



IMPROVING TUBERCULOSIS CONTROL IN RURAL BOLIVIA

Background

Tuberculosis is a serious, endemic disease in Bolivia, with a reported incidence rate of 97.5 per 100,000 inhabitants in 2005, a rate surpassed in Latin America only by Peru and Haiti. Since 2002, detection of smear-positive cases and collection of sputum smears in public sector health facilities has declined; nationally, treatment success has also dipped from 82% in 2001 to 78% in 2005.

In 2006, USAID/Bolivia asked the Quality Assurance Project (QAP) to work with its bilateral health project, Gestión y Calidad en Salud (GCS) and the National TB Control Program (NTP) of the Ministry of Health (MOH) to implement an improvement collaborative aimed at strengthening the TB program's performance. A rapid assessment conducted by GCS and QAP in 38 public health facilities in Los Yungas in January 2007 found divergent cure rates (as low as 47%), abandonment rates of 21%, and no directly observed treatment. Other problems found were limited patient adherence support, weak drug logistics, lack of clinical training of personnel, poor lab quality control, and lack of surveillance of multi-drug-resistant TB.

Improvement Strategies

Working together with the NTP, departmental health authorities, and staff of the GCS Project, QAP organized in late 2006 an Improvement Collaborative of 39 teams representing 81 health posts, 24 health centers, 9 hospitals, and 16 laboratories in three regions: La Paz, Cochabamba, and Santa Cruz. The



Health worker teams conduct home visits to TB suspects and patients

collaborative was managed by QAP and GCS, working closely with national and regional NTP staff. In January 2007, the collaborative leader team developed indicators and guidance for site teams to assess compliance with evidence-based

TB control guidelines both for clinical and programmatic tasks.

The collaborative's first learning session was held in each region in February 2007. At these sessions, providers from the 39 teams were trained in the collaborative approach to quality improvement (QI) as well as in TB case management using a self-instructional CD-ROM on TB case management. Soon after, these trained QI team members used the CD-ROM to train other staff in their facilities.

At the second learning session in May 2007, QI teams learned how to measure and report compliance with standards on a quarterly basis, how to analyze resulting indicators to find quality gaps in the TB control processes, and how

Innovations Introduced by Teams in the Bolivia TB Collaborative

Typical Problems by TB Control Process

Detection of respiratory suspects (RS):

- Carried out only in hospitals by one or two "TB staff"
- No active search of RS among contacts
- Only those who came to the hospital were tested
- No programming nor monitoring of results for detection of RS

Diagnosing new pulmonary TB cases

- Respiratory suspects did not return to facility for 2nd and 3rd sputum samples
- High proportion of saliva samples: RS could not produce good sputum samples due to shyness or lack of understanding

Directly observed treatment

- DOTS only available at large facilities, for patients who lived nearby
- Patients given medicines to take home for one to three weeks
- Nobody monitoring if patients took their daily medicines

Innovations Implemented by QI Teams

- All personnel in the facility directed to detect RS as part of their normal work
- Active search for RS among TB contacts
- Use other programs' resources to detect RS (e.g., vaccination program)
- Tuberculosis "fair", posters inviting chronic coughers to attend
- Promotion of TB control through radio spots and talks by school teachers
- "Secret agents" to detect chronic coughers in schools and other community groups
- Community overnight visits to take 2nd and 3rd samples
- The "cough teacher" to demonstrate how to produce a good sample
- The model of what is a good sample (epoxy glue suspended in water)
- The "path to the good sample"—walkway to area where patient could produce sample in privacy
- Community organizations appoint a DOTS supporter for each patient; this person (known as a padrino or "Godfather") is accountable to the organization and signs a formal commitment to do DOTS
- Health worker teams visit non-adherent patients in the community
- Family members sign formal commitment to become "DOTS agents"

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Family member signs a commitment to be a DOTS supporter

to start improving processes through rapid improvement cycles. In June 2007, a supervisory team of GCS and MOH staff visited most of the 39 QI teams at their facilities to coach them on measuring indicators, analyzing data, finding process flaws, and implementing improvements.

The third and fourth learning sessions took place in September 2007 and February 2008, respectively. Teams met separately in each region to share their experiences with improving TB case finding, TB testing, sputum sample taking, diagnosis, directly observed treatment (DOTS), patient follow-up, and mobilization of community organizations to increase TB awareness and support adherence to treatment. During the next 12 months, teams in the three regions developed a number of solutions to operational problems that they identified (see table of innovations).

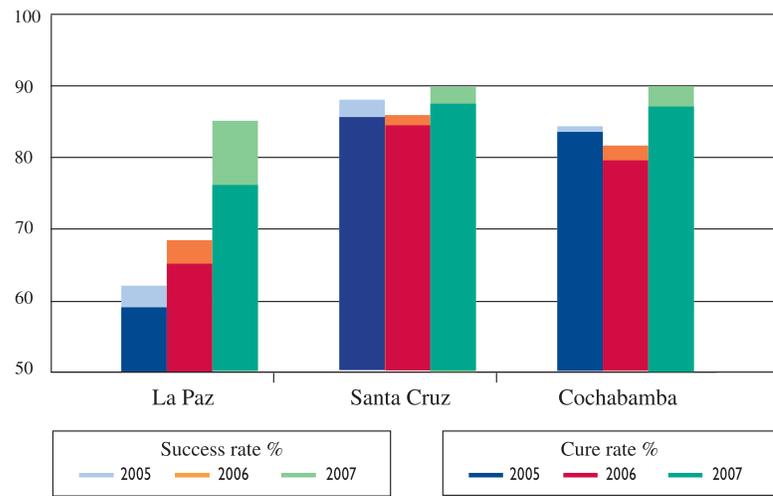
Results

The Improvement Collaborative addressed four main TB control problem areas: a) increasing detection of respiratory suspects and TB new cases; b) increasing practice of directly observed treatment (DOTS); c) increasing treatment success and cure rates; and d) reducing treatment default rates.

The improvement activities in the three regions continued through June 2008,

Treatment success and cure rates: cohorts 2005, 2006 and 2007, pulmonary TB

Municipalities in Depts. of La Paz, Santa Cruz and Cochabamba, Bolivia.



when the Ministry of Health decided to expand the improvement work to new regions and municipalities. Data for TB patient cohorts diagnosed in 2005, 2006, and 2007 provide some indication of the impact of this work thus far.

QI teams were able to achieve important improvements in cure rates, treatment success rates, and abandonment rates with those cases detected, as compared to indicators from the two prior years. As seen in the figure, treatment success and cure rates rose in 2007 in all three regions, particularly in La Paz (which had the lowest initial rates); treatment abandonment rates also dropped.

Detection of respiratory suspects increased slightly, from 64% of expected cases to 75% of expected cases, but did not reach the target of 85%. Teams also made particular progress in reducing the proportion of unproductive (i.e., saliva) samples from 33% to 13%. Only partial progress was achieved as of December 2007 with respect to expanding DOTS. QI teams in Cochabamba and La Paz regions saw essentially no change in the

percentage of patients receiving DOTS, but a substantial improvement was seen in Cochabamba, from 67% to 89%.

Lessons

- The collaborative represented a new way of working for staff in these facilities by engaging them in using TB performance indicators to gauge how well they were doing and take the steps of analyzing their own processes to see how they could improve. Engaged workers, knowing that they can influence the behaviors of their colleagues and patients, tend to be more motivated to provide better health care services.
- Innovative, locally generated solutions are needed to overcome local obstacles that impede application of national TB guidelines. The Improvement Collaborative approach, as adapted by QAP and its successor, the HCI Project, offers an effective approach for engaging health providers in developing countries in finding solutions to common problems.