

BioSpect

the business of Bio

24 years of leveraging the business of Bio
www.biospectrumindia.co

Affordable diagnostics and surveillance technologies critical for India's health priorities: Experts

08 May 2026 | News

Discussion at the National Diagnostics Conclave ultimately reinforced that diagnostics are foundational to healthcare delivery



At the first National Diagnostics Conclave organised by Centre for Cellular and Molecular Platforms (C-CAMP) in Bengaluru recently, a panel discussion titled “Delivering National Priorities: Affordable Solutions for Diagnostics and Surveillance for National Programs” brought together leading experts from scientific research institutions, public health departments, government advisory bodies, and global health organizations to discuss India’s evolving diagnostics ecosystem and the urgent need for affordable, accessible, and indigenous diagnostic solutions. The session highlighted the role of diagnostics in strengthening healthcare delivery, disease surveillance, outbreak preparedness, and national health security.

The session was moderated by Dr Taslimarif Saiyed, CEO, C-CAMP. The panel members included Dr Praveen Bharti, Director, ICMR-NIRTH (National Institute of Research in Tribal Health); Dr Harish Iyer, Director, Health R&D, Digital Innovations, and AI, Gates Foundation India; Dr Sangeeta Agarwal, Scientist F, Office of the Principal Scientific Adviser (OPSA), Govt of India; Dr T. A. Devaparthasarathy, Additional Director- Communicable Diseases, Tamil Nadu Department of Public Health and Preventive Medicine (TNDPHM) and Dr Sivakumar S, Scientist E, ICMR-NIRT (National Institute for Research in Tuberculosis).

Opening the discussion, Dr Taslimarif Saiyed emphasised the importance of creating a robust and comprehensive diagnostics innovation ecosystem in India. Reflecting on lessons learned during the COVID-19 pandemic, he noted that India’s heavy dependence on imported reagents and diagnostic building blocks exposed significant vulnerabilities in national healthcare preparedness. He explained that the C-CAMP InDx National Diagnostics Catapult initiative was designed to bridge critical gaps across the innovation pipeline by supporting reagent development, validation, manufacturing integration, regulatory approvals, and deployment into national healthcare programs. He stressed that affordable diagnostics must become central to India’s healthcare strategy, particularly for diseases such as tuberculosis, malaria, maternal health disorders, and future infectious disease outbreaks. According to him, ecosystem-based collaboration involving innovators, researchers, manufacturers, regulators, and governments is essential for ensuring scalable healthcare impact.

Dr Praveen Bharti discussed the challenges and opportunities in delivering diagnostics to underserved and tribal regions of India. He observed that although India has significantly improved its diagnostics capabilities after the COVID-19 pandemic, major gaps still exist between innovation and adaptation. Many technologies developed in laboratories do not successfully transition into field-level public health deployment. Dr Bharti emphasized that future diagnostic tools must support both patient care and disease surveillance simultaneously, especially in regions with limited healthcare infrastructure. He highlighted the importance of developing reliable, sensitive, specific, and affordable diagnostic technologies capable of addressing infectious diseases effectively. He further noted that improved diagnostics infrastructure in tribal and remote regions would significantly enhance healthcare equity and strengthen disease monitoring systems.

Providing a global health perspective, Dr Harish Iyer highlighted the strategic importance of indigenous diagnostic manufacturing for India’s national health security. He referred to India’s lymphatic filariasis elimination program, which historically depended on imported diagnostic kits manufactured in countries where the disease itself was not prevalent. According to him, such dependence creates vulnerabilities in healthcare systems and underscores the importance of building local manufacturing capabilities. Dr Iyer expressed confidence that India could replicate its global success in vaccines and pharmaceuticals within the diagnostics sector as well, given the country’s strong scientific talent and manufacturing capabilities. He also stressed that diagnostics are needed not only for infectious diseases but also for maternal health, neonatal care, anaemia surveillance, and broader public health priorities. He emphasized that meaningful impact can only be achieved through integration of diagnostic innovations into government healthcare programs and state-level public health systems.

Dr Sangeeta Agarwal discussed the diagnostics landscape from the perspective of the national One Health Mission. She pointed out that most existing diagnostic innovations remain focused on single-disease approaches centred around human health, whereas future preparedness requires multiplex and syndrome-based diagnostics capable of detecting multiple pathogens simultaneously. Dr Sangeeta Agarwal encouraged manufacturers and innovators to move toward comprehensive diagnostic panels that address broader clinical syndromes rather than isolated diseases. She also highlighted the urgent need to expand diagnostic innovation into animal and plant health, emphasizing the interconnectedness of human, animal, and environmental health systems. Addressing concerns regarding regulatory pathways, she remarked that regulatory frameworks evolve alongside scientific innovation and encouraged developers to actively pursue novel technologies instead of waiting for predefined guidelines to emerge.

Dr T. A. Devaparthasarathy provided valuable insights into the practical realities of implementing diagnostics within public health systems. He explained that public health departments prioritize feasibility, affordability, reliability, and policy alignment when evaluating new technologies for adoption. He discussed the challenges associated with transporting patient samples across decentralized healthcare systems, particularly in rural regions, where delays in testing can affect treatment outcomes. At the same time, he highlighted encouraging developments in Tamil Nadu’s digital healthcare infrastructure, where laboratory

results are increasingly integrated into real-time electronic systems accessible to clinicians and medical officers. He also discussed the growing use of portable diagnostic devices for measuring blood pressure, haemoglobin, blood glucose, and other parameters directly in field settings, with digital transmission of data to healthcare providers. Despite these advances, he emphasized that uninterrupted supply chains, affordability, and widespread availability of diagnostic kits across rural healthcare centres remain major operational challenges. He further stressed the importance of multiplex diagnostics during outbreaks, where simultaneous testing for diseases such as dengue, leptospirosis, malaria, and scrub typhus becomes necessary.

Dr Sivakumar focused on the research validation and programmatic integration of tuberculosis diagnostics. Referring to the World Health Organization's target product profiles, he noted that while India possesses several approved low-complexity nucleic acid amplification tests, there remains a major shortage of true point-of-care and near-point-of-care diagnostic technologies for tuberculosis. Existing technologies often require infrastructure unavailable in primary healthcare settings such as Basic Health Centres and Community Health Centres. Dr Sivakumar emphasized that future diagnostic innovations must prioritize portability, simplicity, and usability in decentralized environments. He also highlighted the importance of maintaining rigorous standards for sensitivity, specificity, reproducibility, and analytical validation. According to him, standardised approaches for determining limits of detection and ensuring batch-to-batch consistency are critical for maintaining trust in diagnostic performance and facilitating integration into national tuberculosis control programmes.

Throughout the discussion, the panellists collectively emphasized that India's future in diagnostics depends on collaborative ecosystem-driven innovation involving researchers, manufacturers, regulators, policymakers, funding organizations, and public health departments. The C-CAMP InDx National Diagnostics Catapult initiative emerged as a key example of how coordinated collaboration can accelerate indigenous innovation and strengthen healthcare preparedness.

The panel concluded on an optimistic note, with speakers agreeing that India possesses the scientific expertise, manufacturing potential, institutional support, and public health vision necessary to become a global leader in affordable and accessible diagnostics. However, achieving this vision will require sustained investments in indigenous reagent development, multiplex technologies, validation infrastructure, digital healthcare integration, supply chain strengthening, and public-private partnerships. The discussion ultimately reinforced that diagnostics are foundational to healthcare delivery, disease surveillance, outbreak response, and pandemic preparedness, making them indispensable to India's long-term public health strategy.