

Table 3. Study characteristics of included provider-based or structural-level interventions, published between 2021-2025

Author, year of publication Name of intervention <i>Delivery method</i>	Jurisdiction	Study years	Study design	Intervention description	Study population	Participants	Key intervention effects
PROVIDER-BASED INTERVENTIONS							
O'Byrne <i>et al.</i> , 2021 (19) PrEP-RN <i>Nurse-led PrEP</i>	Canada	2018-2020	Prospective cohort (pre-post analysis)	PrEP-RN is a nurse-led PrEP referral and rapid initiation program within a sexual health clinic setting that functions as an ongoing service (18): <ul style="list-style-type: none">• Identification: Public health nurses identify individuals for PrEP RN at elevated HIV risk (e.g. STI diagnosis, STI follow-up, PEP users, sexual contacts of someone newly diagnosed with HIV, clinical judgment)• Referral: Eligible individuals are offered immediate referral to the PrEP-RN clinic for rapid PrEP initiation or to other local PrEP providers• Initiation: Rapid PrEP initiation at the PrEP-RN clinic• Transition: Once stabilized on PrEP, patients referred to external providers for ongoing care within 1 year	MSM at risk of HIV	Cisgender male (n=89) <ul style="list-style-type: none">– White (n=54)– Non-white (n=23)	<ul style="list-style-type: none">• No significant differences in uptake, acceptance, engagement, or discontinuation
Orser <i>et al.</i> , 2024 (18) PrEP-RN <i>Nurse-led PrEP</i>	Canada	2018-2022	Retrospective cohort (pre-post analysis)	PrEP-RN previously described by O'Byrne <i>et al.</i> , 2021 (19)	MSM at risk of HIV	Cisgender male (n=236) <ul style="list-style-type: none">– Mean age: 30– Ethnicity and race data not collected	<ul style="list-style-type: none">• About half of clients declined PrEP referrals after multiple offers, while the other half accepted• Five HIV seroconversions occurred, all among individuals who declined PrEP at least once
Charest <i>et al.</i> , 2021 (20) PICME & Nurse-led PrEP <i>Knowledge dissemination strategy & nurse-led PrEP</i>	Canada	2017-2019	Pre-post analysis	Patient-Initiated Continuing Medical Education (PICME) is a knowledge dissemination strategy where empowered participants are given PrEP information cards by community-based organizations <ul style="list-style-type: none">• The information cards had links to two modules:<ul style="list-style-type: none">✓ A link to educate patients about PrEP and how to engage providers in a conversation about this preventative tool✓ A link for physicians containing practical information about how to prescribe PrEP based on current Canadian guidelines plus a self-assessment tool• Alternatively, patients could bring their information card into one of two participating clinics in Toronto (if unwilling to approach a primary care provider) where trained sexual health nurses could provide PrEP under a medical directive	MSM	MSM (n=196) <ul style="list-style-type: none">– Median age: 31– White (n=103)– Asian (n=48)– Latin American (n=13)– Black (n=9)– Middle Eastern (n=8)– First Nations (n=1)– Indian-Caribbean (n=1)– Mixed or other (n=6)	<ul style="list-style-type: none">• Nurse-led PrEP was the preferred delivery strategy
Cornelius <i>et al.</i> , 2021 (87) NP PrEP <i>Nurse-led PrEP</i>	U.S.	2019	Case series	NP PrEP is a model of care where NPs meet the needs of patients prescribed PrEP; NPs provide: <ul style="list-style-type: none">• Initial face-to-face PrEP education session (indications, side effects, daily dosing, information handout, medication log, condom distribution)• Two follow-up sessions (at 1 month and 3 months) to review the PrEP handout and laboratory results• Financial incentives (e.g. \$25 gift card) offered at baseline and 3-month follow-up	MSM (aged 18+)	MSM (n=7) <ul style="list-style-type: none">– Mean age: 30– Black (n=7)	<ul style="list-style-type: none">• PrEP adherence supported

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Kimball <i>et al.</i> , 2023 (88) THRIVE <i>PrEP navigator</i>	U.S.	2015–2020	Pre–post analysis	Targeted Highly Effective Interventions to Reverse the HIV Epidemic (THRIVE) is a demonstration project that supported health departments to deliver culturally competent HIV care and prevention services to MSM and transgender women; all THRIVE sites used navigators to assist clients in linkage to services but used a variety of models and programs. Generally, navigators: <ul style="list-style-type: none">• Screened clients for service needs• Provided HIV prevention education• Made referrals and assisted with appointment scheduling/attendance• Conducted follow-up as needed	MSM (aged 18+)	MSM (n=3,481) <ul style="list-style-type: none">– Navigation not used (n=2,126)– Navigation used (n=1,355)– Black/African American (n=1,668)– White (n=1,251)– Hispanic/Latino (n=369)– Other (n=165)	<ul style="list-style-type: none">• Navigation increased linkage to PrEP care
Goedel <i>et al.</i> , 2022 (89) Navigation for PrEP Persistence <i>PrEP navigator</i>	U.S.	2018–2020	RCT	Navigation for PrEP Persistence is designed to improve PrEP-related outcomes by providing Black/African American MSM with a PrEP navigator: <ul style="list-style-type: none">• One session with a PrEP navigator within seven days of PrEP initiation; then, weekly/biweekly check-ins for up to six months• Prescription refills and pickups verified with the pharmacy• Other supports included general PrEP education, reminder calls/emails/texts, transportation assistance on a case-by-case basis Control: General education on PrEP from their health care provider during their initial appointment	Black/African American MSM (aged 18–34)	MSM (n=60) Median age: 25 <ul style="list-style-type: none">– Control (n=30)– Intervention (n=3)– Black (n=60)	<ul style="list-style-type: none">• Increased PrEP initiation and persistence
Saberi <i>et al.</i> , 2022 (90) PrEP-OI <i>PrEP coordination</i>	U.S.	2018–2019	RCT	PrEP-OI (PrEP Optimization Intervention) is centralized PrEP coordination supported by a web-based panel management support tool (PrEP-Rx); includes: <ul style="list-style-type: none">• PrEP coordinator used PrEP-Rx to track patients' PrEP timelines, monitor adherence, manage side effects, and order quarterly labs• Included patient consultation checklists, adherence questions, and automated reminders for follow-up and testing	Individuals receiving PrEP at primary care sites	10 primary care sites <ul style="list-style-type: none">– Median clinic size: 3,922	<ul style="list-style-type: none">• Increased number of PrEP prescriptions• Increased in-person PrEP-related visits

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STRUCTURAL-LEVEL INTERVENTIONS							
Player <i>et al.</i> , 2022 (23) TelePrEP Remote PrEP initiation	U.S.	2018-2019	Pre-post analysis	TelePrEP includes 3 scheduled video visits across 6 months and 4 electronic visits between video sessions: <ul style="list-style-type: none">Baseline video visit: lab review, HIV/STI screening, risk assessment, medical history, lifestyle counselling, medication education, and PrEP prescription with option for pick-up at a pharmacy or home-delivery3- and 6-month video visits: repeated lab testing, adherence review, and continued PrEP management4 e-visits: medication adherence and side effects assessedIn-person lab testing performed before each video visitPatient education materials provided	MSM eligible for and interested in PrEP	MSM (n=20) – Mean age: 36 – African American 5% White 95%	<ul style="list-style-type: none">PrEP adherence remained high
Erenrich <i>et al.</i> , 2024 (22) PrEPTECH Remote PrEP initiation	U.S.	2022	RCT	PrEPTECH is a fully online, technology-based PrEP delivery program that includes the following steps: <ol style="list-style-type: none">Online PrEP education moduleOrdering and completing a home testing kit (rectal swab + dried blood spot) for HIV, syphilis, rectal STIs, creatinine, hepatitis BCompletion of an online medical intake questionnaire on the PrEPTECH platformClinician review of lab results and intake responses; PrEP prescription issued if safe/indicatedMedication shipment: free initial PrEP supply (30 days for MSM; 6 months for transgender women)30-day follow-up: questionnaire on side effects and adherence90-day follow-up: optional second home test kit and third intake form for review <ul style="list-style-type: none">Additional support features include customizable text/email adherence reminders and an interactive portal for ongoing PrEP access guidance	Young MSM, (aged 15-27)	MSM (n=229) Transgender women (n=20) Mean age: 24 – Control (n=113) Intervention (n=116) – Hispanic/Latinx (n=85) White (n=52) Multiracial (n=43) Asian/Pacific Islander (n=29) Black/African American (n=15) Middle Eastern/North African (n=3)	<ul style="list-style-type: none">Increased PrEP initiation
Butts <i>et al.</i> , 2025 (24) HB PrEP Remote PrEP care engagement	U.S.	No dates given	Pre-post analysis	The Home-Based PrEP (HB PrEP) system involves self-collected specimens delivered by mail for centralized laboratory testing, and electronic health surveillance combined with telehealth visits: <ul style="list-style-type: none">Remote assessments replace 3 quarterly in-person PrEP care visits; clients expected to return to in-clinic follow-up for their fourth quarterly visitA brief instructional video for self-collection that complemented printed instructions was providedClients also received an in-person training session that included a detailed explanation of self-collection procedures	Black and Latino MSM currently on PrEP (aged 18+)	MSM (n=60) – Mean age: 38 – Control: In-clinic care (n=100) Intervention: HB PrEP (n=60) – White-Latino/Hispanic (n=100) White-Non Latino/Non-Hispanic (n=15) Black/African American-non-Latino/non-Hispanic (n=13) > 1 race-Hispanic/Latino (n=9) Black/African American-Hispanic/Latino (n=3) Other (n=19)	<ul style="list-style-type: none">Decreased long-term persistence in PrEP care

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Wai <i>et al.</i> , 2025 (21) TelePrEP <i>Remote PrEP initiation</i>	Australia	2022–2023	Pre–post analysis	TelePrEP is a model of PrEP delivery where nurses educate, clinically assess, order tests, and manage PrEP initiation and follow-up remotely: <ul style="list-style-type: none">• Clients access testing via three publicly funded pathways thereby allowing clients to bypass an in-person visit and present directly to a local pathology site• Within 14 days of screening, a 15-minute TelePrEP appointment is conducted by nurses; clinical assessment is completed and education provided• Prescription provided by physician (3–12 month supply) and is mailed to or collected by the client	Uninsured clinic clients (aged 18+)	Cis-male (n=66) Transgender female (n=3) Transgender male (n=3) Non-binary (n=2) Median age: 30 – Overseas-born (n=408) Australia/New Zealand-born (n=64)	<ul style="list-style-type: none">• Nearly half of appointments resulted in PrEP initiation or re-initiation• More than half of appointments resulted in PrEP continuation
Storholm <i>et al.</i> , 2021 (92) Project SLIP <i>PrEP screening tool</i>	U.S.	2017–2019	Interrupted time series analysis	Project SLIP (Screening and Linkage Intervention to PrEP) developed and pilot-tested a PrEP screening tool: <ul style="list-style-type: none">• Clinics received one educational training session prior to implementing the screening tool; sessions lasted 1 hour and 15–18 clinic staff and providers attended• Training covered the PrEP care continuum, patient indications, prescribing practices, and how to introduce the new 7-item PrEP screening tool• Screening tool then incorporated into clinic workflow for 12 months (6 months via nursing staff, then 6 months via front desk staff)	Men at risk for HIV infection at two primary care clinics (aged 18–65)	Primary care visits (n=29,262) Mean age: 44 – Hispanic/Latinx (n=11,179) White (n=8,680) Asian/Pacific Islander (n=5,148) Black/African American (n=1,771) Mixed/other (n=8,680)	<ul style="list-style-type: none">• Increased PrEP referrals
Volk <i>et al.</i> , 2024 (91) EHR-based PrEP prompts <i>Clinical decision support tool</i>	U.S.	2021	RCT	An electronic health record (EHR)–based HIV risk prediction model was used to improve PrEP provision among primary care providers who had >150 people living without HIV on their panel: <ul style="list-style-type: none">• Providers were prompted to discuss HIV prevention and PrEP before incoming in-person or video appointments with patients whose predicted 3-year HIV risk was above a prespecified threshold• Urgent alerts sent to primary care providers 1 day before eligible patient visits, up to a maximum of 2 messages per day; patient with multiple visits were flagged no more than once monthly• Providers received pre-intervention education via focus groups, department meetings, and emails• Providers encouraged to use clinical judgment and shared decision-making Control arm: Usual care (i.e. no prompts)	Patients with increased risk of HIV (aged 18+)	Eligible patients (n=5,051) <ul style="list-style-type: none">• Male (n=4,819)• Female (n=232) – Mean age: 39 – Control (n=2,580) Intervention (n=2,471) – Non-Hispanic White 42.6% Non-Hispanic Black 18.7% Hispanic 15.1% Asian 14.6% Other 3.0% Unknown 6.0%	<ul style="list-style-type: none">• Nonsignificant increase in initiation of PrEP care in the intervention arm

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Fox <i>et al.</i> , 2023 (93) HOME PEPSE <i>Advance provision of PEP</i>	UK	2018-2019	RCT	Advanced provision of PEP for sexual exposure (HOME PEPSE) allows MSM to self-initiate PEP following potential exposure to HIV: <ul style="list-style-type: none">A 5-day PEPSE pack is received in advanceParticipants initiating HOME PEPSE complete diary for the first 5 days to report adherence and adverse reactions Control: Accessed PEPSE through standard of care (sexual health clinic or accident and emergency units) for 48 weeks then received HOME PEPSE for 24 weeks	MSM at risk of HIV	MSM (n=135) – Median age: 30 – Control (n=69) Intervention (n=66) – White/Caucasian (n=101) Black or African (n=9) Oriental (n=6) Other (n=19)	<ul style="list-style-type: none">PEP initiation (reduced time from exposure to first PEP)
Rashotte <i>et al.</i> , 2024 (94) PIP <i>Advance provision of PEP</i>	Canada	2017-2020	Prospective cohort (pre-post analysis)	PEP In-Pocket (PIP): Patients with low frequency HIV exposures are proactively identified and given a prescription for HIV PEP to self-initiate in case of high-risk exposures	MSM with low frequency exposures	MSM (n=42) Transgender women (n=1) – Median age: 36 – White (n=18) Asian (n=9)	<ul style="list-style-type: none">PEP initiation

ART: Antiretroviral therapy

EHR: Electronic health record

MSM: Men who have sex with men

NP: Nurse practitioner

PEP: Post-exposure prophylaxis

PrEP: Pre-exposure prophylaxis

RCT: Randomized controlled trial

RN: Registered nurse

STI: Sexually transmitted infection