

KNOW YOUR EPIDEMIC: DISEASE SURVEILLANCE FOR TARGETING EFFORTS TO END TB

OVERVIEW

Strong laboratory networks, robust treatment programs, and tuberculosis (TB) disease surveillance systems form the core of effective national TB programs. At the local, national, and global levels, surveillance systems – the collection, analysis, and interpretation of public health-related data – are critical to monitor progress toward elimination of any disease, including TB. Disease surveillance is an indispensable source of information that can improve the effectiveness of TB prevention and control programs when data are used to target the most effective interventions to the right populations in the right places. Surveillance can also be used for monitoring the impact of those interventions.

Strong TB disease surveillance helps identify gaps in health systems, and by doing so, saves lives. For example, disease surveillance can identify if there is a substantial gap between people who are diagnosed with TB and those who are started on treatment. Such information can enable outreach to individual patients, but also trigger an assessment of the linkage to care between diagnosis and treatment and change policies or practices that can contribute to this gap.

However, surveillance systems can be difficult to implement effectively, as there are challenges to ensuring accurate, timely, and complete information is captured and can be used at all levels of the health system. To compare data about TB over time and from country to country, there must be a common methodology for the indicators and the methods of collection and reporting. In addition, as new evidence, tools, and strategies emerge to address TB, global strategies continue to evolve. Disease surveillance systems and the data they collect must shift to capture such information; such global shifts in disease surveillance systems take time. Even when good surveillance systems are in place, data are not always used to guide program priorities and interventions if those accessing the data are not trained on how to access, analyze, and interpret the data.

CDC'S ROLE

As the premier U.S. government agency with a global reach and an exclusive focus on public health, the Centers for Disease Control and Prevention (CDC) works with the World Health Organization (WHO) and ministries of health (MOHs) to address all aspects of TB disease surveillance. CDC conducts inventory studies to assess the level of under-reporting of TB cases, and routine assessments to determine how well a surveillance system is functioning. In collaboration with international organizations, CDC conducts periodic national prevalence surveys to document the burden of TB disease. CDC trains public health professionals to use data to drive program improvement. Following the releases of WHO's End TB Strategy and the Stop TB Partnership's Global Plan to End TB (2016-2020), CDC continues to work with its partners to pilot surveillance methods for new indicators to monitor progress toward the goal of ending TB by 2035.

ACCOMPLISHMENTS / RESULTS

- The Global Task Force on TB Impact Measurement is a WHO global advisory group, which meets on a bi-annual basis to develop strategies and guidance to measure the burden of TB and progress towards global targets. In addition, CDC has provided expert consultations and technical assistance in implementation of activities recommended by the Task Force, including national TB prevalence, drug-resistance studies, patient cost surveys and inventory studies in countries, including (but not limited to) Nigeria, Malawi, Uganda, South Africa, Papua New Guinea, eSwatini, Lesotho, Zambia, Vietnam, India, Myanmar, Tanzania, and Haiti.
- Together with partners, CDC developed guidelines and tools for the Task Force, including a handbook and data collection tools for TB prevalence surveys, standards and benchmarks for TB surveillance and vital registration systems, and guidance and data collection tools for patient cost surveys.
- CDC provided technical assistance on inventory studies in four countries to highlight the proportion of cases that have been diagnosed and/or started on TB treatment, but are not reflected in the government and WHO surveillance systems. From 2014-2016, these studies helped determine the number of people who are treated in informal or private settings compared to those who have TB disease and were yet to be diagnosed or treated, enabling better targeting of global efforts to expand access to treatment.
 - In partnership with the Health Data Collaborative – an inclusive partnership of international agencies, governments, philanthropies, donors, and academia with the common aim of improving public health data – and the WHO, CDC provided training and guidance to leadership and program staff from six countries (Malawi, Myanmar, Tanzania, Uganda, Pakistan, and

Zimbabwe) at a WHO workshop for using DHIS2 to analyze national TB data to guide program improvement. Follow-up training and further dissemination of this approach is planned for 2019.

- CDC previously developed, organized, and conducted bi-lateral data use workshops in Kenya and Vietnam and is planning a workshop in India for December 2018. In Vietnam two national-level meetings, three training workshops, and three follow-up meetings were conducted in 2016-2017. Provincial TB and TB/HIV coordinators and data managers from all 63 provinces participated in the training. In Kenya, two training workshops and one follow-up meeting were conducted in 2016-2017. Sixty-two TB coordinators and data managers from all 47 counties of Kenya participated in the training.
- Each year, CDC assists high-burden countries to conduct prevalence surveys of TB and drug-resistant TB. Since 2016, CDC has supported 21 countries in assessing their burden of the disease, which helps efficiently target resources while monitoring program performance and improvement.
- CDC is working with MOHs and other partners in high-burden countries to identify and implement the best approaches for measuring new TB indicators and monitor progress towards national and global TB targets.
- According to the WHO End TB Strategy, a catastrophic cost indicator is one of the three main indicators reflecting the importance of reducing the financial burden of TB care as a key component of global TB elimination. To measure this indicator, high TB burden countries are carrying out nationally representative TB patient cost surveys to determine the proportion of TB patients who spend 20 percent or more of their annual household income on TB diagnosis and treatment. The results of the surveys will inform policies and support efforts to mitigate the costs households incur due to TB disease. In collaboration with WHO and national TB programs, CDC is implementing three patient cost surveys in Papua New Guinea, Brazil, and Tanzania.

FUTURE EFFORTS

CDC will continue working with its partners around the world to strengthen surveillance systems to ensure high-quality data is used to inform program improvement, expand access to TB treatment, and develop approaches for measuring new TB indicators. CDC subject matter experts will continue to apply their unmatched knowledge and public health expertise in training public health professionals in data analysis and use in building resilient public health systems.