

Advancing innovation to end the AIDS epidemic

With country partners, PATH strengthens tools, strategies, and health systems

Since the beginning of the pandemic, PATH has worked in more than 35 countries to reduce the global impact of HIV/AIDS. We collaborate with governments, the private sector, and communities to develop, introduce, and scale technology and service delivery innovations along the HIV prevention-to-treatment cascade to accelerate epidemic control. This includes expanding access to and use of lifesaving prevention tools, simpler and more affordable diagnostics, new treatment formulations, and innovations in service delivery approaches for HIV and co-infections or comorbidities such as tuberculosis (TB), viral hepatitis, and noncommunicable diseases (NCDs). Our particular focus is on the unique needs of people and health systems in low-resource settings and on marginalized populations, including adolescent girls and young women, sex workers, men who have sex with men, transgender women, and people who inject drugs.

PATH's diverse HIV programming draws on our 40 years of experience in product development and introduction, behavior change, community mobilization, and advocacy. Our projects span several of PATH's **innovation platforms**, drawing on the combined expertise and resources of our staff worldwide. Efforts include developing and recommending new **diagnostics**, advancing new **drug** delivery systems and formulations, and introducing and scaling integrated **system and service delivery** innovations to improve access to care. Together with our partners, we are helping countries worldwide deploy affordable, lifesaving, and sustainable approaches to combat HIV—increasing our impact and accelerating progress toward global 90-90-90 goals.



ACCESSIBLE AND AFFORDABLE DIAGNOSTICS

PATH's work in diagnostics focuses on filling gaps in four critical areas: self-testing, early infant diagnosis and treatment, viral load detection, and drug resistance monitoring. PATH focuses on understanding the barriers that restrict access to high-quality diagnostics and advancing new products to overcome these. We evaluate new and emerging HIV diagnostics as they enter markets, work closely with national HIV programs to determine where new diagnostics will have the most beneficial impact, and identify and overcome challenges to sustainability.



DRUG FORMULATIONS AND DELIVERY SYSTEMS FOR PREVENTION AND TREATMENT

PATH advances low-cost, culturally appropriate methods to deliver microbicides and antiretroviral (ARV) drugs for prevention and treatment. With partners, we have advanced options for pericoital (on-demand) prevention, including:

- Developing and testing self-administered, fast-dissolving microbicide vaginal inserts for infection prevention.
- Advancing use of the PATH-designed SILCS diaphragm to both deliver microbicide gel and prevent pregnancy. Used this way, the product is a low-cost, reusable, and multipurpose prevention technology.
- Validating use of the SILCS diaphragm for controlled release of ARVs.
- Identifying, refining, and validating a user-filled paper applicator as a low-cost, environmentally sound option for microbicide gel delivery and an alternative to the prefilled plastic applicators used in clinical trials.



Clockwise from upper left: Assay preparation; paper applicator for microbicide gel; microarray patch; fast-dissolving microbicide inserts; fast-dissolving tablets for pediatric antiretroviral treatment. Photos: PATH and Queen's University Belfast

PATH is also investigating and advancing devices to provide long-term ARV delivery for HIV pre-exposure prophylaxis (PrEP) and HIV treatment. These include applicator devices to subcutaneously insert biodegradable implants and transdermal and vaginal microarray patches. We are also using our fast-dissolving tablet technology to create a pediatric-friendly dosage form of ARV, potentially improving first-line pediatric treatment worldwide.

PATH is also focused on ways to expand the global toolbox of HIV prevention interventions to provide safe, effective choices that fit different life circumstances and individual preferences. PATH, in collaboration with Janssen, the US National Institutes of Health, and the HIV Prevention Trials Network, recently completed a clinical study to test the

safety and acceptability of long-acting, injectable rilpivirine as a form of PrEP against HIV, with the study report anticipated by December 2017.



INTEGRATED DELIVERY MODELS AND SERVICE INNOVATIONS

Through the AIDS, Population and Health Integrated Assistance Zone 1 (APHIAplus Western) project in Kenya, funded by the United States Agency for International Development (USAID), PATH is supporting local partners and strengthening existing health structures across Western and Nyanza provinces. The PATH-led consortium integrates services for HIV/AIDS, reproductive health, maternal and child health, NCDs, TB, and malaria to make high-quality care more accessible to marginalized populations. In addition, community health workers are trained to sensitize communities on healthy behaviors, support stigma reduction, and establish support systems and safety nets for people with HIV and their families. From 2011 through 2016, APHIAplus Western provided HIV testing services to more than 5.3 million individuals. More than 102,000 HIV-positive individuals were enrolled in treatment, with more than 80 percent achieving viral suppression. In 2016, with funding from the US President's Emergency Plan for AIDS Relief (PEPFAR) DREAMS initiative, more than 31,000 adolescent girls and women benefited from interventions to reduce their vulnerability to HIV, including creation of over 160 safe spaces, strengthened linkages to socioeconomic interventions, and improved access to youth-friendly family planning, HIV, and gender-based violence services.

PATH has led USAID's HIV/AIDS service delivery in the Democratic Republic of the Congo since 2009, through the ProVIC project and its follow-on, the Integrated HIV/AIDS Project in Haut-Katanga and Lualaba (IHAP-HK/L). From 2009 to 2017, the project tested more than 1 million individuals across eight provinces, identified over 43,000 HIV-positive adults and children, and supported a treatment cohort of more than 21,000 individuals by March 2017. In October 2016, ProVIC introduced three differentiated care and treatment models—ARV adherence groups, fast-track treatment pickup circuits at facilities, and community-based points of ARV distribution—to improve patient adherence and retention in HIV care and treatment services. The IHAP-HK/L project is scaling up use of these models as part of its efforts to strengthen the capacity of 16 health zones and 153 facilities to deliver high-quality HIV/AIDS services in Haut-Katanga and Lualaba provinces.



An individual browsing Rainbow Village, a Facebook community supported by Healthy Markets where young men can access dynamic content on sexual health, safe sex, and HIV testing. Photo: PATH

Under the USAID Healthy Markets project in Vietnam, PATH is piloting and implementing innovative approaches to control the HIV epidemic, including scaling up HIV lay provider and self-testing (44,000 tested), piloting models of community PrEP service delivery, equipping organizations run by members of most-at-risk populations to sustain HIV services, reaching hundreds of thousands of key populations through active social media engagement, and generating a local commercial condom market. The project has launched three new local condom brands (with two additional World Health Organization–prequalified manufacturers in the pipeline) and sold more than 20 million condoms to key populations in nine provinces.

PATH also supports global and local efforts to better integrate screening and treatment of NCDs into HIV service delivery. In 2016, PATH was selected to implement a first-of-its-kind program that integrates hypertension screening and care into the HIV/AIDS service delivery platform in Kenya, specifically targeting males aged 25 to 50. With program partners AstraZeneca and PEPFAR, PATH brings one-stop diagnosis, treatment, and monitoring for both HIV and hypertension to an especially hard-to-reach population.

Healthy Markets in Vietnam: Reaching key populations online for off-line services

In Vietnam, PATH is leveraging the popularity of Facebook and Grindr to reach 224,000 young men who have sex with men and actively link them to services through online peers or through a new service booking app, *I Reserve*. Recent analysis of HIV testing results found that HIV reactivity was significantly higher among those testing via a social media peer referral (8 percent) compared to those coming into testing from a face-to-face peer referral (5 percent).



www.path.org

PATH is the leader in global health innovation. An international nonprofit organization, we save lives and improve health, especially among women and children. We accelerate innovation across five platforms—vaccines, drugs, diagnostics, devices, and system and service innovations—that harness our entrepreneurial insight, scientific and public health expertise, and passion for health equity. By mobilizing partners around the world, we take innovation to scale, working alongside countries primarily in Africa and Asia to tackle their greatest health needs. Together, we deliver measurable results that disrupt the cycle of poor health. Learn more at www.path.org.

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