



PHOTO: ERIC BOND/EGPAF, 2019



Point-of-Care Early Infant HIV Diagnosis in Rwanda

The Elizabeth Glaser Pediatric AIDS Foundation in Rwanda

The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) began supporting Rwanda's response to the HIV and AIDS epidemic in 2000ⁱ. By 2004, in-country presence had expanded: EGPAF was operating a comprehensive network of HIV clinical services, including prevention of mother-to-child transmission (PMTCT), HIV-exposed infant and child feeding, and care and treatment for children and families living with HIVⁱ.

EGPAF fortified efforts to support the government of Rwanda in meeting its goal to provide universal access to HIV prevention, care, treatment, and support. Between 2007 and 2012, EGPAF-Rwanda services in supported sites reached more than 200,000 pregnant women with PMTCT and more than 30,000 clients with HIV care, treatment, and support services.ⁱⁱ Of clients initiated on lifesaving treatment through EGPAF-Rwanda, approximately 1,900 were children under the age of 15ⁱⁱ.

From 2013 through 2016, an EGPAF-implemented, United States Agency for International Development (USAID)-funded operations research study took advantage of a unique opportunity to evaluate maternal, neonatal, and child health outcomes under **Rwanda's Option B+ program**, as well as infant health and survival outcomes of newly-released infant feeding guidelines. This extensive undertaking was formally known as **the Kigali Antiretroviral and Breastfeeding Assessment for the Elimination of HIV (The Kabeho Study)**.

Kabeho ultimately demonstrated that it is possible to achieve mother-to-child HIV transmission rates similar to those in high-income, non-breastfeeding populations. The study also demonstrated that it was possible to achieve high antiretroviral therapy (ART) adherence and positive treatment outcomes among both infants and mothers.

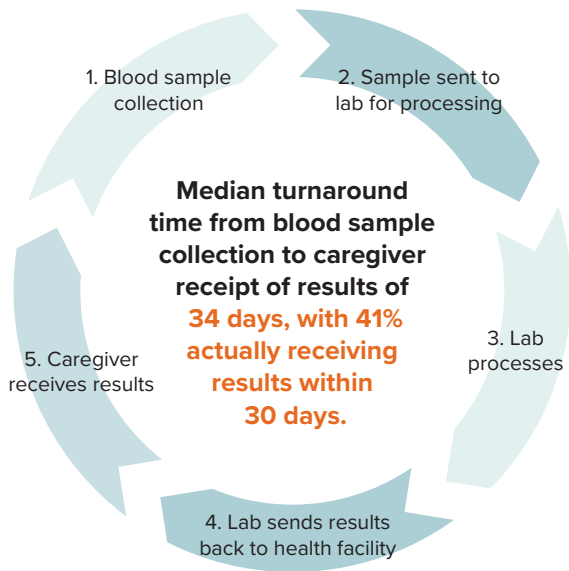
During this time, EGPAF's role in responding to Rwanda's HIV/AIDS epidemic shifted yet again, to focus on a population lagging in global treatment and survival target achievements: young children. Indeed, without treatment, half of all HIV infected children will die by their second birthday. Thus, in 2015, EGPAF was awarded funding from Unitaid to ensure that more young children access testing, diagnoses and treatment services through point-of-care (POC) technology.

Point-of-Care Early Infant HIV Diagnosis

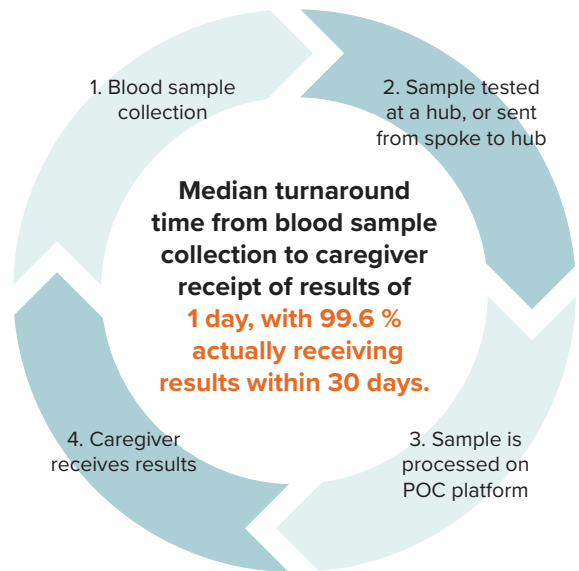
Infants who acquire HIV in-utero or at birth experience rapid disease progression, given their immature immune systems, with peak mortality risk occurring at 8 to 12 weeks of age. For HIV-infected infants, HIV testing before two months of age, prompt return of test results, and rapid initiation of treatment are critical to survival. Through funding and support from Unitaid, EGPAF leveraged its presence and experience in pediatric diagnosis, care and treatment to support Ministries of Health in nine countries, including Rwanda, to hasten clinical decision-making by integrating point-of-care early infant diagnosis (POC EID) into national laboratory systems. Since August 2015, EGPAF has supported

i. Nkiko et al. (2012) Improving Quality of HIV Services in Rwanda: The Elizabeth Glaser Pediatric AIDS Foundation Experience. <http://www.pedaids.org/resource/improving-quality-of-hiv-services-in-rwanda-the-elizabeth-glaser-pediatric-aids-foundation-experience/>

ii. Gill, et al. (2017). 24-month HIV-free survival among infants born to HIV-positive women enrolled in Option B+ program in Kigali, Rwanda: The Kabeho Study. *Medicine (Baltimore)*, 96 (51). <http://dx.doi.org/10.1097/MD.00000000000009445>



Conventional EID process



POC EID Process

the Government of Rwanda to incorporate POC EID into the existing HIV diagnostic network through a systematic approach of selecting and gradually enrolling health facilities. POC testing in Rwanda officially began in March 2017.

POC EID Success in Rwanda

Between March 2017 and April 2019, 141 health care facilities were enrolled in POC EID. Enrollment was preceded by hand-in-hand work with the Ministry of Health to select sites for this service; categorizing sites as hubs (large volume sites, with on-site POC technology) and spokes (lower-volume facilities that send samples to nearby hub locations for processing); and training of health workers on use of platforms.

Key Results

Through POC EID technology:

- 99.6% of caregivers received test results within a median of 1 day
- 3,915 HIV-exposed infants have been tested for HIV, to date
 - Of these infants, 118 were identified as HIV-infected
 - 98.2% HIV-infected infants were initiated on lifesaving treatment within a median of 2 days from sample collection to ART initiation, greatly improving their chance of survival

Conclusions

POC EID testing is effective, affordable and should be sustained and expanded as a principal tool in the country's efforts to end pediatric AIDS. It has been so successful at identifying and treating infants, that POC EID was integrated into the Rwanda HIV and AIDS National Strategic Plan 2013-2018, Extension 2018-2020. Governments and key funders, such as PEPFAR, the World Health organization, and Global Fund have recognized the benefits of POC diagnostics, and have committed to supporting them both technically and financially.

Acknowledgements

We thank our donor, Unitaid, for providing the funding and support necessary funding to introduce this life-saving new technology in Rwanda, which can also be used for viral load testing in pregnant and breastfeeding women. A special thanks to the management and staff of the district hospitals and health facilities, for your commitment to improving the lives of people living with HIV/AIDS, specifically the HIV-infected and affected children in your communities. Considerable gratitude also for the leadership, guidance and partnership provided by the Ministry of Health and the Rwanda Biomedical Center. We appreciate the opportunity to work with you and to contribute to programs that improve the lives of the people of Rwanda.