Improving AFB Microscopy Services in Kenya by Strengthening the EQA System

Kenya’s Tuberculosis (TB) Epidemic

- Kenya is one of the 22 high TB burden countries.
- According to Kenya’s National TB Program (NTP) 2011 Annual Report, 100,000 Kenyans become infected with TB each year.
- NTP registers 70% of all TB cases and successfully treats 85% of all cases.

Laboratory Challenges

- Many doctors in Kenya do not trust public laboratories’ acid-fast bacilli (AFB) TB tests because laboratories often make the following errors:
  - High false positive (HFP) = test results wrongly labeled as positive
  - High false negative (HFN) = test results wrongly labeled as negative (missed TB diagnosis)
- To address this challenge, Kenya needed an external quality assurance (EQA) strategy to evaluate and improve lab performance.

TB CARE I Addresses the Needs (October 2009)

The USAID-funded project, TB CARE I, developed an EQA system and implemented it in 279 laboratories.

- Developed and implemented EQA tools:
  - Standard operating procedures
  - Data collection and reporting forms
  - Data analysis workbook
- Trained 603 EQA implementers and 172 supervisors to use the new tools.
- Provided quarterly support for sample collection and feedback exercises.
- Visited poorly performing laboratories to provide on-site mentorship.

Results

- The percentage of TB laboratories implementing EQA increased from 28% in Quarter 1, 2009 to 86% in Quarter 3, 2012 (see Figure 1).
- Major errors dropped by 10.6% in 2010 to 2.4% in 2012 (see Figure 2).
- With fewer errors, laboratory test results’ reliability improved from 89% in 2010 to 97.6% in 2012.
- Quarterly reports show that regular visits by laboratory supervisors to provide feedback and mentorship to laboratory staff helped to motivate the staff and enhance their performance.

Conclusion

- By developing an EQA system and disseminating associated documents and tools, training staff, and providing feedback and site visits, TB CARE I significantly strengthened the quality and reliability of TB laboratory results in Kenya.
- TB CARE I recommends that the Kenyan government funds and implements the EQA system in all public laboratories nationwide to improve the quality and reliability of TB test results.

Acknowledgement

The Government of the United States of America through the US Agency for International Development (USAID) for funding the TB CARE I project.

For more information, please contact:
Ernest Ruttoh, MSc. Laboratory Advisor, TB CARE I, Kenya; Tel: +254 722 833 768; Email: eruttoh@msh-kenya.org