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Prof. Urvashi B Singh lead the National TB Elimination Program as the Deputy Director General, NTEP from Aug 2024 to December 2025. She was responsible for the roll-out of the new BPaLM regimen, the tri-pronged nutrition support strategy (Doubling of Nikshay Poshan Yojana amount to all TB patients, expansion of Nikshay Mitra food baskets to the households of TB patients and Energy Dense Nutrition Support to TB patients with BMI<18.5), TB Mukht Bharat Abhiyan strategy (screening of asymptomatic vulnerable risk groups for subclinical TB using handheld X-Rays), expansion of 4S (4 symptoms) for screening to 10S, expansion of country wide network of NAAT machines to strengthen TB diagnosis, roll-out of indigenous CAD system for reading X-rays in the peripheral sites. She was also responsible for initiating intensified screening efforts in tribal areas and urban slums. She strengthened the capacity of laboratory network and introduced and certified 43 laboratories across the country for drug susceptibility testing for newer drugs, Bedaquiline and Pretomanid. In addition she introduced targeted Next Generation Sequencing for MDR-TB patients in five National Reference Laboratories. Most of the programmatic implementations were introduced for the first time globally.

Her research interests include adult and pediatric tuberculosis, Drug resistant TB, TB treatment and novel regimens, TB epidemiology, TB diagnostics, novel biomarkers, HIV-associated TB, Non-tubercular mycobacteria and *Mycobacterium avium-paratuberculosis*. The research work includes multiple domains in *Mycobacterium tuberculosis* including understanding the epidemiology and pathogenesis of tuberculosis, molecular insights into spread of multidrug resistant tuberculosis, designing of novel rapid detection method for multidrug resistant tuberculosis, rifampicin resistance, molecular typing and whole genome sequencing. Her research has expanded knowledge of drug resistance mutations and molecular epidemiology of TB in India. Her pioneering work for detecting viable TB bacteria in treatment failure patients and subsequent work on therapeutic drug monitoring in this group of patients have direct policy relevance. She has ongoing research for newer drug regimens for Rifampicin sensitive and resistant TB. Her collaborative work on therapeutic use of the Indian vaccine against TB (MIP) paved the way for a Prevention of

Disease vaccine trial. Her research on Biomarkers has yielded new molecules, which hold promise. Her work in the field of MDR contact tracing has yielded novel data and some novel hypothesis for relapse and reinfection TB and disease transmission. Her research has led to several patents, which are in different stages of translation to companies. One novel cost effective diagnostic tests for rapid detection of MDR and XDR TB has been validated by ICMR and has been translated to a manufacturer.

Tuberculosis laboratory is NABL accredited, fully equipped to offer complete diagnostic services for diagnosis of tuberculosis (TB), Non-tubercular Mycobacteria (NTM), and drug resistance to various anti-tubercular drugs by molecular as well as conventional methods. The laboratory offers microscopy, culture (both liquid and solid), PCR, Truenat, and GeneXpert for diagnosis of TB and NTM. In addition, the conventional drug sensitivity testing in liquid and solid culture media, GeneXpert, Truenat, Line Probe Assay are available for detecting resistance to both first line and second line drugs. The laboratory is equipped with state of art molecular typing techniques for TB. All the techniques are quality assured. The laboratory carries out research under several funded schemes (Extramural funding support for Whole Genome Sequencing, Early Bactericidal Activity, Therapeutic Drug Monitoring, Point of Care tests (Aptamer based), Novel biomarkers, Rapid molecular drug resistance detection, Molecular Epidemiology of MDR-TB).

She is a Member of National Subject Expert Committees of CDSCO (DCGI), ICMR, GoI; Member, Project Review Committees of DBT, ICMR, TDB, GoI; Member Editorial Board, Associate Editor, Frontiers in Medicine, Frontiers in Public Health and Frontiers in Microbiology; Scientific Collaborations with Several International and National Institutes; Reviewer for International and National Journals; More than 200 peer-reviewed Publications; Over 64 funded Research studies; Five patents

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