

OPTIONS *Optimizing Prevention Technology Introduction On Schedule*

TEST-AND-PREVENT ANALYSIS: KEY FINDINGS

April 2019





This work identifies practices for linking individuals from HIV testing to HIV prevention

Purpose of this work

- New HIV testing and new HIV prevention tools are now available. They are important parts of comprehensive HIV prevention programs and can contribute to higher rates of HIV testing.
- While there is significant focus on improving linkage from HIV testing to treatment, there is little effort to create links between testing and prevention for populations who are at-risk of HIV and could be HIV prevention users.
- In response, this work aims to identify:
 - **Interventions that are effective** or show promise of effectiveness to link people who test HIV negative to HIV prevention to inform implementation of HIV testing programs and improve uptake of HIV prevention
 - **Enabling systemic conditions that support improved linkage** between HIV testing and prevention for consideration by policymakers and donors
 - **Remaining questions** about how to improve linkage between HIV testing and prevention for further study

Audiences for this work

HIV testing and prevention implementers

HIV policymakers

Donors

HIV PREVENTION CONTEXT

LINKAGE INTERVENTIONS

RECOMMENDED ACTION STEPS

APPENDIX: DETAILED RESEARCH FINDINGS



A new approach to linkage between HIV testing and HIV prevention is needed

Historically, there has been little effort to link HIV negative individuals to HIV prevention.



Policymakers and funders have been intensely focused on case finding to achieve the **90-90-90 goals** – this has resulted in the perception that testing is the endpoint for those who test HIV negative rather than the beginning of a prevention journey



HIV testing programs are often **independent** from HIV prevention programs; while they are increasingly reaching high-risk populations (e.g., via index case testing), few are able to dedicate significant resources beyond offering condoms and some risk assessment to support linkage to prevention services for those who test HIV negative



HIV negative individuals often lack knowledge of HIV prevention options and/or lack motivation to engage in biomedical solutions because they are healthy – effectively linking people to HIV prevention requires **overcoming these barriers**



The interventions that have been most effective in overcoming these barriers for linkage to treatment have involved interpersonal engagement (e.g., through peer counselors, community health workers), which is **challenging to implement at scale** and thus will be difficult to extend to prevention outside of targeted efforts

The introduction of oral PrEP and self-testing is shifting the landscape.

The introduction of **oral PrEP and HIV self-testing** have raised the importance of creating effective linkages to HIV prevention for those who test HIV negative



Oral PrEP represents a new offering for those who test HIV negative and early evidence suggests that the availability of oral PrEP can act as an incentive for people to get tested for HIV



As the use of HIV self-testing expands, it will become more important to understand how to link those individuals (both those who test HIV positive and those who test HIV negative) back to care

As the use of these two interventions and other biomedical HIV prevention methods expands, more people will be receiving HIV prevention information or HIV tests outside of clinical settings – **improved links** between HIV testing, treatment and prevention programs will be essential



While prevention and treatment have similarities, there are complexities unique to prevention

Many of the methods used for linking individuals with a positive HIV test result to treatment are relevant to linking individuals with a negative HIV test result to prevention. There are, however, several key differences that will need to inform any approach:

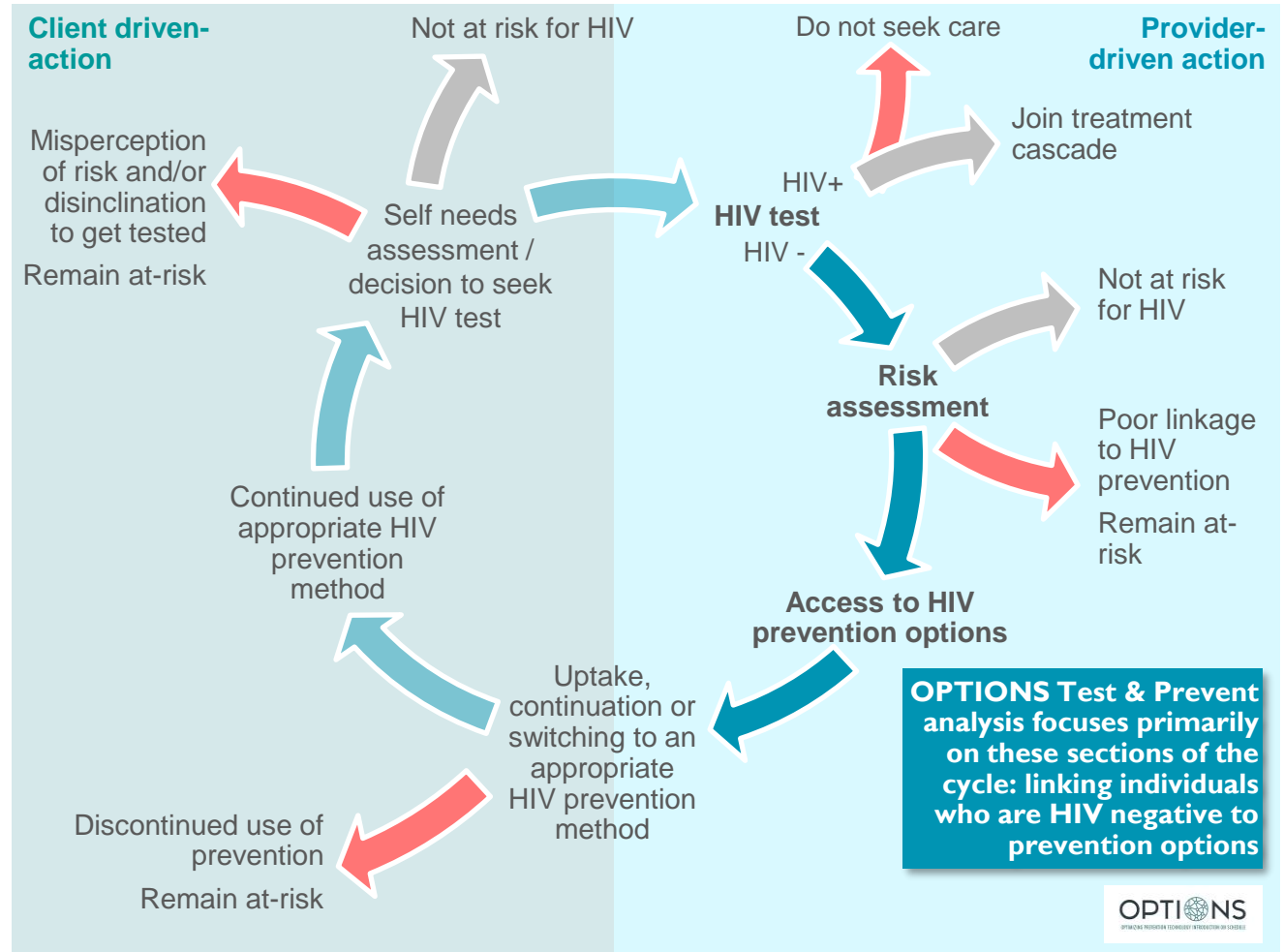
- There is **no single solution** for all individuals who test HIV negative – based on levels of risk and client preferences, different HIV prevention options may or may not be relevant
- Individuals will likely experience **changing levels of risk** over time and will “cycle” on and off prevention as needed
- Individuals may **switch** between methods or benefit from **multiple prevention methods** simultaneously



OPTIONS HIV prevention cycle aims to capture these prevention dynamics

A proposed cycle framework for HIV prevention

- This framework highlights the goal of HIV prevention as **retention** in the cycle for those who remain at risk for HIV
- This cycle allows for changing levels of risk and acknowledges that **ongoing decision-making** is necessary for initiation and continuation of HIV prevention
- The time period for one cycle is likely **~3 months**, in-line with guidance for regular HIV testing for at-risk populations or those on oral PrEP
- Individuals will likely **start the cycle** at the self needs assessment or the HIV test, depending on how they are reached



HIV PREVENTION CONTEXT

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Interventions to create links between testing and prevention fall into four main categories

Category

List of Interventions*

Information provision

- Information on prevention service providers
- Self risk assessments
- Promotional messages about HIV prevention options

Referral systems

- Referral letters / forms
- Unique identifier systems (e.g., QR codes, unique client ID)
- Reminder messages (e.g., SMS, phone calls)
- Incentives for follow-up (e.g., cash transfers, travel reimbursement, food/air time vouchers)

Interpersonal engagement

- In-person linkage support (e.g., counseling, escorting)
- Case management
- Virtual support by peers or counselors (e.g., online, helpline)
- Virtual support using artificial intelligence (e.g., automatically-generated, customized communications)

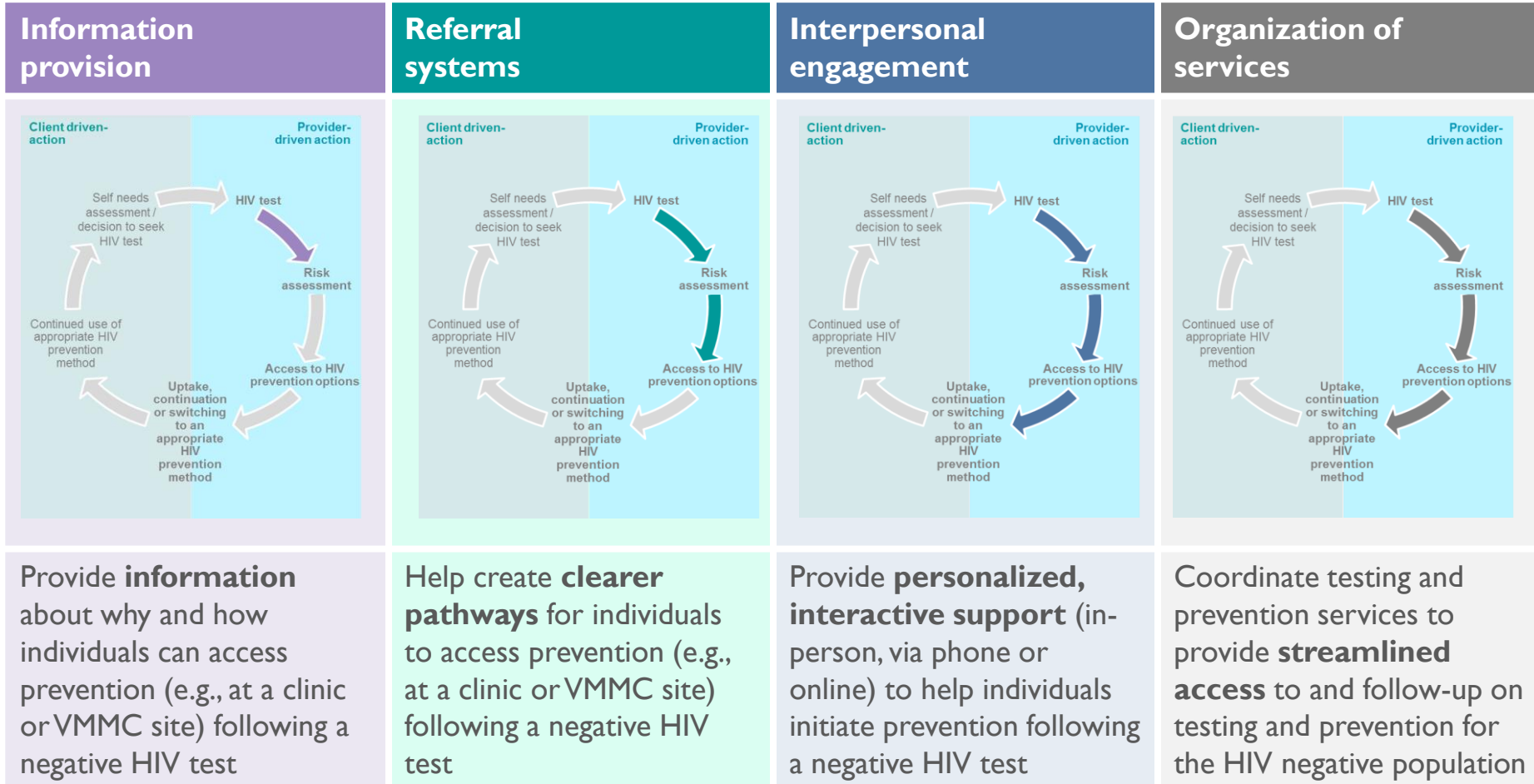
Organization of services

- Fast-track options (e.g., same-day initiation, fast drug pick-up)
- Coordination of testing and prevention programs
- Integration of HIV services into testing settings

**Note: Many of these interventions are also used to link individuals who test HIV positive to treatment.*



Each category of interventions contributes differently to creating links between testing and prevention



Typically targeted toward **first-time** prevention users

Can be used for **first-time and continued** prevention users



Interventions were assessed by cost and effectiveness

Intervention assessment framework

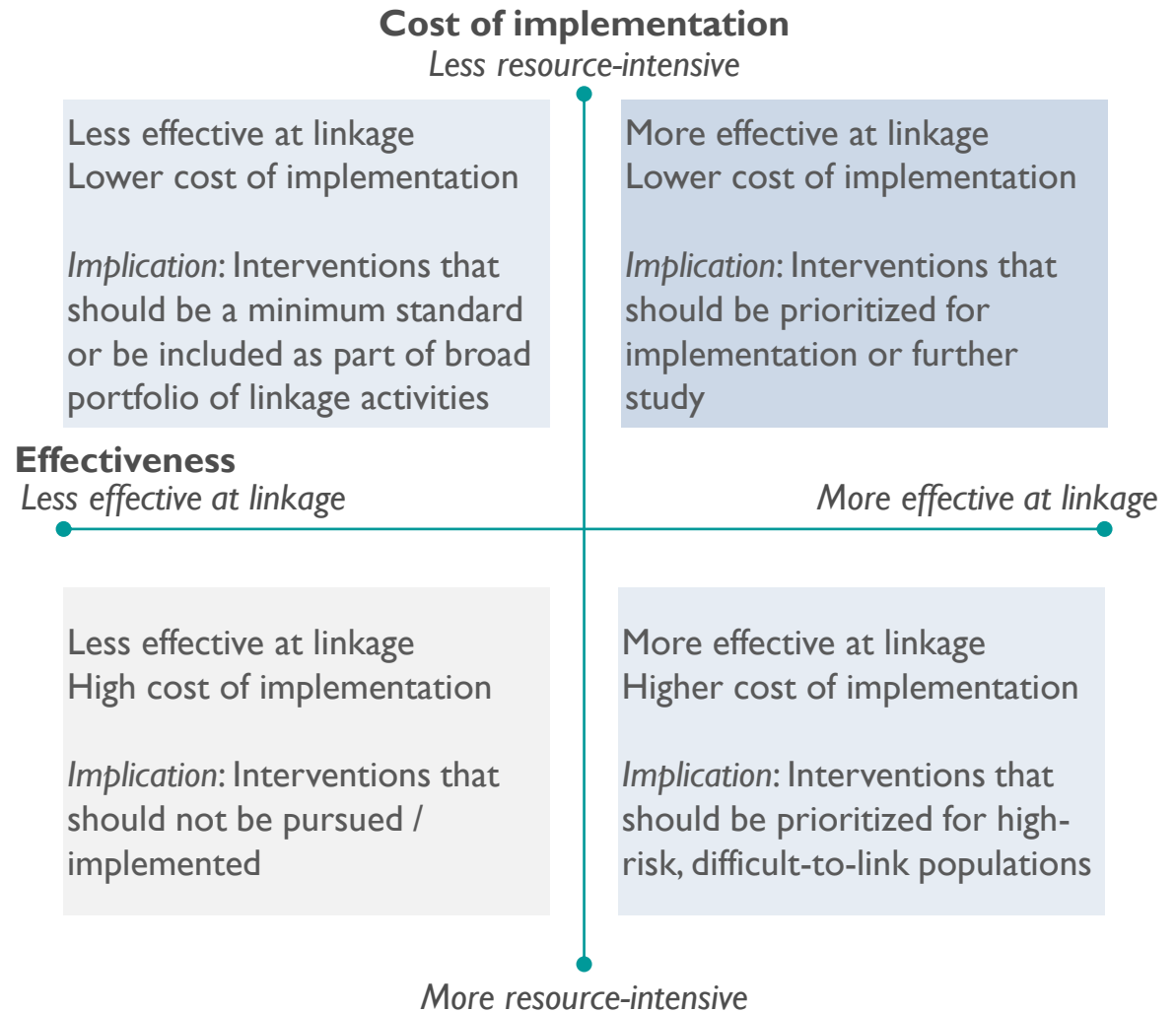
To assess interventions for implementation, interventions were compared by relative effectiveness and cost of implementation:

Effectiveness

- *Evidence base*: The strength of the existing evidence base at increasing uptake of prevention after testing*
- *Linkage*: The extent to which the intervention provides a link from HIV testing to uptake of prevention methods

Cost of implementation

- *Necessary investment*: Expected costs of implementation
- *Scalability*: Ability to scale intervention without significant increase in costs



* See Appendix for additional detail



Interventions differ by cost and effectiveness

Intervention assessment by relative cost and effectiveness

Cost of implementation

Less resource-intensive

Interventions for inclusion in a broader portfolio of activities

- Referral letters / forms
- SMS reminder messages
- Promotional messages about HIV prevention
- Self risk assessments
- Information on prevention service providers

Priority interventions for implementation / further exploration

- Coordination of testing and prevention programs
- Unique identifier systems (e.g., via QR code)
- Virtual support by peers or counselors (online, helpline)
- Virtual support using artificial intelligence

Effectiveness

Less effective at linkage

More effective at linkage

Interventions that should not be pursued

Ineffective at linkage; Low ease of implementation

Interventions for high-risk, hard-to-link populations

- Integration of HIV services into testing settings
- Fast-track options (same-day initiation, fast drug pick-up)
- Incentives for follow-up
- Reminder messages via phone call
- Case management
- In-person linkage support

- KEY**
- Information provision
 - Referral system
 - Interpersonal engagement
 - Organization of services
 - Indicates light evidence / limited early results in prevention setting

More resource-intensive

* Effectiveness varies based on level of risk, needs, behaviors and preferences of each individual or population—graphic depicts overall findings based on available evidence

HIV PREVENTION CONTEXT

LINKAGE INTERVENTIONS

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Linkage interventions should be further explored and tested in implementation

Interventions for broad use as a minimum package *(Less effective, lower cost)*

- These interventions typically make it easier for people seeking HIV prevention to connect to HIV prevention, but do not help overcome major barriers (e.g., stigma)
- Insights from human centered design and behavioral economics can help to make these interventions more effective (e.g., with customized messaging in-line with social norms)
- As low-cost interventions, these interventions can be easily included to existing HIV testing programs as a minimum level of linkage to prevention
- ***These interventions should be made as effective as possible and incorporated into all major testing programs to support greater linkage to HIV prevention***

Priority interventions for implementation / further exploration *(Effective, lower cost)*

- These interventions either 1) build on existing systems (e.g., coordinating existing testing and prevention programs) or 2) leverage technology solutions to achieve effective linkage from HIV testing to HIV prevention services at scale
- Ongoing projects (e.g., POWER, LINKAGES) will yield some insights
- ***While many are experimental, these interventions hold promise and should be further explored in implementation of HIV testing and HIV prevention programs***

Interventions for high-risk, hard-to-link populations *(Effective, higher cost)*

- These interventions are likely to be the most effective at linking those who test HIV negative to HIV prevention services
- These interventions also require the most significant investment in human resources (e.g., counselors, peer navigators) and/or financial resources (e.g., incentives) that would make them cost-prohibitive to use for the broad HIV negative population
- ***These interventions should be used to support linkage for those individuals that are the best candidates for HIV prevention and the most difficult to link to services through other methods***

- Referral letters / forms
- SMS reminder messages

- Promotional messages on HIV prevention
- Self risk assessments
- Information on prevention providers

- Coordination of testing and prevention service providers

- Unique identifier systems (e.g., QR code)

- Virtual support by peer or counselors
- Virtual support using artificial intelligence

- Integration of HIV services into testing settings

- Fast-track options (same-day initiation, fast drug pick-up)

- Incentives for follow-up
- Reminder messages via phone call

- Case management support
- In-person mobilization or accompaniment



In addition, systems will need to adapt to support greater linkage to prevention

Enabling conditions to support linkage to prevention

Funding, guidelines, and monitoring systems

There is currently little support or accountability for linkage to prevention for HIV testing implementers

Guidance on targeting

The HIV negative population is large and has diverse and evolving needs – there is no “one size fits all” solution for this population

Understanding end user preferences

The effectiveness of different linkage interventions will differ based on context and end user preferences (e.g., some prefer anonymous online interventions, others prefer in-person engagement)

Necessary next steps

- Adapt national testing guidelines to include linkage to prevention interventions
 - Increase donor funding for HIV testing programs to include linkage to prevention where relevant
 - Include linkage to prevention for HIV negative populations in monitoring & evaluation systems
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- Continue to use evidence to further define the highest priority populations for linkage to HIV prevention
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- Continue to develop research and effective methods (e.g., motivational interviewing) to identify which linkage interventions will be the best fit for different populations to inform a differentiated, customized approach



Several questions remain to fully understand why and how to effectively invest in linkage to prevention

Current status	Key questions	Existing evidence and ongoing projects
Some limited evidence exists, several ongoing projects are exploring these questions	To what extent does creating stronger linkages between HIV testing and HIV prevention reach those at high-risk for HIV (e.g., good candidates for oral PrEP and other biomedical prevention)?	Some ongoing implementation projects are examining this question including LINKAGES, OUT, Desmond Tutu, Wits RHI, and OPTIONS
	How do linkage interventions compare in terms of impact on uptake of prevention services? Which are most effective? How does this differ across populations?	Some ongoing projects are testing linkage interventions and an ongoing effort by BMGF and IAS is looking across interventions; an upcoming OPTIONS study in Zimbabwe will continue to explore this question
Initial anecdotal evidence is positive but light; few ongoing projects are actively examining these questions	How can solutions best leverage technology to reach large populations for HIV prevention with effective messaging and counseling?	Anecdotal evidence is positive, though the evidence base is light and few projects are actively using technology (Wits RHI WhatsApp AI tool, POWER QR code system, LINKAGES online platforms)
	How does the offer of HIV prevention impact rates of HIV testing for populations at risk of HIV?	There is some anecdotal evidence; work by Jhpiego (Tanzania) and STAR/PSI (Zimbabwe) with integrated testing and VMMC models could provide insight
Questions are relatively unexplored ; no surveyed projects are actively examining these questions	How cost-effective is linkage from testing to prevention relative to other alternatives to generate demand and uptake of prevention?	This area is relatively unexplored; ongoing costing studies (by BMGF and Desmond Tutu) and an upcoming OPTIONS study in Zimbabwe may provide greater clarity

HIV PREVENTION CONTEXT

LINKAGE INTERVENTIONS

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The following slides include additional details on each of the listed interventions

Category

List of Interventions

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Organization of services

- Fast-track options (e.g., same-day initiation, fast drug pick-up)
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- Integration of HIV services into testing settings



Interventions were assessed across testing settings, implementation needs, and evidence of effectiveness

Factors for assessment of interventions linking HIV negative individuals to HIV prevention

SETTINGS

Testing settings for which the interventions are most relevant



Intervention can be used in **all testing settings** in some capacity



Intervention is well-suited to healthcare **facilities**



Intervention is well-suited to **mobile or community** settings



Intervention is well-suited for **HIV self-testing**

COST

Financial and/or human resources needed for implementation

\$ Likely requiring **fewer resources** to implement

\$\$ Likely requiring some resources/**mid-level of investment** to implement

\$\$\$ Likely requiring a **higher level of investment** and resources

EVIDENCE BASE

Evidence base for effectiveness of linkage from testing to uptake

? No, mixed or questionable evidence

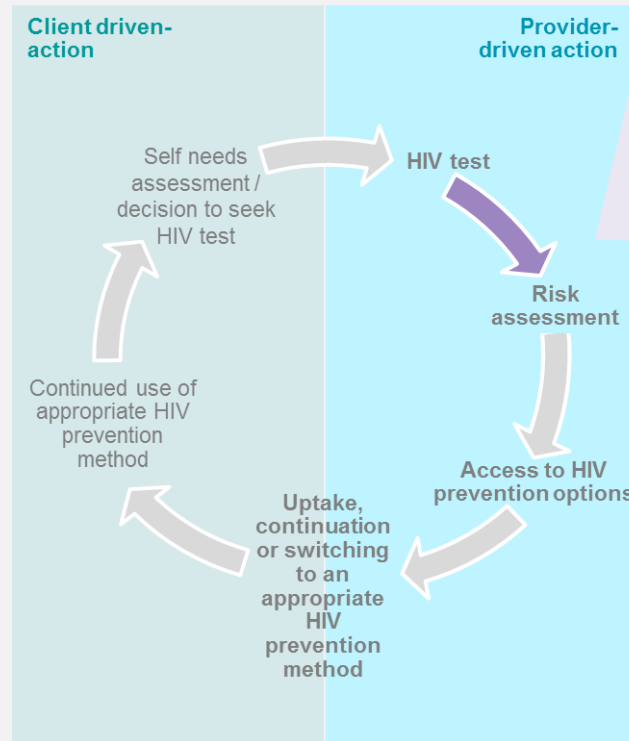
✓ Anecdotal or early evidence of effectiveness

✓✓ Robust evidence only from treatment settings

✓✓✓ Robust evidence from prevention settings

INFORMATION PROVISION INTERVENTIONS

HIV prevention cycle



Information provision

One-time provision of information, typically following an HIV test

- Primarily used to link individuals **from HIV testing to a clinical setting**
- Information is intended to generate awareness and/or demand among clients to seek prevention services but **offers no additional support**
- Most **effective when customized** to a specific audience and when employing principles from human centered design and behavioral economics

Recommended for inclusion across HIV testing and HIV prevention programs as a relatively low-cost initial step to improve linkage to HIV prevention



Information provision interventions

Overview

INTERVENTIONS

- **Information on prevention service providers:** Location, contact information and hours of nearest prevention providers (e.g., in a brochure or card, pamphlets with HIV self-testing kits)
- **Self risk assessments:** A series of questions used to help an individual understand their level of risk for acquiring HIV based on behaviors and preferences (online or in-print)
- **Promotional messages:** A variety of different forms (e.g., video, pamphlet, SMS message, social media) to provide health education information and drive demand for prevention following an HIV test

BENEFITS

- Though most evidence is anecdotal or early, information provision interventions **may help to increase awareness** of HIV prevention options and may lead to greater uptake
- These interventions have the ability to be **implemented at-scale** to reach large segments of population with essential information at a relatively **low-cost**
- These interventions can be easily implemented within an **HIV self-testing setting**, unlike most other linkage interventions
- New **human centered design and behavioral economics** techniques and insights can make these interventions more effective (e.g., by integrating social norms) *

LIMITATIONS




- **Limited strong evidence demonstrating the effectiveness** of information provision interventions to increasing uptake of prevention
- Difficult to **customize** information for mass distribution, providing no ability for interaction or personalized guidance
- Due to these constraints, information provision interventions are **likely most effective when complemented by additional interpersonal** interventions that provide more targeted, interactive guidance

* See [Applying Behavioral Insights: Simple Ways to Improve Health Outcomes](#) for additional guidance



Information provision interventions

Existing evidence

Intervention	Testing Settings	Cost	Strength of Evidence	Supporting Evidence
Information on prevention service providers	Primarily used in self-testing setting; provider not present to provide information on next steps 	Costs expected to be low, in line with other IEC materials \$	✓	<ul style="list-style-type: none"> SMS promotion in Tanzania: A VMMC program worked with a local phone provider to make a series of text messages available to the public, sending benefits of VMMC to individuals, times/locations of VMMC clinics and post-op info to those who underwent VMMC Those who texted for VMMC locations were associated with those who requested post-op information—potentially demonstrating uptake¹
Self risk assessments	Primarily used by community-based clinics or online to support HIV self-testing campaigns 	Assessments likely to be included within larger digital campaign, though tech development requires resources \$	✓	<ul style="list-style-type: none"> A study of oral PrEP implementation in Uganda found that uptake of oral PrEP was only 11% among those screened by providers to be at high risk, versus 39% among those who self-identified as being at risk prior to the screening Qualitative data from providers suggest that additional opportunities for self-assessment provide greater self awareness about risk level² One interviewee in Zimbabwe noted that clients at clinics that use an intake assessment form to understand health risks are more likely to take up a prevention service when offered
Promotional messages	Messages are more general and can be applicable to various testing settings 	Cost can vary based on channel as SMS campaign may be low cost while a video or radio spot could be costly \$-\$\$\$	✓	<ul style="list-style-type: none"> One study cited “mass media can create awareness of VMMC but interpersonal communication serves as the catalyst to action.”³ A 90-second video was created and shown in South Africa to promote PrEP: Though the AGYW audience was satisfied with the video, one interviewee believed the video must be paired with corresponding community campaign efforts to increase demand/uptake A study in India explored the effectiveness of posters and a booklets as IEC materials for women visiting Integrated Counseling and Testing Centers. In interviewing 2,100 clients, researchers found that 50% of clients went in for HIV testing after reviewing the booklet, demonstrating change in behavior⁴ Through LINKAGES Indonesia program, social media influencers promote self risk assessment, booking appointments for HIV services and showing up for HIV service appointments—more than half of the individuals assessed to be high risk, HIV negative were reached through online influencers⁵



Information provision interventions

Current projects

Intervention	Population	Testing Setting	Description
Risk assessment tool <i>LVCT Health (Kenya)</i>	Key populations	Facility	<ul style="list-style-type: none"> • Clients with negative HIV test results undergo a risk assessment and develop a risk reduction plan with clinic counselor; if they are at high risk, they are offered services (e.g., STI screening, PrEP) and required to return in a month—LVCT Health is developing a self risk assessment for clients to complete on their own to reduce implications of stigma and confidentiality
Demand creation/ educational video <i>Desmond Tutu Health (South Africa)</i>	AGYW	All	<ul style="list-style-type: none"> • <i>Reference case study on slide 23 for additional detail</i>
Health promotion SMS messages⁶ <i>DREAMS GIRLS (Kenya)</i>	AGYW	All	<ul style="list-style-type: none"> • AGYW who test negative and are considered “high risk” after risk assessment will receive two SMS messages with health promotion messages 6 and 12 months after testing (study is ongoing) • A follow-up SMS survey will collect HIV risk behaviors and willingness to retest after 12 months
Pamphlet in HIV self-testing kits <i>Wits RHI (South Africa)</i> <i>STAR/PSI (South Africa)</i>	All Men	HIV self-testing	<ul style="list-style-type: none"> • With each Wits RHI HIV self-test kit, a pamphlet is included with frequently asked questions related to prevention, contact information of the nearest public health clinic, PrEP and VMMC sites • <i>Reference case study on slide 23 for additional detail</i>
App-based, virtual reality or gamification⁷ <i>Adolescent Trials Network for HIV Interventions; (United States)</i>	Young MSM	HIV self-testing	<p>Several studies are being conducted to understand how technology can improve linkage between HIV self testing and prevention or care. Examples include:</p> <ul style="list-style-type: none"> • An app to deliver messages about prevention services and offer free HIV self-test (HIVST) kits • App with virtual reality to guide participants through the process of self testing • Gamification of adherence on PrEP with information on PrEP, games testing knowledge and a premium version with an online adherence counselor
Online mobilization <i>LINKAGES/FHI 360 (Indonesia)</i>	Key populations	Facility	<ul style="list-style-type: none"> • In the LINKAGES Indonesia program, social media influencers promote self risk assessment, booking appointments for HIV services and showing up for HIV service appointments—more than half of the individuals assessed to be high risk, HIV negative were reached through online influencers
Mobile application⁷ <i>Rhode Island Hospital; (United States)</i>	Young MSM	HIV self-testing	<ul style="list-style-type: none"> • A mobile phone app that provides self-assessment tools, HIV prevention recommendations, reminders, locations of services providers and ability to order condoms and HIV self-testing kits • More than half of young MSM who used app in study ordered HIV self-testing kit during pilot; other features frequently used were self-assessments and testing plan creation tools



Information provision interventions

Case studies



UNITAID-PSI
HIV SELF-TESTING AFRICA

CASE STUDY: HUMAN CENTERED-DESIGNED INFORMATION LEAFLET (STAR/PSI)

- Location: South Africa and Zimbabwe
- Target population: Men
- Testing setting: Self-testing (on-site at mobile clinic and off-site)
- Model: HIV self-tests are distributed through pharmacies and community organizations. The self-test is accompanied by a pamphlet with information on options for HIV prevention, including the contact details for the nearest provider of VMMC in the area. The pamphlet was designed using a human-centered design approach to ensure effective messaging for men
- Results/evidence: When comparing VMMC programs, those with a HIVST component resulted in higher VMMC uptake (57%) than those without (42%); in PSI VMMC clinic, 82% of men testing negative after HIV self-test undertook VMMC
- Implementation observations and tips: HIV self-testing helps to overcome stigma and fear around testing
- Limitations: Tracing is difficult with home-based testing; however a mobile app is being introduced to capture information for self-testers as well as introduction of mobilizers/role models to guide men through next steps

CASE STUDY: PREP VIDEO FOR AGYW (DESMOND TUTU HIV FOUNDATION)

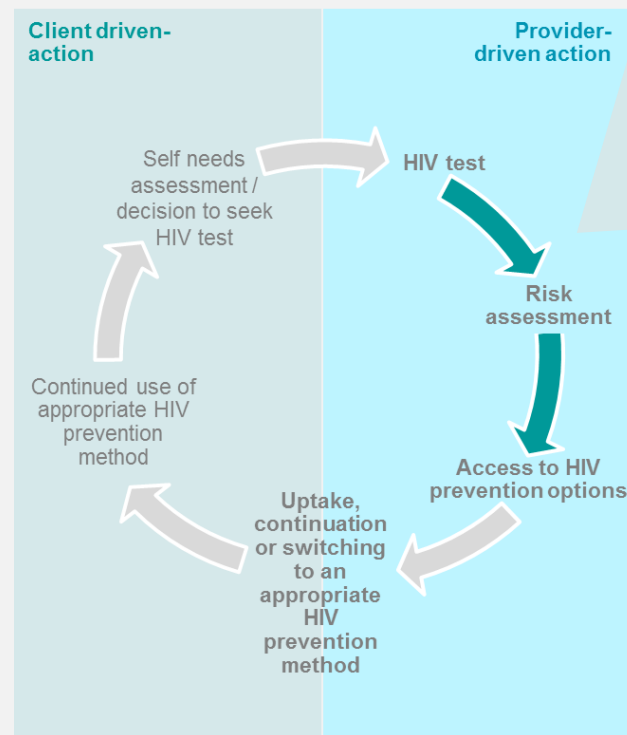
- Location: South Africa
- Target population: AGYW
- Testing setting: Community or facility
- Model: Created and launched a 90-second informational video aimed at increasing awareness of PrEP among AGYW in order to encourage the population to ask healthcare providers about this prevention method
- Results/evidence: Though satisfaction with the video was high among target audience, anecdotally, it was observed that the video alone was not enough to stimulate demand but may be effective if combined with corresponding community campaign
- Implementation observations and tips : Video resonated with target audience
- Limitations: The launch of the video without a corresponding community campaign or clear ability for AGYW to link up with community services provided barrier to increased uptake of PrEP



DESMOND TUTU
HIV FOUNDATION

REFERRAL SYSTEM INTERVENTIONS

HIV prevention cycle



Referral systems

Systems to support referral between sites

- Primarily used to **link individuals from testing to the point of accessing prevention methods** (e.g., clinic, VMMC site)
- Information, financial support and reminder mechanisms **help individuals follow-up to access services**
- Typically targeted toward first-time prevention users

Referral systems are essential for HIV testing programs conducted outside of healthcare facilities; relevant interventions will differ based on level of resources available and intended target audience



Referral system interventions

Overview

INTERVENTIONS

- **Referral letters or forms:** Cards or forms indicating basic client information and desired service from referred location
- **Reminder messages (SMS messages, phone calls):** Messages to individuals who have tested to encourage additional action (e.g., clinic visits, additional testing, VMMC)
- **Unique identification systems (QR codes, unique client IDs):** Electronic or paper systems to track individual patient information and needs
- **Incentives for follow-up:** Monetary rewards to encourage individuals to take specific action after testing (e.g., airtime voucher, transportation voucher, cash incentives)

BENEFITS

- **Helps individuals navigate complex healthcare systems** by providing more information and clarity on next steps and/or providing incentives / financial support to complete referral
- Though evidence is light or early, referral systems **show promise at increasing uptake**
- **Implementation costs can be lower** as many referral system interventions may build on existing systems

LIMITATIONS

- Some interventions such as implementing a digital unique identifier system or incentives for follow-up can be **time or resource-intensive and require coordination**
- Interventions aim to improve convenience of referral process though **may not address stigma-related barriers** of interacting with healthcare system





ADDITIONAL CONSIDERATIONS

- There is a **tension between protecting client confidentiality and collecting necessary client information** in order to strengthen the referral process and trace individuals
- Tracing individuals and conducting individual follow-up can be **resource intensive**
- Implementing interventions that involve new technologies or procedures can be difficult or require additional **resources from health facilities**



Referral system interventions

Existing evidence

Intervention	Testing Settings	Cost	Strength of Evidence	Supporting Evidence
Referral letters or forms	Referral forms, letters or care cards used primarily to refer individuals from community-based programs to clinical facilities 	Cost to implement likely low with simple paper form structure \$	✓	<ul style="list-style-type: none"> Anecdotal evidence suggests referral letters are important tools in facilitating access into healthcare system by increasing information available to healthcare staff about client, translating into more effective service as well as increased client comfort in navigating the healthcare system One study demonstrated their effectiveness at facilitating entry of HIV-positive clients to the hospital by reducing time in registration process and facilitating access to care⁸
Reminders	Reminder systems (e.g., for VMMC appointments, oral PrEP refills) are used across settings 	An SMS system is likely to be easier to implement than a call center with staff \$-\$-\$	✓✓	<ul style="list-style-type: none"> LINKAGES uses virtual WhatsApp or SMS reminder systems and finds them easy to use and low-cost; though uptake can be low with generic messages An RCT in Kenya tested enhanced appointment reminders with an SMS and phone call reminder vs. standard appointment card. Those with the enhanced reminders were 40% more likely to attend for additional testing compared to standard of care group⁹ A study in Kenya demonstrated improved adherence to ART with weekly SMS reminders. 53% of intervention group reported 90% adherence vs. 40% in control¹⁰
Unique identifier systems	Applicable and used in all settings to streamline the process and enable follow-up 	Upfront investment is required though reach is high \$\$-\$-\$-\$	✓	<p>Some programs are seeing early signs of improved uptake with a unique ID system:</p> <ul style="list-style-type: none"> Desmond Tutu has implemented QR code system to facilitate linkage from empowerment session or school-based settings to facilities and has seen promising early results LINKAGES India uses unique ID system to promote follow-up after testing and ensure linkage to prevention, while protecting client confidentiality
Incentives for follow-up	Primarily used by community-based clinics, index case or online to encourage follow-up from HIV self-testing 	Cost can vary depending on investment though will increase as scale increases \$\$-\$-\$-\$	✓✓✓	<ul style="list-style-type: none"> A study in Malawi demonstrated that the use of cash incentives increased the proportion of men that visited a facility for care or prevention after taking a self-test: 52% of men receiving \$10 conditional cash transfer completed referral vs. 13% receiving no incentive; additionally 4% of control group linked to ART or VMMC compared to 19% of \$10 incentive group¹¹ A study in Kenya demonstrated improved uptake of VMMC among men who received incentive: 9% of those who received \$15 incentive underwent VMMC compared with and 1.6% of men who received no incentive¹²



Referral system interventions

Current projects

Intervention	Population	Testing Setting	Project Description
Unique identifier /QR codes ¹³ <i>PASMO/PSI (Central America)</i> <i>Desmond Tutu (S. Africa)</i>	MSM Transgender AGYW	All	<ul style="list-style-type: none"> A Unique Identifier Code (UIC) is assigned to each tester by the counselor conducting HIV testing services or a cyber-educator assisting with HIVST; monitoring data is captured, allowing the project to track the number of individuals reached, individuals who receive HIV testing services, yield, and percentage linked to care <i>Reference case study on slide 28 for additional detail on QR code intervention</i>
Incentive for VMMC ^{14,15} <i>LSHTM (UK, Malawi)</i> <i>Impact Research and Development Organization (Kenya)</i>	Men	HIV self-testing	<ul style="list-style-type: none"> <i>Reference case study on slide 28 for additional detail on incentives for VMMC follow-up in Malawi</i> In a VMMC study in Kenya, 2-month VMMC uptake was higher among randomized participants who received compensation of \$15 (9% VMMC uptake) or \$8.75 (6.6% VMMC uptake) compared with those who received no incentive (1.6% VMMC uptake)
Deposit reimbursement ¹⁶ <i>National Institutes of Health, UNC Center for AIDS Research (China)</i>	MSM	HIV self-testing	<ul style="list-style-type: none"> In study in China, MSM participants paid a \$23 deposit to receive HIV self testing kits. After completing tests, participants took picture of results and uploaded to online platform; staff interpreted results and provided feedback to participants--then participants received deposit reimbursement 89% of MSM in study uploaded results and 100% of positives linked to care
Appointment bookings <i>PSI/STAR (South Africa)</i>	Men	HIV self-testing	<ul style="list-style-type: none"> After clients complete an HIV test on-site, a PSI staff member helps clients make a VMMC appointment; anecdotal evidence suggests the interaction gives clients confidence in the next steps of a complex process and increases client motivation to follow-up
Reminders to report self-test results <i>Wits RHI (South Africa)</i>	Key populations	HIV self-testing	<p>In order to collect HIV self-test results, Wits RHI works through several channels:</p> <ul style="list-style-type: none"> Website to self-report results in addition to SMS reminder systems and a phone call system that auto-calls on the 7th day after the test Linkage officers follow up with 5% of individuals tested via phone to understand their experience, test result, linkage outcomes, and more
SMS reminders and survey <i>DREAMS (Kenya)</i>	AGYW	HIV self-test	<ul style="list-style-type: none"> All participants who test negative receive risk assessment counseling, condoms, and referral for other prevention based on interview: those at high risk will receive a health promotion SMS at 6 and 12 months, an SMS survey to collect HIV risk behaviors and willingness to retest, an HIV test at 12 months and an in person interview on barriers (Study is ongoing—results will be available in 2020)



Referral system interventions

Case studies



CASE STUDY: INCENTIVES + INDEX CASE TESTING LINKAGE TO VMMC¹⁴

- Location: Malawi
- Target population: Men
- Testing setting: Index case testing using HIV self-testing (HIVST)
- Model: Women at an antenatal care clinic were recruited to engage their male partners in HIVST with different intervention arms: 1) standard of care, 2) HIVST for partners, 3) HIVST kit plus an incentive of \$3 or \$10 conditional on follow-up, 4) HIVST kit plus lottery ticket conditional on follow-up (10% chance of winning \$30), 5) HIVST kit and phone call reminder to partner
- Results/evidence: Uptake of HIV self-testing was high across intervention arms. The **conditional financial incentives increased the proportion of men following-up at a clinic** within 28 days of the home visit -- 13% of men followed-up in the control group vs. 41% in the \$3 incentive arm and 52% in the \$10 incentive arm. Uptake of ART or VMMC was also higher in the groups that received incentives -- only 4% of standard of care arm participants initiated ART or VMMC compared to 19% of participants in the \$10 incentive group.
- Keys to success: Incentives seem to be effective within this setting to encourage men to follow-up at the clinic after taking an HIV self-test. Additionally, regardless of incentive, men in the study were very likely to take an HIV self-test, demonstrating that delivery of HIV self-test kits through secondary distribution is effective to reach this population.
- Limitations: This approach may be **costly** to scale as the average cost per male who received ART or VMMC was ~\$100 with the \$3 and \$10 incentive groups compared to ~\$40 for the standard of care group

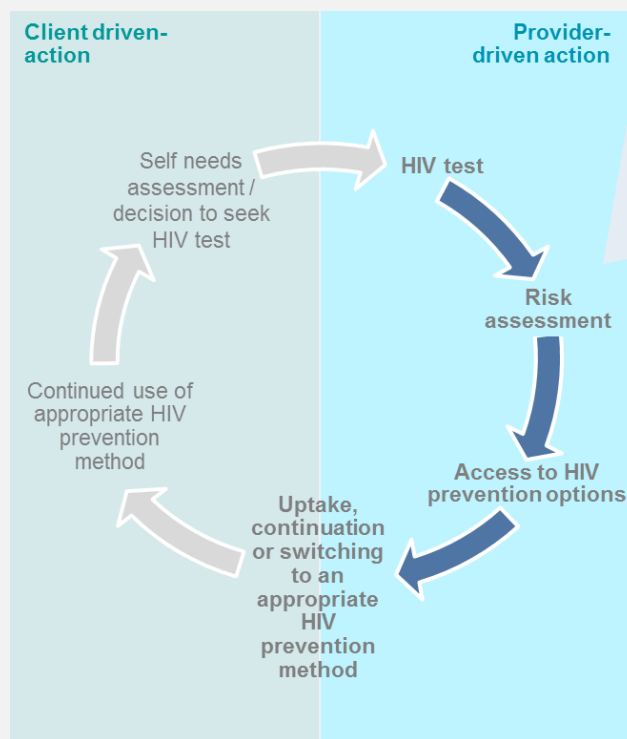
CASE STUDY: QR CODE SYSTEM (DESMOND TUTU HIV FOUNDATION)

- Location: South Africa
- Target population: AGYW and school-aged students
- Testing setting: Community (empowerment sessions for AGYW and in schools)
- Model: AGYW and in-school students learn about prevention options such as contraception or PrEP and may receive HIV testing services as well (depending on setting). The young person's personal information and prevention interests are embedded into a **unique QR code to be scanned by health service providers** to quickly learn about the young person's needs—facilitating access into a difficult-to-navigate health system; often complemented by a peer navigator or escort
- Results/evidence: Intervention still ongoing though early findings suggest **uptake is positive**, despite some IT challenges
- Keys to success: The QR code provides some initial level of information for the provider, which can **increase the ease of access** as well as provide a level of comfort/empowerment to the AGYW in accessing the facility system. It also provides an additional layer of confidentiality for the user, instead of traditional referral letters
- Limitations: The new QR code systems may be difficult to adjust to for some providers, creating implementation and effective use challenges. Additionally, there is a required level of IT/technical structures to support this intervention



INTERPERSONAL ENGAGEMENT INTERVENTIONS

HIV prevention cycle



Interpersonal engagement

Interventions that involve one-on-one interaction – in-person, via phone, or via the internet

- Allow for personalized support to create links from **testing to uptake** of prevention
- Offer different levels of intensity and support, resulting in **varied effectiveness**
- Can be used for first-time and continued prevention users

In-person interventions are recommended for HIV testing and prevention implementers working with hardest-to-link at-risk populations; digital methods of interpersonal engagement should be prioritized for further research as they have potential to scale



Interpersonal engagement interventions

Overview

INTERVENTIONS

- **In-person mobilization or accompaniment:** Individualized support or guidance at point in time, specifically to connect individual to testing, care or prevention services
- **Case management support:** One-on-one continuous guidance, education and follow-up support from a trained individual or peer in-person at a mobile, community, facility or home-based setting
- **Virtual support by peers or counselors:** Digital support, guidance or education from a trained individual or peer via web-based, social media, phone, or SMS platforms
- **Virtual support using artificial intelligence (AI):** Information provision and support through a digital messaging platform (e.g., WhatsApp) that relies on AI to generate prompts and responses

BENEFITS

- Through delivery of individualized support, interpersonal communications attempt to **mitigate health system and cultural stigma barriers** including fear of unknown, distrust, or complexity of navigation
- Most interpersonal communication interventions have a **proven evidence base relating to both uptake and adherence within a treatment setting**, demonstrating their ability to achieve sustainable positive outcomes

LIMITATIONS

- Interpersonal engagement can require a **high level of investment in personnel, training and time** to build trusting relationships with clients
- Despite strong evidence within a treatment setting, there is a need for a **stronger evidence base around effectiveness of interpersonal interventions-within the prevention context** and a need to further test the reach and impact of interventions using mobile phones / technology





ADDITIONAL CONSIDERATIONS

- Though a level of resources is required for additional personnel, interpersonal communications interventions **extend reach of resources** beyond facility by leveraging peers and shifting tasks outside of traditional clinical setting
- Though early, there are promising examples of **leveraging digital technology to create interpersonal/personalized HIV treatment or prevention experiences** that can reach larger populations
- Individuals likely have different preferences for **modes of engagement** (e.g., some prefer in-person engagement while others value the confidentiality provided by on-line websites or WhatsApp communication)



Interpersonal engagement interventions

Existing evidence

Intervention	Testing Settings	Cost	Strength of evidence	Supporting evidence
In-person mobilization or accompaniment	Applicable and utilized in all testing settings 	Low cost for outreach staff; difficult to scale \$\$	✓✓	<ul style="list-style-type: none"> - In LINKAGES Malawi clinic, 98% of FSWs who tested positive initiated ART with peer navigators escorting vs. 38% of FSWs without escorting¹⁷ - One study demonstrated that receiving a follow-up home visit from a person living with HIV was significantly associated with timely linkage to care¹⁸
Case management support	Applicable and utilized in all testing settings 	Despite low cost for outreach staff, training and supervision costs are high and difficult to scale \$\$\$\$	✓✓	<ul style="list-style-type: none"> - Compared with control, clients living with HIV who participated in strengths-based case management services with linkage coordinator (ARTAS) were more likely to visit HIV clinic and be retained in care (64% vs 49%) - A large study of 14 HIV care facilities in US demonstrated that persons who attended a clinic with on-site case management were more likely to be retained in care than individuals attending a clinic without these services¹⁹
Virtual support by peers or counselors	Applicable and utilized in all testing settings 	Training and online platform creation costs can be high \$\$	✓	<ul style="list-style-type: none"> - In Nigerian study on HIV self-testing, participants noted the ability to interact with a helpline counselor was critical in linkage to care²⁰ - LINKAGES India: Online outreach workers compared favorably to in-person outreach – outreach workers converted more visitors (to the website) to testers and resulted in a 5.4% case detection rate vs. 0.3% for in-person outreach in similar geographies²¹; Anecdotal evidence suggests that online one-on-one outreach supported more individuals to follow-up to take a test beyond those who reached the website via advertisements or influencers alone (see case study on slide 34 for more detail)
Virtual support using AI	Currently being piloted with self-testing 	Upfront development cost can be high, though can be easily scaled \$\$	✓	<ul style="list-style-type: none"> - In South African self-testing context, Wits RHI recently launched a WhatsApp service that uses AI to enable two-way conversation with individuals who can message to self-report their testing results and receive guidance on next steps - Early results demonstrate individuals want to use WhatsApp for its convenience, confidentiality, and ability to receive guidance on navigating healthcare system



Interpersonal engagement interventions

Current projects

Intervention	Population	Testing Setting	Project Description
Case management by clinical staff <i>Antiretroviral Treatment Access Study (ARTAS) (United States)</i>	Young men of color	Facility HIV self-testing	<ul style="list-style-type: none"> In the ARTAS program, a linkage coordinator works with individuals who are HIV positive to build rapport, advocate for medical care, and link to additional resources through 5 strengths-based case management sessions within 90 days of the HIV test; this approach has demonstrated improved linkage to care and retention¹⁹
Case management by peer educators <i>LVCT Health (Kenya) OUT (South Africa) LINKAGES/FHI 360 (Malawi)</i>	MSM FSW AGYW	Community clinic Mobile hot spots	<ul style="list-style-type: none"> Peer educators work under supervision of outreach workers and extend reach of clinic by linking peers with information, commodities and referrals for services (LVCT Health) Peer educators provide risk assessment, reduction planning and counseling as well as HIV testing services and distribution of condoms within clinic and mobile testing sites; and are accompanied by nurses who can dispense ART or PrEP (OUT) <i>Reference case study on slide 33 for additional detail on LINKAGES Malawi peer educators</i>
Peer mobilizers <i>STAR/PSI (South Africa) LINKAGES/FHI 360 (Malawi) OUT (South Africa)</i>	AGYW Men	Community clinic HIV self-testing Mobile	<ul style="list-style-type: none"> The STAR program leverages peer role models such as men who have undertaken VMMC or AGYW who have initiated PrEP to generate demand and answer questions among peers The OUT and LINKAGES programs work with peer mobilizers to encourage others in their networks to take an HIV test; mobilizers are given tokens/vouchers to hand to prospects serve as means to track referrals and provide performance incentives to mobilizers
WhatsApp with AI functionality <i>Wits RHI (South Africa)</i>	Key populations	HIV-self testing	<ul style="list-style-type: none"> When individuals in South Africa conduct an HIV self-test they are able to self-report their results via a WhatsApp channel This channel leverages artificial intelligence to conduct a conversation with the individual who is self-reporting to answer questions and help them navigate steps for linkage to care or prevention
Virtual support by online/phone educators <i>PASMO/PSI (Central America) LINKAGES/FHI 360 (India) Adolescent Trials Network for HIV Interventions (Nigeria)</i>	MSM Transgender	HIV self-testing	<ul style="list-style-type: none"> Cybereducators are trained to use social media platforms like Facebook and WhatsApp to generate demand for and refer individuals to HIV testing and services; peer-led Facebook group generates conversation about HIV and connects individuals with HIV self-testing kits (PASMO) Peers interact via video chat with individuals who have an HIV self-test kit throughout the pre, during and post-testing setting to provide guidance, answer questions and provide counseling In a Nigeria study, MSM are recruited by a peer educator to participate in HIV self-testing study and receive 2 HIVST kits. Participants receive phone call from a helpline counselor after 5/30/80 days to provide support and linkage to care—those who tested HIV positive cited helpline counselor as critical in linkage to care²⁰ <i>Reference case study on slide 33 for additional detail on LINKAGES India online educators</i>



Interpersonal engagement interventions

Case studies

CASE STUDY: PEER EDUCATORS, LINKAGES MALAWI

- Location: Malawi
- Target population: Key populations, primarily MSM and FSW, as well as AGYW
- Testing setting: Drop-in center, index case testing, or mobile hot spots
- Model: Peer educators are linked to all individuals who are tested, whether they are HIV positive or negative—each peer counselor has a case load of ~20 individuals. Peer educators develop a “peer plan” (risk education plan) for individuals who test negative, follow-up quarterly to conduct individualized care and counseling, and track referrals to the drop-in center for clinical needs such as STI and HIV screening
- Keys to success: Peer educators supervised by drop-in center clinical staff and have monthly meetings to report linkage progress of case load
- Limitations: There is a cost and limited scalability associated with this program in order to pay and supervise the peer educators but providing support and training for them to be effective is essential



CASE STUDY: ONLINE OUTREACH WORKERS AND COUNSELORS, LINKAGES INDIA²¹

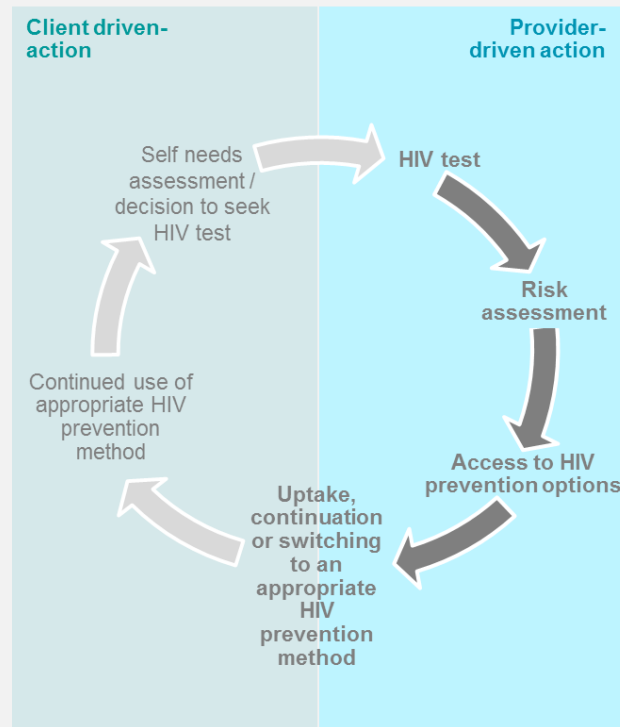
- Location: India
- Target population: Key populations
- Testing setting: Facility and private labs
- Model: Yes4Me.net is a website with information on HIV testing, an HIV risk self-assessment, and an appointment booking system for HIV testing at a private lab assisted by online client support staff. Online counselors call clients to provide post-test counseling and treatment education, linkage to HIV prevention (PrEP referral), STI testing, and testing reminders
- Results/evidence: 13,000 users visited the site during its 6-month pilot: 34% used the online risk assessment, 3.3% booked an appointment online, and 1.4% received HIV testing. All 8 individuals who tested positive were linked to treatment. Compared to online ads or influencers, online outreach workers converted more visitors to testing. The online outreach worker campaign resulted in a 5.4% case detection rate vs. 0.3% for in-person outreach in similar geographies
- Keys to success: The online client support team are trained to use standard, but flexible, messaging tools that help address client concern and communicate the value of various HIV services. The Yes4Me model offers anonymous online support and discounted private lab testing. The team collaborates through WhatsApp to highlight client concerns confidentially and get support from supervisors and other HIV experts
- Limitations: Currently, there is limited focus on prevention. Outreach relies heavily on the online client support team and community based outreach workers, however it could benefit from an expanded creative and social media campaign to generate broader interest in the HIV services offered though Yes4Me



“Doctor Rajesh” is a virtual counselor on the Yes4Me site that can help assess a client’s health needs

ORGANIZATION OF SERVICES

HIV prevention cycle



Organization of testing and prevention services

Interventions in healthcare delivery that bring HIV prevention services closer to HIV testing services

- Creates strong **links between testing and uptake** of prevention
- Integrates providers at a **systems level** to shift the burden of linkage from the end user to the provider, making it **easier for the individual** to follow-up
- Can be used for first-time and continued prevention users

While fully integrated HIV testing and prevention programs are ideal, coordination between existing testing and prevention programs can be an immediate first step



Organization of services

Overview

INTERVENTIONS

- **Fast-track options:** The ability of testing providers to immediately link individuals to PrEP, VMMC, or ART (same-day initiation) or enable individuals to fill a PrEP prescription at a pharmacy with limited waiting or interaction
- **Coordination of prevention and testing providers:** Co-location and coordination of testing and prevention services to reduce client burden and strengthen linkage
- **Integration of HIV services into community testing sites:** The decentralization of HIV prevention services to be integrated in community facilities where HIV testing is offered

BENEFITS

- Provides a consistent venue for an individual to access both testing and prevention, **reducing or eliminating referral process complications**
- Within facility-based setting, integrated model can lead to **higher uptake** of prevention or care methods
- An integrated non-facility setting provides **ability to meet highly mobile or stigmatized populations where they are**—with both testing and prevention services
- **Demand for prevention methods** (VMMC, PrEP) may drive individuals to undergo HIV testing in order to access prevention at integrated sites

LIMITATIONS

- Due to factors such as mistrust in healthcare workers and varying levels of readiness, uptake of prevention within a **mobile setting has been challenging**
- Despite promising rates of uptake within integrated settings, **continued use is a challenge**
- With increased decentralization of testing and prevention to communities, **tracking individuals to ensure follow-up becomes difficult**
- Full integration of prevention and testing services will be both **time and resource-intensive**; coordinating services is a first step







ADDITIONAL CONSIDERATIONS

- Each model option **requires a different level of resources**—coordination between testing and prevention providers likely requires fewer resources while other interventions such as same-day initiation and full integration of HIV services into community testing sites are **more systemic**, requiring more resources, trained staff, coordination and time



Organization of services

Existing evidence

Intervention	Testing Settings	Cost	Strength of evidence	Supporting evidence
Fast-track options (<i>same-day initiation, fast-track ARV or PrEP pick up</i>)	Fast-track options have been introduced across mobile, community and facility-based settings 	Requires an investment in additional staff with training to dispense PrEP or amended processes within clinics to enable fast-track drug pick up \$\$		<ul style="list-style-type: none"> One program in Malawi showed 97% retention and 2% loss to follow up for those in fast-track ARV pick up program; while it decreased waiting time and increased patient satisfaction in Uganda²² An RCT in Mozambique showed 91% of individuals receiving same day point of care CD4 count and option of ART initiation were linked to care within 1 week vs. 46% of individuals receiving standard referral²³ Within the South Africa Teen Truck model, AGYW eligible for PrEP can initiate that day or delay—31% initiate same day; uptake of PrEP is positively correlated with personal agency and health-seeking behaviors OUT integrated its mobile testing units to allow for same-day ART initiation. Initiation was lower at mobile settings than clinical settings due to a combination of client shock at HIV test results, lack of client readiness to start ART, and client distrust of the test results
Integration of HIV and testing services	Facility and community settings such as mobile site, drop-in clinic, or hot spot 	Cost can be high, with additional staff, training, and commodities needed \$\$\$\$		<ul style="list-style-type: none"> After ART integration in Haiti clinics, ART initiation rate increased from 18% to 70% for MSM and from 17% to 45% for FSW²⁴ At OUT's TEN81 MSM-clinic in South Africa, PrEP uptake for those who proactively visit clinic is nearly 100% for those eligible for PrEP
Coordination of service providers	Primarily within mobile and community-based settings 	Coordination can be low cost but time intensive in aligning roles and responsibilities for linkage \$		<ul style="list-style-type: none"> In Zambia, ARV eligible women diagnosed at co-located antenatal and HIV clinics were significantly more likely to start ART therapy within 60 days of diagnosis than women in standard clinics²⁵ Jhpiego (in the STAR project) has started to coordinate VMMC providers and community testing providers and anecdotally noted that co-location of services and geographic proximity of services has led to better linkage and uptake



Organization of services

Current projects

Intervention	Population	Testing Setting	Model Description
Integrated community-based prevention <i>OUT (South Africa)</i> <i>LVCT Health (Kenya)</i> <i>Teen Trucks + Safe Homes, Desmond Tutu (South Africa)</i> <i>LINKAGES/FHI 360 (Thailand, Kenya, Barbados)</i> <i>Jilinde/Jhpiego (Kenya)</i>	Key populations: MSM AGYW Men	Community clinic + mobile sites	<ul style="list-style-type: none"> • Reference case study on slide 38 for detail on OUT's center and mobile sites and Teen Truck models • LVCT Health recently integrated 80% of its prevention services with HIV testing due to challenges with referrals. For clients who receive a negative test, a risk assessment tool is used to determine risk, followed by risk education plan. If high risk, client is offered services in same session (STI screening or PrEP), and required to return within one month • The Safe Homes program in South Africa run by the Desmond Tutu Foundation and LGBTQ organizations offers prevention methods such as lube, condoms, and HIV self tests (oral PrEP is not offered on-site) to MSM via an MSM-run community program • LINKAGES is building the capacity of KP advocacy organizations to deliver HIV services in drop-in centers and KP-led clinics run by peer educators and offering services related to health education, legal aid, counseling, housing support integrated with STI screening, family planning, and HIV services. These models provide access to HIV testing and treatment to previously unreached populations, as demonstrated by high HIV yield, initiation of ART, retention and PrEP uptake • Uptake of PrEP has been high at Jhpiego drop-in centers in Kenya, where KPs receive routine HIV screening; PrEP integration in the drop-in centers has led to increased uptake of PrEP
In-school testing <i>Desmond Tutu (South Africa)</i>	Children and young adults	Non-facility (School)	<ul style="list-style-type: none"> • In ongoing study, 50 secondary schools had option of integrating health screening or counseling services into school through three different models: a) Pregnancy, STI and HIV screening and deliver related prevention services (not PrEP); b) Pregnancy and STI testing and services but no HIV testing; and c) Counseling but no screening services. The majority of schools selected the second option: Pregnancy and STI testing and services but no HIV testing; though over time there has been increased interest in providing HIV screening as well, with decreasing interest in providing counselor only without screening services
Coordination of VMMC and testing providers <i>Jhpiego (Mozambique, Tanzania)</i>	Men	Community	<ul style="list-style-type: none"> • To support improved coordination, the Jhpiego program in Mozambique organized internships at the VMMC clinic for all HIV testing counselors to ensure testing counselors could knowledgeably discuss VMMC as an option with clients. Anecdotally, the study found that people are more likely to convert if referring counselors are knowledgeable about about the program • In Tanzania, a mobile VMMC unit follows behind the mobile testing unit to offer VMMC to men who test negative. This project is ongoing and will launch in 2019 • Through community mobilization campaign, PSI worked with local clinics to set up local health fairs providing health services including HIV self-testing and immediate linkage to VMMC



Organization of services

Case studies



CASE STUDY: DESMOND TUTU FOUNDATION'S TEEN TRUCKS

- Location: South Africa
- Target population: AGYW (16-25 years old)
- Testing setting: Mobile
- Model: Teen Trucks drive to remote areas and offer sexual and reproductive health services to young adults—including HIV testing and PrEP initiation. Those who test negative and are eligible have option of initiating PrEP same day on-site, or picking up later at truck, adherence club or clinic
- Results/evidence: Though the model is still being tested, early results show that of the 1,100 AGYW eligible for and offered PrEP, 31% initiated same day, and 33% of those continued use beyond the first month. The majority (65%) noted that they might take PrEP in the future. Those who declined cited unlikelihood of getting HIV, uncertainty of PrEP effectiveness, low risk perception and belief that people should not take drugs unless sick. Additional cost data will be released in late 2019
- Keys to success: The Teen Trucks are able to reach people who have not been tested by shifting services outside of clinical settings
- Limitations: Uptake rates for oral PrEP at mobile sites are lower than uptake rates in clinical settings

CASE STUDY: OUT'S TEN81 CENTRE AND MOBILE SITES

- Location: South Africa
- Target population: MSM
- Testing setting: Facility and mobile
- Model: In a clinic setting and via mobile outreach, OUT provides a combination of sexual and reproductive health services including HIV screening, risk assessment, risk reduction planning and counseling, and same-day initiation for ART and PrEP. Services are delivered by a team of 10 peer educators trained in testing and 2 nurses trained to dispense ART and PrEP, who are sent to hot spots to extend access beyond clinic and collect contact details for follow-up
- Results/evidence: Within the TEN81 clinic setting, PrEP uptake for those who proactively visit the clinic is nearly 100% and adherence is 60-70%; Within the TEN81 mobile setting, uptake and adherence are significantly lower
- Keys to success: Partnership with government allowed OUT to offer its medications and lab tests for free, which resulted in 100% growth in uptake for first 6 months, while adding credibility and trustworthiness
- Limitations: Adherence is a challenge, especially for those who test at mobile sites due to high level of commitment needed for PrEP along with fear of HIV stigma





Interviews and sources

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2. Tanya Shewchuk, Bill and Melinda Gates Foundation
3. Anna Grimsrud, International AIDS Society
4. Rachel Baggaley, Michelle Rodolph, and Shona Dalal, WHO
5. Sarah Jenkins, CHAI
6. Linda-Gail Bekker, Desmond Tutu Foundation
7. Jason Reed, Kelly Curran and Kristina Grabbe, Jhpiego
8. Chis Akolo and Ben Eveslage, LINKAGES
9. Elizabeth Mpunga, LINKAGES Malawi
10. Njambi Njuguna, LINKAGES Kenya
11. Patricia Jeckonia, LVCT Health
12. Johan Meyer, OUT
13. Nina Hasen and Karin Hatzold, PSI
14. Definate Nhamo, PZAT
15. Mohammed Majam, Wits RHI

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4. HIV Self-testing Research and Policy Hub
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** Any information without a citation was sourced from an expert interview



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