Scaling up versus scaling out

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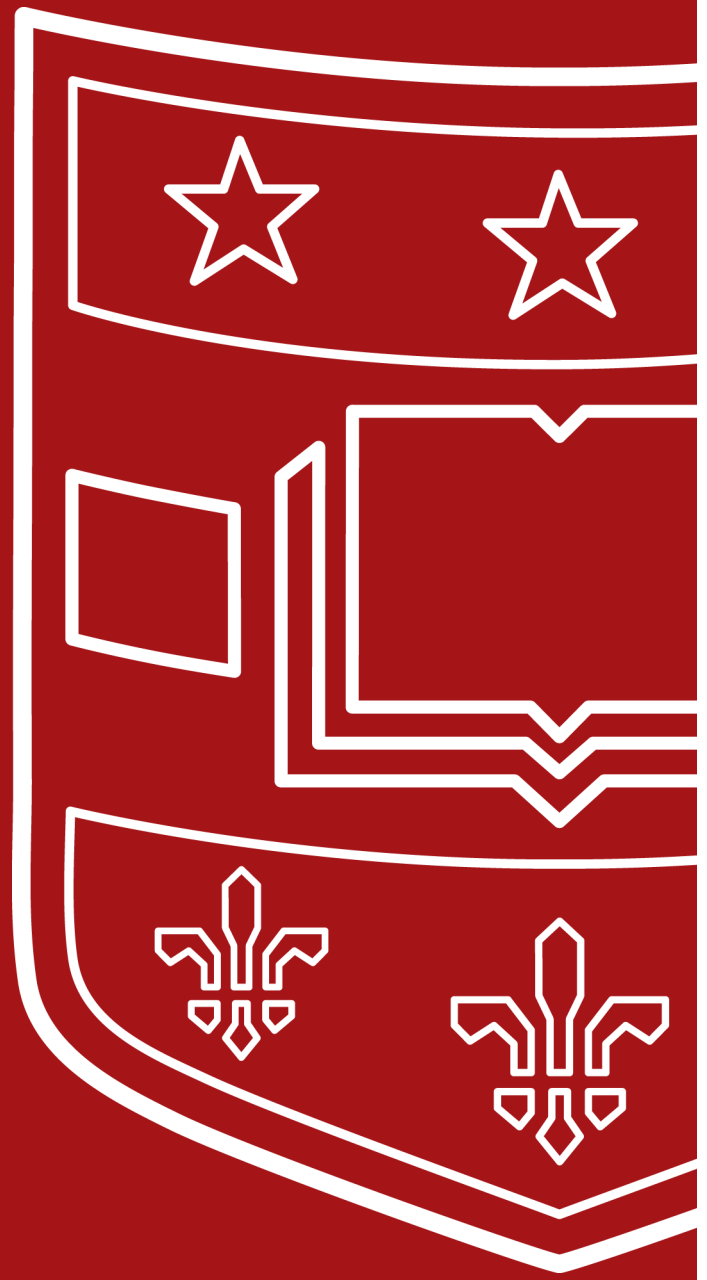

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Take Home Points

- Scaling up = expanded implementation of evidence-based interventions (EBIs) to similar populations and delivery systems

- Scaling out = implementation of EBIs in new populations, delivery systems, or both
  - Prior evidence, core elements, fidelity, adaptations, context are key considerations

- Scaling occurs through government or private sector mechanisms, has variable speeds, and may be deliberate/planned (but not always)

Scale-up

“deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and programme development on a lasting basis”

WHO, ExpandNet, 2010.

Scale-up

Guided process

Backed by locally generated evidence

"deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and programme development on a lasting basis"

New, or perceived to be, new service components, practices, or products; often a set of interventions ("scalable unit")

Requires institutional buy-in for capacity-building and sustainability

WHO, ExpandNet, 2010.

Scale-up v scale-out

Scale up

"deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and programme development on a lasting basis"

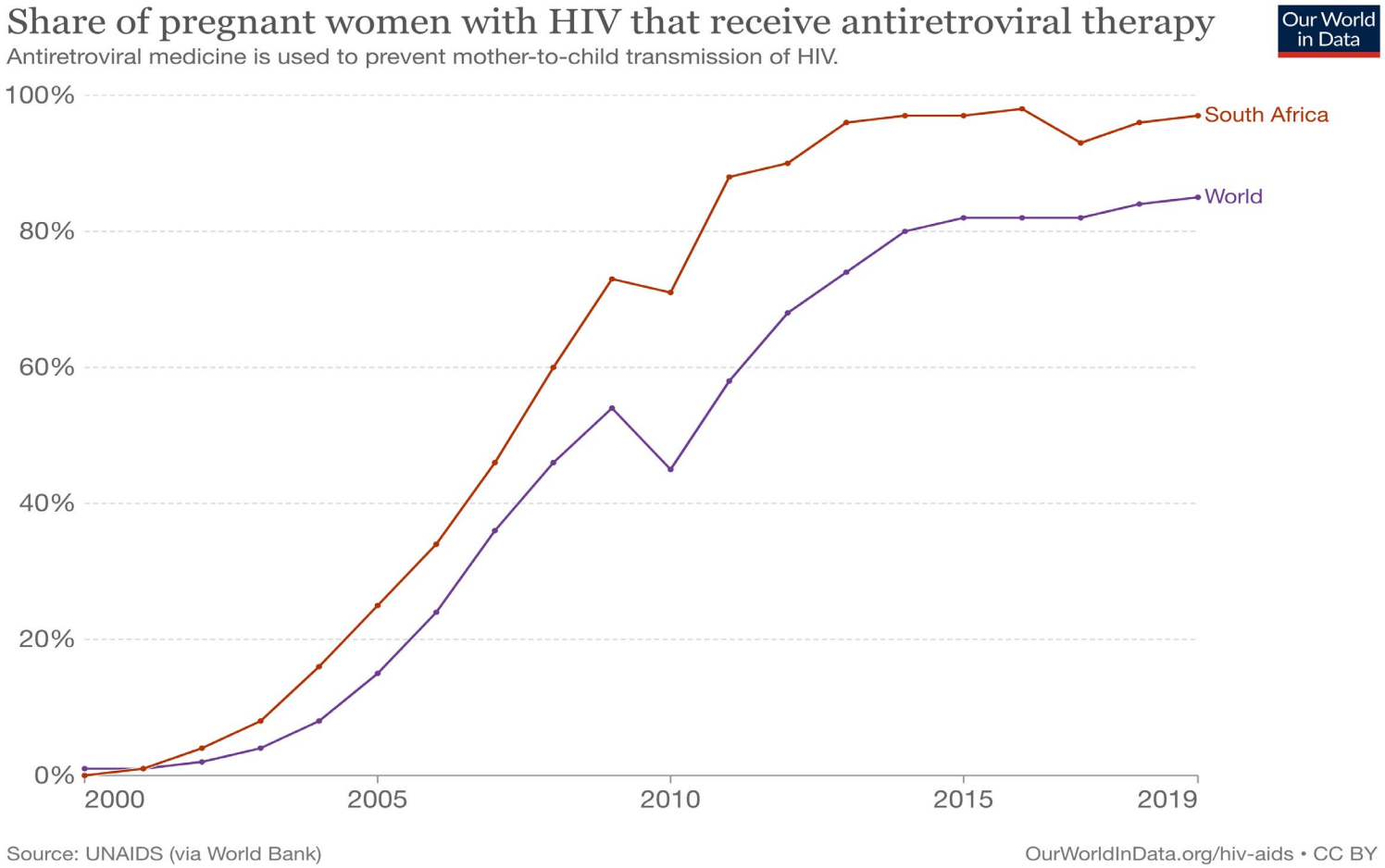
Scale out

"the approach to adapting and delivering evidence-based interventions (EBIs) across health and allied health service systems and organizations and/or across different target populations"

WHO, ExpandNet, 2010.
Aarons et al. Imp Sci. 2017; 12:111.

Examples of scale up and scale out

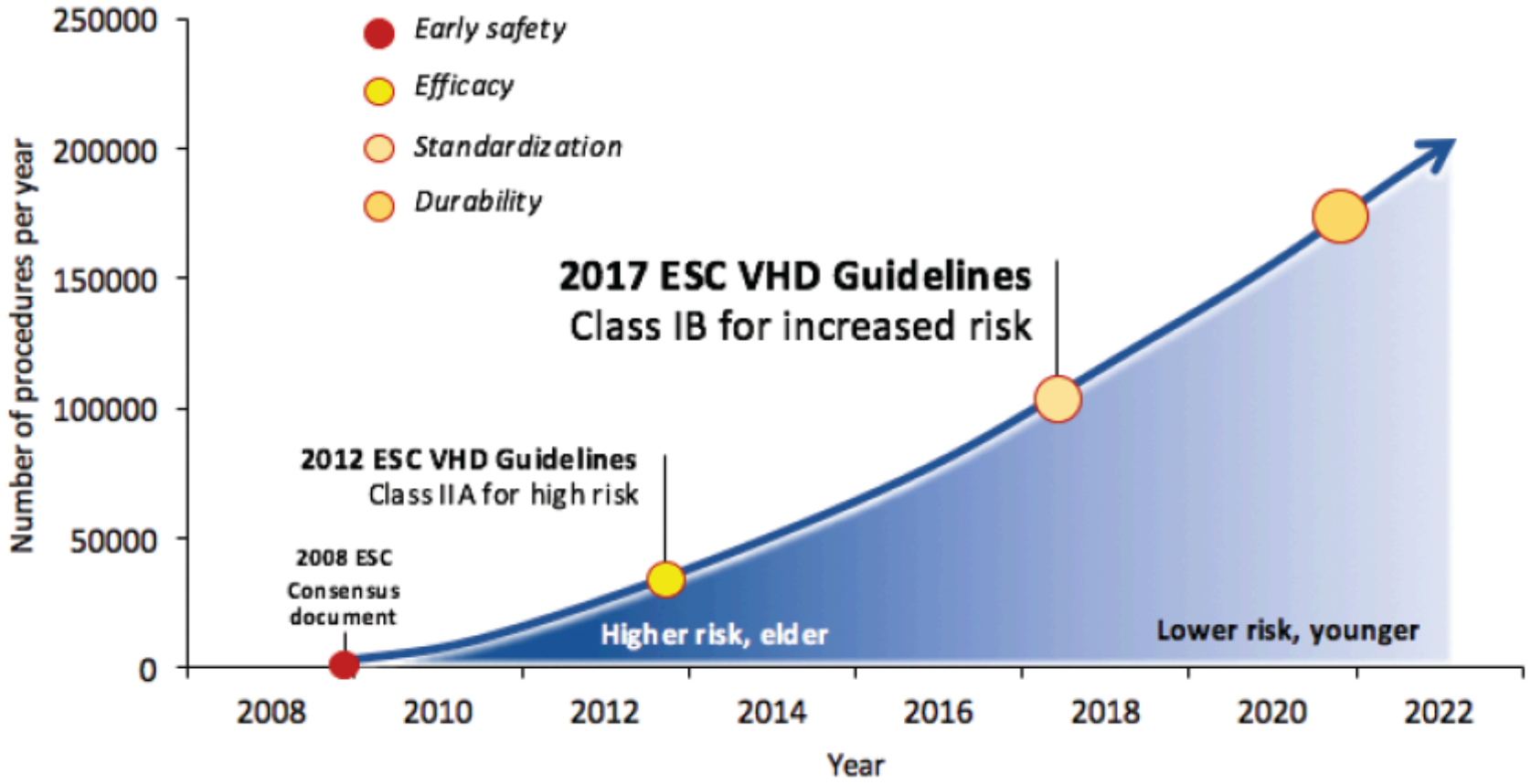
Prenatal antiretroviral therapy (public >> private)



UNAIDS, 2019

Examples of scale up and scale out

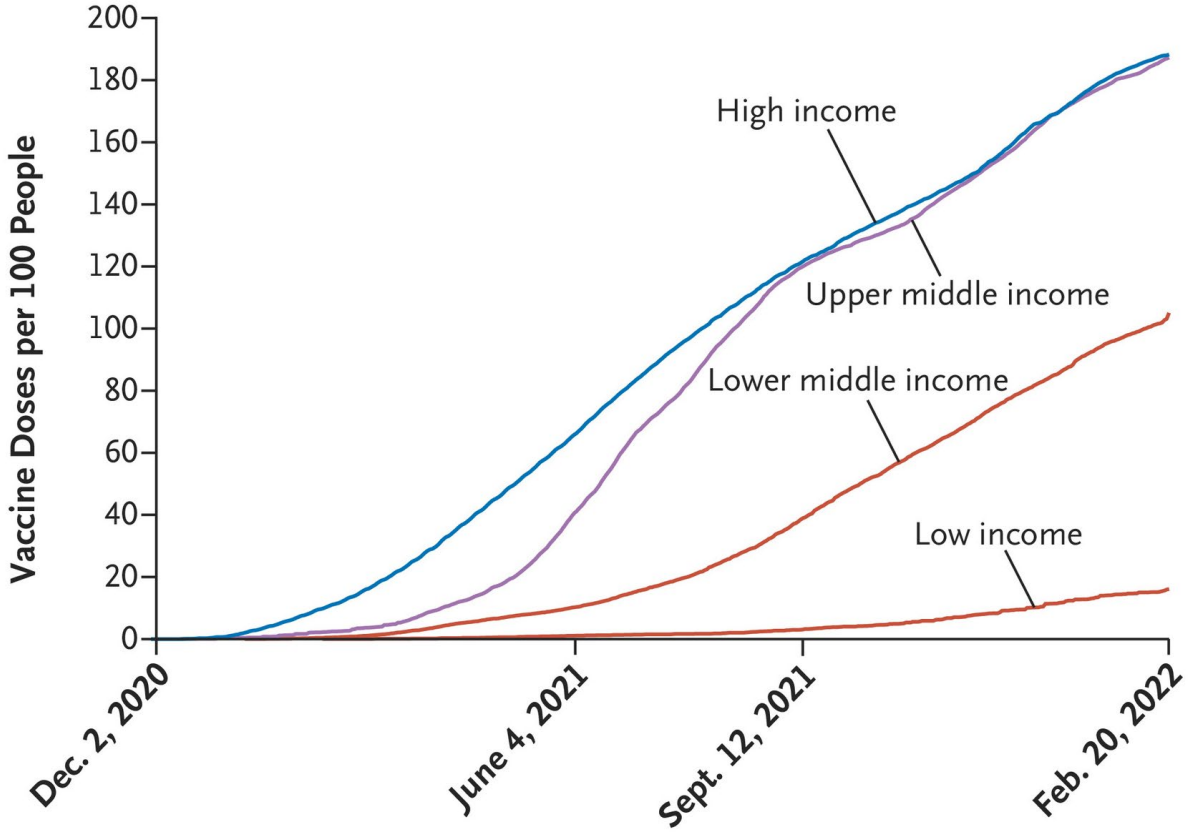
Transcatheter aortic valve replacement (private >> public)



https://citoday.com/articles/2018-mar-apr/trends-in-european-tavi-practice

Examples of scale up and scale out

COVID-19 global vaccination (public > private)



Hunter et al. NEJM 2022; Epub ahead of print.

Key questions for implementation and scaling of EBIs

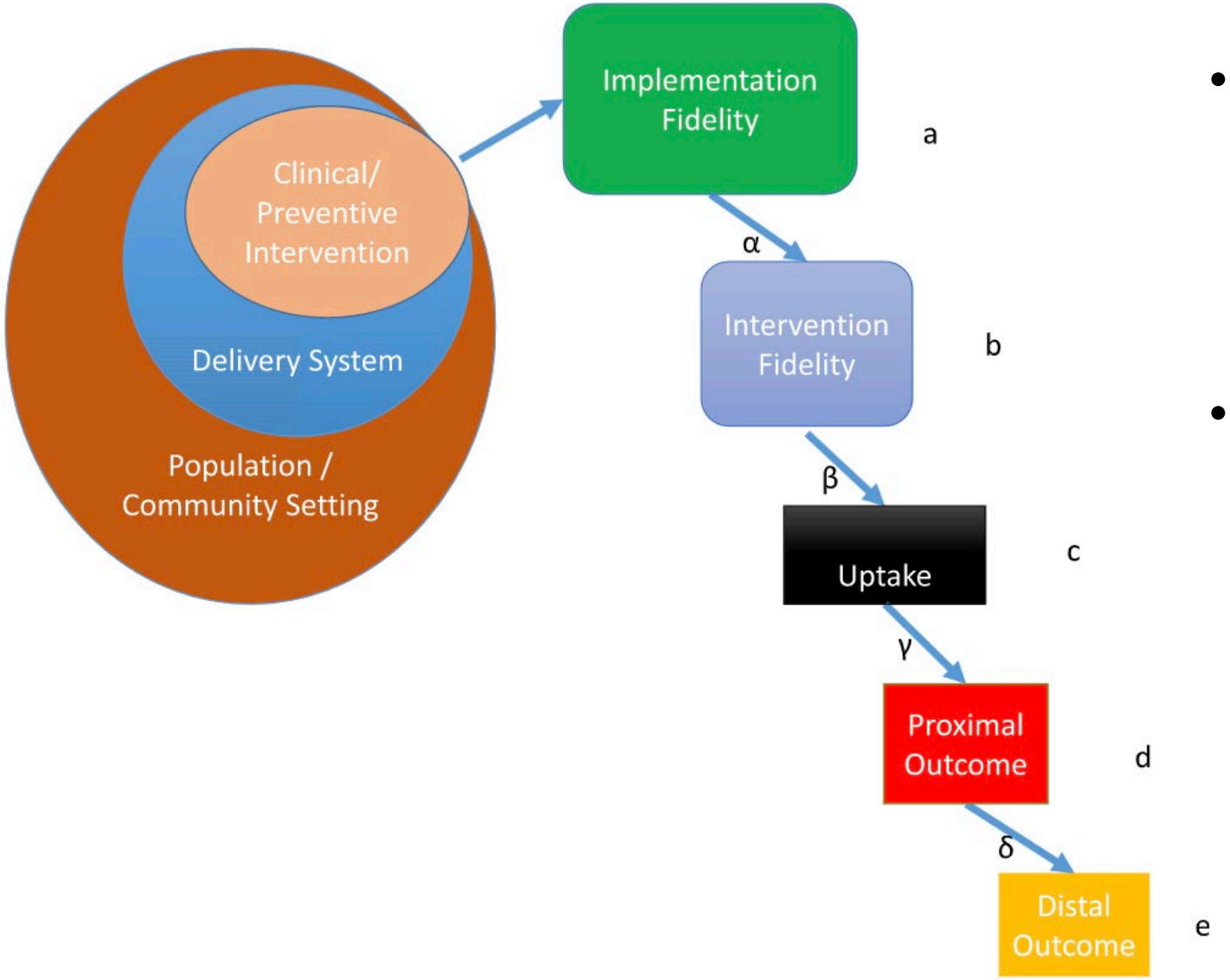
1. Is there sufficient empirical evidence or justification from prior evidence that this EBI would impact health as expected?*

2. Whether the system, organization, EBI adaptations, or combination thereof are necessary, sufficient, and culturally and organizationally appropriate to make it feasible, practical, and acceptable in the new context?*

**Responses depend, at least in part, on the degree of perceived similarities across contexts and available implementation outcome data, including measures of fidelity.*

Aarons et al. Imp Sci. 2017; 12:111.

Sequential mediating model for scaling out



- **Goal:** Understand whether the evidence supporting the EBI is likely to have similar effects when scaled out or not.
- **Approach:** Define the **strength** of the relationships between the steps (Greek letters) and **effect sizes** (Roman letters) across the cascade.

Aarons et al. Imp Sci. 2017; 12:111.

Types of scale-out

- **Type I** scale-out: population fixed, different delivery system
  - *Example: Primary care population; public → private system*

- **Type II** scale-out: delivery system fixed, different population
  - *Example: Public primary care; HIV → general adult population*

- **Type III** scale-out: different population and delivery system
  - Example: *HIV → general adult population; public → private system*

Aarons et al. Imp Sci. 2017; 12:111.

Levels of evidence for scaling up versus out*

Level of evidence	Fidelity	EBI fidelity	Health outcome	Use
Minimal/none	Not measured	Facilitator training	Not measured	Demonstration program
Proxy empirical	Staff self-efficacy	Self-assessment	Proximal outcome	Implementation evaluation
Direct empirical	Milestones	Independent assessment	Within-group difference	Implementation + mediation
Hybrid trial			Between-group difference	Type II hybrid

**More robust evidence is needed for scaling out versus scaling up, especially for Type III scale out*

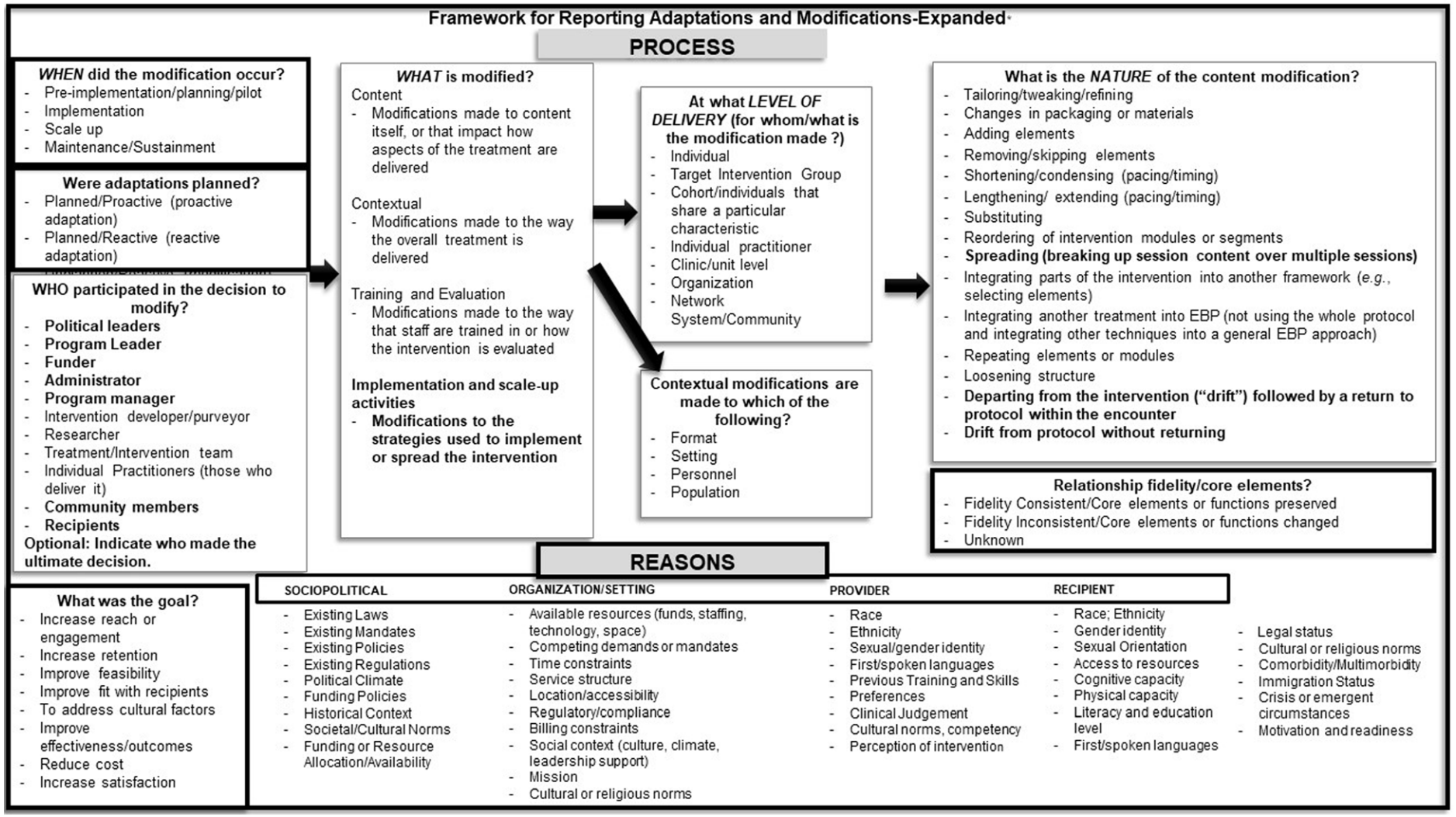
Aarons et al. Imp Sci. 2017; 12:111.

“Borrowing strength” for scaling out

- *Borrowing strength* may allow for more limited evaluation that prioritizes implementation outcomes but requires an understanding across key areas:
  - What are the **EBI core elements**?
  - What adaptations need to be made to **align with health system**, population, and **ecological contexts**?
  - Can the EBI core elements be maintained following adaptation (**adaptation-fidelity tension**)?
  - Can the EBI core elements be delivered and sustained with **fidelity** following adaptation and in a new system or population (avoiding drift)?

Aarons et al. Imp Sci. 2017; 12:111.

FRAME: EBI adaptation tool



Stirman et al. Imp Sci. 2019; 14:58.

MADI: EBI adaptation tool

Domain 1: Adaptation Characteristics (Stirman et al., 2019)

Provides consistency in reporting of adaptations to promote comparison of findings across studies (prospective and retrospective application)

Domain 2: Possible Mediating or Moderating Factors (Stirman et al., 2019; Moore et al., 2013)

Criteria for making adaptations (prospective application); explanation of why, how, and under what circumstances outcomes are achieved (retrospective application)

Domain 3: Implementation and Intervention Outcomes (Intended and Unintended) (Proctor et al., 2011)

Encourages consideration of intended and unintended impact on intervention and implementation outcomes. Prospectively, promotes discussion of all impacts (e.g., if positive and negative impacts expected, can they be balanced? If not, should adaptations be re-designed? Could implementation strategies offset negative impacts?) Retrospectively, promotes more informed decisions in which variables to measure in evaluation.

- **What** is modified (content; delivery; training and evaluation; implementation and scale-up activities)?
- **Nature** of adaptation (e.g., adding/skipping/substituting elements; shortening/condensing pacing; repeating elements)?
- **Who** participated in adaptation decision-making (political leaders; program leader; funder; administrator; program manager; intervention developer/purveyor; researcher; treatment/intervention team; individual practitioners; community members; recipients)?
- **For whom/what** is the adaptation made (individual; target intervention group; cohort/individuals that share a particular characteristic; individual practitioner; clinic/unit; organization; network/system community)?
- **When** did adaptation occur (pre-implementation/planning/pilot; implementation; scale-up; maintenance/sustainment)?

Potential mediator:
- **Alignment with core functions/ relationship to fidelity**: Adaptation consistent with core functions of the intervention or implementation strategy?

Potential moderators:
- **Goal/Reason for Adaptation**: Adaptation made for a reason/goal that addresses fit?
- **Systematic**: Adaptation made with due consideration given to impact on outcomes **and** using a systematic process (consulting data, stakeholders, theory, best practice)?
- **Proactive:** adaptation made due to anticipated obstacle

Implementation Outcomes
- Adoption
- Acceptability
- Appropriateness
- Feasibility
- Cost
- Penetration
- Fidelity
- Sustainability

Intervention Outcomes
- Client outcomes
- Service outcomes

Impact

New additions:

1. Mediators/moderators
2. Ripple effects

Kirk et al. Imp Sci. 2020; 15:56.

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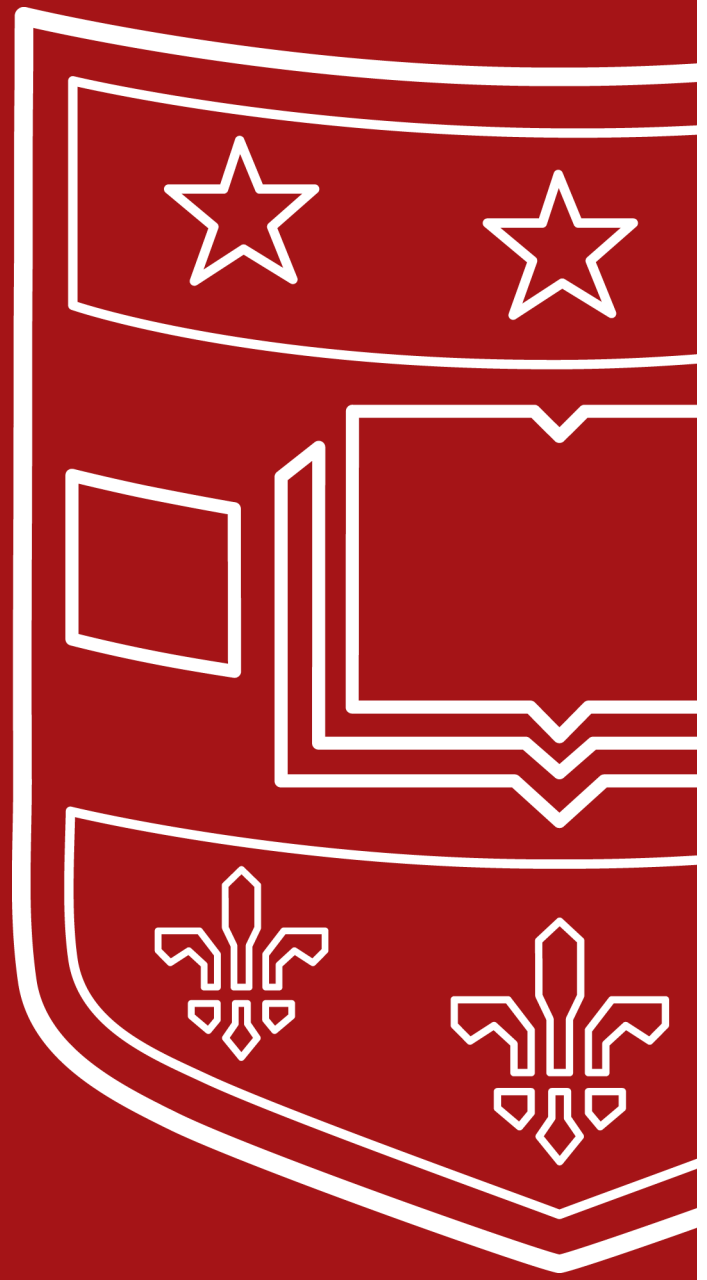

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