

IPAQT- MAKING AN IMPACT

Despite stellar work by the Revised National Tuberculosis Control Program (RNTCP), it was getting clear that India would not be able to eradicate tuberculosis (TB) by 2050. One major roadblock appeared to be accurate and affordable tests for TB. About 80% of India's health care is in the hands of the private sector. An analysis of the tests for tuberculosis done in the private sector in 2011 revealed that the costly and inaccurate serological tests for tuberculosis accounted for 52% of all tests ordered. The WHO has strongly endorsed newer tests like the Gene Expert, Hain Line Probe Assay and BACTEC MGIT. However these tests cost \$68, \$54 and \$73, respectively while the average monthly income of an Indian household is \$52. Hence these tests were rarely considered. In 2013, an innovative program was launched. It is called — Initiative for Promoting Affordable, Quality TB tests (IPAQT). This is a coalition of several private laboratories, supported by industry and non-profit groups, in India to make WHO-endorsed tests available at affordable prices to patients in the private sector. They have agreed that they will not exceed negotiated, ceiling prices. They will further notify the government of the cases diagnosed. In turn they would get reagents at significantly reduced prices.

Now, the GeneXpert, an accurate polymerase-chain-reaction (PCR) based test that detects both the presence of mycobacteria and the mutation for rifampicin resistance in 2 hours, is available at Rs 1700. The Hain genotype MTBDR is a line probe assay where DNA is extracted from sputum, undergoes multiplex PCR amplification and targeted DNA is picked up by specific probes. This test picks up presence of mycobacteria as well as diagnoses both INH and Rifampicin resistance in 6 hours. Under IPAQT this test is now available at Rs 1600. IPAQT now has 50 member laboratories and covers 60% of the districts in India. Not surprisingly, GeneXpert tests went up from 500 in the entire year 2012 to 6000 tests in only the first quarter of 2013. This unique business model to deliver accurate tests at low costs might bring a sea change in the way we manage tuberculosis in India.

(J Mahatma Gandhi Inst Med Sci 2013;18:94-6, <http://www.who.int/tb/careproviders/ppm/IPAQT.pdf>)

NON INVASIVE DIAGNOSIS OF MALARIA

Scientists from Rice University, Texas, USA have developed a totally new approach to diagnose malaria. When plasmodia infect red blood cells, they degrade the heme to hemozoin. The technique developed by Lapotko, *et al.* is based on detection of this hemozoin — a unique component of all blood-stage malaria parasites. A short and safe near-infrared picosecond laser pulse generates a transient vapor nanobubble around hemozoin. These bubbles expand explosively and then collapse with a characteristic sound that can be picked up with an ultrasound sensor. Rapid detection of a malaria infection as low as 0.00034% in animals was possible without using any reagents or drawing blood. The first trials in humans is expected to begin in early 2014 at Houston. Rugged and inexpensive microlasers exist that could be modified to create portable devices capable of operating in harsh conditions. Non-medical personnel would be able to operate these devices and obtain a diagnosis in seconds. However, the technique cannot make a species diagnosis. Moreover, haemozoin may persist in the blood even after the parasite has been cleared. All the same, it is refreshing to know that “It isn't all over; everything has not been invented; and in many unexpected areas human adventure is just beginning”.

*(<http://www.pnas.org/content/early/2013/12/26/1316253111>. abstract, *The Hindu* 1 January 2014)*

APPS FOR ORGAN DONATION

Two mobile phone apps for organ donation have been launched in Chennai in January. Initially on the Android platform, and subsequently, on iOS, this app, gives you a notification that you are a donor after you have signed up to donate organs. Once you register, a red heart symbol will be displayed prominently on the mobile phone, indicating that you are a donor. Eventually, a list of the hospitals where both eyes and other organs are harvested and transplanted will be available on the app, soon to be downloaded from the Apple and Google Play stores. Vasan Eye Care is now taking eye donation formally on to social media platforms with an option to pledge your corneas on Facebook. Social media platforms can be powerful tools to transform healthcare if we only know how to use them well. (*The Hindu* 21 January 2014)

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