

OPERATIONS RESEARCH AND DATA FOR DECISION-MAKING: BUILDING CAPACITY FOR LOCALLY-DRIVEN SOLUTIONS TO IMPROVE TB PROGRAMS

OVERVIEW

Expanding global access to tuberculosis (TB) care and treatment requires continuous improvement of services. To do this, the U.S. Centers for Disease Control and Prevention (CDC) is making efforts to understand the strengths and weaknesses of TB programs at the local level and to identify locally-driven solutions to solve issues as they arise. Every program faces unique challenges, and local staff are often best equipped to identify and address these issues. However, the skills needed to use local data to drive program improvement are not often part of the training for public health professionals in high TB-burden countries. Building a cadre of professionals to lead operational research and harness local data for decision-making can directly and immediately impact programs and create long-term research capacity in the country.

CDC'S ROLE

CDC has a long history of collaborating directly with ministries of health (MOHs) and national TB programs to train local professionals on data use for decision-making and operational research to develop local solutions to challenges and barriers to high-quality TB care.

CDC launched its first formal Operational Research Training Course in India in 2011 in collaboration with the International Union against TB and Lung Disease, the World Health Organization (WHO) and the Government of India. This approach consists of a nine-month modular curriculum, which includes courses on research question development, data collection methods, analysis, and scientific writing, followed by required sustained training and mentorship. Ultimately, participants are able to conduct research independently, providing opportunities for individual professional development while building the technical capacity of MOHs. The course is specifically designed to provide the scientific evidence-base to develop locally-driven solutions and changes to policy and practice. Since 2011, several cohorts have gone through this course in India, and it has been replicated in Uganda and Vietnam.

CDC also works with our partners to identify decision-makers and local professionals at the national and sub-national level, who routinely handle or interpret surveillance and research data that could be used more effectively to drive program improvement. Understanding how to use routinely collected data to assess program performance requires hands-on training. Since 2016, CDC has partnered with WHO and ministries of health to train nearly 300 professionals from nine countries on use of analytic tools to interpret local data and establish simple analytic work plans to translate data into action.

ACCOMPLISHMENTS / RESULTS

Since 2011, 100 Indian investigators from four cohorts have participated in the program and developed 53 unique research protocols to identify public health challenges, design research studies to investigate potential solutions, and translate findings into policy and practice. Course projects have helped enact several national and regional TB and TB/HIV program policies, improve program performance, save tens of thousands of lives through early diagnosis and linkage to care, and save an estimated \$1 million in laboratory costs per year. Some specific policy and programmatic changes resulting from these studies include:

- India's adoption of universal screening for diabetes among persons with TB now leads to early diagnosis of diabetes for 100,000 persons per year.
- The provision of directly observed therapy by family members for children with TB has eliminated the need for health workers to visit approximately 2,400 children per year in Gujarat, thereby saving public health resources and improving treatment completion.
- Nearly 50 percent of all Indians with TB seek care in the private and informal sectors. The Government of India must engage this sector to expand access to care while ensuring high quality treatment and reducing treatment failure and development of resistance. One of the studies from this course resulted in national consensus policy for "Standards of TB Care in India" for all health care providers regarding standards for diagnosis, treatment, and public health responsibility.

Operations research courses developed by CDC staff were launched in both Vietnam and Uganda. The course in Vietnam had 26 students and resulted in 13 projects and four manuscripts. In Uganda, the course (which was completed in late 2018) engaged 21 Field Epidemiology Training Program fellows, six Ugandan faculty, and six CDC faculty. Currently there are 21 studies in progress, all focusing on some aspect of TB/HIV with some yielding preliminary results already.

CDC supported a multi-country workshop through WHO's Health Data Collaborative to enable local professionals to use DHIS2 data to analyze their national TB data and identify successes and challenges facing their TB programs. Follow-up workshops are planned in each country (Malawi, Myanmar, Tanzania, Uganda, Pakistan, and Zimbabwe) to further disseminate these tools and approaches and assure data for decision-making principles have been incorporated into local and national TB program practice. CDC has also supported data use workshops for national and provincial TB program managers in India, Kenya, and Vietnam, training more than 250 professionals to assess program performance to drive program improvement at the site and district level. Evaluation of the impact of routine data use training to drive program improvement has been planned.

FUTURE EFFORTS

CDC is seeking ways to mainstream and scale up these curricula with partners in other high-burden countries to increase routine data use for decision-making.