Strengthening systems to retain mother-baby pairs in care, eliminate mother-to-child HIV transmission, and maximize child survival

Background

UNAIDS estimates that half of infant HIV infections from mother-to-child transmission occur after delivery. Reducing transmission rates further will require improvements in the care for mothers and infants during the post-partum period. But keeping HIV-positive mothers and their infants in care after delivery has proven challenging in many countries. A recent review of loss to follow-up among HIV-exposed infants (HEI) found that 34% were lost by three months and that 45% who had early infant diagnostic testing at three months were subsequently lost after testing. Retention in care is a challenge in all HIV treatment programs, but pregnant and post-partum women have worse retention in care than men or non-pregnant women. Retention in care is a powerful predictor of HIV transmission and is essential for meeting the health needs of HEI and their mothers.

To address the challenges of retention and poor patient care in the post-partum period, the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), together with WHO and UNICEF, launched in 2012 the Partnership for HIV-Free Survival (PHFS) with governments and local implementing partners in Kenya, Lesotho, Mozambique, South Africa, Tanzania, and Uganda. The PHFS sought to use quality improvement (QI) approaches to support targeted facilities in each country to identify and implement changes in how they delivered care to reduce post-natal HIV transmission and mortality. Specifically, PHFS implementers helped staff in supported facilities to improve patient retention, HIV treatment and prophylaxis, and health and nutrition care for the HIV-positive mothers and their exposed infants coming for care at their facilities.

Strengthening the health system to assure HIV-free survival

The United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project, working with PEPFAR clinical service partners, supported governments to implement the PHFS initiative in Kenya, Lesotho, Tanzania, and Uganda. ASSIST focused on supporting a limited number of facilities in each of the four countries to use QI approaches to:

1) Improve the data systems so that health workers had complete patient information as mothers and their HIV-exposed infants moved among maternal, pediatric, HIV, health, and nutrition services;
2) Improve retention in care of mothers and their HIV-exposed infants; and
3) Ensure that mothers and exposed infants received appropriate care at clinic visits.

The type of support ASSIST provided to each facility varied among countries but, in general, consisted of: 1) initial training on new PMTCT guidelines and the basic concepts of QI, 2) on-site support from trained QI coaches to help teams apply the QI skills they learned in the classroom to their setting, and 3) facilitated peer-to-peer learning sessions that allowed teams from different facilities to share progress and learn from each other. The
support from coaches, who included both ASSIST staff and district MOH staff, helped facility staff work as multidisciplinary teams, pick specific improvement aims, use simple analytical tools to identify causes for poor care, and use iterative methods to test and adapt solutions to improve care. The frequency of on-site support varied from monthly (Kenya and Uganda) to quarterly (Tanzania and Lesotho).

Key results

Kenya: Prior to the intervention, the facilities enrolled an average of 29 HEI in care each month and 70% were retained in care until their HIV status was determined 24 months later, when 15.6% of the children with a known HIV status at discharge were HIV-positive. After the QI intervention, an average of 40 HEI were enrolled each month and 66% were retained in care until their HIV status was determined 24 months later, at which 7.3% of the children with a known HIV status at discharge were HIV-positive.

Tanzania: Before the QI intervention, an average of 112 HEI were enrolled in the early infant diagnosis (EID) program each month, and 41 (37%) were retained in care until their HIV status was determined 18 months later; 12.4% of the children with a known HIV status at discharge were HIV-positive. After the QI intervention, an average of 198 HEI were enrolled, and 146 (74%) were retained in care until their HIV status was determined 18 months later; 4.3% of the children with a known HIV status at discharge were HIV-positive. QI practices led to increased retention in postnatal care and in monthly HIV services, ART uptake among women, DNA/PCR for HEI, and nutrition counselling.

Uganda: Data on the number of children discharged from the EID program with a known HIV status and on the number who were HIV-positive were not being collected at 12 of the 22 facilities at the start of the QI intervention. One of the first tasks of the QI teams was to develop these systems; all facilities had these data by December 2013. Among the 10 facilities that did have data available before the QI intervention, an average of 29 children were discharged from EID with a known HIV status; 17.2% of these children were HIV-positive. After the QI intervention, an average of 39 children were discharged from EID with a known HIV status, and the mean percentage of children with a known HIV status at discharge who were HIV-positive was 5.9% and later declined further to a new mean of 1.5% (see Figure 1). Also in Uganda, the percentage of HIV-positive pregnant women and lactating mothers who received infant and young child feeding (IYCF) counselling at each visit improved from 45% to 100% over the course of the intervention. The percentage of HEI adhering to recommended IYCF practices improved from 70% to 96%, and the percentage of mother-baby pairs receiving the standard care package improved from 0% to 100%.

Lessons

- Defining a standard package of services that all mother-baby pairs should receive helped to facilitate the improvement work by giving all teams a clear aim for improvements to service delivery. This prompted teams to reorganize how care was delivered to make care delivery more seamless by integrating service delivery points and giving mothers and their exposed babies a single appointment where all the services needed by both the mother and baby were provided together. Clinics had to adjust their work flow to accommodate the increasing numbers of pairs keeping their appointments and had to improve clinic efficiency, using flow charts to determine which services would be provided where, when, and by whom and to merge steps and remove redundant steps in the patient flow.

- Setting up data systems to monitor service delivery and outcomes was an important early intervention in the PHFS work. Improving data quality and accuracy in demonstration sites helped improve the accuracy of HMIS data and raised awareness about the prevalence of missing data in the system.

- Another factor which contributed to PHFS results was the national leadership by Ministries of Health in guiding the roll-out of PHFS QI activities, coordinating inputs from various partners, and incorporating learning from the demonstration activities to influence changes in national policy and HMIS systems. The active engagement of district and facility leadership structures spurred results; where such engagement was weak, less progress was made.
The strong in-country and cross-country learning mechanisms built into the PHFS, including cross-country, data-driven learning exchanges, provided opportunities to bring together people at all levels to share what they did and learn ideas that they could adapt to their own contexts. This accelerated progress and allowed participants to co-develop solutions to common problems.

Across the four countries, PHFS supported 134 facilities to use QI approaches to improve PMTCT, maternal and child, and nutrition care for mother-baby pairs. The key elements of success of the QI activities were: 1) breaking down problems into smaller, more manageable problems, 2) multi-stakeholder, in-country leadership, 3) on-site QI coaching, and 4) in-country and cross-country shared learning and support. By building capability for QI, improving clinical skills and communication/teamwork skills, and strengthening understanding of how to use data for improvement, the PHFS initiative contributed to strengthening health system building blocks for maternal and child survival.

**Resources Available**

- [Tanzania PHFS Implementation Experience and Change Package](#), 2017.
- [Improving the Retention of Mother-Baby Pairs at Sesheke Health Center in Leribe District, Lesotho](#), 2017.
- [Improving PMTCT in Kenya](#), 2017.
- [Improving Retention of Mother-Baby Pairs: Tested Changes and Guidance from Uganda](#), 2014.
- [Improving Quality of Services Provided for HIV-positive Mothers and Their Babies at Routine Visits](#), 2014.
- [Improving Completeness and Accuracy of Data for Elimination of Mother-to-child Transmission of HIV: Tested Changes and Guidance from Uganda](#), 2014.
- [Implementing the Partnership for HIV-Free Survival (PHFS) Initiative in Uganda: Retention of Mother-Baby Pairs in Kisoro District Hospital](#), 2013.
- [Recordings of PHFS Quarterly Webinars](#)