



## Sharing Tasks Among Health Care Workers in Uganda to Integrate Rapid Syphilis Testing in PMTCT Services



### Background

Streamlining of health care services is an increasingly popular set of strategies for ensuring expanded access to high-quality care, including maternal and child health (MCH) and HIV-related services.<sup>1</sup> Task shifting is one such strategy, in which “specific tasks are moved, where appropriate, from highly qualified health workers to health workers with shorter training and fewer qualifications in order to make more efficient use of available resources for health.”<sup>2</sup> Task *sharing*, while sometimes equated with task shifting, is used here to denote a related strategy in which health care workers take on additional tasks to share the overall workload, rather than shifting existing tasks to others.<sup>3</sup> For example, in order to improve access to testing and treatment, front-line health providers can perform point-of-care testing using rapid diagnostic technology alongside other care services, decreasing the number of specialized staff needed to perform more labor-intensive tests.

Rapid testing technology has greatly improved in recent years. One such improvement has been in the area of syphilis testing. Syphilis is a major public health problem in sub-Saharan Africa with prevalence ranging from 0.18%–7.7% among pregnant women attending antenatal care (ANC) clinics.<sup>4–6</sup> In addition to the morbidity and mortality associated with syphilis and congenital syphilis, co-infection of syphilis and HIV among pregnant women is a significant risk factor for vertical HIV transmission.<sup>7,8</sup> Integration of HIV testing and syphilis screening for pregnant women therefore has the potential to enhance the effectiveness of prevention of mother-to-child HIV transmission (PMTCT) interventions, while helping to prevent congenital syphilis and other adverse pregnancy outcomes of untreated syphilis in pregnancy.

Rapid plasma reagin (RPR), currently the most commonly recommended syphilis diagnostic technology for resource-limited settings, is not widely available due to the refrigeration, centrifuge, and specially trained laboratory staff required to perform the test. Additionally, each RPR test card includes space for ten samples, so tests are not performed until ten samples are obtained (i.e., testing is “batched”) and women often have to return to the clinic on a subsequent day for their results.

Recent developments in point-of-care syphilis testing have led to the availability of low-cost, rapid syphilis tests that require only a small volume of blood, no specialized laboratory equipment, and no refrigeration; clients can receive

their results within 20 minutes. These tests can be performed by staff with relatively minimal training and are simple to read. In addition to these benefits, the rapid syphilis test can be performed alongside rapid HIV tests, allowing clients to receive these two important tests simultaneously.

The Elizabeth Glaser Pediatric AIDS Foundation (the Foundation), in collaboration with the Uganda Ministry of Health (MOH), conducted a study in 2010 to assess the feasibility, acceptability, and cost-effectiveness of introducing rapid syphilis tests for same-day testing and treatment (STAT) of syphilis at established PMTCT sites in Uganda. As of 2010, The Foundation's USAID-funded Call to Action program had provided PMTCT services in over 400 health facilities, reaching over two million women in 27 districts in Uganda. The rapid syphilis tests were introduced in one high-volume urban site, Mulago National Referral Hospital, and eight rural facilities in Jinja District. While the Ugandan national policy promotes syphilis testing as an integral part of pre-conception care, challenges related to provision of RPR have limited its use as a screening method for pregnant women. Syphilis testing is not routinely performed in ANC and is only available in certain facilities designated as sentinel surveillance sites.

## Intervention and Findings

The study team provided training, mentorship, and supportive supervision to midwives providing PMTCT services in nine health facilities (i.e., health centers, district/regional hospitals, and the national referral hospital) in Kampala and Jinja Districts. All activities focused on the integration of STAT for syphilis at ANC sites in the selected facilities. To assess the acceptability of task sharing for syphilis testing among nurses and midwives, information was gathered from study monitoring site visits conducted by the London School of Hygiene and Tropical Medicine (LSHTM) and health care worker (HCW) interviews conducted in 2010. Interviews solicited HCW views on the benefits and challenges of rapid syphilis testing, training needs for personnel performing the tests, and skills and confidence regarding use of the rapid test. Additional information presented in this brief is from data collected for the cost-effectiveness analysis that was also conducted as part of this study.

A description of the specific components of the HCW task-shifting intervention and related findings are described in the following sections.

## Task Shifting and Sharing at Different Levels of the Health System

Prior to the introduction of rapid syphilis testing, syphilis testing for pregnant women in Uganda (if available) was performed by laboratory technicians. With the introduction of rapid testing as part of the study, midwives were given the responsibility of performing the tests during routine ANC visits. ANC services at the regional referral hospital and health centers are operated entirely by midwives. Tasks related to provision of rapid syphilis testing are organized as follows:

Midwives working in hospitals rotate responsibilities. On a given day, a midwife is either running rapid syphilis and HIV tests in the laboratory or providing pre-test and post-test counseling and treatment. Typically one midwife is assigned to perform blood draws.

At lower-level health centers, tasks are split into three areas. One midwife is responsible for registration; another midwife handles recording of client information, measurement of vital signs, and later, post-test counseling and treatment (if needed); and a third midwife is responsible for pre-test counseling, blood draws, and physical exams. Physical exams are conducted while the HIV and syphilis tests are being processed to maximize efficiency. A laboratory technician will run testing samples on busier clinic days.

## Training and Supervision of HCWs on Rapid Syphilis Testing

HCWs were trained by the study coordinator on a range of topics related to syphilis testing and disease management (see Box 1). New HCWs hired after the initial training session received on-the-job training. HCWs trained through the study received continuing medical education credits offered by the district MOH.

The study team, in coordination with the district MOH, provided routine follow-up and supportive supervision at study sites to ensure that HCWs were performing the rapid test correctly during the study period. The study team developed standard operating procedures (SOPs) for syphilis testing, counseling, and treatment and these were placed in all study sites, as were tools and job aids. HCWs that participated in interviews cited SOPs as the most frequently used tool, followed by the flip chart, posters, and the test kit manufacturer's product insert.

Trained HCWs also participated in two follow-up proficiency assessments that took place shortly after the implementation of the rapid tests. Dried tube specimens (DTS) were prepared with various levels of syphilis titres

(i.e., strong positives, diluted positives, and negatives), along with negative controls, to assess HCW testing proficiency and to help ensure testing quality. HCWs with initial poor performance received onsite training, resulting in greatly improved scores upon repeat testing. Laboratory technicians provided back-up support for the proficiency assessments. More details on quality assurance and quality control are provided in a separate brief on quality management (see useful resources).

### **BOX 1. TOPICS COVERED IN THE HCW TRAINING**

- **Symptoms, transmission, and treatment of syphilis and congenital syphilis**
- **Testing methods (including rapid testing)**
- **Partner management**
- **Recordkeeping**
- **Supply management**

### **Impact of Task Shifting on Client Flow\***

All health care workers representing five facilities (out of nine involved in the study) in Uganda reported that clients spent additional time at the clinic after the integration of rapid syphilis testing into HIV testing services; this ranged from three reporting an extra 1-10 minutes to one provider estimating an additional 21-40 minutes. As documented in the costing report, this extra wait time was attributed to the need to perform both tests and, if the client tested positive for syphilis, to administer treatment and observe for reactions to the medication. The time needed to counsel a client or a couple on both syphilis and HIV test results varied considerably, with two health care workers reporting less than 5 minutes (at one health center and one hospital), two reporting 6-10 minutes (both from the national referral hospital), and three reporting over 10 minutes (a one health center and one hospital). According to the costing report, test result type and whether an individual or couple was counseled contributed to variations in time spent on counseling. One strategy employed to reduce client waiting times was multi-tasking (e.g., performing the physical exam while syphilis tests are running).

At the seven facilities that received an external monitoring visit after the introduction of rapid syphilis testing in April 2010, all HCWs reported that they felt the number of staff members was adequate for the number of clients tested per day. However, at a follow-up visit in July 2010, staff

from at least one high-volume site reported that they could benefit from additional staff.

*\*The health care worker survey from which many results in this section were derived involved a very small sample size (n=7). The intent of the survey was to be largely descriptive (not to produce results of statistical importance) and was one component of multiple study activities as well as part of a larger survey that included healthcare workers in Zambia.*

## **Acceptability of Rapid Syphilis Testing Among HCWs**

Overall the findings suggest that HCWs found integration of syphilis testing within HIV services to be feasible. The majority of HCWs interviewed (57.1%) reported acquisition of a new skill or knowledge as a benefit, as they were able to provide an additional service to their clients. They also reported confidence in diagnosing and treating syphilis.

Nearly all (six out of seven) HCWs reported satisfaction with the quick result turnaround times, with nearly half indicating that more male partners came in to ANC once rapid syphilis testing was available. HCWs at three high-volume sites indicated that they experienced an increased workload as a result of rapid syphilis testing integration, but this issue did not appear to hinder their acceptance of the test. HCWs felt that adding rapid syphilis testing would improve the quality of ANC services, primarily because this would increase the proportion of syphilis-positive clients receiving treatment and improve the identification of syphilis-exposed infants. All respondents felt that rapid syphilis testing had been successfully integrated within ANC settings offering PMTCT services and said they would support syphilis screening as a routine offering in their facilities.

## **Next Steps**

As Uganda moves to change its national syphilis testing policy, the Foundation is supporting the Uganda MOH to incorporate the lessons learned from this study through supportive supervision, provision of follow-up training to HCWs, and strengthening of quality assurance and quality control systems. The policy environment in Uganda is supportive of using study findings to inform national guidelines, and the MOH is currently developing an essential laboratory supply list for the district health systems that will include rapid syphilis tests.

The Foundation is also widely disseminating the findings of the study and supporting MOHs in other countries it supports to increase access to syphilis testing for pregnant women.

## Conclusion

While sharing tasks between different cadres of HCWs and use of point-of-care testing represent significant advancements, how these innovations are perceived by a constrained workforce will influence the success of these programs in resource-limited settings. National policies will need to ensure that HCWs are empowered to provide a variety of services without being overburdened. Strong programmatic support and local leadership are also critical to the success of these efforts.

## Useful Resources

- World Health Organization. The Global Elimination of Congenital Syphilis: Rationale and Strategy for Action. [http://whqlibdoc.who.int/publications/2007/9789241595858\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241595858_eng.pdf). Published 2007.
- London School of Hygiene and Tropical Medicine. The Rapid Syphilis Test Toolkit: A Guide to Planning Management and Implementation. <http://www.lshtm.ac.uk/itd/crd/research/rapidsyphilistoolkit/sp765toolkit.pdf>. Published 2011.
- Elizabeth Glaser Pediatric AIDS Foundation. Quality Management Systems Brief: Rapid Syphilis Testing Study in Zambia and Uganda. [http://www.pedaids.org/Publications/Program-Briefs/QC\\_Syphilis\\_Brief\\_Itr\\_April2011\\_4web](http://www.pedaids.org/Publications/Program-Briefs/QC_Syphilis_Brief_Itr_April2011_4web). Published April 2011.
- Elizabeth Glaser Pediatric AIDS Foundation. Male Involvement in PMTCT: Reaching Men through Syphilis Testing. [http://www.pedaids.org/Publications/Program-Briefs/Syphilis\\_MaleInvolve\\_Itr\\_April2011\\_4web](http://www.pedaids.org/Publications/Program-Briefs/Syphilis_MaleInvolve_Itr_April2011_4web). Published April 2011.

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<sup>1</sup>Callaghan M, Ford N, Schneider H. A systematic review of task-shifting for HIV treatment and care in Africa. *Hum Resour Health*. 2010;8:8.

<sup>2</sup>World Health Organization (WHO). *Task Shifting: Rational Redistribution of Tasks among Health Workforce Teams: Global Recommendations and Guidelines*. Geneva:WHO; 2008.

<sup>3</sup>Walsh A, Ndubani P, Simbaya J, Dicker P, Brugha R. Task sharing in Zambia: HIV service scale-up compounds the human resource crisis. *BMC Health Serv Res*. 2010;10:272.

<sup>4</sup>McDermott J, Steketee R, Larsen S, Wirima J. Syphilis associated perinatal and infant mortality in rural Malawi. *Bull World Health Organ*. 1993;71:773-780.

<sup>5</sup>Di Mario S, Say L, Lincetto O. Risk factors for stillbirth in developing countries: A systematic review of the literature. *Sex Transm Dis*. 2007;34(Suppl 7):S11-21.

<sup>6</sup>WHO. Towards Universal Access: Scaling up Priority HIV/AIDS Interventions in the Health Sector. <http://www.who.int/hiv/pub/2010progressreport/en/index.html>. Published 2010. Accessed August 28, 2011.

<sup>7</sup>Lee MJ, Hallmark RJ, Frenkel LM, Del Priore G. Maternal syphilis and vertical perinatal transmission of human immunodeficiency virus type-1 infection. *Int J Gynaecol Obstet*. 1998;63(3):247-252.

<sup>8</sup>Mwapasa V, Rogerson SJ, Kwelek JJ, et al. Maternal syphilis infection is associated with increased risk of mother-to-child transmission of HIV in Malawi. *AIDS*. 2006; 20(14): 1869-1877.

## Acknowledgments

This brief was written by Edward Bitarakwate, Alana Hairston, Michelle Gill, and Tabitha Sripipatana.

The authors would like to acknowledge the support provided by the Uganda Ministry of Health, Mulago Hospital staff, and the Jinja district health team for their role in the integration of rapid syphilis testing in PMTCT services.

The activities described in this brief were made possible by the generous support of the Sexually Transmitted Diseases Diagnostics Initiative of the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR) and the support and coordination of the London School of Hygiene and Tropical Medicine (LSHTM). The contents are the sole responsibility of the Elizabeth Glaser Pediatric AIDS Foundation and do not necessarily reflect the official views of WHO/TDR or LSHTM.

## About the Foundation

*The Elizabeth Glaser Pediatric AIDS Foundation is a global leader in the fight against pediatric HIV and AIDS, and has reached more than 11.6 million women with services to prevent transmission of HIV to their babies. The Foundation works at 5,400 sites in 17 countries to implement prevention, care, and treatment services; to further advance innovative research; and to execute strategic and targeted global advocacy activities in order to bring dramatic change to the lives of millions of women, children, and families worldwide.*

Published September 2011