TB Speed: Improvement of childhood tuberculosis diagnosis using new technologies for use in low-level health care facilities.

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Background

Notification of tuberculosis in children is still low. This likely to be due to the paucibacillary nature of childhood tuberculosis, the difficulty to obtain sputum, the low diagnostic yield of existing tests, weak chest radiograph services, lack of systematic screening at all health facility entry points, and absence of point-of-care tests. Improved case detection and access to treatment for children with tuberculosis is a key step to reach the goal of zero death from tuberculosis.

Objective

The TB-SPEED project goal is to contribute to the reduction in childhood mortality from tuberculosis by delivering an available, feasible, cost-effective, and decentralized childhood tuberculosis diagnostic approach to enhance case-finding and access to treatment.

Project implementation plan

This is a four-year UNITAID-funded project implemented in seven countries (Cambodia, Cameroon, Côte d'Ivoire, Mozambique, Sierra Leone, Uganda, and Zambia) to start in September 2017 with three major patient-centred outputs and three technical support outputs building evidence for future scale-up.

The project will innovatively validate a decentralized diagnostic approach using battery-operated GeneXpert OMNI and Xpert ultra cartridge to increase access to tuberculosis diagnostics. It also proposes a simplified nasopharyngeal aspirate sample collection method through the use of battery-operated suction machines that are suitable for rural areas. The project also aims to optimize stool processing without centrifugation allowing stool Xpert testing at lower-level health care facilities. The approach will also include optimized screening, clinical and radiological diagnosis through training, mentorship, the use of digital radiography, and establishment of quality control of X-ray reading.

Project outputs

1. New decentralized childhood tuberculosis diagnostic approaches tested at district health system level
2. Evaluation of an early tuberculosis detection strategy in children with severe pneumonia
3. Validation of diagnostic tools and algorithms in highly vulnerable groups with presumptive tuberculosis, specifically HIV-infected and severely malnourished children
4. Identification of optimized, suitable, and affordable specimen collection and processing methods for childhood tuberculosis diagnosis in resource-limited countries
5. Evaluation of cost-effectiveness of the proposed diagnostic approaches
6. Dissemination, communication and stakeholders' engagement

The TB-SPEED project aims to increase case detection and reduce mortality of children with tuberculosis through decentralization of diagnosis and screening for tuberculosis of children with HIV infection severe malnutrition, or severe pneumonia.