

NEW DIAGNOSTIC TEST FOR TUBERCULOSIS

More than a century ago, Koch discovered *Mycobacterium tuberculosis* and Ziehl and Neelsen developed a way to stain it. Then science gave a big yawn and turned over to more exciting things; and we limped along with microscopy as the only definitive tool for diagnosis of tuberculosis.

Finally someone got up. With funding from The Bill and Melinda Gates Foundation, FIND (Foundation for Innovative and New Diagnostics) developed a new test called Xpert MTB/RIF, a hemi-nested PCR, to confirm the diagnosis of *Mycobacterium tuberculosis*. It simultaneously also targets the *rpoB* gene, which is critical for identifying mutations associated with rifampicin resistance that occurs with a frequency of 95% in MDR-TB. Hence identifying rifampicin resistance initially should prompt an immediate detailed sensitivity testing against second line agents.

Tests results are available in just 2 hours. Acceptable samples include unprocessed sputum or sediment from concentrated specimens. Cepheid (the company which is marketing it) is offering a 75% discount for poorer nations, meaning the tests will cost \$16.86 and the machine will cost around \$17,000.

A trial on 1730 patients from Peru, Azerbaijan, South Africa, and India using the technique was recently published in the NEJM. It had a sensitivity of 98.2% in smear positive patients and 72.5% in smear negative patients. Specificity was 99.2% and

97.6% of rifampicin resistant bacteria were correctly identified (*NEJM September 9, 2010*).

THE ROAD AHEAD—REFORMS IN MEDICAL EDUCATION

In 1912, the Flexnor Report sparked ground breaking reforms in medical education. Now, a Commission consisting of 20 professionals from diverse countries round the world has published its report on how to relook at the direction in which we must mould our medical education. Internationally, 2420 medical schools train roughly 1 million doctors, nurses and health professionals. Education in the last century has evolved from a science based curriculum to a problem based one and is now entering the third phase of systems based education. The need of the hour is to improve the performance of health systems by adapting core professional competencies to specific contexts, while drawing on global knowledge. We need to change the style of learning from mere information collectors to development of leaders who can induce change in their microenvironment.

Great emphasis has been placed on interdependence and change from stand-alone institutions to networks, alliances, and consortia and harnessing of global flows of educational content, teaching resources, and innovations. Deep thought about how we train future doctors will decide the health of the nation *The Lancet, 4 December, 2010*).

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