

NEWSLETTER

Welcome to the fifth issue of our newsletter, covering the highlights from our conference.



International Conference on Modelling and Informatics for Public Health, December 8-11, 2025

NDMC's International Conference on Modelling and Informatics for Public Health brought together academics, practitioners, and policymakers to explore how advances in disease modelling can translate into public health action. There was an active participation of researchers from across India and several other countries.



Dr. Rajiv Bahl (DG, ICMR) delivered the keynote address, outlining the role of NDMC in strengthening India's disease modelling capacity.

- Dr. C. S. Pramesh (Tata Memorial Centre, Mumbai, India) presented how modelling and data can drive more equitable cancer policy.
- Prof. Amresh D. Hanchate (Wake Forest University School of Medicine, USA) discussed how telemedicine complemented home-based dementia care during COVID-19.
- Prof. Kajal Lahiri (University at Albany, SUNY, USA) reviewed US COVID-19 forecasts, underscoring the value of ensemble approaches.

Plenary highlights

Infectious diseases and Vaccines

- Sir Roy Anderson (Imperial College London, UK) showed how mathematical models and trial simulators can speed vaccine development and infection-control decisions.
- Prof. Sangita Kulathinal (University of Helsinki, Finland) highlighted multistate statistical methods as a core tool for vaccine effectiveness and disease progression.

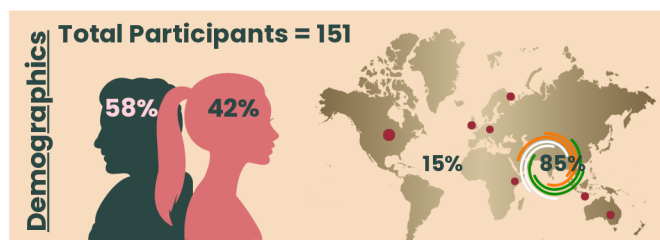
Health services and Policy

- Dr. Prashant Mathur (ICMR-NCDIR, Bengaluru, India) illustrated how locally attuned disease modelling, factoring in time/cost constraints and political economy, informs actionable policies for outbreak preparedness and resource prioritization in the Global South.

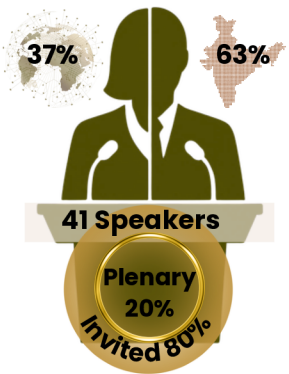
Life-course health and Chronic disease

- Prof. Martin Karlsson (University of Duisburg-Essen, Germany) explained how parental health and socioeconomic status shape health trajectories across the life course.
- Prof. Sujit Ghosh (North Carolina State University, USA) demonstrated survival models using wearable and sensor data to link daily activity with chronic disease risk.

Collectively, the plenaries underscored how modelling can deliver tangible impact for patients, programmes and policy.



The invited talks showcased modelling and informatics end-to-end in public health, from methods to policy. Themes spanned academic–government partnerships for infectious disease modelling, ecological niche models, and vaccination modelling to inform guidelines. Methodological advances featured ultra-large-scale and agent-based models, alongside work linking urban Antimicrobial Resistance surveillance and long-term household air pollution to health outcomes. Cross-cutting sessions addressed economic modelling for public health policy, One Health index development for India, and emerging AI approaches from inferential AI to AMR stewardship and domain-specific language models for data-rich, decision-ready public health evidence.



Poster presentation sessions on Day 1 and Day 2 showcased diverse research contributions from students and early-career researchers. Topics included disease modelling, statistical health applications, genomics, and policy-relevant modelling, encouraging active discussion and cross-disciplinary exchange.



In the valedictory session, Dr. Vinod K. Paul (Member, NITI Aayog) reflected on the role of modelling and data systems in shaping national health responses, drawing on experiences from India's COVID-19 response and the growing focus on non-communicable diseases.

The conference closed optimistically, fostering collaborations, concrete modeling-to-policy ideas, and renewed energy for data-driven public health.

“ This initiative is an important milestone in public health disease modeling and Informatics. The consortium included the best minds in institutions across the country. ICMR–NCDIR scientists took part in the NDMC International Conference on Modelling and Informatics for Public Health, exchanging insights on epidemiological modelling, informatics, and evidence generation for policy
–Dr. Prashant Mathur, Director, ICMR–NCDIR, India ”

“ It was an enriching experience to discuss my work, receive constructive feedback, and learn from several insightful technical sessions delivered by distinguished researchers. I particularly benefited from the clarity and depth shared by speakers.
–Anushka Sonawane, Participant ”

“ Kudos to the organizers of the NDMC conference for bringing together such an outstanding group of researchers and practitioners at the recently concluded event at the IIT–B campus. It was an honor to serve as one of the plenary speakers and to engage with so many bright minds throughout the workshop – including reconnecting with a few good old friends and making new connections with some participating researchers. –
Prof. Sujit Ghosh, Department of Statistics, NC State University, US ”

Disease Burden Estimation Roundtable discussion, December 8, 2025

A closed-door roundtable on disease burden estimation was held as an offshoot of the conference, bringing together NDMC IITB faculty, affiliated ICMR Scientists, partners, and research associates. Discussions were organised around five disease areas: anaemia and cancer, diabetes, AMR, tuberculosis, and mental health. Each group presented its findings, proposed modelling pipelines, data sources, and plans for generating district-level estimates.

Across groups, there was strong convergence on the need for disease-specific, data-driven approaches, with shared priorities including improved data quality and standardisation, transparent and interpretable models, and sustained collaboration to support future disease burden estimation efforts.



We gratefully acknowledge the Secretariat and Research Associates for their dedicated support in organizing and volunteering during the conference. We also applaud Bikash Modak, Divya Kappara, Esha Kashyap, Shoummo Sen Gupta, Rashmi Tiwari, Om Muddebihal, Yashi Raj, Raghavan Parthasarathy, Adithya Somraj and Praveen Chougale for presenting their work in the poster session.

