

# Supplementary File S1: Intervention Summary Table Tables

Version 2.1 — October 2025 — Corresponds to configuration v3.1.0

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## Summary of Evidence-Based Bridge Period Interventions

Table 1: LAI–PrEP bridge-period intervention library (n=21): effect sizes (absolute percentage points), evidence levels, mechanisms and barrier targets.

Intervention	Mechanism	Effect (pp)	Evidence	Complexity / Cost	Addresses	Primary sources notes
Same-day switching protocol	eliminate_bridge	40	Strong	Low/low		CDC LAI–PrEP guidelines 2021
Oral-to-injectable transition	eliminate_bridge	35	Strong	Low/low		CAN Community Network, Ryan W clinics oral-to-LA data
Accelerated HIV testing (RNA + Ag/Ab)	compress_bridge	10	Moderate	Medium/high		WHO July 2025 guidance, window literature
Patient navigation program	navigate_bridge	15	Strong	Medium/medium		San Francisco Pr navigation (HR 1 cancer care meta-analyses (1 improvement)
Peer navigator support	navigate_bridge	12	Moderate	Medium/medium		HIV care cascade navigation studies
Telehealth bridge counseling	navigate_bridge	6	Emerging	Medium/low		Telehealth implementation COVID-19
SMS/text message navigation	navigate_bridge	5	Moderate	Low/low		Healthcare app reminder meta-a

Continued on n

Table 1 (continued)

Intervention	Mechanism	Effect (pp)	Evidence	Complexity / Cost	Addresses	Primary sources notes
Mobile/community-based delivery	remove_barriers	12	Moderate	High/high	Transportation barriers	Mobile clinic HIV services, community-based models
Low-barrier access protocols	remove_barriers	12	Emerging	Low/low	Criminalization/legal concerns; Lack of government ID	Harm reduction models
Transportation vouchers/support	remove_barriers	8	Moderate	Low/medium	Transportation barriers	Cancer care transportation stu PrEP barrier liter
Childcare vouchers/on-site care	remove_barriers	8	Moderate	Medium/medium	Childcare needs	Family planning s models
Flexible scheduling options	remove_barriers	6	Moderate	Medium/low	Scheduling conflicts	Healthcare access literature
Expedited insurance authorization	structural_support	10	Moderate	High/low	Insurance authorization delays	Insurance author delay literature
Insurance navigation support	structural_support	10	Strong	Medium/medium	Insurance authorization delays	Healthcare navig literature
Bundled payment model	structural_support	8	Emerging	High/low	Insurance authorization delays	Value-based pay models in prevent care
Anti-discrimination protocols	clinical_support	12	Moderate	Medium/low	Healthcare discrimination experience	LGBTQ + health training studies
Medical mistrust intervention	clinical_support	10	Moderate	Medium/medium	Medical mistrust	Community health worker models
Prenatal care integration	clinical_support	10	Moderate	Medium/medium	Competing health/life priorities	Integrated care n
Enhanced confidentiality protections	clinical_support	8	Moderate	Low/low	Privacy/confidentiality concerns	Adolescent health services literature
Pregnancy-specific PrEP counseling	clinical_support	8	Emerging	Low/low	Competing health/life priorities	PURPOSE-1 stu protocols
SSP/harm reduction integration	system_level	15	Emerging	High/medium	Criminalization/legal; Medical mistrust; Discrimination	PURPOSE-4 tria SSP integration r

Notes. Effects are absolute percentage-point improvements in predicted bridge-period *initiation* success for each intervention applied singly. Combined effects in the decision

tool are computed with a diminishing-returns factor ( $\alpha = 0.70$ ) and a mechanism-overlap penalty; overall success is capped at 95% to reflect implementation ceilings. Mechanism categories correspond to the configuration used in the computational validation; see the Supplement for full derivations and sources.

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