Stopping HIV in its tracks

Differentiating partner notification services to disrupt the spread of HIV and accelerate epidemic control

PATH

Index testing and partner notification services (PNS) are systematic and voluntary approaches to notifying sexual and injecting partners and children of people diagnosed with HIV (index clients) about their increased risk of HIV infection; offering them HIV testing; and immediately linking them to HIV prevention services, if negative, or HIV treatment, if positive.

While PNS has been a key strategy of sexually transmitted infection control programs dating back to the early 1900s,[1] PNS for HIV was not widely used in lower- and middle-income countries until evidence emerged that index testing and PNS cost-effective and efficient strategies to reach those at high risk of HIV infection, leading to the release of the 2016 World Health Organization (WHO) HIV testing supplemental guidelines on PNS and HIV self-testing (HIVST).[2] Several studies have shown that partner notification can increase uptake of HIV testing services, identify sexual or injecting partners with undiagnosed infection, and enable increased treatment uptake. More recently, studies are exploring the benefits of connecting HIV-negative partners of HIV-positive index clients to pre-exposure prophylaxis (PrEP) or other high-impact HIV prevention technologies.

With support from the US President's Emergency Plan for AIDS Relief (PEPFAR), PATH was an early adopter of index testing and PNS, first introducing our approach under US Agency for International Development (USAID)–funded projects in Kenya and the Democratic Republic of the Congo (DRC) in 2015, and expanding this approach across other countries in sub-Saharan Africa and Asia.

This brief presents four vignettes showcasing how PATH has customized index testing and PNS to fit a variety of contexts and population groups, from a generalized HIV epidemic in Kenya, with a particular focus on reaching men; to an epidemic concentrated among miners, fishing communities, and long-distance truck drivers in the DRC; to micro-epidemics among networks of key populations (KPs) in Vietnam; and finally, within both penal and community settings in Ukraine.

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Our layered approach to differentiated partner notification

Partner notification can be passive (entirely patient driven, where the index client notifies their partner(s) of their HIV status themselves), assisted (varying degrees of support provided by a trained counselor), or offered during couples HIV testing services. The three types of assisted partner notification recommended by WHO are:

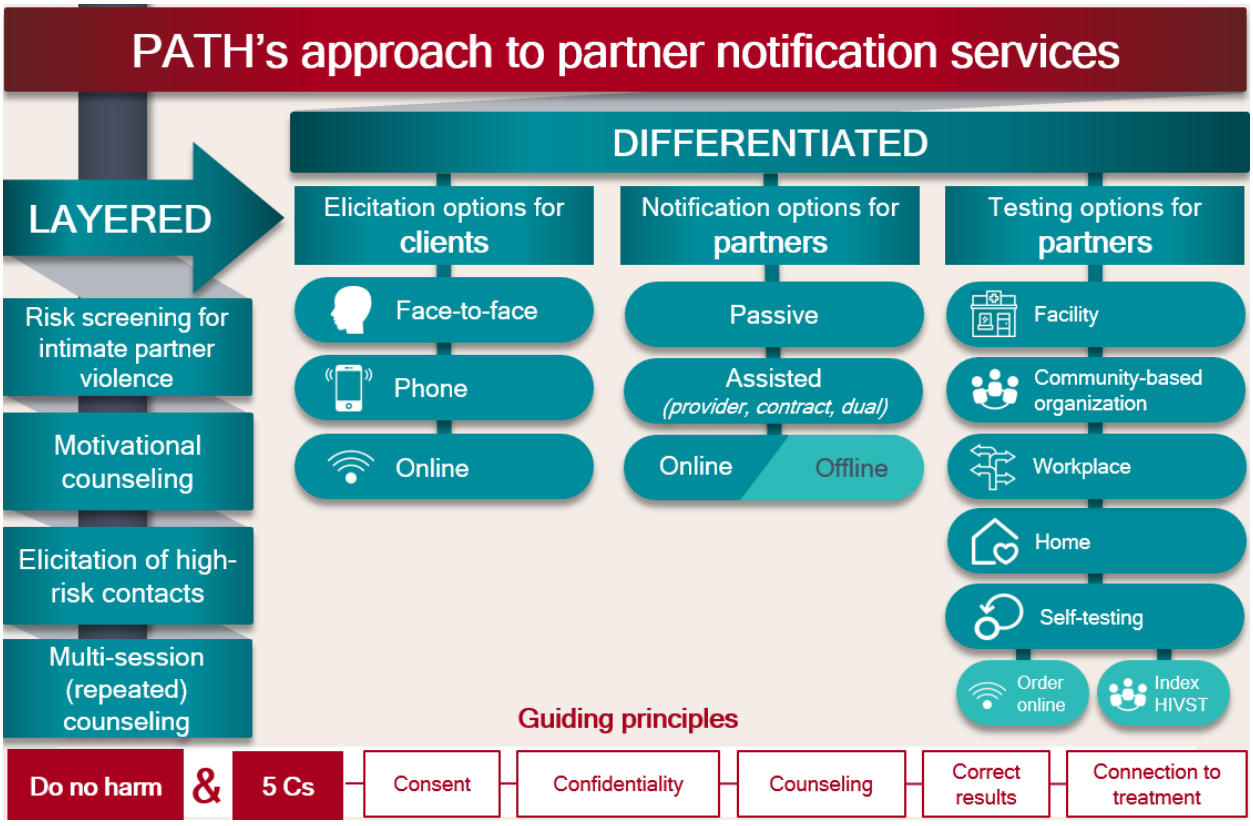
- Provider referral: A trained provider/counselor, with consent from the index client, confidentially contacts the partner(s) directly to offer HIV testing services.
- Dual referral: The index client leads the disclosure process, with a provider/counselor present to support the index client to disclose their status and offer options for HIV testing.
- Contract referral: The index client and provider agree on a timeline for partner notification; if the index client does not notify their partner(s) within the agreed time frame, the provider contacts the partner(s) directly, maintaining confidentiality of the index client.[3]

PATH has applied a layered approach for successful index client counseling and sexual and/or injecting partner access to HIV testing services. This approach comprises four elements:

1. Offering risk screening for intimate partner violence (IPV).
2. Emphasizing motivational counseling.
3. Eliciting high-risk contact(s) from index clients during high-risk periods.
4. Conducting multi-session counseling (face-to-face, phone, or online communication, based on client preference) to elicit a full list of contacts and both off- and online partner-tracing based on what is most efficient and acceptable to the index client and their partner(s).

Both offline (by telephone or face-to-face) and online methods are used to trace and notify partners of index clients, based on what is most efficient and acceptable to the client and their partners. To increase choice and therefore uptake of HIV testing, notified partners are invited to test based on preferred mode: HIV testing at a facility or community testing outlet; lay provider or assisted HIVST at a community-based organization (CBO); partner-distributed HIVST (index HIVST); or, in one country, HIVST kit delivery by online mail order.

While PATH has tailored the approach to suit a variety of contexts, all approaches preserve the key principles of partner notification,[3] which include ensuring PNS meets WHO's "5 Cs"[4] and taking a "do no harm" approach to minimize IPV.



Intensifying partner notification services to reach men in western Kenya

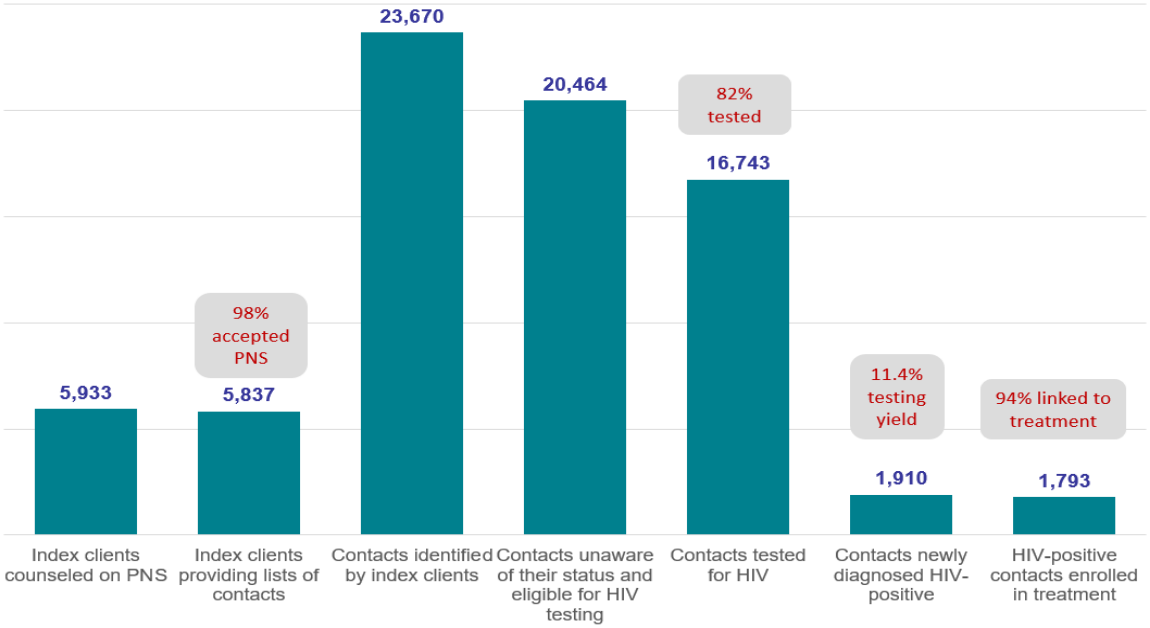
In Kenya, while an estimated 79% of people living with HIV (PLHIV) are aware of their status, recent data indicate that only 50% of HIV-positive males aged 15 to 24 years are aware of their status.[5] Thus, accelerating HIV case-finding, particularly among young men, is critical to achieving and maintaining HIV epidemic control. The USAID-funded Afya Ziwani project supports the delivery of high-quality HIV prevention, testing, and treatment services at 247 health facilities across five counties of western Kenya.

Afya Ziwani introduced index testing in 2015, directing outreach to biological children and spouses of HIV-positive pregnant women. In 2017, facility-based providers expanded counseling on PNS to all newly identified and virally unsuppressed PLHIV (with a focus on PLHIV with suspected treatment failure), and offered information on available notification methods, including the three options for assisted PNS. With consent from the index client, partners are contacted by a trained HIV testing counselor and offered HIV testing services, with the option to self-test. To expand reach of HIV testing to partners, particularly male partners, Afya Ziwani integrated secondary distribution of HIVST kits for partners of individuals who opt for HIVST (if there is no risk of IPV), and introduced mobile testing services near workplaces and community areas where male partners noted a preference for receiving HIV testing services.

In late 2018, PATH optimized the contact elicitation process by introducing a multilevel elicitation approach: an individual is counseled on PNS and given the option to provide names of sexual partners and biological children at the HIV testing entry point and then again at the Comprehensive Care Center, during initiation of antiretroviral therapy (ART). This approach was scaled to all project-supported facilities in 2019 by training facility-based providers (including adherence support counselors, laboratory officers, and clinicians at all HIV testing points) and community-based HIV testing volunteers to offer PNS counseling and contact elicitation at every touchpoint with a client.

Over a six-month period, Afya Ziwani elicited contacts from 98% of 5,933 index clients counseled on PNS; more than 23,600 partners and biological children were identified by index clients (Figure 1). In all, 82% of the 20,464 contacts eligible for HIV testing were tested; 11.4% of those tested were diagnosed HIV-positive, and 94% of newly diagnosed PLHIV were successfully enrolled on ART. Index testing contributed to more than 46% of new PLHIV identified by Afya Ziwani during this period, with a significantly higher testing yield compared to the overall testing yield for the project (11.4% compared to 1.2%). Assisted PNS through a provider referral is the most commonly used approach by Afya Ziwani, since it tends to be faster and leads to better notification and testing outcomes; dual referral is the least preferred option.

Figure 1. Afya Ziwani index testing cascade, October 2018–March 2019.



Optimizing facility and community partner notification services in the Democratic Republic of the Congo

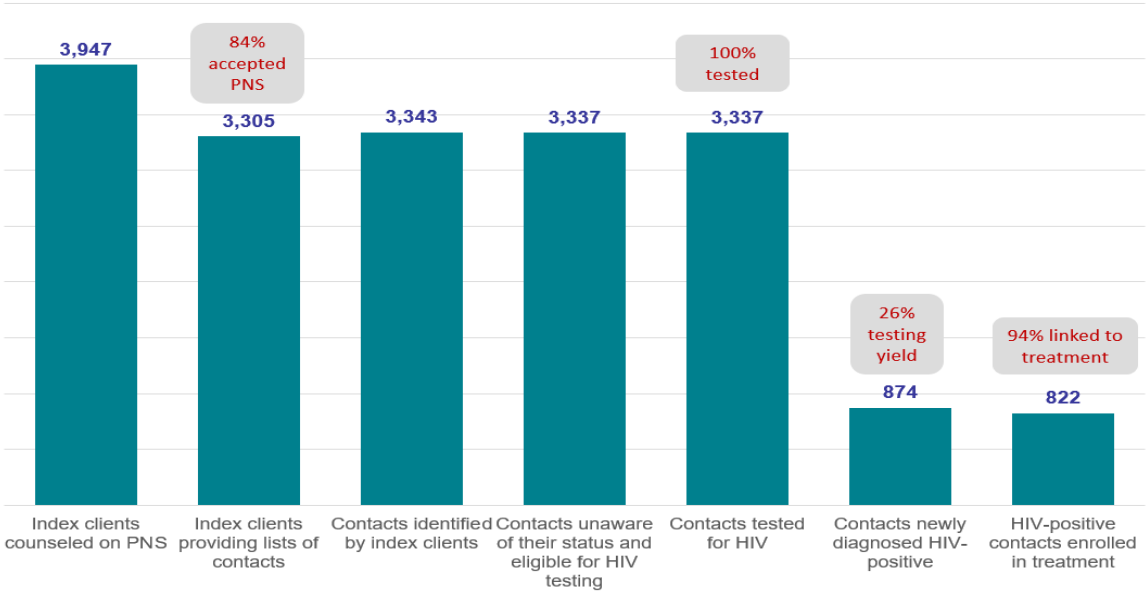
The HIV epidemic in the DRC is low level and generalized, with higher transmission observed within specific population groups, particularly miners, long-distance truck drivers, and sex workers. Only 40% of PLHIV have been diagnosed, making HIV case-finding a key priority for achieving epidemic control. PATH leads the USAID-funded Integrated HIV/AIDS Project in Haut Katanga and Lualaba (IHAP-HK/L), supporting the provision of comprehensive HIV services across 18 health zones along the copper transportation corridor in the southeastern corner of the country.

IHAP-HK/L introduced index testing at 159 health facilities in 2017, initially using a passive notification strategy by counseling HIV-positive pregnant women to invite their partners and children to the facility for HIV testing services. In 2018, to expand outreach to sexual partners, the project shifted from a passive to an active partner notification approach, eliciting contacts from all PLHIV on ART and offering passive or assisted PNS, with either a trained facility-based provider or peer educator notifying partners directly or supporting index clients to disclose their HIV status. Notified partners are provided with a menu of options for HIV testing services, including testing at a project-supported facility, a community ART distribution point (PoDi+ site), or at home.

PATH also integrated PNS into IHAP-HK/L's differentiated care models (DCMs), training peer educators who run PoDi+ sites and facilitate ART support group meetings on contact elicitation, IPV screening, and supporting PLHIV through the disclosure process. While PNS was highly acceptable DCMs, the index testing yield from contacts of index clients receiving differentiated care services was much lower, as the majority of these PLHIV were virally suppressed. In 2019, to further target index testing and improve yield, IHAP-HK/L prioritized PNS for sexual partners of newly diagnosed and virally unsuppressed PLHIV, and in health zones with greater concentrations of at-risk groups of miners, long-distance truck drivers, and sex workers.

From October 2018 through March 2019, 84% of the 3,947 index clients counseled by providers at IHAP-HK/L–supported health facilities and community-based treatment sites accepted PNS (Figure 2). Contact information was elicited for 3,343 sexual partners and biological children, of whom 3,337 were not aware of their HIV status and eligible for HIV testing services. In all, 26% of those tested for HIV were diagnosed HIV-positive, more than five times higher than the testing yield observed across all HIV testing points supported by the project (5%). A total of 94% of those who were identified HIV-positive were linked to treatment services. Passive (client led) and assisted PNS (through provider and contract referrals) were the preferred notification approaches.

Figure 2. IHAP-HK/L index testing cascade, October 2018–March 2019.



Scaling online and community-driven partner notification services in Vietnam

The HIV epidemic in Vietnam is concentrated among KPs, including men who have sex with men (MSM), transgender women, people who inject drugs, female sex workers, and their sexual partners. Stigma and discrimination pose a significant barrier to increasing uptake of HIV testing, particularly in public health facilities; only about 30% of KPs are tested for HIV annually.[6] To address this barrier and tailor HIV service delivery based on KP preferences, including optimizing confidentiality, convenience, and comfort—three factors of HIV testing services that matter most to KPs—the PEPFAR/USAID-funded Healthy Markets project offers HIV services, including index testing and PNS, primarily through KP-led CBOs.

Healthy Markets introduced index testing in June 2017, integrating PNS into the project's KP-led community testing efforts by training lay providers from CBOs to counsel newly diagnosed PLHIV on PNS for sexual/injecting partners. Index clients that opt into PNS are offered two choices: passive, or assisted via a provider referral. Focus was placed on reinforcing CBO staff's use of motivational interviewing, specifically applying this technique to help index clients recall high-risk periods or "seasons of risk."

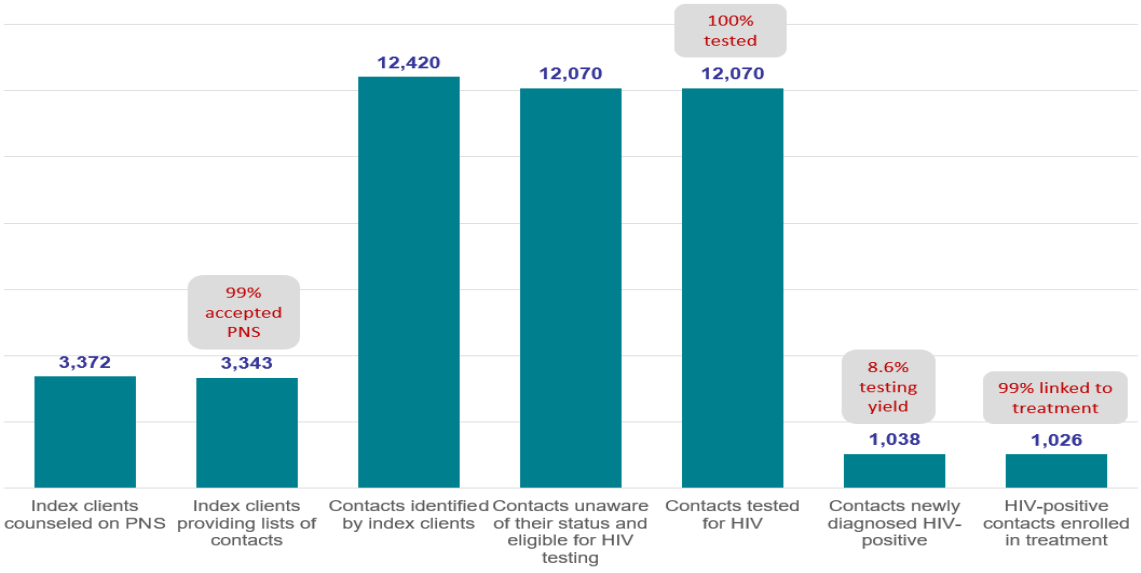
If an index client agrees to PNS and voluntarily opts into the program, partners are then notified (either in person or online), invited to test, and provided choices for HIV testing, including:

- Arranging to be tested at a KP-led CBO.
- Scheduling an HIVST kit pick-up at a KP-led CBO.
- Opting to have an HIVST kit delivered to a location of their choice.
- Receiving a referral to a health facility.

Providers then follow up with the partner online or in person on the outcome of their test, link them to HIV prevention or treatment services, and offer index testing to those who tested HIV-positive. Healthy Markets will add partner-distributed HIVST to the HIV testing option mix later in 2019. From June 2017 through May 2019, Healthy Markets tested all eligible partners elicited from index clients who were unaware of their HIV status, yielding a seropositivity of 8.6% (Figure 3), almost double the seropositivity observed from lay provider and self-testing efforts combined (4.1%). Of the 1,038 newly diagnosed PLHIV, 99% were successfully linked to HIV treatment services.

The project also actively links HIV-negative partners of index clients to PrEP and other HIV prevention services. Assisted PNS through lay providers linked to KP-led CBOs is the preferred notification option, particularly among MSM index clients. Our experience from Vietnam highlights that KP-led CBOs are best placed to reach KPs, particularly never-HIV testers and young KPs who are most reluctant to seek health care in the public sector. Local health authorities of major cities in Vietnam have formally acknowledged KP-led CBOs as critical partners in HIV case detection, and the Ministry of Health established guidelines for community PNS in 2018, in recognition of the vital role of KP-led CBOs in PNS.

Figure 3. Healthy Markets index testing cascade, June 2017–May 2019.



Adapting partner notification for penal and community settings in Ukraine

Ukraine has the second largest HIV epidemic in Eastern Europe, concentrated among KPs—primarily people who inject drugs, MSM, and female sex workers. The average HIV prevalence in the Ukrainian penal system is 7.6%. The PATH-led, USAID-funded Serving Life project aims to increase HIV diagnosis and strengthen linkage to integrated HIV, tuberculosis, and viral hepatitis treatment services for detainees, prisoners, and individuals on probation across Kyiv and 11 oblasts.

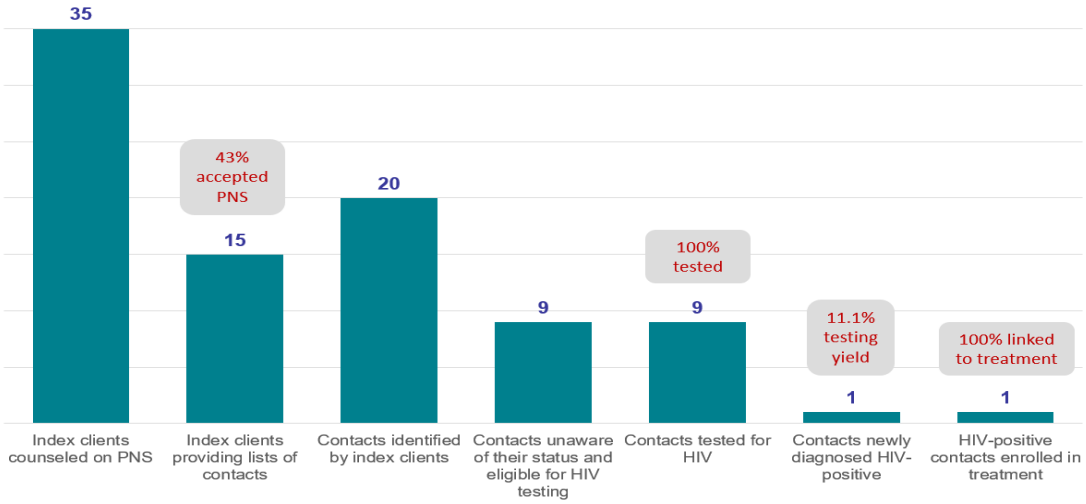
A woman at Mykolaiv City Probation Services being counseled on PNS. Photo: NGO Penitentiary Initiative/Olena Churpyna.

To accelerate HIV diagnosis, Serving Life is piloting index testing services within penal settings and facilitating PNS among sex and injecting partners in both penal and community settings. Serving Life is implementing the model in four types of penal settings in Mykolaivska Oblast: pre-trial detention center; prison colony; correction center (which does not have a health care unit); and probation center. All known HIV-positive or newly diagnosed detainees, prisoners, and those on probation are counseled and offered PNS by a medical worker (in the prison colony and pre-trial detention center settings) or a social worker (in the probation and correction center settings). Given the setting, Serving Life takes extra care in training and monitoring PNS counselors to ensure the 5 Cs are always observed.

If PNS is accepted, a medical or social provider counsels the index client to list sexual or injecting partners (and biological children for female index clients) in the civil sector. Index clients are provided with four options for PNS: passive client referral; assisted provider referral; assisted contract referral; and assisted dual referral. Based on the index client's preferred notification approach, partners are then notified in a probation center's counseling room and offered HIV testing either in the counseling room or at another health facility (e.g., AIDS Center or Trust Cabinets).

Of the 35 index clients counseled on PNS in February and March 2019, sexual and injecting partner contacts were elicited from 43% of those who accepted PNS, and nine were unaware of their status and eligible for HIV testing services (Figure 4). One contact was diagnosed with HIV and initiated on treatment. Index testing yield was 11.1%, higher than the project's yield across all HIV testing approaches during this period (3.7%).[a] Passive and assisted PNS through a provider referral were the preferred notification approaches. In all, 55% of contacts elicited from index clients were sexual partners; the remainder were injecting partners.

Figure 4. Serving Life index testing cascade, February–March 2019.



a. The data presented from the Serving Life project are from an initial pilot study of index testing and PNS; additional data will be available in late 2019 to characterize the effectiveness of this approach.

Conclusion

Results from Kenya, the DRC, Vietnam, and Ukraine showcase the effectiveness of index testing and PNS in accelerating HIV case identification and improving testing efficiency across multiple and varied epidemic contexts.

The HIV positivity yield from index testing across the four projects ranged from 9% to 26% and was significantly higher than the yield across all other testing modalities (which ranged from 1% to 6%) within all four contexts. The higher yields observed from index testing were due to PATH's focus on supporting facilities and CBOs to observe the 5 Cs, and eliciting contacts through motivational counseling and based on periods of risk, working with index clients to elicit highest-risk partners, and prioritizing PNS for contacts of virally unsuppressed index clients. The Healthy Markets project in Vietnam is further maximizing risk-based index testing by introducing enhanced PNS to index clients with indicative acute or recent HIV infection (see Feature).

Use of recurring and multilayered contact elicitation contributed to high contact elicitation rates in Kenya and Vietnam, at 4.06 and 3.7, respectively. In Kenya, high elicitation rates were due to ongoing counseling on PNS and offering of contact elicitation at each index client touchpoint. In Vietnam, the use of motivational counseling coupled with ongoing counseling for index clients on the benefits of partners knowing their status led to high elicitation rates. Lower elicitation rates observed in Ukraine are understandable due to the nature of penal settings, and were also impacted by the loss of social relationships with partners in the civil sector among prisoners, particularly those incarcerated for long periods of time. In the DRC, lower elicitation rates were due to stigma, particularly in rural health zones, and fear of abandonment by spouses or longer-term sexual partners.

"Some clients get shocked with their reactive test result. [In terms of PNS], I could not do anything at that time, and had to wait until they became calm to talk about their partners. […] But, after a while, clients would call back to ask for support. I think success in reaching partners may not come right away from the first time."

A lay provider in Ho Chi Minh City

Feature: Disrupting chains of transmission in Vietnam

In early 2019, Healthy Markets adopted an enhanced PNS (e-PNS) approach, whereby risk factors, influenza-like symptoms, and a fourth-generation rapid HIV diagnostic test were combined to optimize identification of those with acute or early HIV infection.

Healthy Markets initiated e-PNS in Ho Chi Minh City, and then expanded to two additional areas of Vietnam. Contacts for 231 partners were elicited from e-PNS clients (5.9 elicitation rate), among whom 38 tested HIV-positive, **double the standard index testing yield** (16.4% compared to 8.6%). Influenza-like symptoms are associated with 50% to 80% of those with acute HIV infection; among the Vietnam clients, 87% reported one, 57% two, and 48% three influenza-like symptoms. All HIV-negative partners were offered a referral for PrEP or access to other HIV prevention services. Individuals within the 72-hour exposure period were supported to seek post-exposure prophylaxis and follow-up services.

Earlier detection of HIV infection in combination with multi-wave index testing for partners of clients with acute or early HIV infection, combined with immediate linkage to ART or PrEP, is a promising approach that could stem HIV micro-epidemics by getting ahead of and preventing onward HIV transmission in a more targeted and efficient way.

PATH has successfully leveraged our layered and differentiated partner notification approach to address implementation barriers in different settings and populations. Competing priorities (driven by time and distance to travel for testing); fear of stigma, discrimination, IPV, and/or potential abandonment by partners; and casual and multiple concurrent partners were common barriers to PNS across all four countries. Expansion of peer-led notification and testing services; use of digital tools, such as online outreach through social media; and provision of multiple options for HIV testing services enabled us to overcome these barriers and lay the foundation for the continued scale-up of index testing as we move toward achieving and sustaining HIV epidemic control.

An HIV-positive couple who, due to partner notification and prevention of mother-to-child transmission services supported by PATH in the DRC, gave birth to an HIV-negative daughter. Photo: PATH/Felix Masi.

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