STRENGTHENING INFECTION PREVENTION AND CONTROL IN SWAZILAND

Background

The global HIV and TB epidemics have placed enormous burdens upon already overstretched health care workers (HCW) and poorly resourced health care facilities in sub-Saharan Africa. The rapid emergence of multi-drug resistant (MDR) TB and its association with hospital-based outbreaks have highlighted the role that health care facilities inadvertently may play in TB transmission and the vital importance of good TB infection prevention and control (IPC) practices.

Swaziland, which has the world’s highest TB incidence rate, has had challenges of containing the epidemic. In 2006, PATH (a PEPFAR-funded project) supported the Swaziland Ministry of Health (MOH) to improve TB infection and control by strengthening and ensuring sustainability of the IPC structure at national, regional and facility levels. From 2013-2014, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project built on the success of PATH to strengthen the IPC
program at all levels of the health system with the following objectives:

1. Strengthen MOH capacity to provide leadership and oversight for the implementation of infection prevention and control activities in the country

2. Strengthen infection prevention and control practices in clinics in areas of high risk

3. Implement advocacy, communication, and social mobilization in interventions for TB, MDR-TB, and infection control

4. Establish surveillance systems to monitor TB incidence and outcomes in HCWs

Figure 1 summarizes the interventions used by ASSIST in Swaziland to strengthen TB IPC implementation.

**Interventions And Results**

**Policy and Guidelines**

Strengthened MOH capacity to provide leadership and oversight for the implementation of infection prevention and control activities in the country

- ASSIST provided technical expertise and resources to national and program level IPC interventions. In FY13 and FY14, ASSIST provided both financial and technical expertise support to the National IPC Technical Working Group (TWG) to conduct the quarterly IPC meetings and develop the annual work plan. ASSIST also supported the National IPC TWG to develop, print and disseminate the National IPC guidelines. The dissemination included regional workshops to update health care workers on the new guidelines.
Building on the work that PATH had initiated, ASSIST continued to build the capacity of the National TB Control Program to oversee and monitor infection prevention and control interventions. In February 2014, the project facilitated an IPC quality assurance workshop for 110 participants, including representatives from the MOH and health facilities. Facilities were supported to identify IPC focal persons who were then trained on IPC measures as a means of enhancing their skills and knowledge. The national IPC advisor also provided technical expertise to the program-based IPC coordinators to enable them to execute their duties.

**Facility interventions and strategies**

**Develop health care worker capacity for infection prevention and control**

- ASSIST helped build the capacity of health care workers through training and mentoring on infection prevention and control including supporting the development of a standardized training and certification program. For example, in FY13 ASSIST supported a series of workshops to review and adapt the national IPC curriculum, training manual, and supporting job aids in order to facilitate standardized IPC training and implementation at all levels of the health care system.

- Using the newly developed IPC training curriculum, the project enhanced the capacity of the health workforce by facilitating a training-of-trainers (TOTs) workshop in February 2013 on infection control measures. The 14 people trained were then tasked to conduct trainings on IPC within their regions. This approach was used to accelerate the implementation of IPC interventions. By the end of June 2014, 1098 HCWs were trained in IPC. The participants included facility IPC focal persons, TB focal persons and other cadres of staff working in facilities in the four regions of Hhohho, Manzini, Shiselweni and Lubombo.

**Strengthened infection prevention and control practices in clinics in areas of high risk**

Once the focal IPC persons were identified, the ASSIST team provided technical expertise to conduct baseline risk assessments for high-volume facilities in the four regions as well as the follow-up assessments after improvement plans had been implemented. Improvement plans were developed after the baseline assessments to address gaps that were identified. Forty-eight baseline assessments and 35 follow-up assessments were conducted between FY13 and FY14. Figure 2 shows the results for one facility – the TB Centre. A baseline assessment conducted in 2013 in this facility showed poor performance in administrative controls, environmental controls, and respiratory protection. These areas improved once an improvement plan addressing these gaps was implemented.

The facilities were supported to develop action plans to address the infection prevention and control issues identified in the baseline risk assessments and the IPC persons supported to monitor the implementation of the plans. Infection control plans were developed for all 48 facilities, however only 38 were monitored, as there was staff rotation and some IPC focal persons left the facilities. N95 mask fit testing was carried out at the TB hospital and TB Centre with a total of 85 health care workers benefiting from this exercise.

- The FAST (Finding cases Actively, Separating Safely and Providing Effective Treatment) strategy was introduced in FY12 in some facilities supported by ASSIST but...
during FY13 and FY14 the strategy was scaled up as one of the effective measures for containing TB transmission. Information, education and communication (IEC) materials regarding the FAST strategy were developed and disseminated (see Figure 3).

- Additionally, ASSIST supported the development of IEC materials on handwashing. These were developed in accordance with the national IPC guidelines and disseminated after a national orientation workshop was conducted. A total of 279 HCWs were sensitized on hand washing. In April 2014, ASSIST conducted an initial evaluation of compliance to hand hygiene. The evaluation showed that many of the hospitals and clinics did not have facilities for effective hand hygiene either because of no infrastructure (sinks or running water) or supplies (soap, hand towels, etc.). Seven hospitals participated in a pilot using locally prepared alcohol hand rub. The pilot assessed the feasibility and cost-effectiveness of preparing and distributing a locally prepared alcohol hand rub. The ASSIST team, together with Mbabane government hospital pharmacists, facilitated the training of pharmacists, IPC focal persons and IPC Quality Assurance officers on locally preparing alcohol hand rub. Four selected regional coordinators were trained on how to prepare, package and deliver the alcohol-based hand rub to participating facilities. The pilot ran for six months. The preliminary results showed that the preparation of the local hand rub was feasible, however, the packaging and the supply chain management were lacking.

Figure 3: IEC material developed for health care workers demonstrating the FAST strategy
Community engagement

Implemented community-level communication and social mobilization for TB, MDR-TB and infection control

• ASSIST worked to increase and strengthen TB infection prevention and control awareness in communities through working collaboratively with local community organisations to reach targeted populations. The project worked with the Swaziland Commercial Amadoda Road Transportation Association (SCARTA) to conduct TB IPC campaigns in three regional bus stations between October 2014 and March 2015. An initial workshop was conducted where 28 members of SCARTA were taught the basics of TB prevention and given information on employee wellness issues pertaining to TB. During these regional campaigns, 610 people were reached, including police officers and health care workers, 1500 IEC materials were distributed and 310 people received TB symptomatic screenings.

• ASSIST also worked in collaboration with the Swaziland Miners Association and the National Tuberculosis Control Programme to conduct a registration and mapping exercise of current and ex-miners within the Nkwene community in the Shiselweni Region of Swaziland. The goal of the mapping was to assess the health status of the community’s current and former mine workers, including their need for TB diagnosis and treatment, and to identify the health facilities where these miners were most likely to seek treatment. The Nkwene community comprises the largest mining population in Swaziland and is hard hit by both TB and HIV. In total, 231 miners were registered, ranging in age from 35 to over 70 years. Of those registered 45% (109) were mapped using geographic information system mapping to collect the miners’ coordinates through their identification numbers. During health assessments, TB screening was conducted by the mapping officers among the miners. All those screening positive for TB were given sputum bottles and referred to Hlathikhulu Hospital for follow-up care, including GeneXpert Mycobacterium Tuberculosis/Rifampicin testing. Of the 231 miners, 38 screened positive for pulmonary TB, and 29 reported recurrent chest infections. Diagnostic testing revealed nine cases of drug-susceptible TB and three cases of DR-TB.

• Between October and December 2013, 300 community treatment supporters were trained on TB prevention, treatment and care. The community treatment supporters were deployed in their respective communities to help with ensuring that TB patients on treatment stayed on treatment and conducting contact tracing within the household. These community treatment supporters were also tasked with providing basic TB prevention messages in the community.

Challenges

Although much was done by ASSIST to improve IPC in Swaziland, several challenges still remain. These challenges include: infrastructure inadequacies,
weak administrative policies and inadequate human resource capacity to implement infection prevention and control measures. They are detailed below.

- Many of the facilities do not have a focal person for infection prevention and control, let alone a focal person for TB infection control. Despite having conducted baseline risk assessments in the hospitals, health centres and high-volume primary health clinics, the lack of focal persons for infection prevention and control make it difficult to implement an infection control plan as well as monitor the improvements made in infection control in the facility.

- Procurement of IPC equipment is not supported by adequate supply chain management of equipment and supplies. This makes the quantification and forecasting for supplies very inaccurate, inevitably leading to stock-outs or procurement of non-essential, inconsistent and inadequate IPC supplies at the facilities.

- Poor IPC policies, guidance, and practices by HCWs at facility level also impact the implementation of IPC measures. The facilities do not have standard operating procedures that outline the processes to address: prevention of respiratory infections; use of disinfectants and barrier techniques; compliance to hand hygiene measures; prevention of the spread of infection during surgical wound dressings; prevention of the spread of infection through intravascular devices and injectable; proper handling of blood, blood products and other body fluids; health care waste management; and injection safety. There are inconsistent onsite trainings and mentoring opportunities for facility-based HCWs on infection prevention and control.

- Many of the health facilities were constructed over 30 years ago and cannot cater to the increased patient burden adequately: the waiting rooms are very small and inadequately ventilated; there are no sinks in many of the consultation rooms, and if the sinks are present, there is no running water; for facilities with admission capacity, there are inadequate isolation rooms or facilities, making the general wards a hazard for ongoing disease transmission.

- There is a lack of a standardized surveillance system for tracking of health care-associated infections (HAIs) in facilities. The system to diagnose HAIs is also weak, and therefore HAIs and their impact on patient outcomes are not addressed during facility morbidity and mortality reviews.

Lessons Learned

Curbing the spread of TB and MDR-TB cannot be a one-time event but needs to be a continuous process where emphasis should be placed on high-risk populations like HCWs, miners, public transport owners, as well as settings which attract large crowds, such as health facilities (nosocomial infection), congregate settings, and households. Lessons learned from ASSIST’s work in IPC include:

- IPC risk assessments and corrective actions in health facilities help improve infection and prevention measures, which in turn will reduce the rate at which new infections take place.

- It is critical to purposively assign a health worker for implementing infection control measures at the facility-level.

- Health care workers should be tested for TB and MDR-TB in a systematic and routine manner as they are exposed to TB daily during the course of their work.
**Next Steps**

Between October 2012 and September 2014, ASSIST documented some features of the IPC implementation process that were considered as institutionalization. These included: empowering the national focal person for IPC to provide oversight for the national IPC TWG and lead the implementation of the annual work plan and quarterly meetings, as well as support to the regional and facility focal IPC persons.

The engagement of stakeholders during the development of the IPC guideline ensured that all HCWs were valued and had ownership in the guideline development process. Capacity building enabled the health facility health care providers to take ownership for community IPC campaigns, in addition to their own facility-based hand hygiene campaigns, held annually in October. The facility wellness corners routinized the TB symptom screening to every HCW presenting for any service at the wellness corner; and health care workers institutionalized presentation of facility IPC data during their quarterly review meetings. Through ASSIST operational research on feasibility of local production and use of alcohol hand rub preparations, health facilities were able to increase uptake of hygienic practices during patient care.

As part of ASSIST support for improving in-service training coordination in the Ministry of Health of Swaziland, IPC training needs assessments were supported at a regional level so that training plans and calendars were developed and implemented based on need. These plans were monitored by the regional in-service training coordinator who ensured that all HCWs in the region received at least a minimum of one orientation or refresher training on IPC. Through the capacity building provided by ASSIST, national IPC focal persons and the regional IPC coordinators (who were trained and certified in the basic IPC course by ASSIST) are recognized as IPC trainers in their respective regions. These trainers will continue to provide support to individual health facilities to develop and implement comprehensive IPC plans, standard operating procedures, and quality improvement activities.

*Community health worker demonstrating how to use an improvised hand wash station during a community sensitization in Mbabane. Photo by Nomathamsanqa Mavuso, URC*