Maa Navjaat Tracking Application (MaNTrA) for Delivery Point Health Facilities, National Health Mission, Government of Uttar Pradesh

Uttar Pradesh, with a population exceeding 24 crores, faced a maternal health crisis with a Maternal Mortality Ratio (MMR) of 197 per lakh live births (SRS 2016-18). Over 24 lakh deliveries occurred annually in public health facilities, but the existing system had limitations.

The existing Health Management Information System (HMIS) captured cumulative data but lacked critical information about labor room practices and service quality. Alarming statistics revealed that 46% of maternal deaths, 40% of neonatal deaths, and 40% of stillbirths occurred on the day of delivery. To achieve national SDG goals, reducing MMR in Uttar Pradesh became paramount. Mantra emerged as a transformative solution.

The objective of the MaNTrA ensure quality of care around birth to over 2.4 million pregnant women and their newborns in public health facilities of Uttar Pradesh and to facilitate direct benefit transfers and entitlements such as registration of births and issue of birth certificates through the Civil Registration System.

MaNTrA has been designed and developed as a user-friendly mobile application using Flutter – an open-source cross-platform applications development software from Google, along with a web-based online portal to enable convenient access to labour room processes for each beneficiary from registration to delivery and then discharge or referral.

The users (primarily staff nurses or Auxiliary Nurse Midwives) can easily submit forms, track registered mothers (recently delivered women), and receive notifications, enhancing accessibility and reducing delays related to record-keeping as a result of an intuitive and standardized data entry interface requiring minimal manual data entry. The web interface

is used by Block, District, and State program managers and decision-makers to manage masters and fetch exceptions or detailed reports. The central dashboard of Mantra is built with R Shiny and Python and deployed in a Dockerized environment, which makes it highly scalable.

Utilising big data analytics techniques, the dashboard analyses vast quantities of beneficiary and facility data. This facilitates the identification of trends, the anticipation of programmatic, beneficiary, and facility requirements, and the optimisation of service delivery, resulting in more personalised and proactive services.
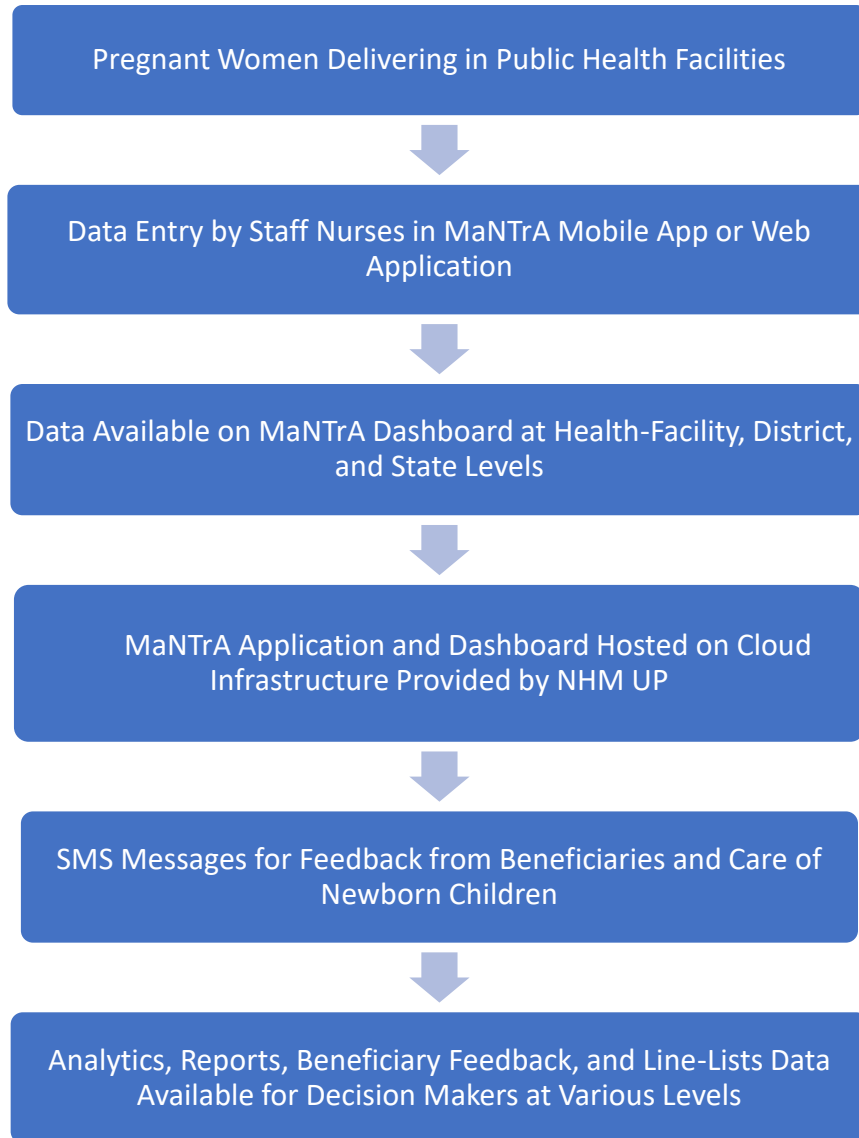
Roll-Out Model

Launched on December 5, 2021, by the Hon'ble Chief Minister of Uttar Pradesh, Mantra employed a cascade model for capacity building. State ToT-Training of trainers for capacity building was done online for the district officials followed by block-level and health-facility-level training by district master trainers. After the training, MaNTrA is available for download for the staff nurses, on Google Play Store to begin data entry in a real environment.

Impact:

Timely direct benefit transfers for over 2.4 million pregnant women who deliver in public health facilities, is facilitated by MaNTrA. Improved quality of care is ensured by better load prediction and thereby better health facility preparedness which leads to increase in uptake of services in government facilities thereby reducing out-of-pocket expenditure. Automated process of birth registrations eliminated wastage of time and unnecessary travel expenses for beneficiaries thus saving their time and expenses.

Process Flow:

Pregnant Women Delivering in Public Health Facilities

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Data Entry by Staff Nurses in MaNTrA Mobile App or Web Application

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Data Available on MaNTrA Dashboard at Health-Facility, District, and State Levels

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MaNTrA Application and Dashboard Hosted on Cloud Infrastructure Provided by NHM UP

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SMS Messages for Feedback from Beneficiaries and Care of Newborn Children

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Analytics, Reports, Beneficiary Feedback, and Line-Lists Data Available for Decision Makers at Various Levels

Beneficiaries

Over 2.4 million pregnant women deliver in over 6,300 delivery points in the public health facilities and their newborns in Uttar Pradesh in a year. Decision-makers in health systems are also benefited by real-time data availability and access in MaNTrA.

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