

IMPROVING PHARMACEUTICAL SUPPLY CHAINS IN HUMANITARIAN SETTINGS

CHALLENGES AND SOLUTIONS FOR DELIVERING HEALTH SUPPLIES IN
HUMANITARIAN AND EMERGENCY SETTINGS



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The Building Capacity to Improve Pharmaceutical and Medical Commodity Management in Humanitarian and Disaster Settings Program helps staff from international organizations and local NGOs by equipping them with training, guidance, resources, and follow-up support. JSI manages this program, funded by USAID's Bureau for Humanitarian Assistance (BHA).

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INTRODUCTION

Humanitarian supply chain management (SCM) involves buying and delivering health supplies and services to the place where they are needed in the immediate aftermath of an emergency and during recovery. Strong health supply chains save lives and are a critical component of humanitarian crises. With funding from USAID's Bureau for Humanitarian Assistance (BHA), JSI implements the Building Capacity to Improve Pharmaceutical and Medical Commodity (PMC) Management in Humanitarian and Disaster Settings Program, which improves the capacity of international and local nongovernmental organizations (NGOs) to manage PMCs.

The program equips SCM staff with training, guidance, resources, and follow-up support. This includes blended learning and in-person training; development of learning briefs that showcase proven practices for managing PMCs; technical discussions where practitioners share learnings; and engagement in the Humanitarian Commodities Logistics (HCL) Community of Practice, a subgroup of the International Association of Public Health Logisticians. The program also supports BHA implementing partners with mentoring and technical assistance to institutionalize good PMC policies and practices.

Through the program's HCL Community Education Series, humanitarian health logisticians and SCM experts participated in online technical discussions on a variety of supply chain topics. Through 12 webinars over two years, the program gathered a wealth of information about the challenges that humanitarian organizations face. This document is a collection of challenges and proposed solutions based on the technical discussions and learning from program activities and their numerous participants. It is organized by SCM function. All technical discussions are available on-demand through JSI's YouTube channel.

QUANTIFICATION

Quantification is the process of estimating the quantities and costs of the products required for a specific health program (or service), and determining when they should be delivered to ensure an uninterrupted supply for a health program. Quantification is a critical SCM activity that links information on services and commodities from the facility level with program policies and plans at the national level.

1. Challenge: Difficulties obtaining good-quality consumption data for forecasting commodity requirements.

Solutions:

- a) Use consumption data collected from clinics during the forecasting step of quantification. Continuously review and improve data collection mechanisms to ensure data accuracy and reliability to determine the required quantities of supplies.
- b) When possible, visit a sample of service delivery points to validate data reported against data collected. Provide on-the-job training to improve data collection and reporting.

- c) Establish data review teams that routinely use data to identify supply chain problems and take action to improve the supply chain. Structured use of supply chain data improves data collection and reporting.
- d) Conduct periodic audits and assessments of supply chain data collection and management processes to identify areas for improvement and implement corrective measures.
- e) Triangulate consumption data with alternate sources such as supervision and health facility survey data to validate and cross-check the consumption data collected from clinics and other service delivery points. Incorporate supportive supervision to provide continuous feedback on data quality and recording and reporting processes.
- f) Create systems that recognize and reward accurate and diligent data reporting at all levels. This could involve recognizing individual or team efforts to maintain high data quality standards.

2. Challenge: Fragmented forecasting and quantification processes.

SOLUTIONS:

- a) Find collaboration and coordination opportunities to achieve a more diverse quantification team and to synchronize processes among stakeholders both internally and externally.
- b) Establish a quantification team that includes members from relevant departments and agencies to conduct quantification activities together, and review and update forecasts and supply plans.
- c) Create shared data repositories or folders accessible to all stakeholders. This can be a single source of data related to forecasting and quantification, reducing fragmentation, and improving transparency.

3. Challenge: Difficulties obtaining accurate, comprehensive, and up-to-date information on population size, epidemiological information, treatment protocols, and consumption patterns, especially in resource-constrained settings.

Solutions:

- a) Improve data collection and management systems. This can involve implementing electronic health record systems to capture and analyze patient data; strengthening surveillance systems for better disease monitoring; and conducting regular surveys or assessments to gather population and consumption data. Collaborate with local health authorities and organizations to share data.
- b) Establish a commodity coordination committee that includes relevant partners who meet routinely to monitor stock status, share information, and act to ensure continuous supply.

- c) Invest in capacity-building initiatives for health care workers involved in quantification. Provide training on data collection methods, analysis techniques, and interpretation of guidelines so health care professionals can improve their skills for accurately estimating the required quantities of health commodities.
- d) Integrate technology-driven solutions to streamline data collection and analysis. For example, use mobile applications for data collection and implement forecasting models supported by artificial intelligence to automate and standardize quantification, reducing human error and enhancing accuracy.
- e) Address challenges related to data availability and accuracy with a multi-faceted approach involving improved data systems, capacity building, and the integration of technology-driven solutions.

PROCUREMENT IN LOCAL MARKETS

Only effective and rigorous procurement policies, processes, and procedures can ensure a reliable flow of commodities into the supply chain and respond effectively to any contextual or operational changes. To design the procurement strategy, the procurement unit must develop an understanding of the market by studying market structure, competition, supply chain, products and product quality, value as a customer, and prices.

1. Challenge: Lack of organizations with resources and expertise to inspect suppliers manufacturing sites.

Solution:

- a) When planning local market surveys, explore options for sharing information among humanitarian organizations to minimize the need for multiple suppliers site visits in a year, ensuring efficient use of time and resources.

2. Challenge: Lack of trained/professional staff to execute market survey management tasks.

Solutions:

- a) Improve the capacity of your organization by investing in the training and development of human resources to conduct market surveys effectively. If funds are available, consider contracting QUAMED or other vendors to conduct professional analysis and market surveys, depending on organizational and funder requirements.
- b) Form a multidisciplinary team comprising logistics, procurement, medical, and sometimes funding staff to conduct market surveys. This ensures a comprehensive evaluation using different perspectives.

3. Challenge: Insufficient knowledge and capacity to assess local PMC supplier information management systems (IMS) and quality management systems (QMS).

Solution:

- a) Obtain the IMS and QMS information from the shared report for QUAMED's most recent assessment of potential suppliers to evaluate their IMS and QMS capabilities and suitability.

4. Challenge: Insufficient price discovery during market surveys.

Solution:

- a) When conducting market surveys, make price discovery an objective of the survey to gather important price data for decision-making. Conduct market surveys regularly and include as many suppliers as possible, including local ones and those in nearby countries. Include all costs (product price, delivery costs, and at what level) to conduct comparable analysis of prices and related costs.

5. Challenge: Monitoring local supplier quality control practices is time-consuming.

Solution:

- a) As part of planning a market survey, summarize the evaluation criteria related to the supplier's quality control practices, including testing protocols, documentation, and monitoring of product quality.

PROCUREMENT LEAD TIMES

A major consideration when opting for international procurement is lead time. Procurement can be delayed for many reasons, including legal and policy restrictions, not only in the origin and final destination countries but also in other countries involved in the global supply chain. Procurement eventually determines how fast and effectively you can deliver health products to the last mile, especially during a humanitarian response.

1. Challenge: Meeting defined timelines and lead times (e.g., price quoting, purchase order processing, freight) is difficult.

Solutions:

- a) Establish clear key performance indicators (KPIs) to measure performance and monitor timelines for different process steps.
- b) Include KPIs in supplier contracts with incentives to meet the targets including lead times and timeline KPIs. Work with suppliers during negotiations to establish realistic performance metrics.

2. Challenge: Delays and bottlenecks can occur at different stages of the supply chain, resulting from documentation inaccuracy, limited container availability and vessel space, delays in receiving import waivers, and limited truck availability.

Solutions:

- a) Conduct process mapping and process optimization to identify bottlenecks and take corrective action. Improve planning and processes to ensure the availability of necessary equipment; reserve space on vessels; and improve forecasting exercises to reduce lead times.
- b) Develop and use electronic checklists for increased visibility and monitoring, and process mapping and timelines to better plan and prepare for supply chain inputs and resources.

3. Challenge: Difficult supplier relationships and negotiations.

Solutions:

- a) Leverage negotiating power while respecting supplier partners.
- b) Facilitate collaboration by engaging suppliers, offering services to local authorities, and sharing best practices and experiences to improve the flow of goods and reduce lead times.
- c) In cases when multiple partners are providing health products, establish mechanisms for coordinated supply planning to avoid duplication; share supplier information; and leverage each partner's relative procurement advantage.

4. Challenge: Broken local market and long lead times for international procurement can cause shortages.

Solution:

- a) Increase projected quantities to provide buffer stock to protect against stockouts while closely monitoring stock levels to avoid excess stock and expiries. Regularly review and adjust the projected quantities based on updated information and market conditions. Explore options for diversifying suppliers and consider building strategic partnerships with reliable local suppliers to reduce dependence on a single source.

QUALITY ASSURANCE

Counterfeit and substandard products in the marketplace cause significant quality risks for the supply system and harm the environment. Public sector procurement processes and national regulatory agencies must implement appropriate quality assurance (QA) measures to ensure that only good-quality products enter the supply system. Procurement addresses this responsibility through the technical specifications issued in the tender document, which identifies key product quality requirements such as product certification, labeling and packaging, and shelf-life, and pharmacopeia standards (when applicable).

1. Challenge: Inappropriate temperature and humidity conditions for pharmaceutical storage and distribution caused by inadequate power supply, unsuitable warehouse infrastructure, difficult topography, and limited availability of suitable transport compromise overall product integrity.

Solutions:

- a) Manage risk by developing contingency plans, diverse and comprehensive alternative transportation methods in challenging environments, and information-sharing mechanisms.
- b) Optimize distribution intervals by accounting for storage conditions at warehouses and storage nodes in your system and implementing short distribution intervals for sites where temperature control is a problem. This lessens the duration of exposure to unfavorable storage conditions and reduces the risk of compromised product quality and waste.
- c) Maintain an optimum level of safety stock at facilities based on consumption and storage capacity to mitigate the consequences of power supply and infrastructure limitations.
- d) Ensure a monitoring mechanism for temperature and humidity conditions during transportation and handling.
- e) Implement and monitor temperature control measures, such as using air conditioners, dehumidifiers, and solar-powered fans to control temperatures and humidity in warehouses and facilities.
- f) Explore alternative energy sources such as solar to protect the quality of vaccines and other cold-chain products in warehouses.
- g) Arrange stacks for better air circulation, promote passive ventilation with screened windows, and install heat ventilators in the roof.

2. Challenge: Organizations do not always comply with WHO's Good Storage and Distribution Practices for pharmaceuticals.

Solutions:

- a) Prioritize simple yet effective QA measures such as visual inspections during product movement. Use tools like the WHO "Be aware" guide for visual inspection of medicines.

- b) Follow good warehouse practices and implement the first-to-expire-first-out system to prevent distribution of expired products, waste, and subsequent environmental consequences.
- c) Protect products from sunlight, chemicals, and physical damage by adhering to good storage guidelines including keeping them in designated packaging materials.

3. Challenge: Proficient monitoring and traceability take time to institutionalize due to lack of processes and sufficiently trained workers.

Solutions:

- a) Use inventory management systems such as the Excel-based Pharma Inventory Tracker (PIT) and facility stock reporting tools for accurate reporting and traceability.
- b) Strengthen reporting and investigation mechanisms, including establishment of clear procedures for reporting product quality issues. Conduct thorough investigations and implement necessary actions based on the findings.
- c) Establish or enforce record keeping and data management to track products from source to destination.

4. Challenge: No quality assessments or follow-up on corrective and preventive action (CAPA).

Solutions:

- a) Create a basic quality assessment framework that outlines standards, processes, and responsibilities.
- b) Conduct quality assessments annually and follow-up on CAPA implementation continually. Consider asking management and financing colleagues to help close improvement gaps.
- c) Conduct training on basic QA concepts and CAPA processes, and implement a monitoring system to track them.

5. Challenge: Lack of standard operating procedures (SOPs) and trained staff to manage risk and reality of counterfeit medical items.

Solutions:

- a) Require Good Manufacturing Practices certificate from stringent authorities. Once products are in the warehouse, develop clear SOPs and train staff to establish regular processes for visual inspection and recall.
- b) Implement technology-based authentication tools such as barcode scanning, RFID tags, and holograms on product packaging, which can help identify counterfeit products.

- c) Educate health care providers, patients, and the community about the risks of counterfeit medical items. Develop a user-friendly reporting mechanism and encourage people to report suspected counterfeit products.

INVENTORY MANAGEMENT

Supply chain strategy is defined by the Association for Supply Chain Management as a plan for how the supply chain will function in its environment to meet the business goals of an organization. By extension, an inventory strategy describes how inventory will be used or managed to meet supply chain goals. It is the supply chain manager's responsibility to ensure that inventory policies are in place to support the organization's mission, goals, and objectives related to health in humanitarian and crisis settings.

1. Challenge: Lack of integration of the supply chain across contracts and funding sources; managing the max-min levels according to financial source rather than need can introduce waste and stockouts.

Solution:

- a) Implement an integrated SCM approach that considers the actual need for supplies, regardless of funding source or contract. This will ensure efficient allocation and use of resources, leading to less waste and stockouts. Automate the alert system in the logistics management information system (LMIS) to signal when stock levels are below the minimum threshold. Automate these alerts to streamline the process further.

2. Challenge: Lack of government guidelines for the disposal of expired products.

Solutions:

- a) Develop internal guidelines and protocols for proper disposal of expired products. Train staff on guidelines and ensure compliance with them. Separate expired products from regular stock, label them appropriately, limit access, and store them separately. Advocate for the development of government guidelines for the disposal of expired products to ensure standardized practices across the industry.
- b) WHO has disposal guidelines that programs can reference. When developing guidelines, be sure to check local environmental regulations and establish a clear process for reverse logistics. This is also an opportunity to collaborate with the private sector, which may have access to high-fire incinerators or other appropriate methods for disposal.

3. Challenge: NGOs lack supervisory authority for inventory management of donated health supplies in ministry of health MOH facilities.

Solutions:

- a) Collaborate closely with the MOH to establish clear roles and responsibilities for training and supervising donated inventory in MOH facilities.
- b) Work with MOH staff to provide SCM support and training as needed. Ensure that both implementing partners and MOH staff have regular supervision and monitoring visits to maintain inventory controls and solve problems promptly.

4. Challenge: Lack of proactive planning and budgeting to accommodate increased quantities and warehouse space.

Solutions:

- a) Anticipate the effects of increased demand due to rotation of health services, budget for increased warehouse space, and plan for SCM considerations. Conduct regular assessments to forecast future needs accurately, secure funds in a timely manner, and place orders promptly with suppliers, whether local or international.
- b) Collaborate and partner with the private sector and other partners to find and understand possible options for temporary storage when more space is needed.
- c) When warehouse space is limited, increase frequency of resupply instead of having fewer larger orders. If sufficient and efficient transportation is available, this can alleviate the need for more storage space.

5. Challenge: Delayed shipments and stockouts due to global logistics challenges.

Solutions:

- a) Have a risk management plan in place to activate a response protocol. Establish communication channels and partnerships with international NGOs to request loans or support in case of emergencies.
- b) Monitor closely the status of shipments and adjust the minimum stock levels, increasing buffer stocks if needed based on vendor reliability and prevailing global logistics challenges.
- c) Collaborate with the global pharmaceutical unit for support and guidance.
- d) Increase the number of potential suppliers to mitigate delays, possibly identifying qualified local and regional suppliers to reduce lead times.

6. Challenge: Managing inventory control of donated health supplies and maintaining NGO-procured stocks within MOH-owned warehouses can be difficult.

Solutions:

- a) Build good relationships with MOH staff.
- b) Support and train public health staff to ensure accurate inventory management practices. Collaborate closely with the public health centers to train staff and align processes, establish clear roles and responsibilities, and implement robust inventory control systems.

7. Challenge: Difficulties managing bin location re-order level.

Solution:

- a) Use advanced electronic inventory tools with regular updates for real-time capability. Estimate need through monthly consumption data, PIT inventory tool register, coordination with health staff, and use of monitoring systems.

STORAGE AND WAREHOUSING

Supply chain managers must have an overall strategy for commodity warehousing, particularly in resource-poor environments in which warehousing can buffer against uncertainties and breakdowns within the supply chain. Managers must use warehouses as dynamic operations centers housing a range of distinct yet complementary activities that collect and hold products for delivery to where they are needed the most.

1. Challenge: Security-related restrictions make it difficult to manage product shortages and travel and distribution to end users.

Solutions:

- a) Plan for temporary storage in a warehouse in a safer location. Distribute medicines across multiple warehouses to increase accessibility.
- b) In unstable areas where adequate temperature is difficult to maintain, distribute medicines weekly when feasible and safe.
- c) In unstable areas, distribute medicines to camps and health centers weekly, when feasible and safe, to avoid losses and ensure availability.

2. Challenge: Fuel and energy shortages make product transport and cold chain storage difficult during times of conflict and political instability.

Solution:

- a) Plan to have reserve fuel available before political and security conditions worsen.
- b) Move sensitive cold chain medicines from health centers to the nearest pharma warehouse with better storage conditions.
- c) Transfer fuel from offices and health centers to pharma warehouses to maintain the cold chain.

3. Challenge: In volatile security situations in crisis and disaster areas, warehousing and distribution of medical supplies to end-users are difficult.

Solutions:

- a) Maintain backup stock of essential medicines and distribute across warehouses strategically; adhere to Good Storage and Distribution Practices.
- b) Collaborate with the private sector and other implementing partners. When using the private sector, include specific standards and KPIs in contracts.

4. Challenge: Managing and reconciling in-kind donations, especially of drugs, is difficult.

Solution:

- a) Request storage condition reports for the past three months and manufacturer's certificate. Get approval from the QA team, then after approval, accept donations in the pharma warehouse, and record them on an inventory tracker such as PIT.

5. Challenge: Inventory cycle count for pharmaceutical warehousing takes time and requires sufficient and trained staff to conduct spot checks.

Solutions:

- a) Instead of doing an entire physical count on a monthly or quarterly basis, consider spot-checking different portions of the inventory. Spot checks involve finance and program departments, conducted randomly within each month by different managers or a committee to secure accountability and transparency.

- b) During cycle counts, several methods can be used. For example: 1) apply the Pareto principle, focusing on the top 20% of products that constitute 80% of the most expensive, attractive, and highly consumed inventory; and 2) use ABC classification based on annual value: usually Category A items include the costliest and are considered priority items—these may only account for a small percentage, perhaps 10 or 20%; and 3) VEN analysis based on classifying medicines according to their critical nature. Find more information in the JSI Supply Chain Manager Handbook.

6. Challenge: Moving supplies in conflict situations poses risks to products and staff.

Solution:

- a) Have backup stocks (pre-positioning) of essential medicines; distribute strategically to warehouses to cover all health care facilities; and ensure one-month coverage of basic supplies during emergencies.

7. Challenge: Dealing with expired products and mitigating waste is difficult.

Solutions:

- a) Focus on medicines with shorter expiration dates and request quantities based on real consumption or forecasting.
- b) Involve health staff and supply chain team in the ordering process and prioritize essential medicines.
- c) Review previous projects to avoid repeating challenges, and regularly monitor expiration dates for products with a shelf life less than 12 months.
- d) Pre-position products to have a guaranteed amount available drawn from high rotation stock with sufficient shelf-life.
- e) Resupply short shelf-life products more frequently.

8. Challenge: Improper medical kit handling can damage items. This can occur due to inadequate training and lack of awareness of proper storage and usage of kits.

Solution:

- a) Provide comprehensive training on the proper handling, storage, and use of medical kits. This includes training health care workers on inventory management, cold chain maintenance, adherence to treatment protocols, and how to transition from health kits to individual PMCs.

9. Challenge: Limited infrastructure, such as insufficient storage facilities, unreliable transportation, and lack of equipment for proper administration hinder the deployment and efficacy of medical kits.

Solutions:

- a) Work to improve infrastructure such as providing adequate storage facilities and reliable transportation systems. This may require increased budget allocations and collaboration with local authorities and NGOs to enhance capacity to handle medical supplies effectively.
- b) NGOs may collaborate with the private sector to use its infrastructure. For example, hiring local taxi drivers in Liberia secured transport of personal protection equipment during the Ebola crisis. Niger has used local grocery stores to increase cold chain capacity during crises.

COLD CHAIN WAREHOUSING

The cold chain encompasses the entire process from manufacturing, storing, transporting, and distributing to reaching the end-user. Cold-chain pharmaceutical products refer to drugs, vaccines, and biological substances that must be stored and transported within a specific temperature range to preserve their quality, potency, and safety. There are health products that are highly sensitive to temperature fluctuations, and deviations can render them ineffective or even harmful.

1. Challenge: Temperature excursions for cold chain health products.

Solutions:

- a) Monitor temperatures with digital temperature monitoring devices like log tags, FridgeTag (30-day temperature recorders), or remote temperature monitoring devices to effectively monitor and track potential temperature excursions. Establish SOPs for regular reporting of data and implement processes to address any excursions promptly.
- b) Establish SOPs and written plans shared with all health facilities that clearly describe actions to take (e.g., using vaccine carriers or moving vaccines to a neighboring facility with cold chain equipment) when cold chain fails, and how to record temperatures and any action taken due to temperature excursions.
- c) Establish SOPs for preventive maintenance for cold chain equipment such as cleaning, defrosting as needed, cleaning solar panels where available, and ensuring space between equipment and the wall for air flow.
- d) Ensure proper transportation with vaccine carriers, ice bags, conditioned ice or gel packs, and digital temperature monitors.

2. Challenge: Managing cold chain for products other than vaccines (e.g., maternity oxytocin and laboratory reagents) in the absence of cold chain equipment.

Solution:

- a) Use mobile unit boxes with ice and gel packs and temperature loggers.

3. Challenge: Risks associated with electricity outages and maintaining the cold chain are complex to manage.

Solution:

- a) Implement measures to mitigate risks such as installing automated generators and backup power systems, and ensure surge protectors are in place and use. SOPs should explain how to minimize opening the door of a piece of cold chain equipment as the holdover time can be up to 8 hours, depending on the equipment. During holidays and special dates, train night-shift staff (security personnel) to monitor the temperature regularly. Install remote monitors that will alert staff to temperature excursions. Maintain accurate temperature records to verify that the cold chain is properly maintained.

LOGISTICS MANAGEMENT INFORMATION SYSTEMS

Supply chain management information systems are the heart of health supply chains and depend on the right combination of people, processes, and technology. An effective SCMIS depends on the right combination of people, processes, and technology. A logistics management information system collects, organizes, and reports data that enable people to make operational and strategic decisions and take informed action.

1. Challenge: When integrating electronic LMIS with other platforms, the software is not always compatible and may cause operational problems.

Solutions:

- a) Develop a detailed assessment of processes when integrating LMIS with other platforms. This includes:
 - 1) gathering process and system requirements; 2) conducting a technology scan or overview of all the options, whether open-source or proprietary and organizing a team of experts to select the best solution; 3) conducting a market survey to identify a technology partner that will provide dedicated ongoing support; 4) assessing organizational management capacities (people, funding, and processes) to implement the project; 5) planning entry and exit strategies to clarify the final product; and 6) developing clear time- and deadlines to keep momentum and motivation.
- b) Design integration architecture that is scalable and adaptable to different systems and versions. This includes using application programming interfaces that facilitate integration and data sharing between systems.
- c) Standardize data formats, terminologies, and protocols across systems to facilitate integration.

2. Challenge: Version updates for DHIS2–stock management do not always facilitate end-to-end supply chain visibility or integration.

Solutions:

- a) DHIS2–RTS (real-time stock management system) is fully functional on mobile devices for recording and managing stock data. It can be used as a transactional system for warehouse management from the central level to the end user.
- b) Plan for dedicated support such as a service-level agreement that will secure ongoing support when issues arise. DHIS2 can be integrated with multiple electronic LMIS or ERP systems such as mSupply, Medexis, OpenLMIS, and ORACLE. This facilitates triangulation of logistics and service data imported from other LMIS tools.

3. Challenge: DHIS2 is not always able to manage data with offline functionality for updating stock data, especially in complex emergencies with intermittent power and internet connectivity.

Solution:

- a) The Android Capture app of DHIS2 is designed for offline use. Users can collect and view data while offline and synchronize data with the server once the network is back. DHIS2 is implemented in complex emergencies in Somalia, Nigeria, and DRC because it can handle such conditions. For more support, the DHIS2 community is available to discuss challenges and how other users handle them.

ENVIRONMENTALLY SUSTAINABLE SUPPLY CHAINS

In recent years, there has been increased focus on environmental sustainability in humanitarian supply chains. A sustainable supply chain is one that fully integrates ethical and environmentally responsible practices into a competitive and successful model. To help protect the environment and meet global climate change goals, humanitarian partners must find ways to reduce their carbon footprint and other environmental burdens stemming from supply chain activities. This includes reduced packaging and improved quantification accuracy to reduce waste and optimized distribution routes to cut fuel usage.

1. Challenge: Humanitarian NGOs lack tools to assess their environmental impact and develop corrective actions.

Solution:

- a) Use tools like the NEAT + tool to assess every function (product selection, quantification, procurement, inventory management, warehousing, and transportation practices) and incorporate sustainable practices throughout the entire supply chain to reduce and mitigate environmental harm. Seek guidance and resources on inventory control management practices to improve sustainability.

2. Challenge: Incinerators for waste management in different countries are not mapped.

Solutions:

- a) Collaborate with international partners, including USAID BHA, to leverage resources to map incinerators.
- b) Establish contact with relevant stakeholders to access information and resources related to incinerators in different countries.
- c) Engage in knowledge sharing and networking opportunities to enhance waste management practices, including access to incinerators.

3. Challenge: Finding alternatives to conventional plastics in humanitarian settings can be difficult.

Solution:

- a) Alternative options are becoming increasingly viable, so continue to research them. Prepare and publish guidance notes on alternatives to plastic, considering the specific conditions and challenges faced in humanitarian contexts. If alternatives to plastics are not available, explore reusable instead of single-use materials.

4. Challenge: Promoting recycling initiatives and biodegradable materials in humanitarian contexts takes time, commitment, and financial resources, which are not always available concurrently.

Solutions:

- a) Although recycling initiatives are often privately owned, some organizations and funder support such initiatives in certain countries. Include recycling, reuse, and biodegradable considerations in product selection, quantification, and procurement specifications and contracts. Advocate for increased support for recycling initiatives and incentivize more manufacturers to produce biodegradable materials. However, carefully consider the conditions for biodegradability, which may not be possible in humanitarian contexts.
- b) Emphasize the importance of waste reduction at the source and encourage investment in recycling and reuse practices, particularly within the organization.
- c) When developing product specifications, include a requirement to use brown cardboard material for packaging (it has less chemicals). Recognize the supply/demand dynamics in the cardboard market and the potential shift to brown cardboard if demand for white cardboard decreases. Advocate for the use of brown cardboard as the default material and support initiatives that promote its adoption.

5. Challenge: Insufficient skills to advocate for investments in environmentally sustainable supply chains and funding for waste management practices.

Solution:

- a) Include waste management practices in the preparedness phase of projects and initiatives. Incorporate budgetary considerations for staff, processes, new materials, and implementation of waste management strategies. Advocate for securing sufficient funding and resources at higher levels within NGOs to support waste management efforts. Ask donors to fund and adopt environmentally sustainable waste management practices.

RISK MANAGEMENT

All activities and operations conducted in a humanitarian health supply chain are exposed to risk. In each function of the SCM cycle, staff work in procurement, storage, distribution, inventory management, and reporting to ensure that people in crisis and emergency settings receive the lifesaving medicines they need. The various problems that can interrupt these activities and the ability to provide products to people are known as supply chain risks. For example, sudden reduction in funding may limit procurement or slow down delivery operations.

1. Challenge: Relying on a limited number of local suppliers may cause disruptions.

Solution:

- a) Expand the network of suppliers by engaging local, regional, and international suppliers. Coordinate with other partners and organizations working on the response to explore collaborative solutions such as joint market surveys and pooled procurement.

2. Challenge: Accepting products with insufficient expiration dates increases the risk of expired products.

Solution:

- a) Establish a general rule of accepting products with expiration dates of 12 months or more. Negotiate with vendors to exchange products with longer expiry dates if stock levels are sufficient, and monitor consumption and accelerate distribution to health clinics with higher consumption rates to minimize the risk of expired products. Strive for zero tolerance of expired products.

3. Challenge: Inadequate procurement processes compromise quality and cause delays.

Solutions:

- a) Strengthen procurement processes by emphasizing the use of pre-qualified suppliers and establishing robust and comprehensive product specifications. This will mitigate risks associated with receiving the wrong or substandard products.

- b) Conduct regular analysis of consumption, review forecasts, and expiration dates to optimize procurement decisions and minimize waste and stockouts.

4. Challenge: Dealing with political situations that affect health supply chains.

Solutions:

- a) Contact other NGOs to seek collective support and collaboration to handle political situations that affect procurement and distribution. Establish and maintain communication channels with MOH authorities to understand the situation and work together to find solutions.
- b) Work through the cluster system (if activated) to ensure coordination and advocacy.

5. Challenge: Risk management is not a standardized organizational practice.

Solution:

- a) Promote a proactive approach and culture of regular review of risk management plans for SCM within the organization. Encourage leadership commitment to risk assessment and mitigation by providing the necessary tools and guidance.

6. Challenge: Lack of analysis and understanding of suppliers' capacity and developing response protocols.

Solution:

- a) During the preparedness phase, include a comprehensive threat analysis of suppliers' capacity to deliver on time. Use previous performance statistics, analyze the global supply chain, and consider special conditions within the country. Based on the risk level identified, develop a response protocol using a team-based approach to determine the most suitable course of action.

COORDINATION

Humanitarian organizations and governments responding to health crises use several coordination mechanisms to strengthen global, regional, and national/local humanitarian management and coordination systems. They diversify collaboration to build better sourcing strategies, effective and timely distribution, efficient inventory strategies to avoid expiries and waste, and warehousing and storage practices that comply with WHO standards. Coordination within each organization is essential to expedite processes and better serve populations in need.

1. Challenge: Limited access to MOH annual supply plans challenges ability to maintain adequate stock levels.

Solution:

- a) Establish a collaborative relationship with the MOH to gain access to its annual supply plans. Emphasize the importance of sharing information to improve coordination and planning. Regularly communicate and coordinate with MOH to align procurement and supply chain activities to maintain adequate stock levels and implement effective inventory management and controls.

2. Challenge: Navigating commodity security during volatility, insecurity, and political unrest hinders the ability to deliver health supplies.

Solution:

- a) Monitor the security situation through humanitarian access teams and the clusters system. Share information and work with local authorities to avoid insecure areas and plan accordingly.

3. Challenge: Limited local manufacturing of pharmaceuticals and lack of coordination to conduct joint market surveys due to different calendars and timelines.

Solutions:

- a) Conduct local market assessments—ideally with other NGOs—by certified experts to ensure procurement from local suppliers that use best practices.
- b) If local suppliers are unavailable, procure primarily from international suppliers and invest time in analyzing importation processes and requirements, mapping them and identifying roles and responsibilities to optimize lead times.

4. Challenge: Administrative burdens in the government medical supply chain limit importation and distribution of health products.

Solution:

- a) Work with health authorities to pre-clear international orders and engage all levels of government for transportation permits to deliver health supplies where needed.

5. Challenge: Limited local supplier collaboration and data sharing with humanitarian organizations hinders ability to identify qualified suppliers.

Solutions:

- a) Establish coordination committees or other forums for information sharing and problem solving. Explore coordination of International Association of Public Health Logisticians country chapters with humanitarian organizations to understand MOH challenges and how to strengthen coordination with NGOs supporting the humanitarian response.
- b) Encourage suppliers and distributors to share product monitoring data to facilitate coordination and decision making. This collaboration helps identify and avoid quality problems.
- c) Encourage suppliers and distributors to share temperature monitoring practices and other relevant information.
- d) Standardize procedures for data sharing and reporting. Use digital platforms and communication channels to facilitate data exchange and improve coordination.
- e) Hold regular meetings and establish communication channels to share SCM updates, challenges, and solutions.

HUMAN RESOURCES FOR SUPPLY CHAIN MANAGEMENT

Human resources are at the center of the SCM cycle. In humanitarian assistance, SCM requires skilled and committed personnel to ensure the functioning of the supply chain cycle and deliver health supplies in the right quantity, quality, and cost during every phase of the humanitarian response. By addressing Human resources management challenges and implementing these solutions, organizations can enhance the utilization of supply chain professionals in humanitarian settings, ultimately improving the efficiency and effectiveness of relief efforts.

- 1. Challenge: Shortage of trained health care personnel hinders proper use of health supplies, including health kits. The lack of staff to administer treatments and educate patients on medicine usage can impact the overall effectiveness of the humanitarian response.**

Solutions:

- a) Task shifting can alleviate the burden on health care professionals. Train community health workers or volunteers so that health care tasks can be decentralized, ensuring wider coverage and better use of health supplies.
- b) Develop strategies for the deployment of supply chain professionals based on the specific needs of humanitarian operations. Ensure seamless integration into the overall structure to optimize their contributions.

2. Challenge: SCM training is ad-hoc, diminishing humanitarian supply chain performance due to knowledge gaps.

Solutions:

- a) Set up a sustainable human resources system, emphasizing the need for structured and ongoing training programs, including on-the-job. Focus on building an HR system that can withstand external challenges and reduce/manage staff turnover.
- b) Provide training and capacity-building programs for humanitarian organizations to enhance understanding of the role and importance of supply chain professionals. This can contribute to a more comprehensive use of their skills.

3. Challenge: While there are supply chain professionals in most countries, not all work in the humanitarian sector. Their expertise may not be fully recognized or understood in the context of humanitarian settings, hindering their involvement in critical decision-making processes.

Solutions:

- a) Encourage collaboration and coordination between humanitarian organizations and supply chain professionals. Foster a more collaborative approach to use their skills across sectors and organizations.
- b) Advocate for the recognition of supply chain professionals as essential contributors to humanitarian efforts. Emphasize their role in ensuring the efficient and timely delivery of aid.

4. Challenge: The People that Deliver Step 2.0 Program, which can mitigate SCM challenges, is expensive and not yet implemented in many countries. The program combines traditional learning with on-the-job training to give health supply chain managers guidance in people management, problem-solving, communication, project management, and professional development competencies.

Solution:

- a) Efforts are being made to secure funding from organizations like USAID, the Global Fund, IPFW Foundation, and the GAVI Vaccine Alliance. The PtD implementation event in Thailand in 2024 will convene multiple countries and organizations to discuss challenges and solutions.

5. Challenge: Health and education workers in refugee camps face safety risks, including theft and harm to female workers.

Solution:

- a) Talk with workers to understand their security concerns and design interventions that respond to them. Promote an inclusive worker-centric strategy.

6. Challenge: Lack of optimization for distribution of SCM human resources across health interventions in humanitarian settings. There is concern that SCM resources are prioritized in silos instead of an integrated approach to meet primary health care needs.

Solution:

- a) Develop a SCM professionalization strategy using tools like capabilities mapping and cutting across health programs to ensure a more holistic and equitable distribution of human resources to manage PMCs.

7. Challenge: Humanitarian organizations face resource constraints that make it hard to allocate personnel including supply chain professionals.

Solution:

- a) Secure additional resources for humanitarian organizations to overcome constraints in deploying and using supply chain professionals. This may involve seeking external funding and reallocating existing resources more effectively.



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