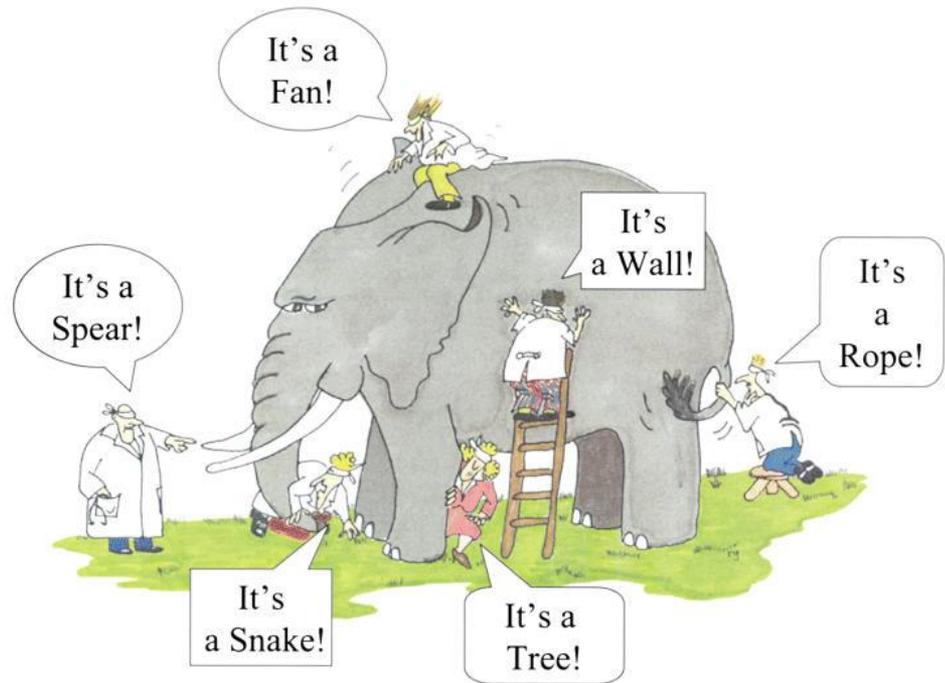# What is Implementation Science?

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# Roadmap

- How do domestic and global perspectives on IS differ?

- How is IS different from:
  - Process evaluation?
  - Improvement science?
  - Dissemination science?
  - Health systems strengthening?

# View from NIH

- **<u>Implementation</u>** is the use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within **specific settings**.

- **<u>IS</u>**: the scientific study of methods to promote the integration of research findings and evidence-based interventions into **healthcare practice and policy**. It seeks to understand the behavior of healthcare professionals and support staff, healthcare organizations, healthcare consumers and family members, and policymakers in **context** as key variables in the adoption, implementation and sustainability of evidence-based interventions and guidelines…

# View from PEPFAR

- IS:  the study of methods to improve the uptake, implementation, and translation of research findings into routine and common practices

- Scope:  improve **program effectiveness** and optimize **efficiency**, including the effective transfer of interventions from one setting to another

- The PEPFAR IS Framework:
  - monitoring and evaluation
  - operations research
  - impact evaluation

# KQs:  Monitoring and Evaluation

1.  Is the program being implemented as designed and planned?

2.  Are inputs and outputs sufficient to achieve the desired outcomes?

3.  Are program benefits getting to intended recipients?

4.  Are expected program outcomes moving in the right direction?

Padian NS, Holmes CB, McCoy SI, Lyerla R, Bouey PD, Goosby EP. Implementation science for the US President's Emergency Plan for AIDS relief (PEPFAR). J Acquir Immune Defic Syndr 2011 Mar 1;56(3);199-203.

# KQs: Operations Research

1. What are the implementation problems exhibited by a particular project?

2. What are innovative solutions to deal with implementation problems?

3. What policies or service delivery models can improve effectiveness or efficiency?

4. What is the optimal allocation of resources for the program?

Padian NS, Holmes CB, McCoy SI, Lyerla R, Bouey PD, Goosby EP. Implementation science for the US President's Emergency Plan for AIDS relief (PEPFAR). J Acquir Immune Defic Syndr 2011 Mar 1;56(3);199-203.
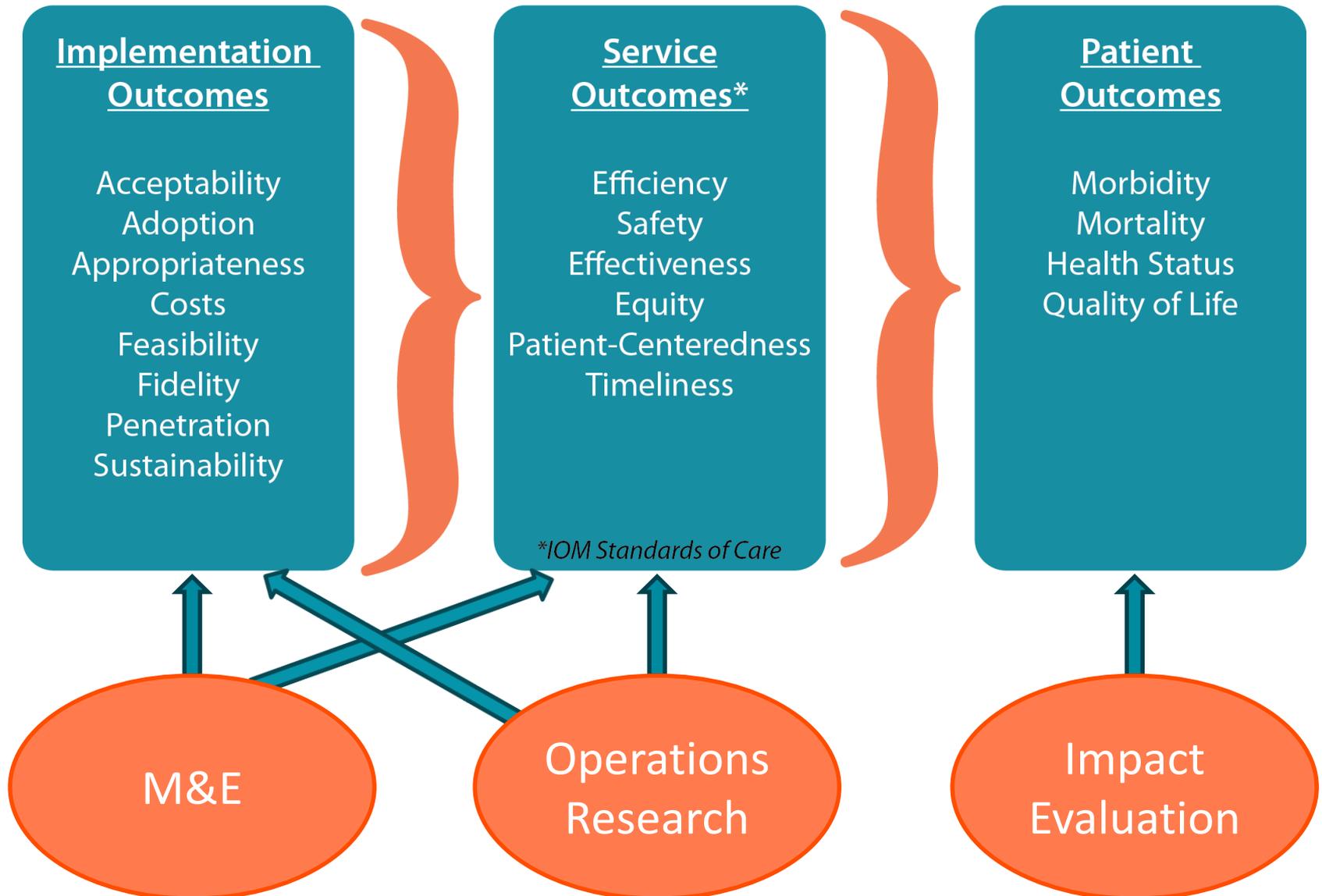
# KQ: Impact Evaluation

1.  What would have happened had the intervention not taken place?

2.  What was the impact of the intervention on beneficiaries?

3.  How does the outcome among beneficiaries compare to the outcome among individuals who were not involved in the program?

Padian NS, Holmes CB, McCoy SI, Lyerla R, Bouey PD, Goosby EP. Implementation science for the US President's Emergency Plan for AIDS relief (PEPFAR). J Acquir Immune Defic Syndr 2011 Mar 1;56(3);199-203.

# View from WHO/TDR

- **<u>Implementation</u>** involves evidence-supported, systematic, and planned efforts within a **<span style="color:orange">system (or organization)</span>** to institutionalize an intervention and to ensure its intended effects and impacts.

- **<u>Implementation research</u>** asks: "What is happening in the design, implementation, administration, operation, services, and outcomes of social programs? Is it what is expected or desired? Why is it happening the way it is?"

- Implementation research does not isolate the effects from the **<span style="color:orange">context</span>**, thus distinguishing itself from clinical trials and impact evaluations.

# Types of Outcomes in Implementation Research

**Implementation Outcomes**

Acceptability
Adoption
Appropriateness
Costs
Feasibility
Fidelity
Penetration
Sustainability

**Service Outcomes***

Efficiency
Safety
Effectiveness
Equity
Patient-Centeredness
Timeliness

*IOM Standards of Care*

**Patient Outcomes**

Morbidity
Mortality
Health Status
Quality of Life

M&E

Operations Research

Impact Evaluation

# Questions to Ponder

- Does IS include integration of evidence-based health interventions into informal settings (e.g., families)?

- Is patient adherence an implementation outcome?

- How about patient adoption of health behavior?

- Is dissemination science distinct from, or included in, IS?

- If context is an important aspect of IS, what is the role of the randomized controlled trial?

# Reserve Slides

# Am I Doing IS if I'm…

- Implementing evidence-based programs?

- Providing training or technical assistance?

- Building capacity?

- Doing quality improvement?

- Doing a process evaluation?

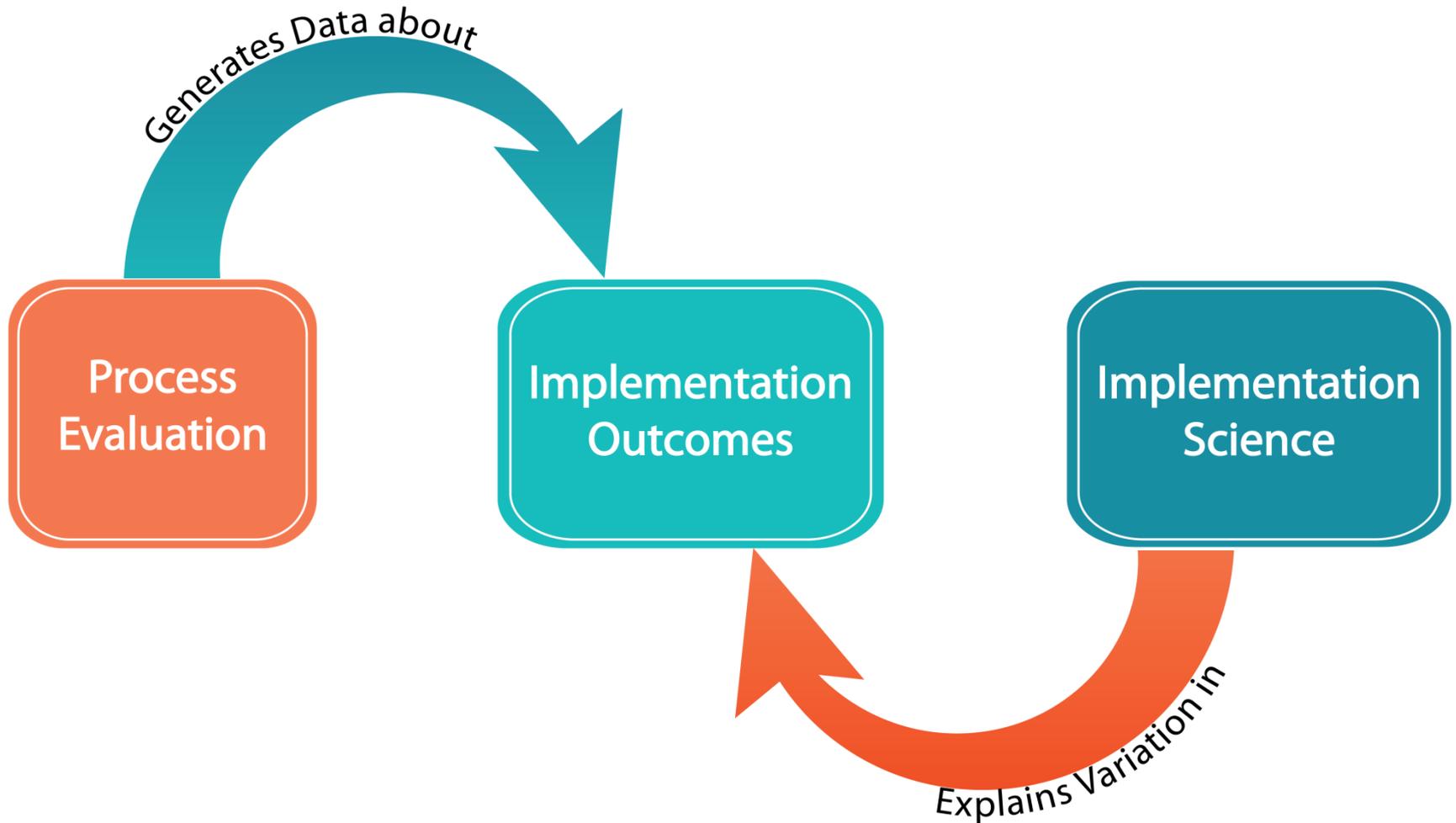Answer: probably not… but could support IS

# Learning while Doing



Implementation Science

Implementation Practice*

* Training, technical assistance, capacity building, quality improvement, etc....

# Process Evaluation

- …describe how program activities were delivered.
- …determine the degree to which program activities were implemented as planned.
- …assess link between program activities and outcomes.

- Useful for:
  - Monitoring, improvement, replication
  - Investigating dose-response relationship

# Combining
# Process Evaluation and IS

# Improvement Science

- **<u>Quality improvement (QI)</u>** uses quantitative and qualitative methods to improve the effectiveness, efficiency, and safety of service delivery processes and systems, as well as the performance of human resources in delivering products and services.

- **<u>Improvement science</u>**: a body of knowledge that describes how to improve safety and consistently…. the primary goal of this scientific field is to determine which improvement strategies work as we strive to assure effective and safe patient care.

Marshall M, Pronovost P, Dixon-Woods M. Promotion of improvement as a science. Lancet 2013 Feb 2; 381(9864):419-21.

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# Dissemination Science

- <u>Dissemination</u>:  the targeted distribution of information and intervention materials to a specific public health audience or clinical practice audience

- Core processes:  communication and social influence

- Key outcomes:
  - Awareness
  - Knowledge
  - Positive view
  - Intention to adopt
  - Adoption

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# Health Systems Strengthening

- **<u>Health systems strengthening</u>**:  (i) the process of identifying and implementing the changes in policy and practice in a country's health system such that the country can respond better to its health and health system challenges and (ii) any array of initiatives and strategies that improves one or more of the functions of the health system and that leads to better health through improvements in access, coverage, quality, or efficiency.

# Example

- FHI360: Health Systems Strengthening (HSS) Program Component of USAID/Senegal's Health Program
- Aims:
  - Innovative financing mechanisms for health activities at decentralized levels,
  - Planning and evaluation of the health system at decentralized levels, and
  - Innovative strategies for financing HIV care and support through local health insurance schemes, micro-credit and a fund managed by regional administrative and technical institutions to promote sustainability.

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