Status of Xpert MTB/RIF assay implementation in Ethiopia

Ayinalem Alemu

Ethiopian Public Health Institute, Ethiopia

Background: Since December 2010, WHO has endorsed Xpert MTB/RIF Assay for the diagnosis of tuberculosis and rifampicin resistance tuberculosis. Based on this recommendation, Ethiopia has been implementing the use of Xpert MTB/RIF Assay since 2012. Monitoring and evaluation of Xpert MTB/RIF Assay implementation is necessary to ensure the effective and efficient use of resources and to guide for further scale-up.

Objective: To assess implementation outcomes, gaps and staff profile after the implementation of Xpert MTB/RIF Assay for the diagnosis of Tuberculosis and Rifampicin resistant Tuberculosis in Ethiopia.

Methodology: Data was collected and analyzed from 87 GeneXpert sites from 15 May to 11 June 2016. A structured questionnaire was used to collect information on staff profile and trainings taken. Data was extracted from GeneXpert machine since the date of installation from 70 GeneXpert sites. Records were reviewed from laboratory register book and from archived laboratory request formats by using a comprehensive assessment tool to evaluate the laboratory personnel competency and clinician's adherence to the national algorithm.

Result: A total of 80,683 specimens were examined by using Xpert MTB/RIF Assay starting from the date of installation up to June 2016 in 70 GeneXpert sites. *Mycobacterium tuberculosis* was detected in 12,422 (15.4%) of specimens. From all Tuberculosis detected results 83.75% (10,403), 12.68% (1,591) and 3.45% (428) were susceptible, resistance and indeterminate to Rifampicin respectively. The error rate was 14.1%. There were 285 Xpert MTB/RIF Assay trained laboratory professionals at 87 GeneXpert sites. An average of 3 trained laboratory professionals were working in each facility. At least one trained laboratory professional was found in each facility, but untrained laboratory professionals were performing Xpert MTB/RIF Assay in 67 facilities. National Tuberculosis Program approved Xpert MTB/RIF Assay testing algorithm was not followed in 36% of sites. Most of the clinicians did not properly fill request papers. Standardized request formats and laboratory log books were not available in 15% and 8% of facilities respectively. Xpert MTB/RIF Assay results were correctly recorded on the laboratory log book in 87% of sites. Critical result (rifampicin resistant tuberculosis) communication was not appropriate in 25.6% of facilities. Xpert MTB/RIF Assay test results were not archived regularly in 47% of laboratories.

Conclusion: Detection rate of tuberculosis with the Xpert MTB/RIF Assay was low; this may be due to inappropriate requesting. Xpert MTB/RIF Assay showed an advantage for detecting rifampicin resistant tuberculosis cases in peripheral laboratory level which is important for early management of drug resistant tuberculosis. Error rate was high as compared to the expected standard. There was 100% Xpert MTB/RIF Assay training coverage. It was found that untrained laboratory professionals were doing Xpert MTB/RIF Assay which may have a negative impact for the control of tuberculosis and drug resistant tuberculosis.

e: ayinalemal@gmail.com