Improving Efficiency of Vaccination Systems in Multiple States

**Background**

The Ministry of Health and Family Welfare in India aims to reduce morbidity and mortality from vaccine-preventable diseases through its Universal Immunization Programme (UIP). However, despite significant progress towards ensuring timely and safe vaccination to every child and pregnant woman, there exists a widespread inequality in immunization coverage. In addition to social and demographic restraints, a critical constraint is the limited availability of cold chain infrastructure and lack of real-time visibility of stocks and storage temperatures for effective vaccine management.

Challenges relating to infrastructure, monitoring and management information systems, constraints of human resources, including technical capacities, are some of the gaps identified in cold chain and vaccine logistics management. These limitations often affect equipment maintenance and vaccine distribution leading to overstocking and stock-outs, thereby hindering complete and effective vaccine coverage.

**About the project**

In partnership with the Ministry of Health and Family Welfare, Government of India, UNDP aims to support the UIP through designing and implementing the Electronic Vaccine Intelligence Network (eVIN), and strengthening the evidence base for improved policymaking in vaccine delivery, procurement and planning for new antigens. Supported by GAVI—the Vaccine Alliance, the health systems strengthening project aims to streamline and regularize the vaccine flow network by ensuring data-driven and efficient management of the immunization supply chain. The goal is to ensure equity in easy and timely availability of vaccines to all children. This will be achieved by systemizing vaccine recordkeeping, digitizing vaccine inventory, empowering cold
chain handlers through capacity building, and tracking real-time temperature information of the cold chain equipment across all the vaccine storage cold chain points in the country. UNDP supports the Ministry of Health and Family Welfare by:

• Strengthening the immunization supply chain management by implementing eVIN, an online real-time vaccine logistic management system, across all districts of the country;
• Facilitating real-time monitoring of temperature of cold chain equipment by installation of nearly 40,000 temperature loggers at over 28,500 cold chain points where vaccines are stored;
• Building capacity of nearly 49,000 government personnel for vaccine and cold chain logistic management on eVIN;
• Deploying vaccine and cold chain managers in all the districts for constant support to estimate vaccine requirements, supervise cold chain handlers and ensure effective adoption and use of eVIN;
• Coordinating and commissioning research on immunization to plug vital information gaps in the immunization programme.

Developments so far

• Assessed the preparedness of states for adopting eVIN through a survey of the entire immunization cold chain network, enlisting details of personnel and processes.
• Designed and successfully implemented eVIN in all 731 districts of all 36 states and union territories of India.
• Supported a vaccine availability rate of over 99% at all cold chain points.
• Achieved over 80% reduction in instances of vaccine stock-outs and ensured improved availability of adequate and potent UIP vaccines to all targeted children and pregnant women.
• Achieved reduction in utilization of vaccines from 3,053 lakh doses in pre-eVIN period to 2,149 lakh doses in post-eVIN period across the initial 12 eVIN states, mostly on account of wastage and mismanagement, resulting into savings of approximately 900 lakh (90 million) doses of vaccines.
• Systemized processes by initiating corrective action to revise target population for cold chain points that were earlier out-of-sync, improve vaccine storage infrastructure and encourage effective planning and distribution.
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• Supported evidence generation to guide the UIP by coordinating the Vaccines and Immunization Research Network (VIRN) and the Scientific Advisory Group (SAG) of the Ministry of Health and Family Welfare, and commissioning research grants.

Looking to the future

• Maintain efficiency of vaccine cold chain by ensuring timely and effective use of eVIN across all cold chain points in India.
• Automate the process of indenting and supplying vaccine using order management module based on historic actual consumption of vaccines and forecasting.
• Complete the process of temperature logger installation across the remaining states for accurate remote temperature monitoring.
• Continue to support health officers and healthcare workers at the last mile with capacity building and supportive supervision.

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