

# Tuberculosis FREE WORLD

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It gives me immense pleasure to wholeheartedly greet all the medical professionals, paramedical staff, researchers, patients etc. on this "World TB Day being celebrated every year on 24 March".



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Free World

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TB, as we all know, is the most infectious disease on this planet\_killing more than 2 million people each year. This communicable disease caused by *Mycobacterium tuberculosis* exists on earth since time immemorial and is intelligent enough to evade the eradication despite sustained effort and improvement in medical sciences.

Be its Mars mission, building a nuclear submarine or robotic surgery or weapons of mass destruction or the advanced jet engine or eradication of plague, polio, smallpox, human being has displayed his extraordinary ingenuity taking every challenge in his stride. Despite thousands of researchers working for the last 60 years around the globe, the disease is continued to be a threat to humanity. It takes about 2 weeks for diagnosis with an increase in complexity when we come across XDR or MDR TB cases.

The need of the hour is to relook at our efforts, redirect our research, utilize advanced technologies and find out a long lasting solution to eradicate this disease. Resistance to current drugs asks for new drugs and hence innovation in drug discovery. Additionally, TB patients suffer from social stigma, daunting and difficult treatment, lack of social support, lack of motivation to undergo prolonged treatment resulting in large unsuccessful outcomes.

Some of the challenges are not medical but behavioural leading to non-adherence to treatment. Failure to early diagnosis and unable to initiate on time effective treatment are some other which are indispensable for effective TB control. Expediting research using point of care nano bio sensing based technologies which have the potential to detect even MDR TB cases with instantaneous results will be in order.

Today India has set up excellent Nano-, biotechnology centres that should be funded to undertake this research at a larger scale. Nanotechnologies are successful in drug delivery at site of action which can give nullify the challenge associated with poor absorption, metabolism and hence dosage and duration of treatment. To overcome some of the patient non-compliance and behavioural issues, digital platforms and social media can be used to create interactive communication between patients, doctors, social workers, psychologists and researchers. This may improve the awareness and hence the adherence to the treatment regimen.

India despite seriously engaged with control of TB over the last 50 years faces a mortality rate of 1200 per day. It is gratifying that GOI has set up a national programme under the chairmanship of our honourable Prime Minister and drawn up a framework to create TB free India.

ESA has funded a project SAFE (satellites for Epidemiology) which was employed for routine surveillance of TB in Georgia. This enabled better follow up of MDR cases. This has been used by Georgia national centre for TB to decentralize the way the data was collected than any other means. We can probably ask for support from ISRO to initiate such a programme in India. At the international level, the WHO has drawn up strategies at a global level to save the world from the scourge of TB by 2035 with 90 percent reduction in incidence, 95 percent reduction in deaths with affordable treatment.