# EDITORIAL

The article in this issue of the Journal (A Study on challenges in diagnosis of Drug Resistant TB by Gene-Xpert in Bangladesh -2016) which was conducted by National TB Control Programme Bangladesh in collaboration with SAARC TB and HIV/AIDS Centre (STAC) provides challengers which encountered during application of the Gene-Xpert and key lessons learned in Bangladesh. According to this study, main challenger while operating these machines in Bangladesh has been a frequent module failure, which require longer time period to replacement. Also the study revealed that, frequent errors are shown due to poor quality of sample, unstable electricity supply or poor skill of machine operators. Authors concluded that proper training of operators and proper sputum transport system is urgently needed for efficient use of these machines.

Tuberculosis (TB) remains a major public health problem, as evidenced by the estimated 9 million incident cases, 300 000 multi-drug resistant (MDR) cases and 1.5 million deaths worldwide in 2015. However, only 58% of the new incident cases were bacteriologically confirmed by smear, culture, or Xpert® MTB/RIF (Xpert), while the remaining 42% were diagnosed clinically, including by X-ray.

Xpert® MTB/RIF (Xpert) is an automated molecular test for simultaneous detection of tuberculosis (TB) and rifampicin resistance, recommended by the World Health Organization as the preferred diagnostic method for individuals presumed to have multi-drug resistant TB (MDR-TB) or HIV-associated TB. In 2010, the World Health Organization (WHO) endorsed the Xpert test and recommended its use as the initial diagnostic test for people with HIV-associated TB or presumptive multidrug resistant TB. Three years later the recommendation was extended (conditional on availability of resources) to cover initial diagnostic testing for all adults presumed of having TB.

Early treatment of tuberculosis (TB) is hindered by the lack of rapid, accurate diagnostic modalities that can be applied in resource-limited settings Sputum smear microscopy which is the cheapest and the most available method of TB diagnosis identifies TB in less than half of patients with HIV/TB co-infection. Access to mycobacterial culture is limited and where available results are often delayed by several weeks. Xpert MTB/RIF test (GeneXpert) is a promising innovation in routine TB diagnosis in developing countries owing to the its high sensitivity, specificity and rapid turnaround time of only two hours.

Laboratories play an important role in the NTPs, primarily in the detection of tuberculosis cases, thus ensuring effective treatment and cure by periodic examination of sputum specimens by smear microscopy. Over the years, SAARC TB and HIV/AIDS Centre (STAC) has been conducted quality assurance for smear microscopy in National Reference Laboratories in all the SAARC member states and results showed very good performances.

The Xpert test has been shown to improve TB case finding especially among HIV infected, pediatric age group, extra-pulmonary TB. This and other molecular tools which are fast followers of Xpert and other Point of Care tests has potential to replace microscopy as the first tool for screening and is likely to be the subject of interest in which the SAARC laboratory as the Supra-national reference laboratory could play a key role to validate and generate evidence for wider use of this test in the SAARC region.

In addition, good quality C&DST laboratories are to be strengthened to evaluate the level of dug resistance in the region.