A Technology Enabled Solution

for Management of High-Risk Pregnancies in Remote Areas of Himachal Pradesh

A mobile app streamlines a systems based mechanism for detection and management of High-Risk Pregnancies by integrating data, providing critical case related information and linking all levels of stakeholders for concerted action.

BACKGROUND

High-risk pregnancies (HRPs) put the mother, the fetus, and the newborn baby at higher than normal risk for complications during or after the pregnancy and birth. Identifying a pregnancy as high risk early helps to ensure that it receives extra attention and proper care. "WHO recommendations on Antenatal Care (ANC) for a positive pregnancy experience" state that adequate prenatal care should include assessment of anemia, asymptomatic bacteriuria, gestational diabetes, HIV, tuberculosis, and syphilis. But, there are challenges in providing comprehensive ANC in public health settings particularly in remote geographies.
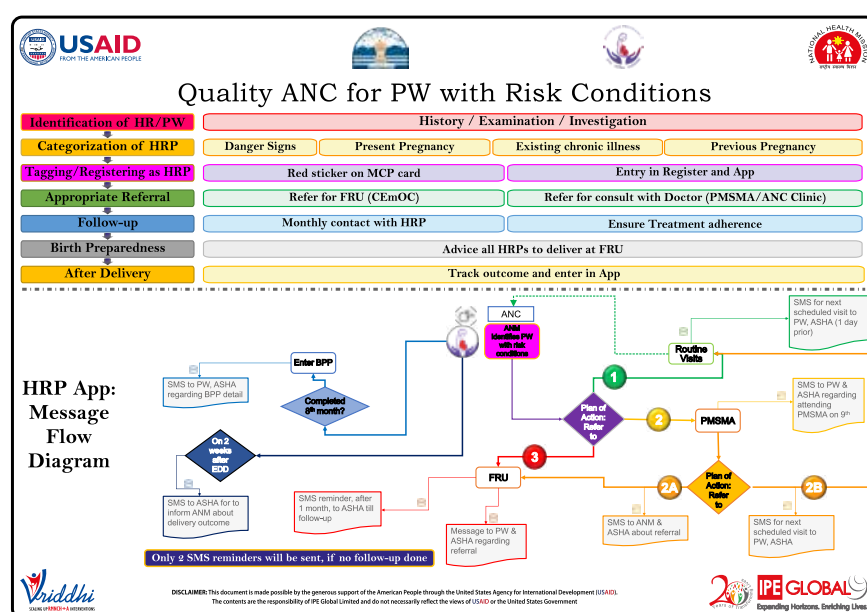
The Ministry of Health and Family Welfare (MoHFW), Government of India (GoI), has taken several steps to improve access to ANC services and detection of HRPs. These include expanding scope of ANC package by inclusion of screening for gestational diabetes, hypothyroidism and syphilis; introduction of Pradhan mantri Surakshit Matritva Abhiyan (PMSMA) to ensure quality ANC and HRP detection in pregnant women; strengthening outreach service delivery through a network of Health and Wellness clinics and Village Health and Sanitation Days (VHSND); IT enabled MIS systems and strengthening delivery points through Laqshya. Maternal health outcomes have improved and MMR has declined from 254 (SRS 2004-06) to 130 (SRS 2014-16) and is 113 (SRS 2016-18) currently. The coverage of full ANC services has also increased from 11.6% to 21% between 2005-06 to 2015-16 (NFHS 3 and 4).

In the state of Himachal Pradesh' ANC indicators have consistently remained above the all India national average. In Himachal Pradesh 70% pregnancies registered in the first trimester versus a National average was 59%; pregnant women who received 4 ANC was 69% (HP) vs 51% (National) and pregnant women received full ANC services was 37% (HP) vs 21% (National- NFHS 4). In 2016 the launch of PMSMA presented an opportunity for the state to accelerate its performance on quality ANC coverage and HRP management.

THE CHALLENGE

Himachal Pradesh (HP) began implementing PMSMA in 2016 and *Vriddhi* project supported monitoring of the program. A detailed observation of the PMSMA in Karsog Block of Mandi district revealed challenges in detection and management of HRPs. Gaps were found in standard protocols for management of HRPs; continuum of quality ANC care from outreach to facility; communication linkages between field health service providers (ANM), health facility and support services e.g. transport, and coordination among stakeholders- beneficiary and her family, health care providers, health facility and referral centres.

DEVELOPING HRP TRACKING MODEL

A model for tracking HRPs was envisioned and piloted in one block of Mandi district. The process involved

- **Developing protocols for identification of HRPs** at Sub-Centres and PMSMA clinics

- **Defining process and roles** for tracking HRPs of ANMs, ASHAs and line managers

- **Setting up the communication loop** connecting community level to facility to referral centre

- **Documentation** kit consisting of PMSMA register, HRP register, PMSMA outpatient department (OPD) slips, birth preparedness planner and HRP sticker for MCP Card was developed

- **Sensitization and capacity building** of stakeholders and service providers.

OUTCOME

- Linear records of HRP available to state with no data duplication
- Increased birth preparedness plan with text messaged to ASHA and women for compliance.
- HRP identification rate increased from 3.5% (HMIS) to 28% in one year pre and post intervention .
- Cases of severe anemia, PIH, Hepatisis B, GDM and hypothyroidism were detected at earlier stages of pregnancy.

THE INTERVENTION

The intervention designed around an IT solution a mobile App, aims to demonstrate an implementation model for screening all pregnancies for risk, identifying and managing HRPs. The following process was used.
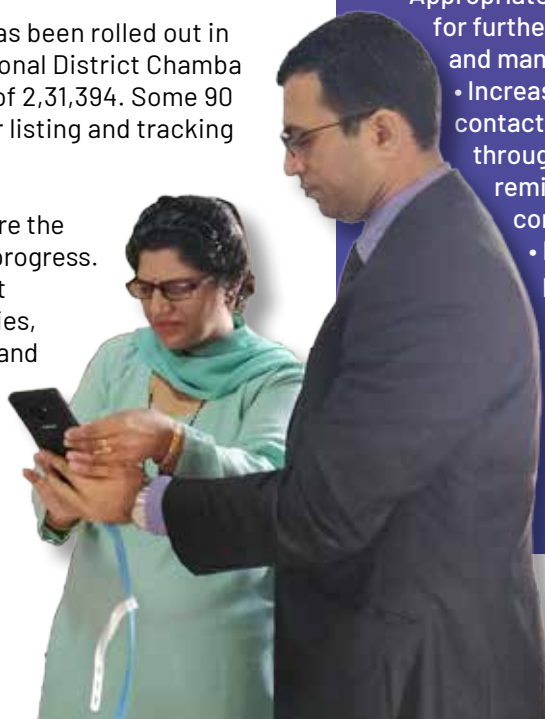
Advocacy and Sensitisation: Early advocacy and involvement of state, district and block functionaries at all steps was ensured. Prior to the launch of the App in the district the managers and implementers were sensitised on the need for identifying and managing HRPs and use of the App.

Field Testing of the App: The App was field-tested to assess user acceptance and functioning. Health workers from 4 sub-centres performed the entire process from data entry to engaging with office bearers. Glitches were recorded and addressed. Algorithms for HRP tracking and the SMS triggers were also reviewed and revised and aligned with the GoI draft Antenatal Care (ANC) Guidelines.

Capacity Building: Posters and handouts were developed for training of front line workers. These included guidance on clinical triggers for the risk conditions and actions required. The training content included HRP conditions, conducting essential tests and the use of App. 121 Program Officers and Health Workers were trained.

Launching the App: The application has been rolled out in two blocks (Pukhri and Samote) of Aspirational District Chamba in September 2019 for a target population of 2,31,394. Some 90 Health workers are using the SEWA App for listing and tracking HRPs.

Mentoring & Review: Block meetings are the main platform for mentoring and review of progress. During these meetings project staff support includes answering frontline workers' querries, resolving issues related to use of App and hand holding to improve identification and tracking of every pregnancy. Progress and shortcomings are discussed during these meetings. Monthly district level reviews take stock of the situation and resolve issues as needed.

DIGITALIZING THE PROCESS

Paper based records and an excel tool were initially used and helped develop proof of concept. However, this proved time consuming and it was decided to digitize the process to improve efficiencies. A mobile App was developed for use by frontline workers on their android phone or ANMoL tablet.

An App to track HRPs: Systems E-approach for Women at Risk (SEWA) – is an android App that can be downloaded from the Google Play Store. The App enables:

- Line listing of HRPs and records interventions/ services provided from registration to delivery
- Appropriate referral of HRP for further assessment and management
- Increased ANC contacts for HRPs through SMS based reminders and home contacts by ASHAs
- Improved program support and management of ANC through a systematic review process.

SEWA App sent out 25,620 SMS reminders to the registered pregnant women, this helped in improving outcomes.

- The numbers of HRPs identified – 32% new HRPs compared to 3.5% before implementation
- Risks identified at outreach at first contact - severe anemia, PIH, GDM, hypothyroidism, HIV, Hepatitis B, Syphillis etc.
- Deliveries at FRUs and appropriate referrals.

"The SEWA has guidance on additional knowledge about the risk conditions, their management and referral options in our area. This helped us to take appropriate action and referrals as per need of HRP mothers."

– **Darshana**, Health Worker, Chamba District

RESULTS
October 2019 – September 2020

4,340
Pregnancies Registered

1,216
Pregnancies listed in HRP App

295
HRPs Delivered

244 (83%)
Institutional Deliveries

138 (47%)
Delivered at FRU

HRP APP AMID COVID-19
HRP App being used as:
- Messages being sent to all PW registered in HRP App for basic precautionary measures during COVID-19.
- Messages being sent to HW and ASHA (362) for basic and targeted counselling.

"My co-health workers and I feel empowered, we used the SEWA App to inform all HRP mothers about the pandemic, how to protect themselves and stay safe. This happened without any face to face contact that could endanger us all."

– **Rachna**, Health Worker-Samote Block, Chamba District

Vriddhi: Scaling Up RMNCHA Interventions
USAID's flagship project *Vriddhi* is mandated to scale-up high-impact RMNCH+A interventions. As a technical partner it supports the Government of India and seven state governments of Jharkhand, Uttarakhand, Haryana, Himachal Pradesh, Punjab, Odisha and Chhattisgarh to achieve its objective. *Vriddhi* has designed multiple innovative approaches to address gaps in RMNCH+A continuum of care, generating implementation experience and learnings for contextual adaptation across the country. In an additional ten states of Madhya Pradesh, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura it supports specific health systems strengthening initiatives for logistics management of the family planning program. Project interventions impact a population of 328 million across 15 states.

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