Data for Management - Approach

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The Data for Management (D4M) approach promotes the establishment of a data-driven culture at all levels of the supply chain. The aim of this approach is to strengthen the immunization supply chain by improving the processes of data collection, analysis and visualization to facilitate the use of data for decision-making by managers and healthcare workers.

Background
Availability of reliable and relevant supply chain data is essential for managing key aspects of immunization supply chains (iSC), including vaccine availability, quality of storage and transport facilities, and stock management efficiency. Managers and healthcare workers rely on available information to understand their supply chain and to make decisions that ensure availability of quality immunization products whenever and wherever they are needed.

Immunization supply chain data can be used to answer important questions, for example:
- What is the current vaccine stock status at the different levels of the supply chain?
- How long is the current stock expected to last?
- When should we order more vaccines? In which quantities?
- Is the available budget sufficient for our future needs?
- Are the immunization resources being utilized efficiently?

Ensuring that quality data is regularly collected, analyzed and used at each level is one of the necessary interventions for managing and strengthening immunization supply chains.

Challenges
In some countries with poorly developed iSC information systems, there is no clear definition of which data needs to be collected at each level of the supply chain.
clear definition of which data needs to be collected at each level of the supply chain, which means that very often key information is not available and decisions are made based on rough estimates, instead of actual evidence.

In other cases, countries attempt to collect as much data as possible, without clear processes on how to aggregate, analyze and use this information, posing an unnecessary burden on their health workers and potentially having a negative effect on the quality of the data.

Very frequently, the system only supports data flows upwards in the supply chain, but there is no feedback mechanism which could help those who report track their performance and understand how their data is used at the higher levels. Collecting data and reporting is usually considered a chore by staff at the lower levels, as there is no immediate value to the person completing the task, usually due to lack of awareness on how to utilize the information.

Immunization and supply chain managers may also lack technical expertise or guidance on how to analyze available data to make it more useful for both operational or short term decision-making (i.e. how much to resupply) as well as strategic or longer term decision-making (i.e. what is my annual forecast or what should my stocking and alert levels be). In addition, there is often a gap between program data and supply chain data, missing an opportunity to triangulate for improved insight.

D4M approach

The Data for Management (D4M) approach considers the importance of three fundamental elements which need to be strengthened in order to improve the immunization supply chain:

- People
- Processes
- Technology

It is essential to build the capacity of the staff involved in the data system and to define and standardize the data collection processes before considering the implementation of new technology. People must be aware of the importance of data collection, and have the capacity to understand, analyze and use the data they gather at their own level. Likewise, standard processes must be in place to guide supply chain staff, ensure quality of the data collected and facilitate the use of this information for performance monitoring and decision-making. Tools and technologies, both paper-based and electronic, can then be used to support the people involved and ease the processes.

Focus areas

Taking the three fundamental elements into consideration, the Data for Management approach defines a series of interlinked focus areas to be supported by D4M interventions.
- **Data collection tools/report templates & staff capacity**: Review, improvement and standardization of paper-based and electronic tools used for data collection and reporting, to ensure availability of key data points while avoiding duplication and redundancy.

- **Logistics Management Information System (LMIS) & staff capacity**: Assessment of the iSC data landscape, analysis of the data flows and interlinkages between data from various business processes. Definition of requirements and plans for deployment of electronic LMIS.

- **Key Performance Indicators (KPIs) & staff capacity**: Definition and implementation of performance indicators (e.g. DISC indicators) for monitoring each level of the immunization supply chain.

- **Standard Operating Procedures (SOPs) & staff capacity**: Definition of standard procedures and development of guidelines to support staff on the process of collecting, aggregating, analyzing and using iSC data.

- **Dashboards & staff capacity**: Introduction of data visualizations dashboards (e.g. ViVa) to facilitate the process of understanding supply chain information and promoting its use.

- **Demand forecasting & staff capacity**: Development of procedures and capacity for using iSC data to accurately predict immunization program needs and optimize resources.

- **Advocacy at the country and global level**: Awareness and resource mobilization for D4M interventions in the context of iSC strengthening. Demand creation for D4M activities, promoting prioritization in national supply chain plans and budgets.