A SUCCESS STORY IN TUBERCULOSIS
IMPROVING THE QUALITY OF SPUTUM SAMPLES THROUGH BETTER TEACHING & MODELS

The busy Hospital Materno-Infantil Cochabamba is a secondary hospital in Bolivia’s third largest city; while much of its services are dedicated to obstetrics and pediatrics, the tuberculosis (TB) program and laboratory are bustling. Lic. Nelly Orellana Céspedes is in charge of the Hospital’s TB program, and reports that she faced many challenges prior to a new TB improvement collaborative in Cochabamba led by the Health Care Improvement Project (HCI) with assistance from the Ministry of Health and Sports and USAID. Diagnosing patients was particularly challenging; patients were unable to tell if they had provided an unusable saliva sample, and there was little integration between the TB program and laboratory staff. The challenges faced by the Hospital Materno-Infantil are not unique; more than 33% of sputum samples in 2010 in Cochabamba were unusable.

Ensuring a high-quality sputum sample is critical for TB patients not only to diagnose the disease, but also to measure progress two months after beginning treatment and to ensure the patient is cured at the end of the treatment course. As the laboratories rely on limited supplies and personnel, it is critical that all sputum samples are of a usable quality. Because many of the TB patients at the Hospital Materno-Infantil are poor and often homeless, it can be quite challenging to locate them if a fourth or fifth sputum sample is needed to make a proper diagnosis.

Through its previous experiences working with TB clinics in El Alto, an urban area outside La Paz, and 16 rural municipalities across 3 provinces, HCI was able to identify several best practices for clinics to obtain higher quality sputum samples. The changes implemented by these clinics include:

- Teaching patients how a proper sputum sample should appear by using a “model of a good sample”
- Giving privacy to patients providing a sputum sample by creating a Sputum Sample Unit
- Teaching patients how to provide a proper sample through a video demonstration
- Making sure the area is sufficiently humid to make it easier for patients to provide samples.

Each clinic has built its own model that demonstrates the color and consistency of good and bad sputum samples. “My patients are able to see right away if they need to provide another sample, and we don’t have to go through the trouble of calling them back to the clinic,” reports a TB auxiliary nurse at the Hospital Materno-Infantil. Some clinics have also filmed a short video starring the “Cough Professor,” a nurse, doctor, or expert patient who shows patients breathing...
and massage techniques for producing samples. Humidifying the environment where patients provide samples with a vaporizer also stimulates expectoration for the patient.

Creating a dedicated, private area for patients to provide sputum samples has been a positive change for many clinics and patients. Lic. Orellana Céspedes notes, “Patients are less embarrassed or shy about providing a sample. Before, we had to send people out to the waiting area or even on the street.” While it can be challenging to find a private space in an already over-crowded clinic, the participating facilities have shown creativity in converting an existing space to a UTO, or “Sputum Sample Unit.” The Hospital converted a private alley between two buildings in its complex to a UTO; a patient now will be accompanied by a nurse who counsels him or her and demonstrates how to provide a sample. Reminder instructions have been hung in the area, shown below. The TB Program will hang a curtain to ensure complete privacy for patients.

There are 34 health centers, 8 hospitals, and 18 laboratories participating in the collaborative in Cochabamba, which began in March 2011. The collaborative uses a quality improvement (QI) methodology where teams implement a set of changes in their facility, such as creating a model of a good sputum sample, then convene in workshops, called learning sessions, with other participating clinics and QI experts to share and learn from each others’ experiences. Clinic and hospital staff also participate in a CD-ROM learning course about TB treatment and TB-HIV co-infection, and continued training through monthly staff meetings, which include case studies. These meetings also help build a sense of team among the staff and many facilities report higher integration among staff. According to Lic. Orellana Céspedes, “For me, it’s a big success that the laboratory staff have been trained, that they are more aware of TB issues, and are more dedicated to the program.”

In addition to the changes designed to help patients provide higher quality sputum samples, clinics in the collaborative will implement changes such as bundling a full treatment course for each patient and creating a file organization system.

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“Before, our work felt very static; every day was the same, and we were just trying to comply with the national norms. The collaborative has opened us to new ideas, and it’s much more dynamic now as we work to find, treat and cure patients,” says Lic. Orellana Céspedes.

This success story on strengthening tuberculosis care in Bolivia is evidence of how the Ministry of Health and Sports is making a difference in improved tuberculosis outcomes in El Alto, Cochabamba, and across Bolivia. These results are facilitated by the improvement collaborative led by the Ministry of Health and Sports and HCI, working to deliver better tuberculosis care in clinics and communities through improved case detection, management of medication, and better diagnostics. This initiative is supported by the American people through the United States Agency for International Development (USAID).