

NDMC PHASE I UPDATES

The National Disease Modelling Consortium (NDMC) was established taking into account the need to integrate the disparate modelling groups and individuals in the country and serve as an institutional nucleus for the country's disease modelling ecosystem. During Phase I, NDMC achieved several proposed objectives, which are outlined below:

Key milestones and progress achieved

- The secretariat, advisory council (AC) and 4 disease specific advisory groups (DSAGs) have been set up.
- The **first Advisory Council meeting** was conducted in April 2023
- The following DSAG meetings were conducted
 - Vaccine preventable diseases (VPD)**
Feb 2024
 - Neglected tropical diseases (NTD)**
March, 2024
 - Tuberculosis (TB)**
April 2024
 - Malaria**
May 2024
- Agreements signed with 6 partner institutions:



- Overall, **15** post doctoral level research associates and 1 PhD student have been hired

WORKSHOPS

8 workshops were organised for training and learning exchanges:

- 1 Measles & rubella
 - 1 Respiratory syncytial virus (RSV)
 - 1 Cervical cancer
 - 1 TB
 - 1 Malaria
 - 1 Rota virus
 - 2 NTDs
- Participant numbers ranged from 25-70



Dr. Pawan Kumar and Prof. Siuli Mukhopadhyay - Measles Workshop, Feb 2024



Dr. Tanu Jain with Dr. Vinod Choudhary and Dr. Bhupendra Tripathi, NTD Workshop, Aug 2023



Dr. Shirshendu Mukherjee with Prof. Sarika Mehra -Scoping Workshop, Feb 9 2024



Dr. Tanzin Dikid delivering a talk at the Malaria Workshop, Nov 2023



Dr Raghuram Rao delivering a talk at the TB Workshop, June 2023

- Participants were from various institutes across the country including, ICAR NIVEDI, IIPS, NIRRH, CMC Vellore, ICMR - NIRT, PHFI - Delhi, ICMR - NARI, ICMR - VCRC, ICMR - NCDIR, NTAGI ICAR NIVEDI, AIIMS, and the IITs
- NDMC investigators and post doctoral fellows presented at several conferences

ICMR-NIMS National Statistics Day

IDM Annual Symposium

IVBDC, Singapore

NPHICON 2024

Lifescience Conclave, IITB

Strengthening health and disease modelling for public health decision making, Kigali

Lymphatic filariasis (LF)

Measles & rubella

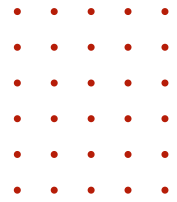
Antimicrobial resistance (AMR)

Visceral leishmaniasis (VL)

Malaria

TB

Limited data for modelling work were obtained for :



Details of Disease Modelling Work Done

Measles

- **Goal:** Measles elimination under various vaccination scenarios studied for district-level data
- Collaboration with the Immunisation division
- Modelling results were presented at the 5th and 6th IEAG meetings

AMR

- **Goal:** to assess AMR burden in India for various antibiotic-pathogen combinations
- Collaboration with ICMR; results presented in monthly meetings to ICMR

Cervical cancer

- **Goal:** National-level cervical cancer modelling
- Collaboration with NCDIR
- Joint work with IDM submitted

Rotavirus

- **Goal:** To estimate % decrease in deaths and DALYs due to vaccination in Odisha
- New three-dose model proposed
- Collaboration with CMC Vellore (Prof. G. Kang's group)

NTDs

- **Goal:** Block-level modelling of LF to estimate the required number of mass drug administration rounds to reach elimination
- **Goal:** Modelling to predict the resurgence of VL and post kala-azar dermal leishmaniasis (PKDL)
- Collaboration with NCVBDC; the modelling results have been presented to NCVBDC

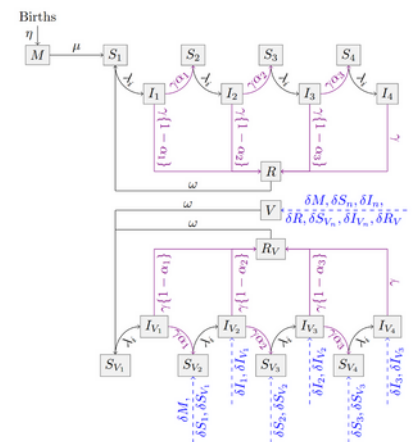
TB

- **Goal:** TB model for district-level burden estimation
- Collaboration with the State TB office, Maharashtra; the work has been presented to the State TB office and CTD

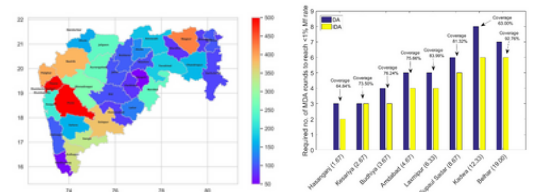
Malaria

- Malaria burden estimation and effect of interventions in NE, India
- Ongoing malaria modelling work
- Collaboration with ICMR-NE
- Policy paper prepared; ready for submission

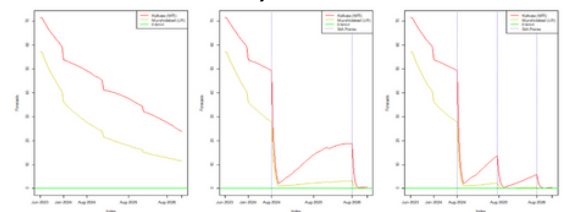
Rotavirus Model Structure



Maharashtra TB incidence MDA projections using the new LF compartmental model



Measles infections/million forecasts for WB



Follow-up actions

- **2nd Advisory Council Meeting** was held on 30th April 2024
- Finalise the **publication procedure** for dissemination of work conducted in the NDMC
- Facilitate signing an **umbrella-MoU** between NDMC, IIT Bombay and MoHFW, with specific NDAs for disease-related data exchange
- **Updation of DSAG members** list along with inclusion of members in an ex-officio capacity
- Appointment of a **consultant at NHM** as a NDMC liaison officer

Develop a detailed project proposal for Phase II (ongoing) with emphasis on below points:

- Proposed directions in existing disease groups and discussion on new research areas (MNCH, Economic Modelling, Data Driven Models in Infectious diseases)
- Disease burden estimation in specific disease including AMR and RSV
- Training courses in Healthcare and Disease Modelling
- Setting up a Center of Excellence