

Using the Implementation Research Logic Model (IRLM) to design and implement community-based management of possible serious bacterial infection (PSBI) when referral not possible during COVID-19 in Ethiopia

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The IRLM helped us organize formative work and facilitate stakeholder engagement to specify conceptual links between the implementation challenges, strategies, mechanisms of action, and outcomes to design and strengthen the PSBI program under complex contextual factors, including COVID-19 and health system and community barriers.

BACKGROUND

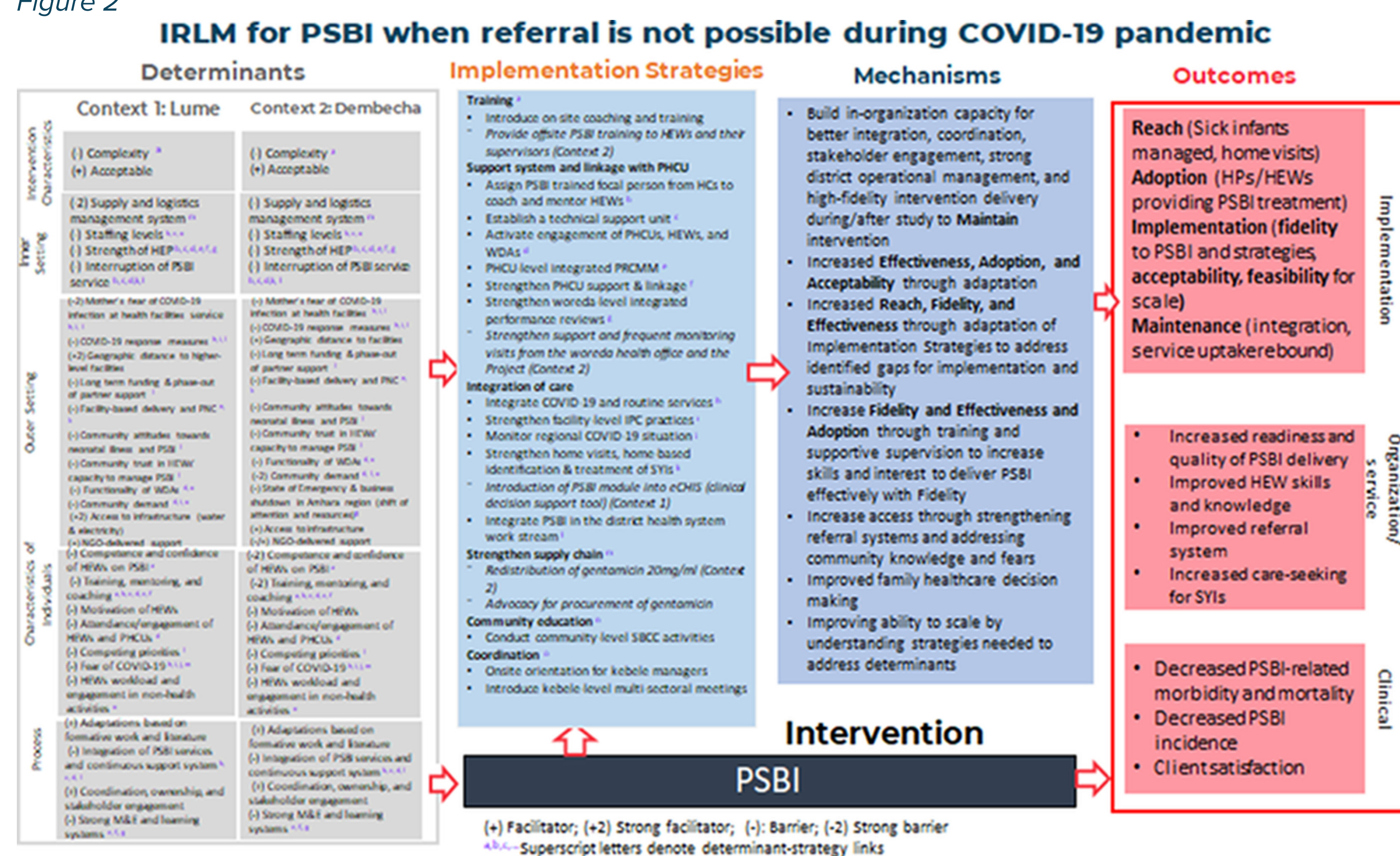
- Persistently high newborn mortality rates (33 per 1,000 live births in 2019).
- PSBI is a leading cause of mortality in sub-Saharan Africa, contributing to 37% of the 2.1 million neonatal deaths in the region (Ahmed et al., 2018).
- Since 2012, Ethiopia has been implementing integrated community case management/community-based management of sepsis when referral is not feasible.
- The coverage of PSBI services remains low, worsened by COVID-19.
- We used the IRLM to:
 - ✓ understand the demand- and supply-side challenges of PSBI program delivery
 - ✓ engage stakeholders in co-design and adaptive strategy testing to mitigate barriers including COVID-19 on PSBI program implementation and delivery.
- We describe using the IRLM in the design, implementation, and evaluation of strategies to improve community-based treatment of PSBI during the COVID-19 pandemic in Ethiopia.

FINDINGS

Pathways of PSBI program adaptive implementation

- We developed the pre-implementation IRLM for Demebecha and Lume woredas (Fig. 2).

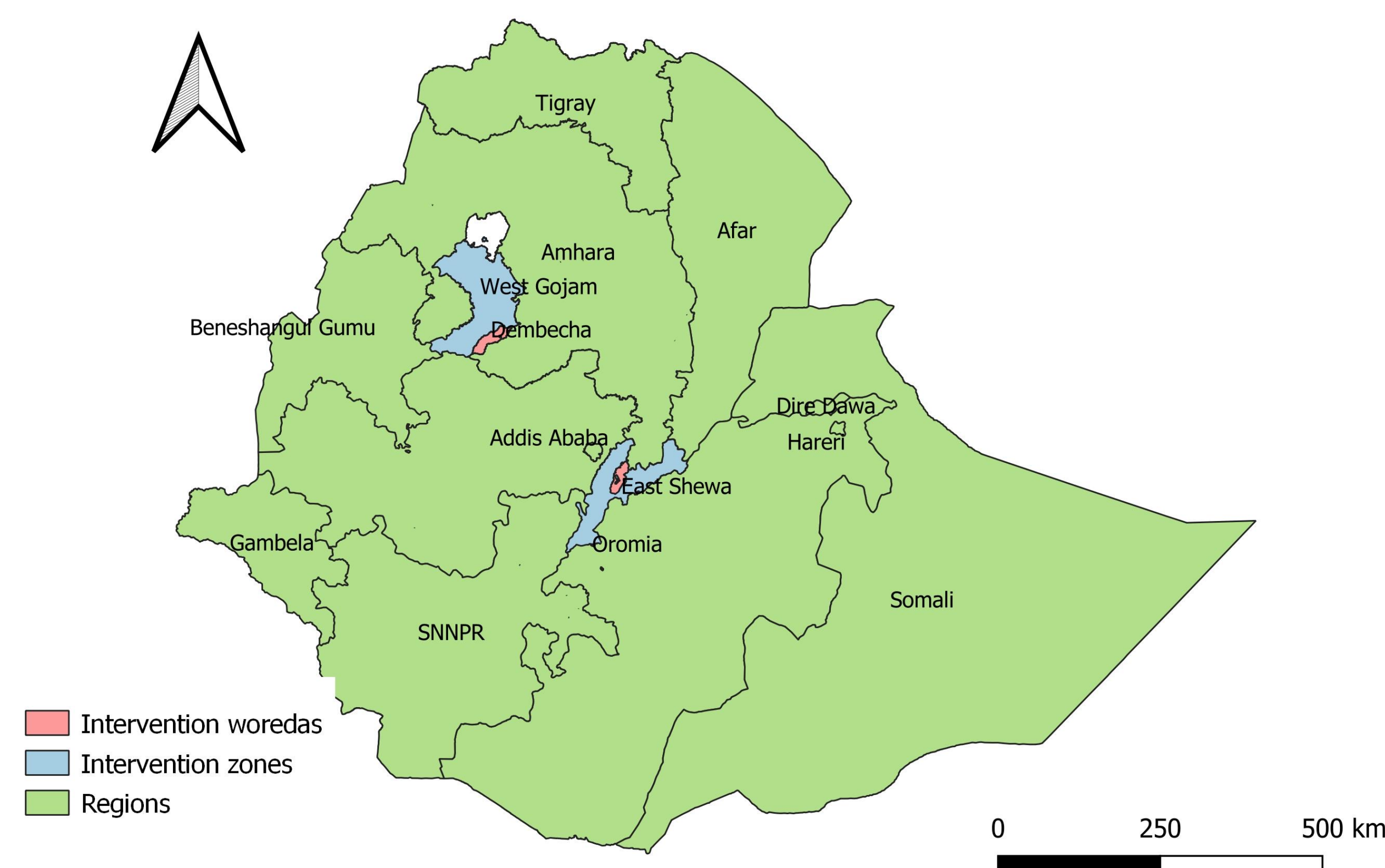
Figure 2



METHODS

- Between November 2020 and April 2022, JSI implemented in two woredas covering 11 health centers. 66 health posts, and approximately 250,000 people (Fig. 1).
- Narrative review: April 2021, 11 articles synthesized
- Formative assessment: April 2021, interviewed 4,262 mothers; facility assessment; and 34 program managers, service providers, and community members.
- Facilitated stakeholder engagement May 11–12, 2021.
- Iterative learning process and capturing ongoing challenges and adaptations of strategies.

Figure 1



DISCUSSION

- Use of implementation research methods to synthesize evidence helped us better identify challenges and understand the conceptual links between determinants, implementation strategies, mechanisms, and outcomes.
- Concept mapping (stakeholder engagement) informs the choice of implementation strategies and is associated with more effective implementation.
- This increasingly used framework, which combines Consolidated Framework for Implementation Research (CFIR) and RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) using concept mapping, helped us identify strategies by integrating existing evidence and stakeholder engagement and expertise.
- Capturing implementation challenges and document modifications of strategies during implementation allowed us to update the IRLM to provide generalizable knowledge on how to adapt and implement PSBI in various settings.