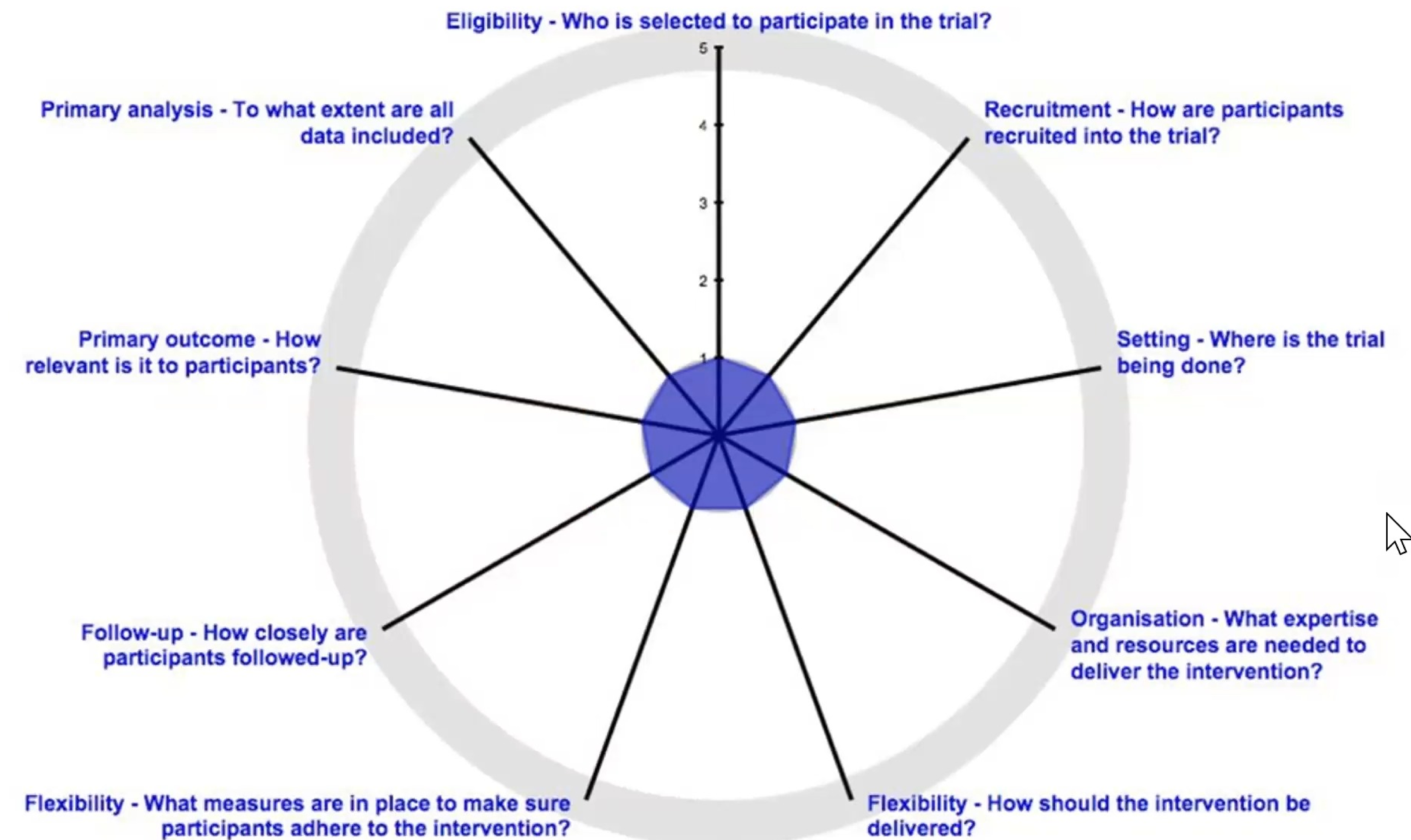
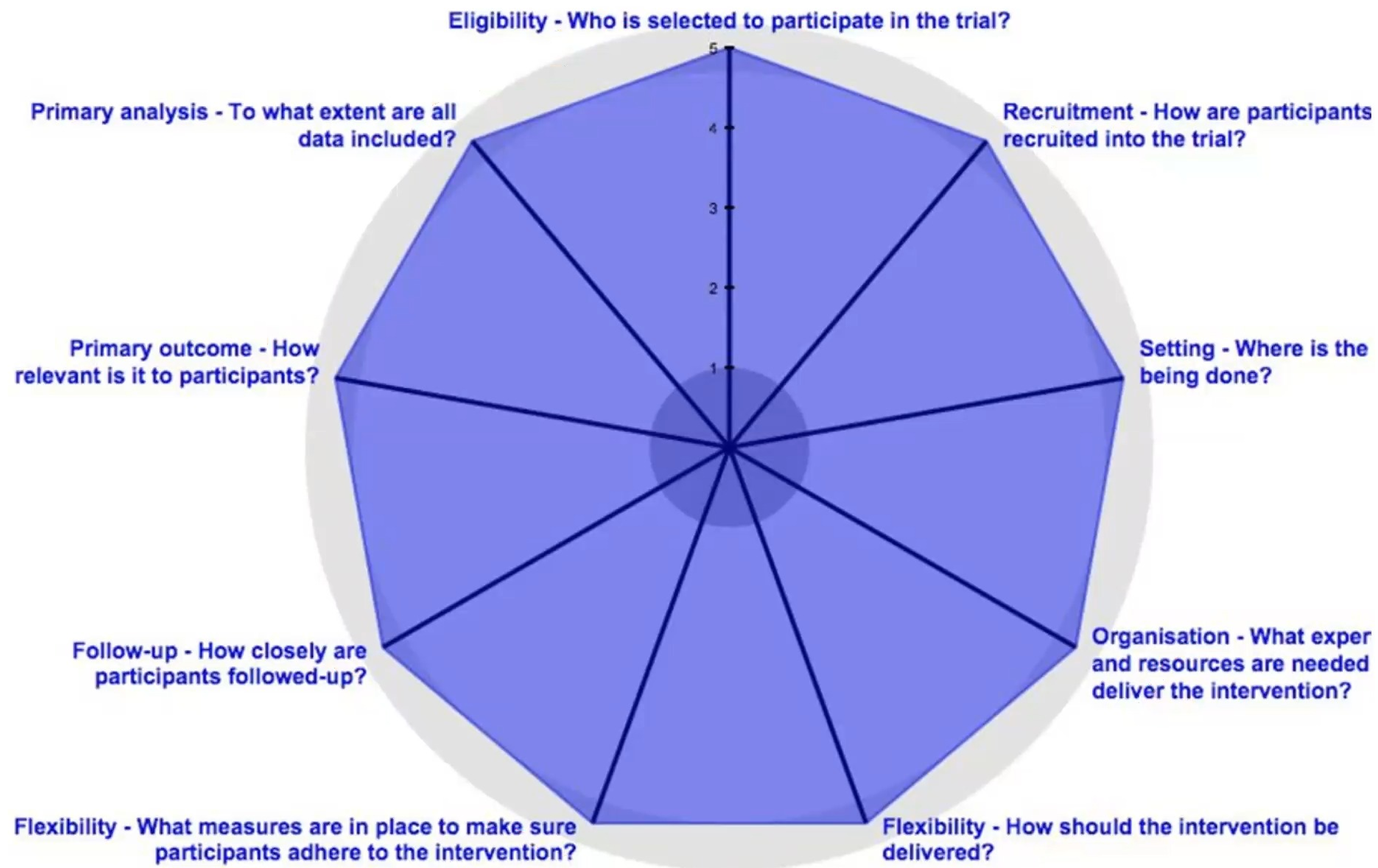


The PRagmatic-Explanatory Continuum Indicator Summary 2 (PREC2)

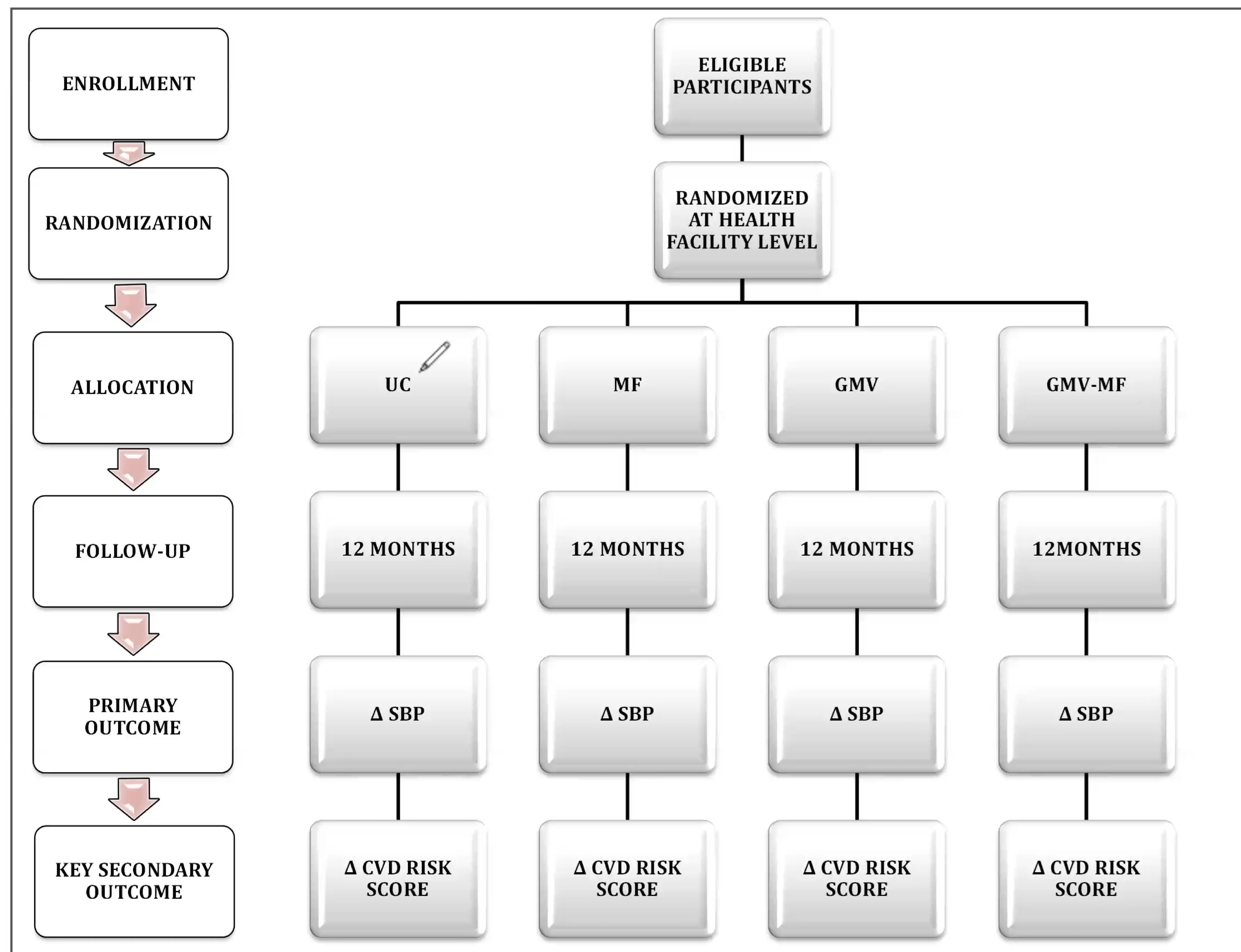




Pragmatic vs. Explanatory

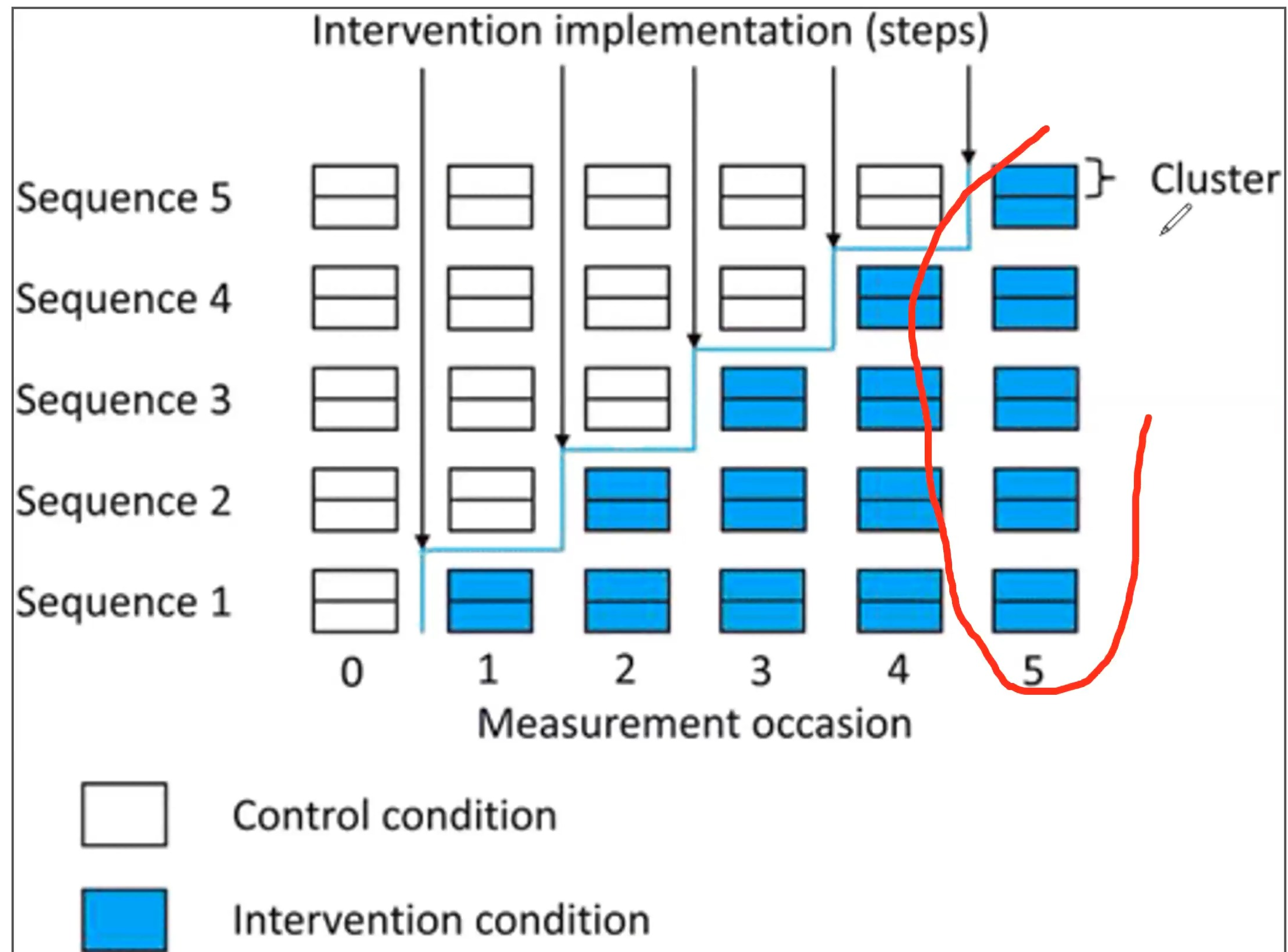


BIGPIC: Cluster RCT

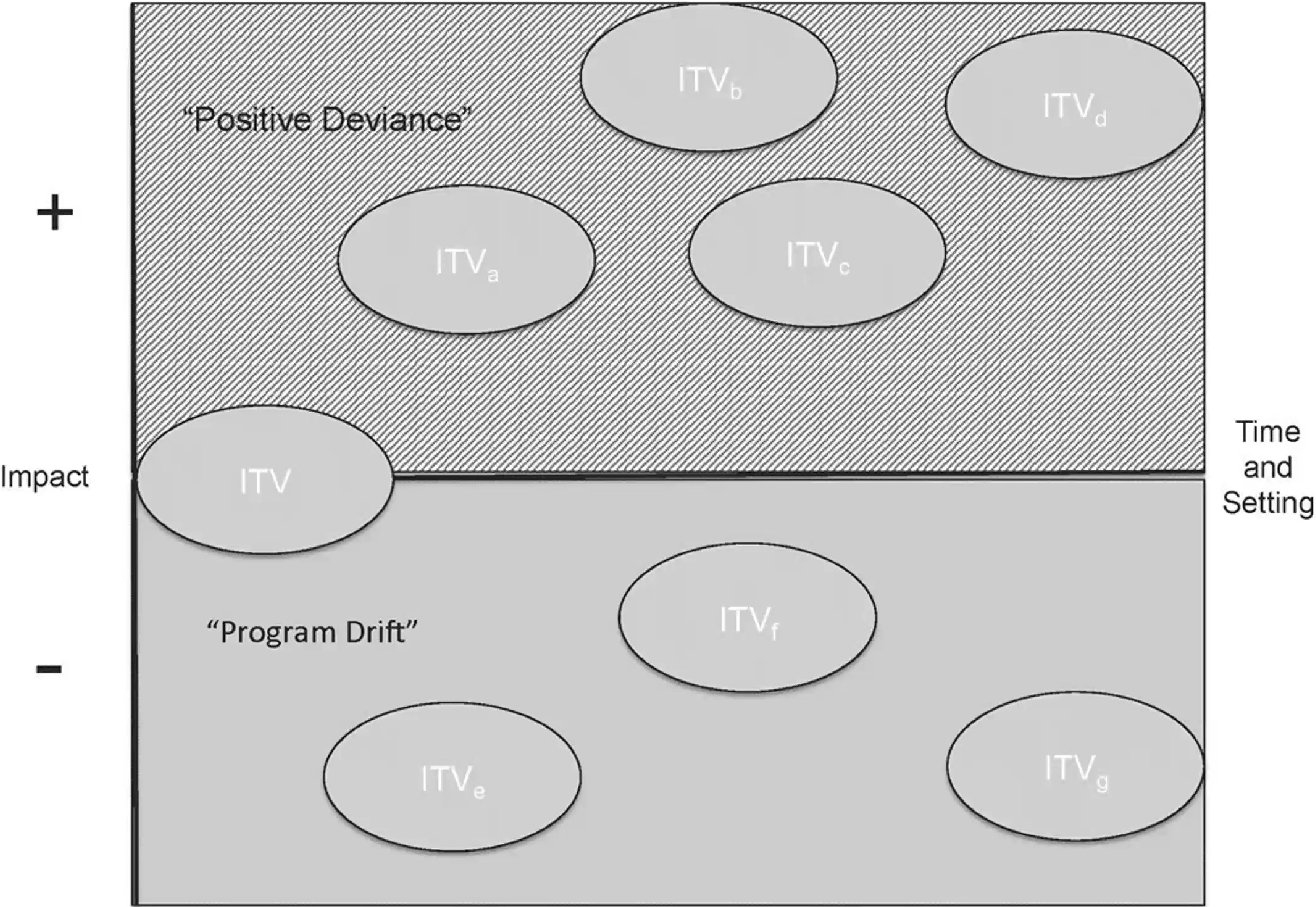




Stepped-Wedge Design

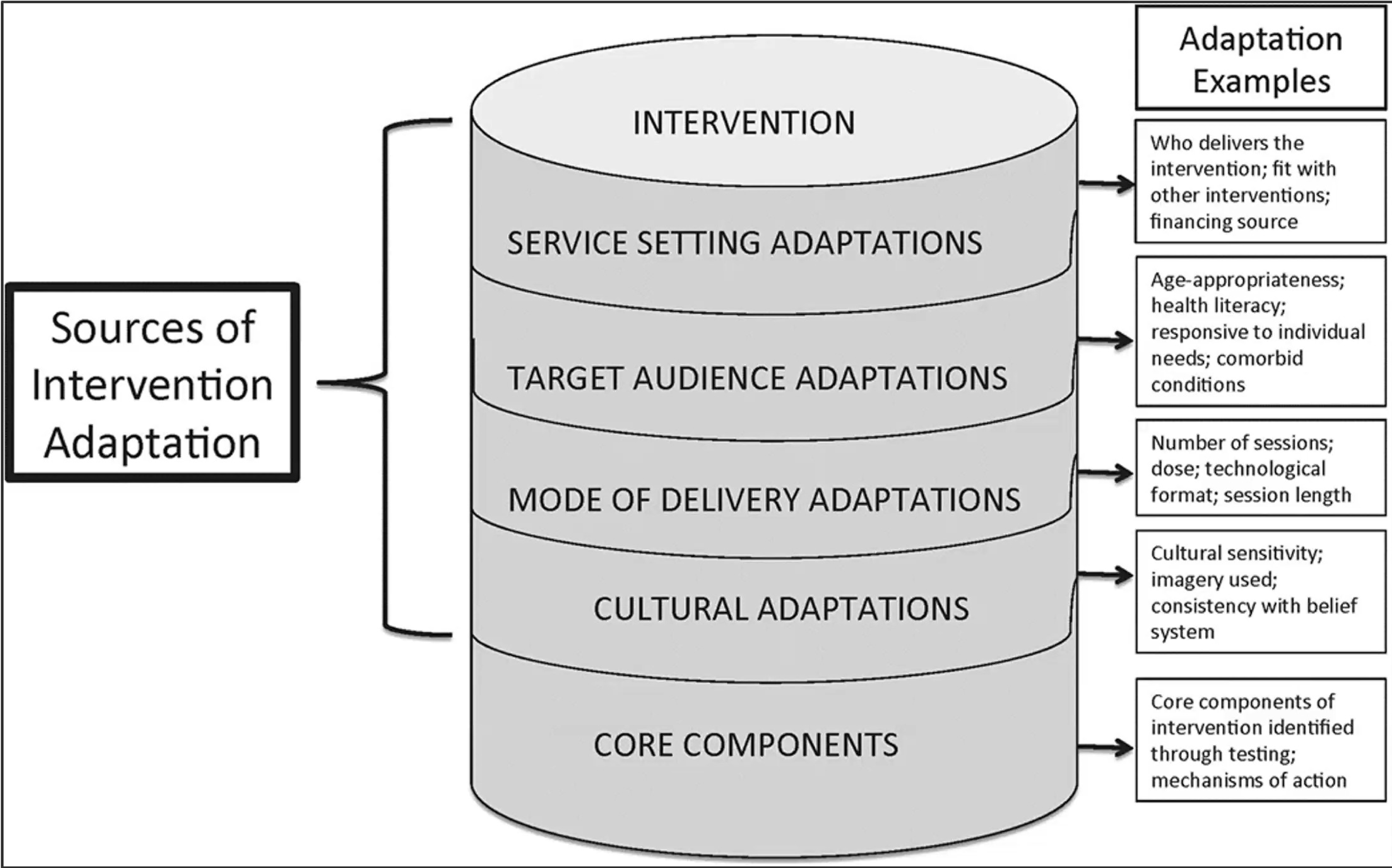


Adaptome





Adaptome



FRAME-IS—Framework for Adaptations and Modi



Module 5, Part 1: WHEN is the modification initiated?

- ☐ Pre-implementation/planning/pilot phase
- ☐ Implementation phase
- ☐ Scale up (i.e. when the EBP is being spread to additional clinics/settings within your system)
- ☐ Maintenance/Sustainment
- ☐ Other (write in here):

Module 5, Part 2: Is modification PLANNED?

- ☐ Planned/Proactive (proactive adaptation)
- ☐ Planned/Reactive (reactive adaptation)
- ☐ Unplanned/Reactive (modification)
- ☐ Other (write in here):

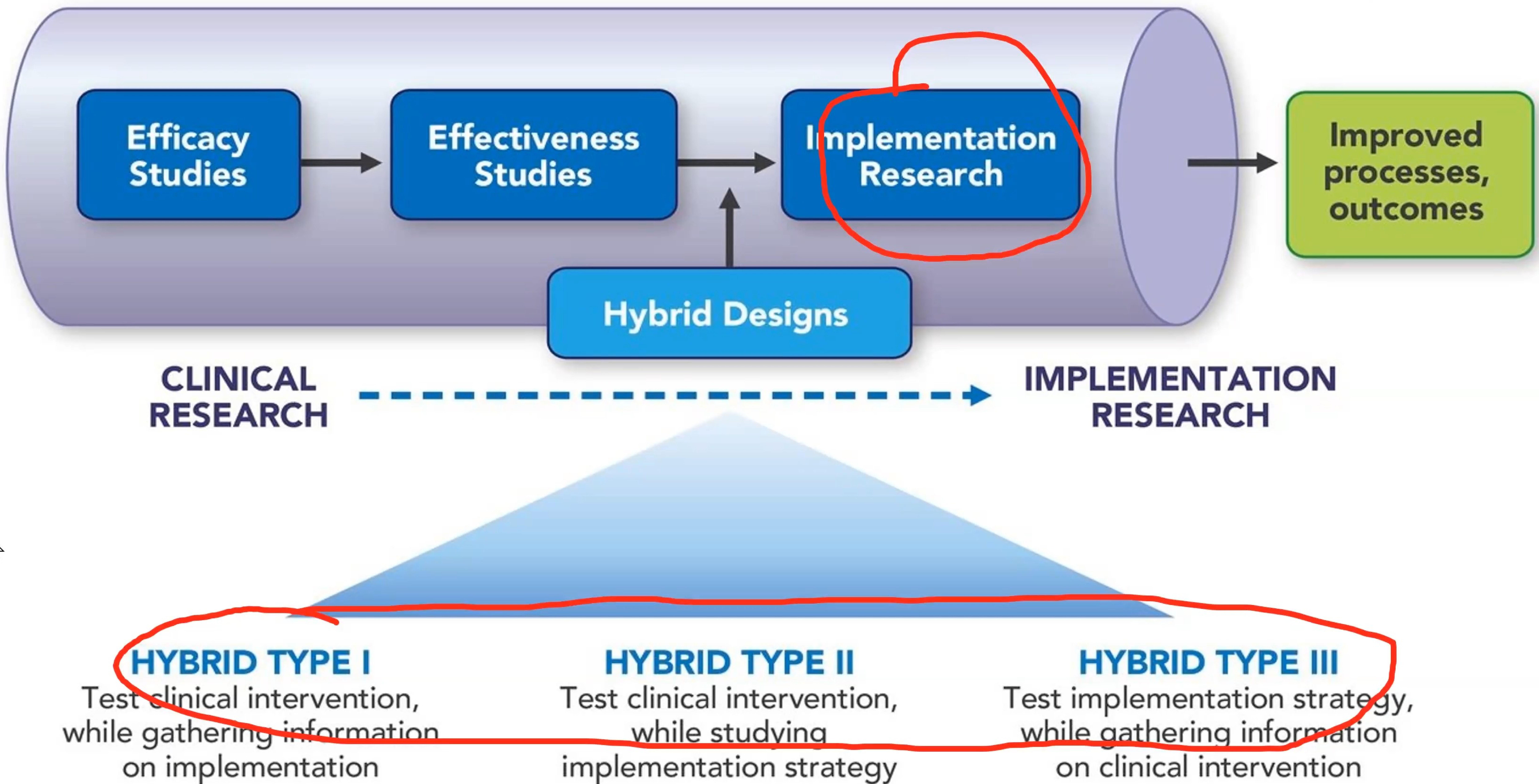
Module 6: WHO participates in the decision to modify?

- ☐ Political leader(s)
- ☐ Program Leader, Manager, or Administrator
- ☐ Funder
- ☐ Implementer or implementation strategy expert
- ☐ Researcher
- ☐ Clinician(s) or teacher(s) who are being asked to use the EBP being implemented
- ☐ Community members
- ☐ Patients or other recipients who will be the ultimate target of the EBP being implemented
- ☐ Other: write in here:

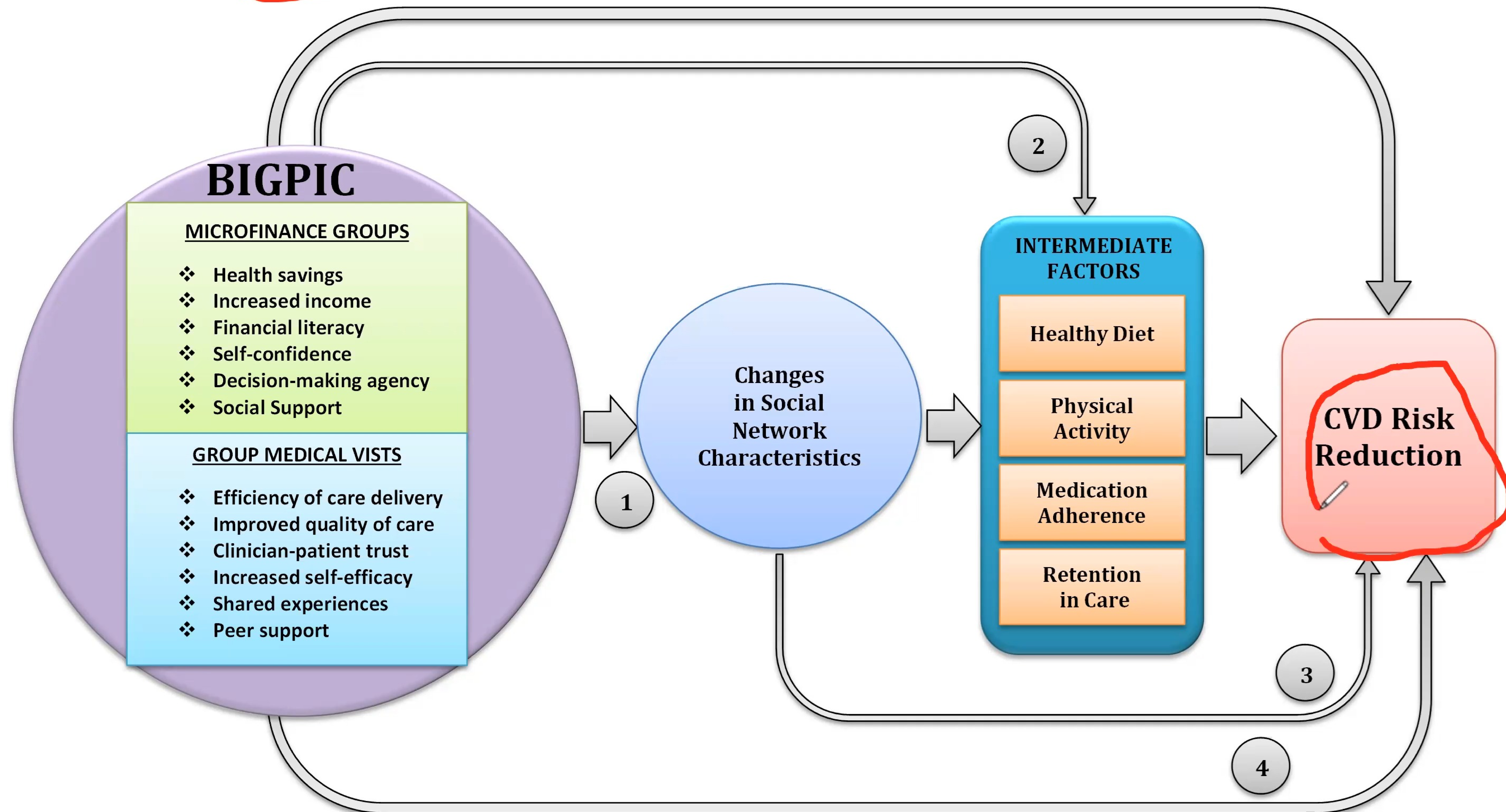
- ☐ **Optional: Indicate who makes the ultimate decision:**

Module 7: How WIDESPREAD is the modification? (i.e. for whom/what is the modification made?)

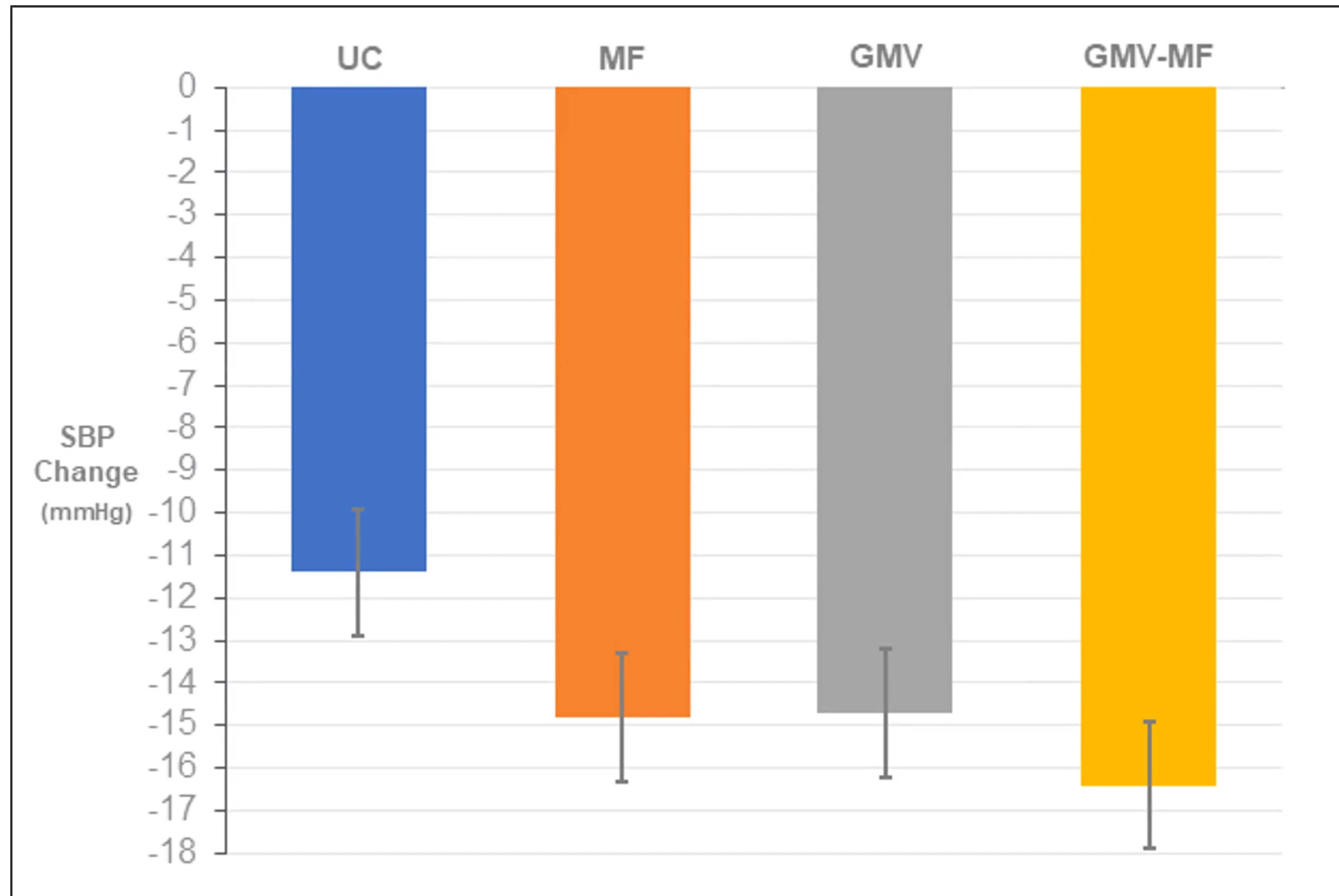
- ☐ Individual patient or other recipient for whom the EBP is being implemented
- ☐ Group of patients or other recipients for whom the EBP is being implemented
- ☐ Patients or other recipients that share a particular characteristic (e.g. all patients from a specific language background)
- ☐ Individual clinician or teacher charged with implementing the EBP
- ☐ Clinic/unit
- ☐ Organization
- ☐ Network system/community
- ☐ Specific implementer/facilitator
- ☐ Implementation/facilitation team



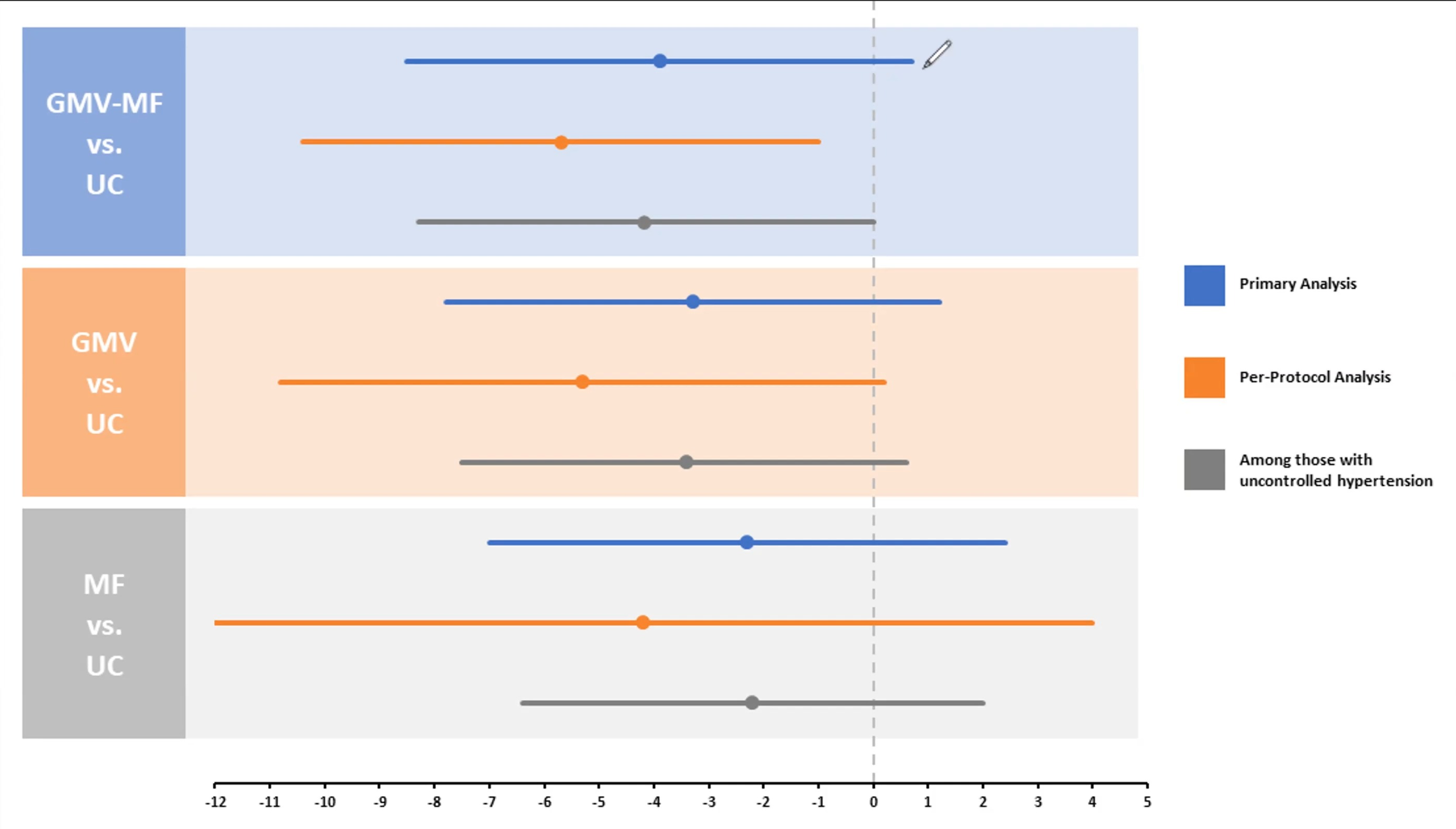
BIGPIC—Type 2



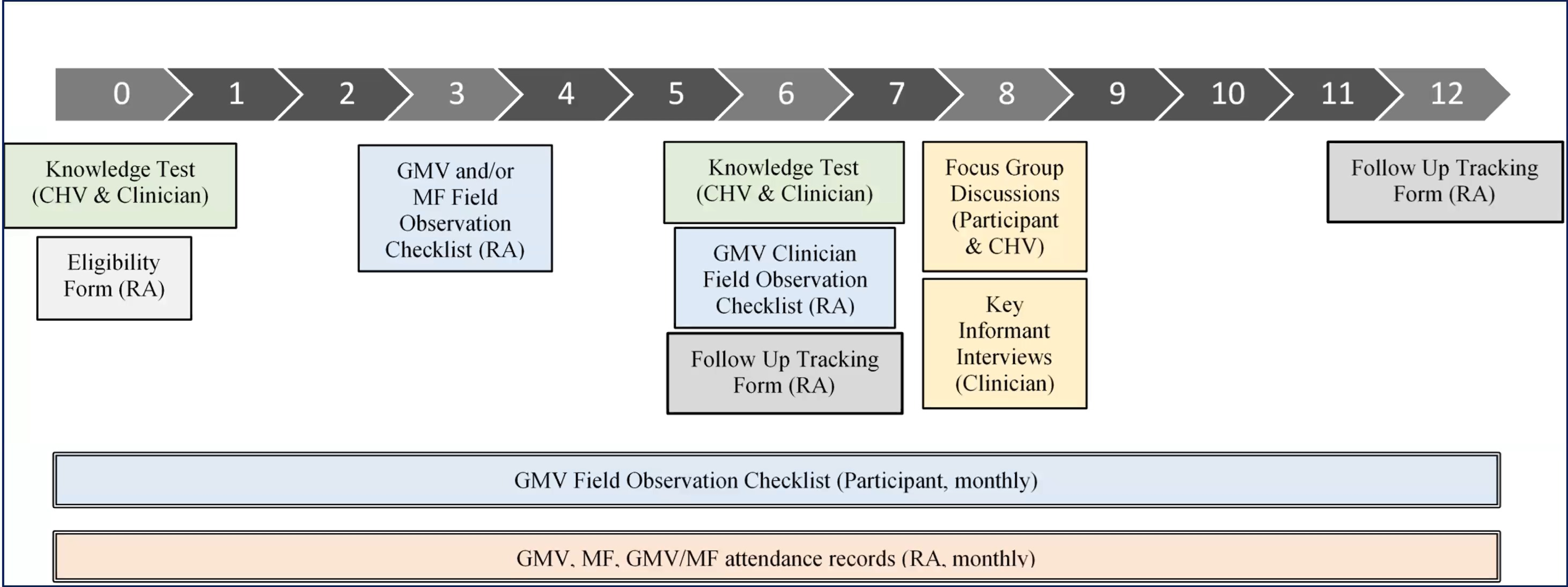
SBP Change - 12 month vs. Baseline (unadjusted)



Adjusted Pairwise Comparisons



BIGPIC—Process Evaluation

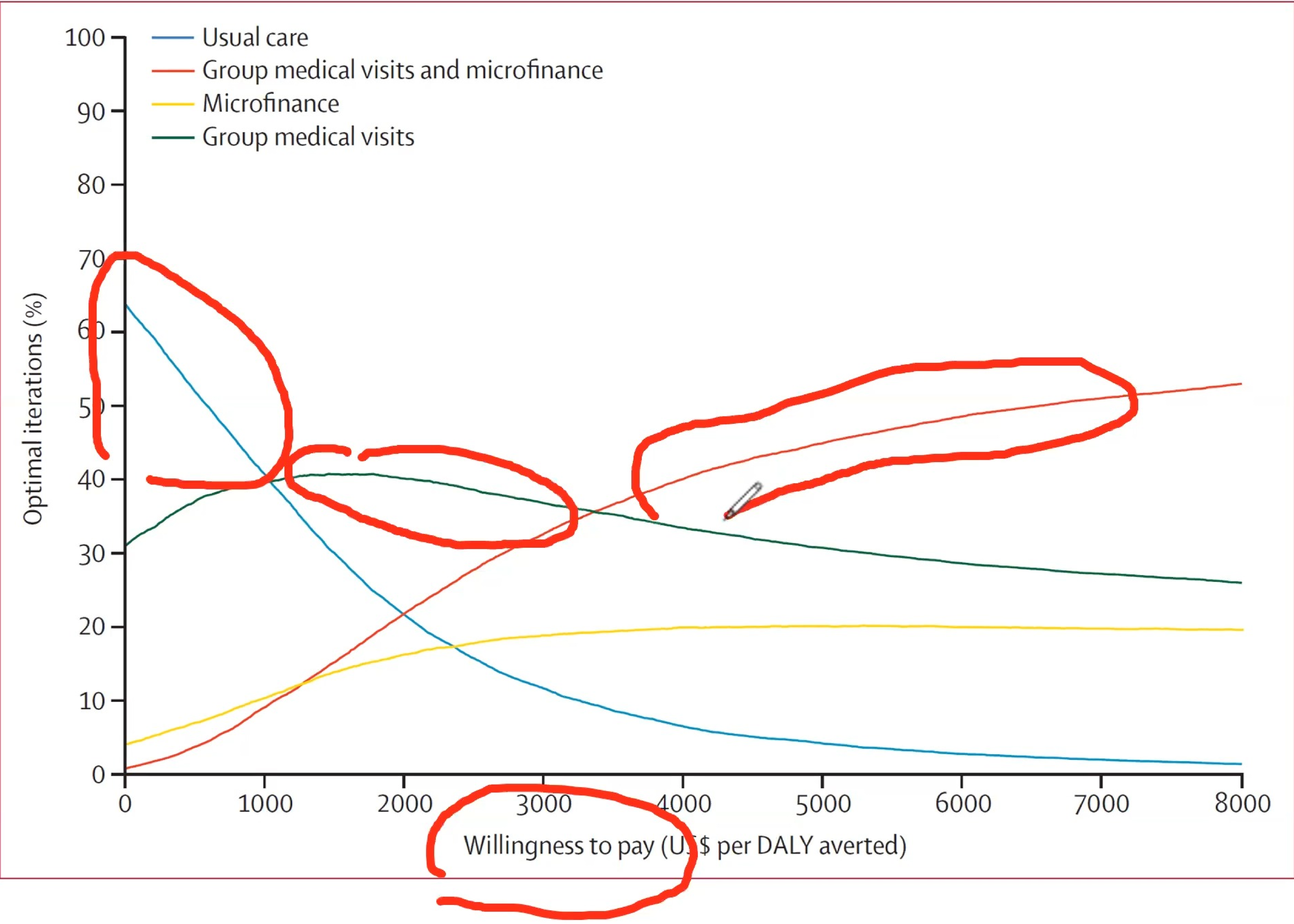
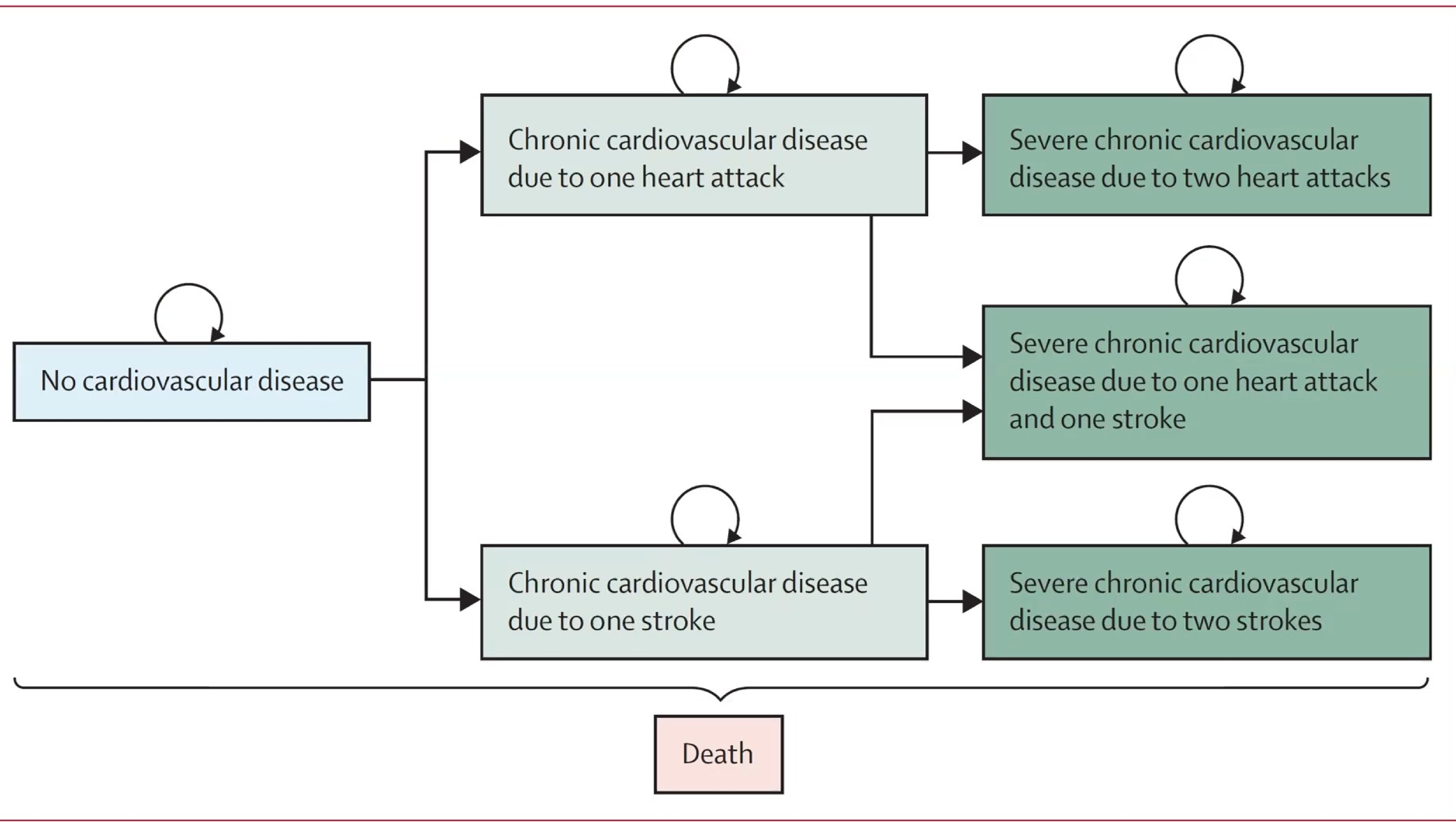


Saunders Process Evaluation Outcomes					
Fidelity	Dose delivered	Participant engagement	Participant satisfaction	Reach	Recruitment
-Knowledge tests	-GMV and MF field observation checklists	-GMV and MF field observation checklists	-GMV field observation checklists	--Follow up tracking forms	--Eligibility form
-Attendance records	-FGDs and KIIs	-FGDs and KIIs	-FGDs and KIIs	-FGDs and KIIs	--FGDs and KIIs
-FGDs and KIIs					

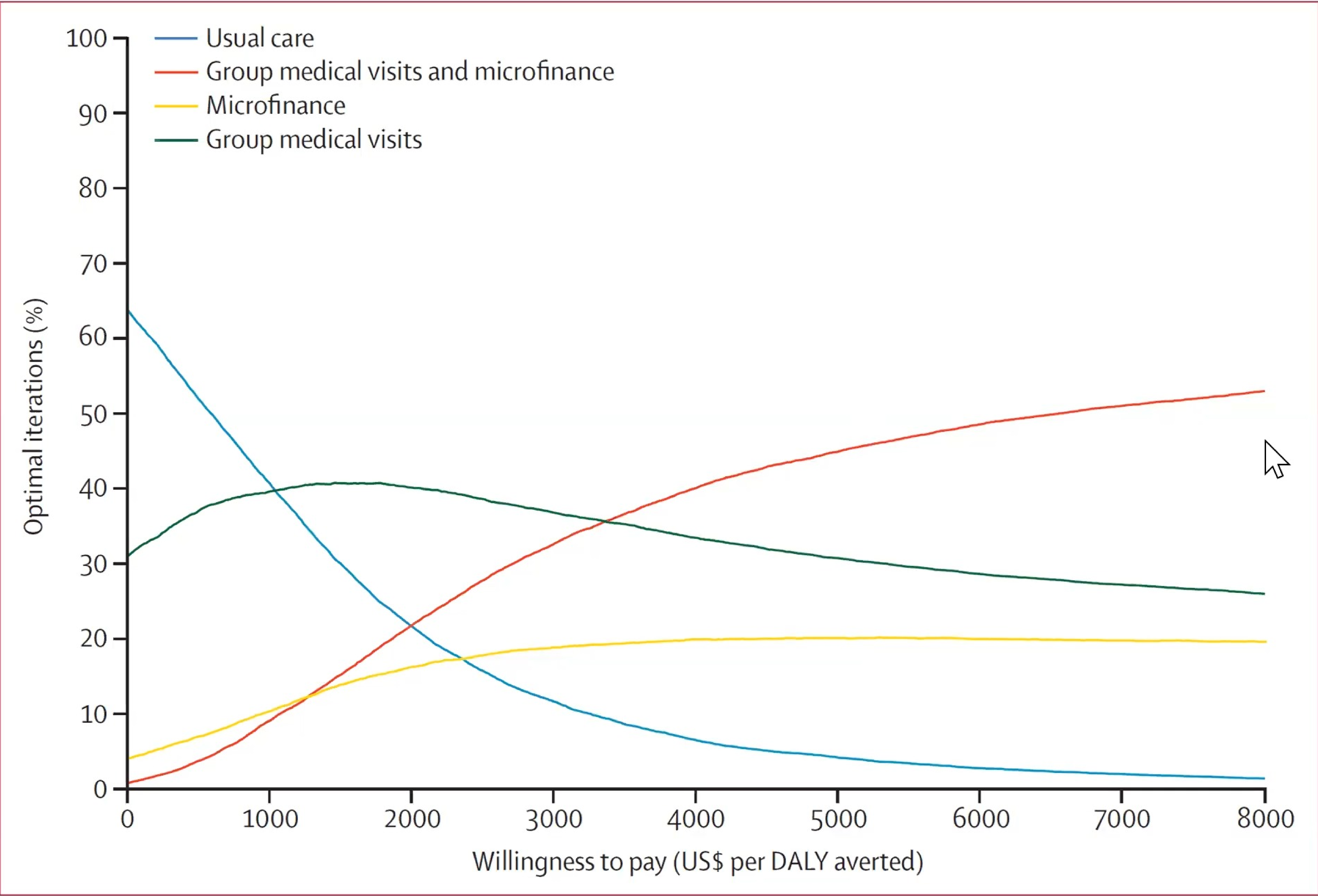
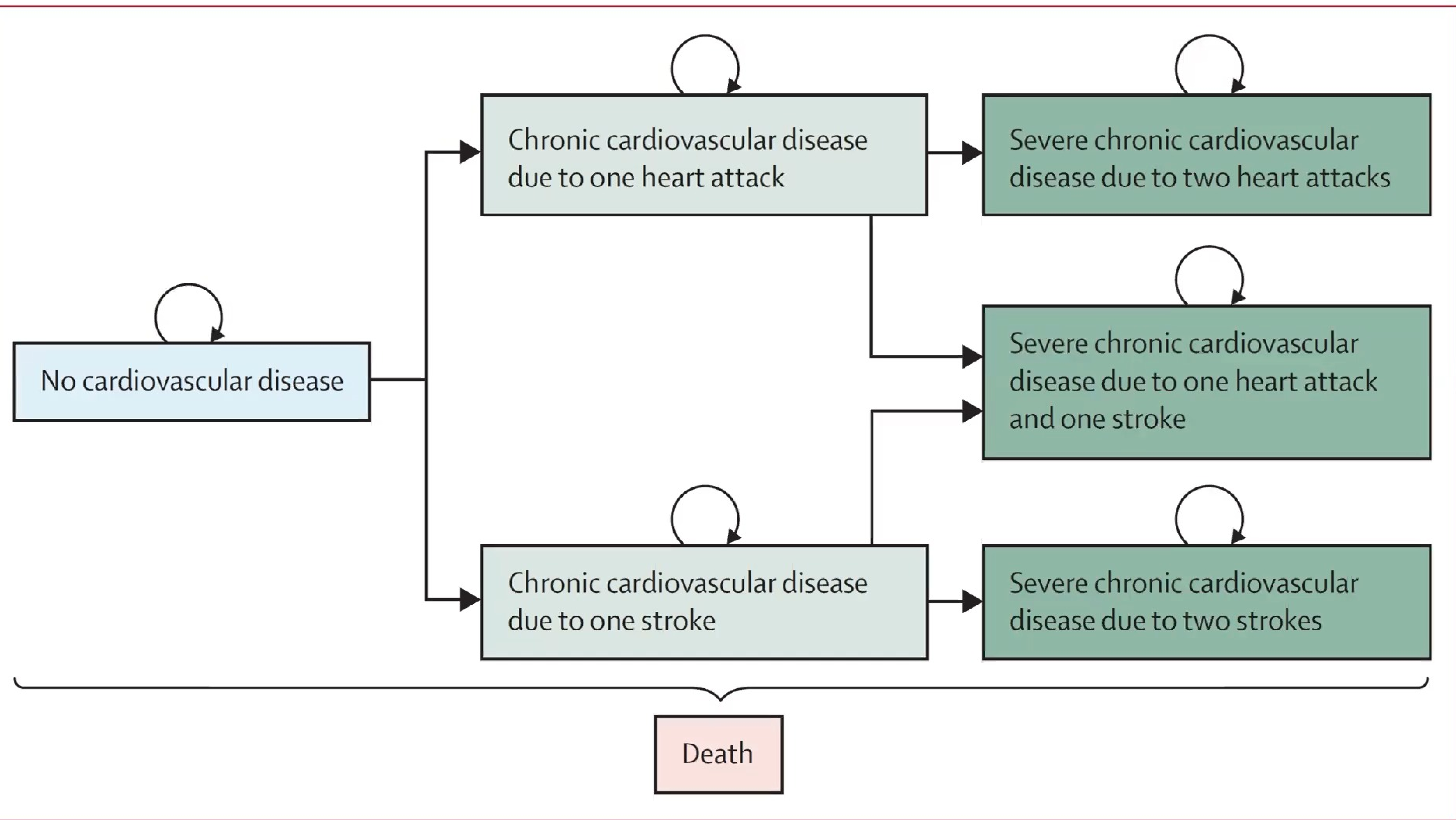


	Participant	CHV	Clinician
Fidelity	Excellent	Very Good	Very Good
Dose delivered (completeness)	Excellent	Very Good	Very Good
Participant engagement	Excellent	Very Good	Excellent
Participant satisfaction	Excellent	Excellent	Excellent
Reach	Good	Very Good	Very Good
Recruitment	Good	Good	Good

Cost-Effectiveness Analysis



Cost-Effectiveness Analysis





Key Messages

- **Implementation research is transdisciplinary**
- **A common language among multiple disciplines to address a common issue**
- **Multiple steps in an implementation research project**
 - Each step can be transdisciplinary
 - The entirety of the project is transdisciplinary