



Successful Tuberculosis Control Program in China Incorporates Results-Based Financing (RBF)

BY LINDSAY MORGAN*

When China does something, it does it big. Think the Three Gorges Dam—the largest electricity-generating plant in the world. Or the opulence of the Beijing Olympics. Think the 5,000 mile-long Great Wall.

The country's tuberculosis (TB) epidemic is equally massive—and tragic. With more than one million new cases each year, it is the second largest epidemic in the world, behind only India. Poverty helps to spread TB, and TB reinforces poverty, sickening the poor especially in their adult (i.e., most productive) years. Their incapacitation and death are tragedies in themselves but they also contribute to the impoverishment of families, and impact the country as a whole. It is estimated that high-burden countries in Asia suffer from productivity loss due to TB of 4 to 7 percent of GDP per year.¹ But a national TB program incorporating performance incentives has turned the tide on the epidemic.

A national tuberculosis program was established in 1981, and though some progress was made, “the program was plagued by poor treatment compliance, a deficient network of diagnostic laboratories, and an inadequate system of reporting and evaluating cases.”² Thus, in 1990, TB was still the leading cause of death among adults (360,000 died of TB that year alone).

One year later, China embarked on a 10-year Infectious and Endemic Disease Control (IEDC) project to curb the TB epidemic. In partnership with the World Bank and the World Health Organization (WHO), the Chinese government implemented DOTS (Directly Observed Treatment, Short-course) in 13 provinces that account for roughly half of the Chinese population. DOTS, the internationally recommended approach for the diagnosis and treatment of tuberculosis, requires the supervision of a TB patient's treatment by an independent observer to ensure treatment is taken regularly, usually over a six-month period. DOTS has been proven to be extremely cost-effective at reducing incidence of TB in high-burden settings.



Photo: Curt Camermark/World Bank

¹ C. Harper, “Tuberculosis, A Neglected Opportunity,” *Nature Medicine* 13 (2007): 309–312.

² Ruth Levine and the What Works Working Group with Molly Kinder, *Millions Saved: Proven Successes in Global Health*, Washington, D.C.: Center for Global Development, 2004.

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Under the IEDC project, low-cost, high-quality drugs were purchased, health facility staff were trained, and free diagnosis and treatment were provided to infectious TB patients. By the end of 2000, nearly 1.2 million infectious TB patients had been diagnosed and cured as a result of the program.

The national DOTS program was boosted and expanded in 2002. With support from the World Bank, the U.K. Department for International Development (DfID), the Japanese government, WHO, the Global Fund to Fight Aids, Tuberculosis and Malaria, the KNCV Tuberculosis Foundation and the Bill & Melinda Gates Foundation, the China Tuberculosis Control Project was the largest control effort of its kind, covering 668 million people in 16 provinces. It was also stunningly successful, reducing TB-associated deaths by 770,000, and preventing two million people from falling ill.

The impressive collaboration, facilitated by the World Bank, was one crucial element of the program's success. The program achieved one hundred percent DOTS coverage, 77 percent case detection, and 92 percent cure for detected smear-positive patients—all exceeding initial targets.



Photo: WHO/TBPr/Pierre Viret

Says John Langenbrunner, the lead health economist at the World Bank's Beijing office: "the Bank provided a platform...we can be an honest broker and we did that very effectively in China."

Another key element of the project's success was its use of performance-based incentives. Under the program, village doctors (community health workers) received a fee for reporting and referring a TB patient, and for supervising a patient to complete treatment (for the entire 6 months). The project paid other incentives as well, such as fees to physicians in general hospitals for referring TB patients to TB dispensaries, and fees to dispensary staff for tracking patients. The project also provided transportation subsidies to poor patients for travel between their home and the clinics.

Paying for performance turned the status quo on its head in China, where the incomes of health providers are typically closely linked with the volume of medical care provided rather than outputs. This has at times led to overutilization and unnecessary treatment, but not necessarily to improved quality of care or health among patients. Results-based financing (RBF)—using performance incentives—contributed to the high case detection rate in China, and to the high referral rate as well.

Now that the program is complete, it is not clear which incentives will be maintained. The central government has pledged to continue paying incentive payments to physicians for diagnosis of smear-negative patients, as well as transportation subsidies for poor TB patients. But the bonuses for health facility staff will likely be dropped, as they were funded by local governments and will probably not be picked up by the central government. It may depend on the decisions of local bureaus of finance, which pay health facility staff at different levels—province, prefecture, and county. This highlights the issue of inequity of funding in a very decentralized sector—a big challenge for China today and tomorrow.

A new small pilot funded by DfID and the WHO is paying doctors for TB case management. This incentive is meant to address the problem spawned by the previous fee for service model, which saw unnecessary care and over-use. The new approach is meant to incentivize doctors, not only to indentify and treat patients, but to do so in a way that is cost-effective.

So far, results are promising, but whether the incentives will be adopted by the government after the project is complete is unclear.

“It’s one thing to have a successful program,” says Langenbrunner, “but are they sustainable?”

China has seen stunning success in TB control. How it will be maintained, and whether RBF will be part of the effort, are open questions.