

ENSURING LAST MILE SUPPLY OF IRON FOLIC ACID in MADHYA PRADESH

PRACTICE INSIGHT

System Strengthening for
Micronutrient Supplementation

This series captures the intervention implemented in Madhya Pradesh by the Clinton Health Access Initiative (CHAI) under the guidance of the Government of Madhya Pradesh to ensure the last mile delivery of Iron Folic Acid (IFA) tablets. The document highlights the key strategy and approach taken by the state government to address the supply side barriers and streamline upstream and downstream challenges in the supply chain. The effort led to the scaling up of the downstream strategy to 13 districts. Eventually, Government of Madhya Pradesh plans to scale it up further to all the districts in a staged manner.

THE CONTEXT

The fourth round of the National Family Health Survey 2015-16 (NFHS-4), indicates a high prevalence of anemia across all the age-groups in Madhya Pradesh (MP) with 68.9% children (aged 6-59 months), 54.6% pregnant women and 52.4% of the women in the reproductive age group (20-49) being anemic. With steadfast determination to arrest the high prevalence rates of anemia, the National Health Mission (NHM), Government of Madhya Pradesh (GoMP) embarked upon an ambitious set of comprehensive measures to improve compliance to IFA supplementation. Also, to implement a comprehensive anemia reduction strategy, it is necessary to ensure uninterrupted access to IFA tablets. The universal availability and consumption of appropriate IFA products have a compounding effect on the reduction of anemia.

While the non-compliance to the IFA supplementation regime has multifactorial causes, the government of MP and the Clinton Health Access Initiative (CHAI) believed that one of the key reasons for non-compliance was a lack or delay in supply and distribution of IFA or inconsistency in receiving IFA tablets as prescribed by the National Anemia Control Programs, which in turn led to only 23.6%¹ of mothers consuming IFA when they were pregnant. In an independent survey conducted by CHAI with support from the Government of MP found that about 39% of Anganwadi Centres (AWCs) in 2016 and 35% of schools across the state were completely stocked out of IFA. Recognizing that improving the last mile availability of health commodities requires mobilizing a set of comprehensive and well-orchestrated supply chain strengthening interventions. CHAI has been supporting the state government in addressing critical IFA supply chain aspects ranging from efficient forecasting, streamlined procurement to timely and adequate last mile delivery.

1. MP NFHS 4; Consumption of IFA for 100 days or more.

PROBLEM IDENTIFICATION AND CHALLENGES

CHAI, under the guidance of the Government of MP analyzed both the upstream and downstream supply chains to identify key areas of improvement and opportunities, and holistically address the inherent supply chain challenges.

Upstream Supply Chain: The upstream supply chain encompasses **forecasting, procurement, and minimum inventory management.** The following sets of challenges were identified after a comprehensive analysis of the performance of the upstream supply chain processes:

- ▶ **Procurement and Forecasting:** Given the decentralized procurement protocols governing the IFA procurement in the state, 51 districts individually places IFA procurement orders against a set rate contract. The analysis underscored that the frequency and quantity of district-level procurement were rather erratic which made the entire process unpredictable and difficult to manage. In mature supply chain systems, up-stream processes follow a stringent 'rhythm of business' that makes the overall governance and management seamless. The analysis also highlighted that the districts often procured inadequate quantities of IFA and a procurement order was usually placed reactively while quantities of IFA products throughout the value-chain were already negligible.
- ▶ **Minimum Inventory Management:** A majority of the districts were not maintaining the minimum inventory at the time of placing a procurement order which often led to situations of stock out as the delivery lead time from suppliers would typically range from 45-60 days.

Downstream Supply Chain: The downstream strategy encompasses timely and adequate delivery of commodities from districts to health facilities- Community Health Centers (CHCs)/Primary Healthcare Centers (PHCs), to AWCs, and schools across villages:

- ▶ The downstream supply chain was largely dependent on the transportation facilities at the

block level and frontline health workers- Auxiliary Nurse Midwives/ Accredited Social Health Activists. The state witnessed, lack of dedicated transportation and human resource capacity.

- ▶ The ad-hoc delivery of IFA resulted in poor availability and accessibility for beneficiaries in AWCs and school. Hence, the government of MP identified the need to devise an efficient mechanism to deliver the 5 different formulations of IFA to 1,600 CHC/PHCs across 313 blocks in 51 districts, and to 1.3 Lakh schools and 94,000 AWCs across 54,000 villages at regular intervals, for the target beneficiaries.

APPROACH AND STRATEGY

To address the supply side barriers, the government adopted a systemic approach across the state of MP and streamlined both the upstream and downstream challenges.

Upstream Supply Chain Strategy: The upstream strategy was implemented for the entire state in all 51 districts from December 2017 onwards. The government prepared Standard Operating Procedures (SOPs) for forecasting, procurement, minimum inventory management and distribution of IFA across the state, with the following interventions:

- ▶ **Adequate Procurement & Forecasting:** CHAI with the support of the government developed a forecasting tool for districts to procure an adequate quantity of stock, accounting for the estimated target beneficiaries and the on-going consumption trends. All district storekeepers and data entry operators were trained on using the forecasting tool and adherence to calculate the procurement quantities through the tool was monitored rigorously. To bring about greater predictability to the procurement processes, the government also established norms for biannual IFA procurement by the districts that ensured timely procurement and mitigated the risks of stock-outs. Adherence to the bi-annual procurement protocol was also monitored rigorously by the state government. Given the set rhythm of the procurement processes, it was relatively easier to establish accountability and have supervision mechanisms in place.

- ▶ **Minimum Inventory:** Minimum inventory norms were established for districts to maintain a minimum inventory of stock of 2 months, for CHC/PHCs to maintain a minimum inventory of stock of 0.2 months (6 days) and for AWCs/ Schools to maintain a minimum inventory of stock of 0.3 months (9 days), taking into account both lead time of delivery and the minimum emergency buffer.

Downstream Supply Chain Strategy: To streamline the downstream supply chain, the government analyzed various supply chain delivery models like courier delivery, third party logistics, and other programmatic supply chains to identify the most optimal strategy. Post a holistic analysis, the vaccines supply chain was identified as one of the most sophisticated supply chain systems, with India immunizing a significant proportion of its birth cohort at the immunization sites in the villages. Further, analysis of the feasibility of utilizing the vaccine supply chain for IFA delivery indicated the adequately available excess capacity within the vaccine's supply chain to undertake regular deliveries of IFA products:

- ▶ The downstream strategy leveraged the excess capacity of the vaccine's supply chain. The vaccine van vehicles were leveraged on their free days and their utility was optimized (by maximizing storage space utilization) for increased penetration and delivery to the health facilities. The vaccine van regularly supplied stocks of vaccines to the health facilities. Crafting a seamless delivery plan was therefore relatively easier and required minimal human resource capacity building.
- ▶ The concept of a Drug Delivery Boy (DDB), mimicking the concept of the Alternate Vaccine Delivery (AVD), was replicated to ensure the delivery of IFA from health facilities to the schools and Anganwadi Centers (AWCs) at a stipulated interval.
- ▶ The downstream strategy was piloted for a duration of 3 months in 2 districts- Vidisha and Hoshangabad, chosen to be representatives of a high burden of anemia, poor access to IFA, high population, and challenging terrain. The tenets of the flow of distribution of IFA within the downstream strategy were as follows:

Delivery from the district warehouse to the health facilities (CHC/PHC)

- A dedicated vaccine delivery van was leveraged to deliver IFA tablets to a pre-determined and carefully planned network of health facilities at a prescribed frequency of every 2 months.
- The quantum of drug load was estimated to amount to around 85% utilization of the space available in the vaccine van with 5 layers of stacking and utilized only 5 days of run-time for delivery of 2.2 months of stock to all the CHCs/PHCs.

Delivery from CHC/PHC to the villages (AWCs and schools)

- Existing teams of the AVD were leveraged to deliver a pre-determined quarter worth of the IFA stock to a planned network of villages (AWCs and Schools) on a quarterly basis.
- For the DDB, the per day trip capacity was estimated to be a stock worth 40 kilograms (10 kilograms per village), and hence the DDB could deliver to 4 villages per day.

COST INVOLVED

The downstream delivery strategy leveraged the existing supply chain infrastructure with no additional purchase cost for vehicles and other infrastructural requirements, and only includes a minimal incentive of INR 90 per village per quarter, for delivery by the DDB and the fuel cost for the delivery by the vaccine vans. The upstream strategy can be implemented without incurrance of any additional cost by introducing a set of rational management processes, the compliance of which is supervised on a regular basis. The total downstream pilot budget (for the 2 districts) was estimated at INR 5.2 Lakhs and barring the initial training and logistics cost, the only recurring cost will be limited to INR 2.6 lakhs per quarter for the subsequent delivery and fuel costs. For the pan state scale-up, it is INR 90 for villages less than 30 kilometers from the CHC/PHC and INR 200 for villages more than 30 kilometers from the CHC/PHC. It is estimated that a budget of INR 2 Crores (11.5% of annual procurement cost for IFA) will ensure that the investment made to procure ~INR 17.3 Crores worth of IFA commodities yields a return by assured annual IFA delivery to beneficiaries in the AWCs and schools for the entire state.

KEY ACHIEVEMENTS

Within the upstream strategy, setting-up and ensuring compliance of critical supply chain operating procedures has helped the state in achieving significant improvements to key supply chain indicators for IFA:



The state achieved 100% usage of the forecasting tool by the district officials.



Procurement adequacy for all districts over December 2017–18 has been in the range of 80-100% against the set population and consumption-based forecast benchmark.



Additionally, a majority of the districts now maintain the prescribed minimum inventory at the district warehouse to address demand spikes or unforeseen procurement delays.



The downstream delivery strategy ensured IFA deliveries in 3,235 AWCs and 3,923 schools, across 2,562 villages. All 24 health facilities in Vidisha and Hoshangabad districts received 100% of the requisite IFA stock during the pilot.



Post the intervention, the IFA stock-outs (stock level zero) reduced drastically by about 80–90% for AWCs and Gram Arogya Kendras (GAKs), and by 60–65% for schools.



The government of MP is now scaling-up the downstream strategy to 13 districts and eventually plans to scale the strategy to all districts in a staged manner.

BENEFITS OF A STREAMLINED IFA SUPPLY CHAIN

A streamlined supply chain has several benefits such as reduced stock-outs and wastage. In the absence of this supply chain system, there is no defined mechanism for delivery, with the only prevalent method being the ad-hoc approach of ANMs/ASHAs to collect inadequate and untimely stock. The supply chain strategy mitigates the unintended consequences of the ad-hoc approach that may lead to stock-outs or excessive wastage and expiration of stock. A dedicated supply chain system also leads to savings in terms of time and effort for the healthcare workers, who can then be solely focused on healthcare service delivery, instead of also working on drug delivery logistics. With the DDBs visiting each AWC and school every 3 months, the supply chain strategy ensures an effective mechanism and feedback loop to record stock data at AWCs and schools and analyze consumption trends. The DDB also ensures that he delivers the stock after taking the current stock present at the facility into account, hence minimizing wastage of stock and increasing cost-effectiveness.

About WeCan

We Collaborate for Nutrition (WeCan) is a national level platform that documents and shares high impact nutrition interventions to enable cross-learning for increasing efficiencies among different stakeholders and development partners working to reduce malnutrition and improve the nutrition indicators across India. Funded by the Bill and Melinda Gates Foundation (BMGF), the goals of WeCan are aligned to the overarching mandate of POSHAN Abhiyaan, a flagship program of the Government of India in the nutrition space.

WeCan was born out of the need for a common forum to facilitate cross-pollination of experiences and sharing of learnings amongst development partners. We do this by aggregating, collating and disseminating knowledge of replicable and proven nutrition programs being implemented by various organisations. The processes involved in the programs are captured in the form of practice insights (PIs). Custom products are developed based on the PIs for the ease of comprehension and wider dissemination.

For more info:

Noveena Swapnabh

Email: wecollaboratefornutrition@ipeglobal.com

Parth Bahuguna

Email: pbahuguna@clintonhealthaccess.org

Acknowledgments

Vision

1. **Dr. Pallavi Jain Govil (I.A.S.)**, *Principal Secretary, Public Health and Family Welfare Department, MP*
2. **Mr. Nitesh Vyas (I.A.S.)**, *Commissioner Health, Directorate of Health Services, MP*
3. **Smt. Chhavi Bhardwaj (I.A.S.)**, *Mission Director, NHM, MP*
4. **Dr. J. Vijayakumar (I.A.S.)**, *Managing Director, MPPHSCL, MP*
5. **Dr. Pragya Tiwari**, *Deputy Director (Child Health Nutrition), and Nodal Officer - AMB, NHM, MP*
6. **Dr. Archana Mishra**, *Deputy Director, Maternal Health, NHM, MP*
7. **Dr. Ashish Saxena**, *Chief General Manager (Technical), MPPHSCL, MP*
8. **Dr. Savyasanchi Tiwari**, *General Manager (Logistic and IT), MPPHSCL, MP*

Technical Support

1. **Mr. Parth Bahuguna**, *Deputy Director, CHAI*
2. **Mr. Nitin Raj**, *Deputy Director, CHAI*
3. **Mr. Nitin Kothari**, *Senior Associate (Supply Chain), CHAI*
4. **Ms. Ayushi Bhatnagar**, *Analyst (Nutrition), CHAI*
5. **Mr. Kumar Aniket**, *Analyst (Supply Chain), CHAI*
6. **Dr. Shikha Tomar**, *State Consultant - I-NIPI/AMB, NHM, MP*
7. **Mr. Bhupendra Kumar Sharma**, *Consultant (Supply Chain), CHAI*
8. **Mr. Piyush Tripathi**, *Consultant (Supply Chain), CHAI*

Authors

Neha Bainsla, Programme Coordinator, Chai

Rupa Prasad, Program Manager, IPE-G/Wecan