



Data Visibility: Monitoring Pharmaceutical and Medical Commodities in Humanitarian and Crisis Settings

Using data visibility tools to improve supply chain performance and increase the availability of life-saving health supplies.

BACKGROUND

Health supply chain managers are responsible for analyzing and monitoring every aspect of their supply chains to ensure timely delivery of medicines to people in need. An important tool for doing this is a logistics management information system, which provides visibility to inform decisions and performance management in the supply chain cycle. Data visibility allows supply chain managers to track key indicators through every function of the pharmaceutical and medical commodities supply chain.

DATA VISIBILITY

Supply chain data visibility refers to accessibility and clarity of information that makes it easy to retrieve, analyze, and understand the flow of commodities. Data that are presented in a way that is comprehensible and actionable transforms into information, which facilitates performance monitoring and corrective actions, as described in Figure 1.



Figure 1. Benefits of Using Supply Chain Data Visibility Tools

ACCURACY	With clear data, SC managers make decisions based on facts and trends rather than assumptions, leading to more accurate and effective outcomes
TIMELINESS	Data visibility enables quicker access to relevant information, allowing for timely decisions in response to rapidly changing situations
PREDICTIVE ANALYSIS	Visible data allows organizations to forecast future trends, enabling proactive rather than reactive decision-making
STRATEGIC PLANNING	Data visibility helps in identifying patterns and opportunities, aiding in strategic planning and long-term performance improvement

Location: Global

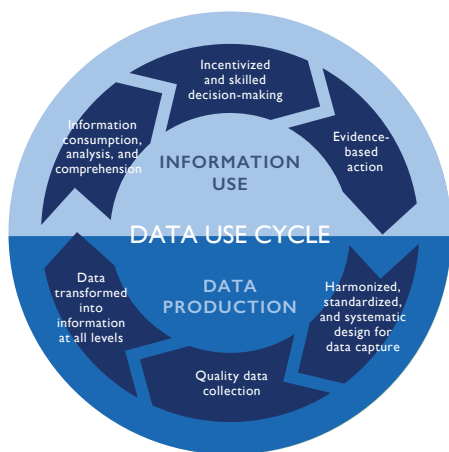
Setting: Humanitarian crisis settings

Supply chain management practice area: Performance monitoring

HR cadres involved:
Supply chain, pharmacy, warehouse, and program managers

This series of learning briefs focuses on health supply chain practices that can be implemented by humanitarian partners to resolve common challenges and improve the delivery of pharmaceutical and medical commodities.

Figure 2. The Data Use Cycle



Theory of Change for the Data Use Partnership.
Seattle: PATH, Vital Wave; 2016.

The data use cycle (Figure 2) demonstrates how data production is linked to its use. Based on insights and understanding derived from data visualized in tools such as dashboards, supply chain managers contextualize and integrate information with expertise to make decisions and take actions such as implementing sourcing strategies, selecting distribution routes, and solving stockout or overstock problems.

Dashboards are part of the data use cycle. They are a sophisticated form of data visualization, typically employing familiar tools like graphs, charts, and tables. Dashboards aggregate and present various interrelated data sets in a format that simplifies complex

information. Their widespread use is helping to foster a culture of data-driven decision-making and corrective actions in many organizations.

PRACTICE

Some of the humanitarian organizations that the Building Capacity to Improve Health Commodity Management in Humanitarian and Disaster Settings program supports are developing dashboards to track key performance indicators and facilitate decision-making for improved supply chain performance monitoring and enhanced processes. In several countries, implementing partners of the USAID Bureau for Humanitarian Assistance had common challenges to monitoring performance indicators, including a lack of supply chain data visibility to make timely and informed decisions. They identified the need to track key data and better analyze supply chain trends.

A first step in performance monitoring is collecting comprehensive and high-quality data from lower levels of the supply chain, such as districts and service delivery points. These data can facilitate accurate stock projections that consider current inventory, average monthly consumption, and expected shipment arrivals.

To move from data visualization to informed decision-making, it is critical to identify people who have the authority and expertise to make effective decisions and implement appropriate actions. Such analysis helps preempt and mitigate stockouts. It is good practice to document monthly discussions to monitor corrective actions and outcomes.

A number of the program's humanitarian organizations found timely solutions to supply chain problems by identifying priority performance indicators (product average monthly consumption, stockout rates, overstock, and expiry), organizing data, and developing dashboards. They used the dashboards to present and analyze their monthly reports and indicators to report on supply chain management status and to take corrective actions to reduce inventory imbalances (stockouts and overstocks).

Figures 3 and 4 demonstrate how dashboards can illustrate data and help supply chain managers identify problems in the pharmaceutical supply chain. In Figure 3, reporting rates show a declining trend for the last two months: 100% in October falling to 93% in December. Root causes could be that health centers ran out of register books or report forms or were busy responding to local crises. In Figure 4, in Province A, atenolol 50 mg tab is stocked out at 16% of health centers and understocked at 42% of health centers. This might be caused by stockouts at provincial and central warehouses due to procurement delays because the supply planning phase did not consider minimum and maximum stock levels at each level.



PRACTICE AREA ESSENTIALS

Performance Monitoring

Supply chain performance improvement depends on robust data collection processes and use of key performance indicators and data visibility tools to identify and resolve challenges to delivering health products in humanitarian and crisis settings.

The supply chain manager needs to know:

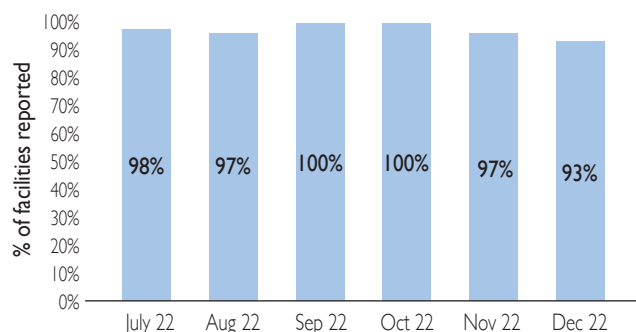
- How to identify key indicators to monitor supply chain management performance
- How to access, organize, and analyze data to inform decisions
- How to develop and execute plans to improve supply chain management performance

[Learn more about performance management](#)

[The Supply Chain Manager's Handbook](#)

[Monitoring and Evaluation](#)

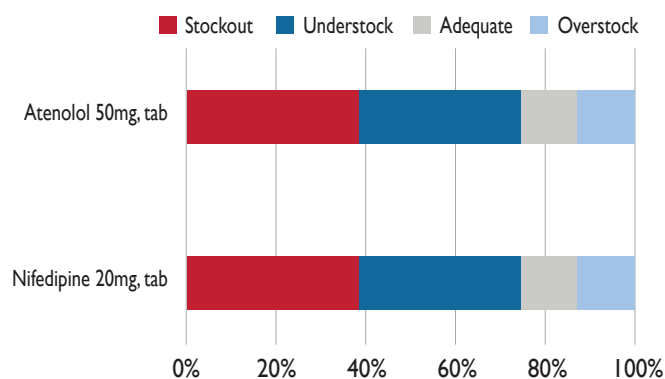
Figure 3. Reporting Rate July–December 2022



✓ REPORTED ✗ NOT REPORTED

Facility Name	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22
Anyland District Hospital	✓	✓	✓	✓	✓	✓
Anyland Health Center 1	✓	✓	✓	✓	✗	✗
Anyland Health Center 2	✓	✓	✓	✓	✓	✗
Anyland Health Center 3	✓	✓	✓	✓	✓	✓
Anyland Health Center 4	✓	✓	✓	✓	✓	✓
Anyland Health Center 5	✓	✓	✓	✓	✓	✓
Anyland National Hospital	✓	✓	✓	✓	✓	✗
Anyland Regional Hospital	✓	✓	✓	✓	✗	✗

Figure 4. Stock Status September 2023



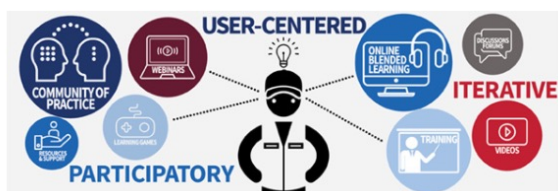
Facility Name	Sep-23		
	Closing Balance	Consumption	Month of Stock
A	0	215	✗
B	105	40	2.625
C	80	135	0.5925
D	0	125	
E	195	255	0.7647
F	20	190	0.1052
G	0	200	✗
H	300	0	300

Key Lessons Learned

- Organized high-quality data significantly improve decision-making and pharmaceutical supply chain performance by providing accurate, relevant information in a compelling, easily understandable format such as dashboards.
- Data visibility is not only about access to data. The goal is to understand and use data to make informed and timely decisions to improve supply chain management performance monitoring.
- It is critical to collaboratively analyze key performance indicator trends in dashboards and identify the challenges, root causes, and decisions needed to improve performance. One way to analyze jointly is to apply data review team approaches in which supply chain staff and stakeholders, including pharmacists, logisticians, and financial staff, gather to find gaps and solutions.

Through the Building Capacity to Improve Health Commodity Management in Humanitarian and Disaster Settings program's capacity building support, several humanitarian organizations that support work funded by USAID's Bureau of Humanitarian Assistance have improved their supply chain performance through increased data visibility. This includes using reporting systems that connect to dashboards in real time, decreasing both reliance on emails for reporting and time and effort required to assess data. Through its data visibility improvement work, the program also resolved data quality problems, for example by standardizing product lists. With enhanced data visibility, humanitarian organizations can improve performance, which simplifies supervisory visits and supply chain management pharmaceutical team analysis.

Building Capacity to Improve Pharmaceutical and Medical Commodity Management in Humanitarian and Disaster Settings Program



The Building Capacity to Improve Pharmaceutical and Medical Commodity Management in Humanitarian and Disaster Settings Program improves the capacity of people who manage health supply chains in humanitarian settings. It helps staff from international organizations and local NGOs to manage pharmaceutical and medical commodities by equipping them with training, guidance, resources, and follow-up support. JSI manages the Program, which is funded by USAID's Bureau for Humanitarian Assistance.