



One HOPE Many Solutions

Data-driven Decision-making for Efficient Health System

UTTAR PRADESH PUBLIC HEALTH SYSTEM AND ITS CHALLENGES

Uttar Pradesh, being the largest state in India also boasts the largest network of public health system in the country. With a staggering network of over 31,000 public health facilities—including 108 District Hospitals (DHs), 261 Special Hospitals (SHs), and 972 Community Health Centres (CHCs)—it serves the needs of an immense population of approximately 239 million. Despite the sheer scale of the health system and extensive network of hospitals and health centres, critical gaps in real-time oversight, data accessibility, and timely decision-making hindered the system's ability to function at its full potential and the health administrators faced difficulty in monitoring underutilized services and unmonitored patient care.

To enable the Government of Uttar Pradesh (GoUP) to have a centralized system of monitoring health services, and to constantly focus on improving the health outcomes of the population in the state, the Department of Medical Health and Family Welfare, with support from National Health Mission, Uttar Pradesh Technical Support Unit, Bill and Melinda Gates Foundation, and the Piramal Foundation, developed the Integrated Command and Control Centre at Swasthya Bhavan, Lucknow. Later renamed the Health Online Parameter Evaluation (HOPE) Center, it centralizes monitoring and data-driven decision-making, and was officially inaugurated in August 2023 by the Honorable Deputy Chief Minister of Uttar Pradesh.

OBJECTIVE OF THE HOPE PLATFORM

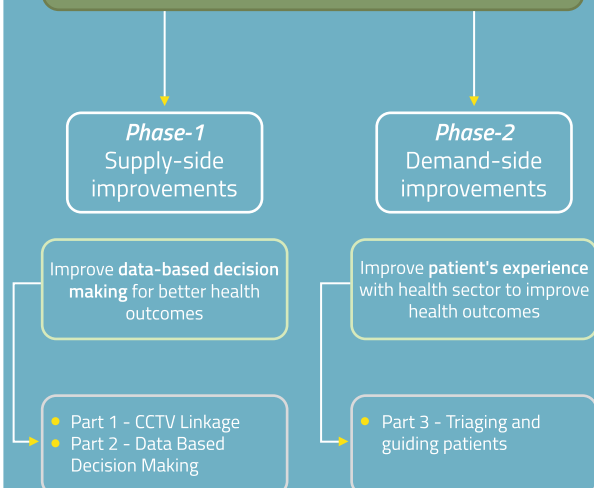
The primary objective of HOPE is to establish a future-ready, real-time monitoring hub that strengthens Uttar Pradesh's health system.

Institutionalised within the Department of Health, HOPE aims to serve as a central platform for data analysis, monitoring, and remote support to health facilities. This initiative is designed to enable the GoUP to maintain direct oversight of health programs, optimize resource allocation, and drive data-driven decisions to address critical health challenges, ultimately improving service delivery and health outcomes across the state.

SALIENT FEATURES OF HOPE

At present, HOPE has three key functions: real-time monitoring of 16 critical service delivery locations through CCTV already installed by the facilities, establish a communication to the facility or the service provider through a dedicated Health Helpline, and leverage the existing program data to enhance data-based decision-making for program improvement without collecting additional data. Looking ahead, this platform is poised to build on this foundation by addressing demand-side factors, including triaging, guidance, and enhancing the overall patient experience within the public health system (Figure 1)

Improve health outcomes of people of UP



The detailed interventions under Phase 1 of HOPE are summarized below:

1. CCTV Surveillance:

- HOPE provides 24/7 monitoring of 107 District Hospitals (DHs) and 172 Special Hospitals (SHs) under the Directorate of Medical & Health Services, Uttar Pradesh (DGMH-UP), across 16 service locations identified by GoUP and three shifts by call centre executives (CCEs). This monitoring adheres to established Standard Operating Procedures (SOPs).
- Non-compliance against the SOP, referred to as tickets, are generated for identified service gaps and are systematically tracked until resolution.
- This process follows a three-tier escalation matrix involving the Chief Medical Superintendent (CMS), Joint Director (JD), and District Medical Committee (DMC). The CCTV monitoring initiative is also set to expand to include Community Health Centers (CHCs) after assessing the feasibility of required infrastructure and human resources.

2. Health Helpline:

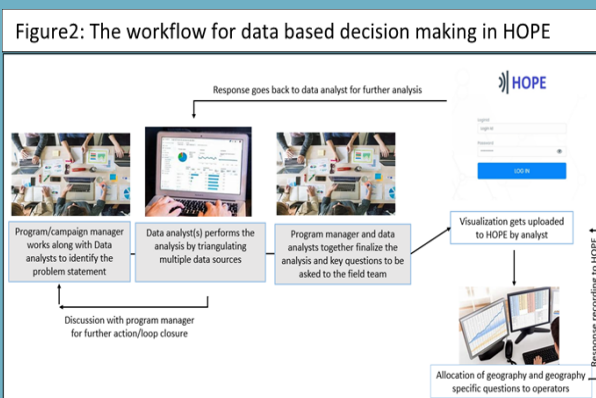
Call Centre Executives are available 24/7 to respond to incoming calls through the State Health Helpline (1800-180-5145 & 1800-180-5146). This service addresses a range of issues, including infectious diseases, seasonal health problems, and complaints regarding health services statewide. Additionally, the Health Helpline facilitates outbound and conference calls to ensure comprehensive support for the community.

3. Data-Based Decision-Making:

- To maximize the effectiveness of the HOPE Center and overcome supply-side barriers in service delivery, a data-driven decision-making component has been integrated into the HOPE platform. This feature enables the GoUP to employ six dedicated data analysts for in-depth programmatic analysis, utilizing available program monitoring or survey data.
- The Monitoring and Evaluation (M&E) unit at UP-TSU mentors data analysts on use of multiple data sets and portals, data extraction, and integrated analysis. These analyses guide program managers in addressing specific issues by consulting with relevant officers (CMOs, health facility in-charges, MoICs, etc.).
- The data gathered by HOPE CCE is meticulously analyzed, enabling program managers to make informed decisions. To optimize this process, an online web-based tool developed by the GoUP with the support of UP-TSU streamlines the workflow by facilitating:

- Centralized registration of all HR personnel at HOPE
- Customized data visualization
- Geography-specific campaign/analysis allocation to operators
- Targeted follow-up mechanisms via calls
- Systematic collation of responses for subsequent analysis

- The HOPE web portal offers three levels of user credentials (Admin, Data Analyst, and Call Operator), providing role-based access to the system. The workflow for data-based decision-making through the HOPE platform is summarized in Figure 2.



Implementation and Progress

1. CCTV Surveillance:

Currently, the monitoring of CCTV feeds from 279 district and special hospitals is facilitated through a dedicated call centre. This centre rigorously assesses compliance against standard protocols for 3,076 identified service locations using 5476 cameras within these facilities. HOPE CCEs are tasked with tracking non-compliance incidents around the clock (24/7), operating in three shifts, and raising tickets for any identified service gap.

As of August 2024, 98.5% of the tickets raised have been resolved, with the remaining being pending at various escalation levels. Approximately 78% of all resolved cases were addressed within 48 hours of being raised or escalated. About 50% of the non-compliance issues are related with CCTV cameras (e.g., connectivity or orientation), followed by unavailability of human resources (e.g., medical, paramedical, support, or security staff) - 22%, and 18% on quality of services mainly around cleanliness. Of the total pending issues, 74% are related to human resource unavailability which needs to be addressed at the state level.

2. Health Helpline:

In June 2024, the Health Helpline monitored 17,153 calls from various groups seeking information on infectious diseases, seasonal health problems, and filing complaints. Of these, 7,091 were inbound calls.

Table 1 Summary status of non-compliance issues/tickets- August 2024

Description	No. of tickets
Total raised/ escalated tickets of non-compliance	3569
Resolved	3516 (98.51%)
Pending	53 (1.48%)

3. Data based Decision making:

Under the data-based decision-making component at HOPE, 47 campaigns were planned by the data analysts in consultation with relevant program officials in the last one year starting from September 2023. Of these, 42 campaigns have been completed, while five are currently in progress and are expected to conclude in the coming months. These 47 data analysis campaigns span various domains, as detailed in Table 2. The data analysts and program managers based on state priorities, such as addressing the issues preventing FRUs from providing C-section services and identifying geographic areas and AAMs with low screening and management of hypertension and diabetes patients planned the campaigns. Examples of these cases are provided in Table 3.

Table 2 Domain wise campaign status

#	Domain	Planned	Completed	Ongoing	Shared with program nodal
1.	Maternal Health	13	12	1	10
2.	Child Health	3	3	0	3
3.	Family Planning	13	11	2	11
4.	Communicable / Non Communicable disease	7	6	1	6
5.	Routine Immunization	1	1	0	0
6.	Hospital Services	9	8	1	6
7.	Data Quality	1	1	0	1
	Total	47	42	5	37

Table 3 Examples of campaign with detailed findings and actions

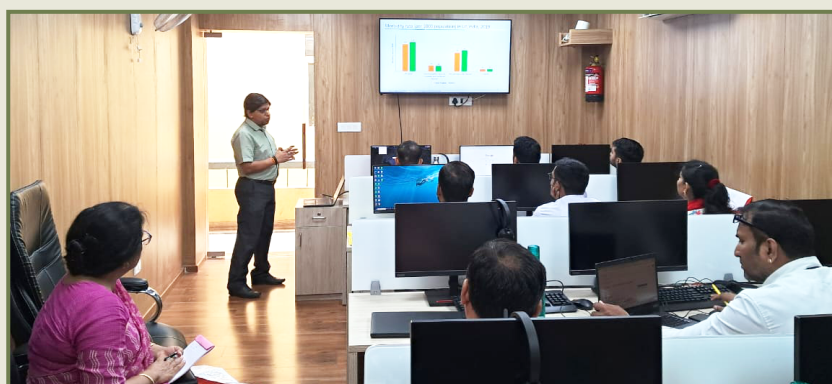
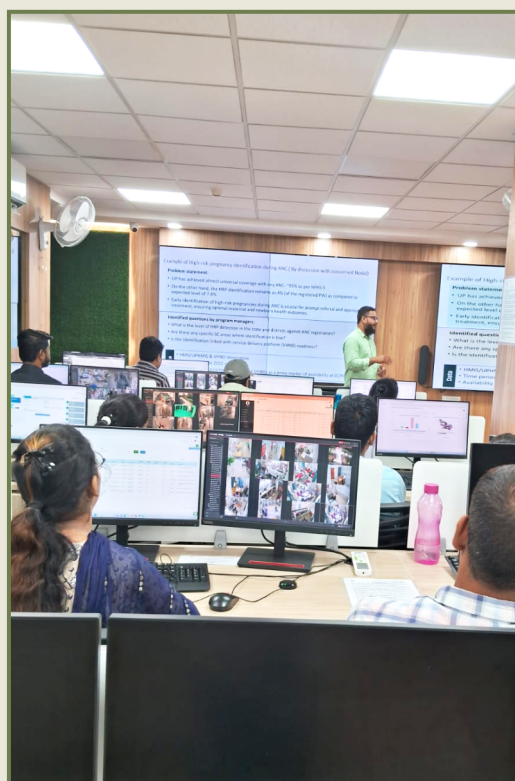
Campaign topics	Data source and reference period	Process undertaken & summary	Gap identified by data and through CCEs call to the concerned	Action measures undertaken & Way forward
Analyzing factors for non-active CHC-FRU despite having adequate HR (Anesthetist and Gynecologist)	HMIS (April 2023 – Feb 2024), UPKSK (4 th March 2024)	<ol style="list-style-type: none"> Performed comprehensive data extraction, mapping and triangulation from multiple sources using MS-Excel. Data visualization using HOPE web application. Calling done by CCEs from HOPE, using a specific set of provided questions. 	<ol style="list-style-type: none"> Out of 324 CHC FRUs, 57 have not performed any C-sections during the specified period. Of these, 8 CHC FRUs have both required specialists (Anesthetist/ Gynecologist), 17 have only one, and the remaining 32 FRUs did not have any specialist. The in-charge officers of these 25 CHCs (8 with both specialists and 17 with one) were contacted by the CCE. The identified gaps include: HR transfers from FRUs not updated on HRMS, facilities not reporting non-performance of C-sections on HMIS, specialists or EmOC-trained doctors at FRUs lacking confidence and needing hands-on practice, and the occasional unavailability of on-call specialists, leading to the non-performance of C-sections. 	<ol style="list-style-type: none"> Facility wise detailed report shared to GM Maternal Health for review and necessary actions GM Maternal Health planned a one-to-one review via virtual Zoom meeting with the concerned CMO, ACMO, and facility in-charge to fill the identified gaps. Give immediate instructions based on the shared report. Some of the immediate actions related to data uploading, correction of information on the portals, and re-positioning/allocation of staff (wherever possible) was done.
Validation of SNCUs' Bed Occupancy Rate from FBNC Portal and CCTV Observation	CCTV live feed and FBNC portal, Apr 2023 - Mar 2024	<ol style="list-style-type: none"> Performed comprehensive data extraction, mapping and triangulation from multiple sources using MS-Excel Data visualization using HOPE web application Call center executives have closely monitored 57 Identified SNCUs and NBSUs for 18 days and filled the details in CRM portal as per their observations 	<ol style="list-style-type: none"> Out of 98 SNCUs, 57 have been monitored by the CCE using CCTV feed to validate bed occupancy rates and the management of sick newborns. CCTV monitoring revealed that 4 SNCUs were overloaded, with no vacant beds for more than 10 days. In 7 SNCUs, CCTV monitoring showed that 2 patients were admitted to a single bed. 10 facilities are not being monitored due to issues with camera orientation. 	<ol style="list-style-type: none"> Facilities with high patient load should plan for the expansion of beds and necessary infrastructure. Cameras to be reoriented in identified facilities to ensure that a maximum number of beds (at least 6) are visible through the camera (7 facilities identified). Conducting facility-based primary assessment to understand the other causes of high bed occupancy rate.
Gap in screening of hypertension and diabetes through CHO for 108 aspirational blocks	CCTV live feed and FBNC portal, Apr 2023 - Mar 2024 NCD portal, Apr 2023 - Mar 2024	<ol style="list-style-type: none"> Cleaning of data from the NCD portal and its mapping with 108 Aspirational Blocks. Analysis of data to identify blocks having less than 25% screening of hypertension & diabetes. 	<ol style="list-style-type: none"> 107 blocks were identified where monthly screenings for hypertension and diabetes among the 30+ age population were below 25%. Of these, 36 blocks, where over 50% of HWCs did not conduct any screenings, were contacted by HOPE CCEs to record field observations. Based on calls to the in-charge, facility-specific issues were identified, such as CHOs not being posted at every HWC, CHOs not being provided with user IDs for reporting, and mapping issues on the NCD portal. 	<ol style="list-style-type: none"> The program nodal, i.e., General Manager (NCD) called for a meeting of the low performing districts to understand and develop action plans to improve the NCD screening. CHO posting to the appropriate facility was prioritized. Action related to ID generation and facility mapping to NCD portal were the two important actions that got initiated.

Note: Outcomes of the HOPE platform

KEY LEARNINGS

The establishment and implementation of the HOPE Centre yielded valuable insights, that have enhanced health system management, as followings:

- 1. Effective Data Utilization:** The establishment of the HOPE Centre has demonstrated the importance of integrating real-time data monitoring and analysis into health system management. By leveraging multiple data sources and conducting targeted campaigns, significant insights were gained, enabling informed decision-making and timely interventions.
- 2. Targeted Interventions Improve Service Delivery:** By focusing on specific challenges, such as the functionality of First Referral Units (FRUs) and the low screening rates for hypertension and diabetes, the HOPE Centre demonstrated the value of data-driven interventions. These initiatives not only identified existing gaps but also facilitated direct actions to address them, leading to improved service delivery at the grass-root level.
- 3. Continuous Monitoring and Feedback Mechanisms:** The success of the HOPE Centre's initiatives, particularly in resolving non-compliance issues and validating bed occupancy rates, highlights the effectiveness of continuous monitoring and feedback mechanisms in ensuring accountability and driving improving healthcare outcomes.



WAY FORWARD

The GoUP is further planning to expand real-time CCTV monitoring through HOPE Centre at the CHC level for improving patient experience at these block level facilities.

