

## **Abstract**

*Setting:* The global menace of Tuberculosis (TB) claims one life every 21 seconds; claiming 1.5 million lives and afflicting 9 million in 2013. Despite advances, direct Sputum smear microscopy (SSM) has remained the key tool in global TB control as the standard of care test for diagnosing pulmonary TB in resource-constrained countries. GeneXpert, a nucleic acid amplification test using a fully automated cartridge based closed system, endorsed by WHO in 2010, has been rolled out in 108 countries to enhance TB diagnosis as well as the rapid identification of Rifampicin resistance to *Mycobacterium tuberculosis* (*Mtb*); a factor strongly associated with multi-drug resistant TB.

*Design:* The current study compares the incremental value of the new tool GeneXpert over the standard of care test, SSM in TB suspects, in a directly observed therapy short-course (DOTS) clinic in the city of Bangalore in Southern India.

*Results:* We observed a 21% incremental value of GeneXpert (22 cases diagnosed additionally, over SSM) which is statistically significant. Additionally, 22/75 SSM negative samples (29%) were Xpert positive.

*Conclusion:* The definitive incremental value of Xpert MTB/RIF in detecting Pulmonary TB over the standard of care SSM observed can potentially have added value as add-on test in the diagnostic algorithm.