Salient Strengths and Areas for Improvement: MUZAFFARPUR

Criteria	Strength	Areas for Improvement
E2: Temperature	• Good knowledge of temperature record and freeze sensitivity • Temperature logbook found at most of the sites.	• Working thermometer is not found in each and every equipment. • Cold chain handler (CCH) not able to read thermometer at some facilities. • Temperature log book not regularly reviewed by Medical Officer-in-Charge (MoIC)/District Immunisation Officer (DIO)/any other district official. • No mention of remarks such as power failure, defrosting, made and model number of cold chain equipment (CCE).
E3: Storage Capacity	• All antigens stored in ice lined refrigerator (ILR). • Knowledge about stocking of vaccines in ILR is found good. • Ice pack freezing capacity found good. • Staff knowledge about emergency vaccine management found satisfactory.	• As per target population vaccine storage capacity in ILR found inadequate in most of the sites. • Vaccine not stored in proper ILR basket. • Vaccine contingency plan not highlighted as per standard operating procedure (SOP). • No dedicated dry space.
E4: Buildings, Equipment, Transport	• Cold Chain equipment found functional in existing building, well protected from rain water. • Floor dry and reasonably levelled.	• Some building lack minimum required standard such as ventilation, cleanliness, free from cracks, seepage and safe electrical wiring. • Many repairable cold chain equipment and condemned equipment found in some sites. • No space for passive containers. • Regular preventive maintenance plan of building and fire extinguisher not found. • Vehicle user manual followed but vehicle logbook not updated. • Functional voltage stabilizer not found in some of the source. • Telecommunication link not functional at some sites.
E5: Maintenance	• Visual evidence of maintenance of building found at some sites. • Defrosting of ILR found at most sites.	• Planned preventive maintenance of buildings and equipment not found. • No dedicated person assigned to carry out routine maintenance. • No written planned overhaul programme. • No maintenance manual of vehicle service record of the manufacturers.
E6: Stock Management	• Ice pack conditioning done during vaccine transportation. • Record of antigens and diluents found in stock register.	• Though computerized stock control system is installed at district vaccine store (DVS), stock management is not up to date; no antivirus and vaccine presentation in vial size is available.

	• Name of vaccine manufacturer, batch number, expiry date of antigen found in most site. • Vaccine vial monitor (VVM) status taken into consideration for effective stock management.	• No regular data backup practice being followed. • Challan book is not used for every transaction.
E7: Distribution	• Effective vaccine distribution plan exists for health facilities. • Health facilities distributing vaccines to session sites through AVD mechanism. • Frozen, expired and damaged vaccines not found in most of the sites.	• No effective vaccine distribution plan exists at district vaccine store (DVS) and above. • No specific dated for delivery and collection of vaccines. • Number of short shipment for different antigens and different timings. • No accurate knowledge of cold box packing. • Open vials not labelled pro rather by quantity in stock at most places. • No consent of vaccine arrival checks and notification. • Vaccine supply often influenced and • Haphazard vaccine supply and distribution system.
E8: Vaccine Management	• Good knowledge about vaccine vial monitor (VVM). • Utilisation of diluents and manufacturer being practiced. • Safety pit found in almost all sites. • VVM found in stage 1 at most sites.	• Poor knowledge and practice of shake test. • Though multi dose vial policy (MDVP) is implemented, no record found in stock register, no record of vaccine wastage at anywhere. • Knowledge about MDVP is poor. • Poor supportive supervision of routine immunisation (RI) and cold chain. • Poor immunisation waste management.
E9: MIS, supportive functions	• RI micro plan, analysis of vaccine utilization and wastage rate is used for vaccine forecasting. • SOP manual found satisfactory and guidance in the SOPs follow World Health Organisation (WHO) recommendations.	• Vaccine distribution route and job aids not exhibited in most of the facilities. • Cold chain equipment inventory not satisfactory.

Salient Recommendations: MUZAFFARPUR

Area	Recommendations
Management Policies	• Bihar vaccine and logistics management system (BVLMS) should be scaled up. • Regular on the job training or literature training for stock management and stock update. • Utilization of BVLMS dashboard for vaccine and logistic distribution. • Vaccine notification system should be implemented. • Utilisation of effective vaccine management (EVM) dashboard for evidence based decision regarding vaccine and logistics management. • Strict adherence to immunization SOPs. • MDVP implementation as per guidelines. • Budgetary provision for vaccine logistic manager at regional and district level and loading and unloading at all level.
Human Resource	• Dedicated and well recognised (ANM/MPW/Pharmacists) cold chain handler (CCH) must be in place. • Each district should have dedicated full time cold chain technician (CCT). • Each district should have dedicated full time district immunization officer. • Vaccine logistic manager must be placed at regional and district level. • Recognized staff for loading and unloading of vaccine.
Infrastructure	• Separate RVS building with dedicate staff and equipment required at Muzaffarpur. • Dedicated dry store to be developed in all the cold chain stores. • Renovation of buildings to meet required standard such as ventilation cleanliness safety, free from crack and safe electrical wiring. • Area to be marked for loading and unloading of vaccine under shade. • Adequate and washing facilities must be provided. • Dry store and clod store must be under one roof preferably on ground floor.
Equipment	• Additional ILR and deep freezer (DF) must be supplied at all level to meet the storage capacity. • All cold chain equipment must be attached to functional voltage stabilizer. • All vaccine stores must have a standby generator. • Each cold chain equipment must have a functional thermometer/data logger. • Each Vaccine store should have tool kit and vaccine float assembly. • Ensure equipment is placed on wooden frame. • Speedy disposal of condemned equipment as per GoI guideline.
Planning and documentation	• Plan preventive maintenance of building, equipment and vehicle. • Separate temperature logbook for every equipment, generator logbook and vehicle logbook maintained at all sites. • Effective vaccine distribution plan must be developed and used. • Location of vaccine displayed at equipment and in register. • Maximum – minimum inventory control mechanism for vaccine logistic management. • Earliest-expiry-first-out (EEFO)/First-in-first-out (FIFO) practice for vaccine distribution. • BVLMS must be updated regularly. • National cold chain management information system (NCCMIS) must be updated regularly.
Capacity Building	• Refresher training on RI and CC of all DIO, Medical Officer (MO), Health Worker (HW) and CCH (Pentavalent, MDVP, Shake test etc.). • Capacity building of data entry operators in BVLMS, NCCMIS, Health

	management information system (HMIS) and Mother and child tracking system (MCTS). • Capacity building of DIOs and MOs in using Immunization data for action. • Regular refresher training of CCTs. • Capacity building of state/regional/district/block level official for supportive supervision of RI.
Improvement in practice	• Strengthened sector meetings (weekly) and monthly meeting at block and district level specifically for routine immunization. • Regular quarterly meeting for RI at divisional and state level. • Knowledge and practice of shake test, conditioning of ice pack, packing of cold box, use of thermometer and MDVP. • Regular defrosting and physical verification of stock. • Efficient use of vaccine to minimize wastage. • Use of challan for vaccine distribution and vouchers for issue of vaccine. • Development and display of standard vaccine emergency preparedness plan. • Display of current vaccine stock position at all sites. • Regular preventive maintenance of all CCE, building and vehicles. • Improve immunization waste management practices.
Supportive supervision	• Development of supportive supervision micro plan including monitoring matrix at all levels. • Recognition of supervisors for supportive supervision at all levels. • Mobility support to supervisor. • Monitor coverage of RI using coverage monitoring chart. • Use of android based technologies for supportive supervision. • Use of NCCMIS, BVLMS, EVM and supportive supervision dashboard for evidence based decisions and prioritization. • Involvement of development partners and medical college faculties for supportive supervision.