

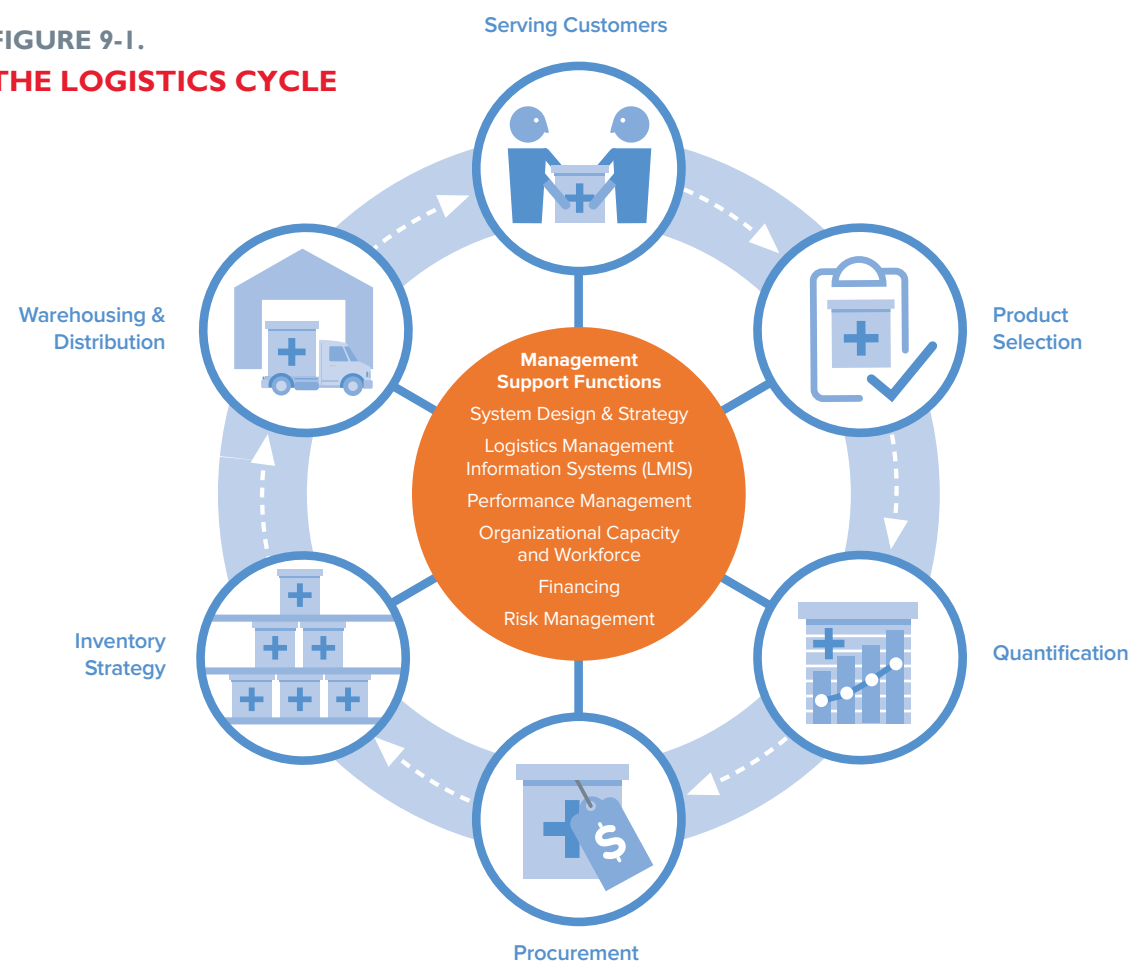


CHAPTER 9

PERFORMANCE MANAGEMENT

AND CONTINUOUS IMPROVEMENT OF PUBLIC HEALTH SUPPLY CHAINS

FIGURE 9-1.
THE LOGISTICS CYCLE



WHAT A SUPPLY CHAIN MANAGER NEEDS TO KNOW:

For the supply chain manager to effectively oversee the full range of system components and ensure an efficient and effectively operating public health supply chain, s/he should be familiar with:

- Status of each component of the cycle for supply chain operations
- Key performance indicators for each functional area of the system
- Available control measures for continuously improving performance

A well-organized performance management system provides the supply chain manager routine visibility into the functioning of the various components.

9.1 WHAT IS PERFORMANCE MANAGEMENT?

Until relatively recently, analysis of public health supply chain performance was feasible primarily through monitoring and evaluating the supply chain by periodically traveling to a sample of sites to collect detailed data for analyses and studies and then adjusting operations accordingly. This provided useful indicators for considering supply chain effectiveness and efficiency, and suggesting adjustments and activities to strengthen the supply chain going forward. While periodic M&E analyses still have a role, commercial and public sector supply chains are moving to more routine supply chain performance management to enable an agile and responsive supply chain.

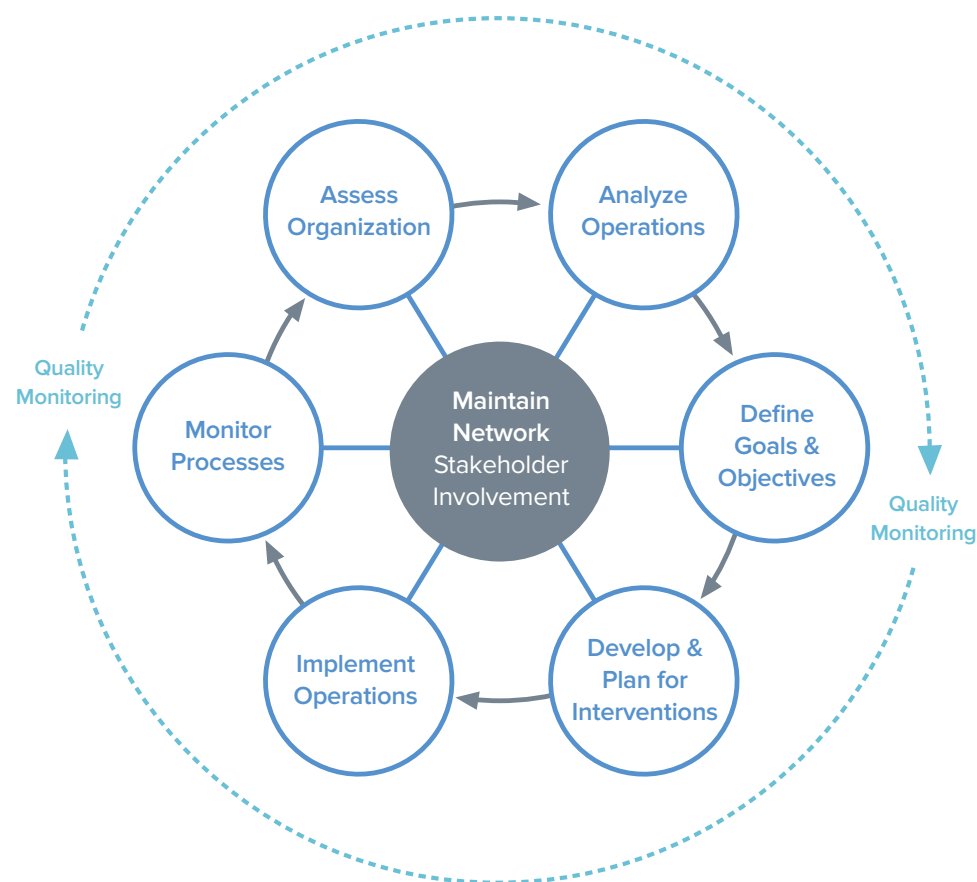
Whereas monitoring and evaluation often was undertaken for the purpose of reporting indicators to the leadership and/or to funders or other stakeholders, performance management is integrated into routine supply chain operations. Adapting private sector commercial best practices and metrics as appropriate is enabling continuous analysis and improvement of operations. This internal analysis also serves external reporting purposes because funders are increasingly interested in key performance indicators (KPIs). It also plays an important role in strategic, tactical, and operational planning and implementation, including setting objectives, assessing progress against those objectives, identifying areas for investment, and adjusting for the future.

Performance measurement is the process of collecting, analyzing, and reporting information regarding the performance of an individual, group, process, organization, system, or component to see whether outputs are in line with what was intended or should have been achieved.

However, measuring the performance of the public health supply chain poses idiosyncratic challenges. The national public health supply agencies (e.g., MOH, Logistics Management Units (LMUs), CMS, etc.) do not function independently nor in a vacuum and rarely control all the levers of the system, as do most private sector, commercial supply chains. Public health supply chains are reliant on and interdependent with the operations of a network of many other stakeholders (e.g., UN agencies' procurement practices, various health programs' cycles, government funding calendar, government procurement or decentralization policies, other donors, private suppliers, and private sector partners, etc.). Some have different drivers as well as their own constraints. In fact, not all participants in the network always share the same goals. While most are likely driven to improve health outcomes, others may be driven by the profit motive or the need to generate a financial surplus or margin. None of these motives are necessarily bad, as long as their incentives are well-aligned to benefit the public health supply chain. Consequently, although there are valuable lessons from the private sector to be applied and opportunities for extensive

private sector collaboration in many circumstances, attempting to simply replicate a private sector solution verbatim for the entire public health supply chain is seldom a viable option. In many respects, managing performance to ensure constant availability of health products, not simply financial results, can be a more complicated process.

FIGURE 9-2.
PERFORMANCE MANAGEMENT CYCLE GRAPHIC



9.2 CREATING PERFORMANCE MANAGEMENT SYSTEMS

Performance management for public health supply chains requires a systematic approach. Ideally, the performance management process should be defined at the very outset—the system design stage of the supply chain.

The performance management system entails processes that are critical to improving supply chain effectiveness and efficiency including identifying measures and data requirements, defining targets, planning, communicating, measuring, reporting and feedback. Measures must be selected judiciously lest the system be hobbled under the weight of too many measures and too much data. Also, analysis and use of the measures must be incorporated into organizational processes and capacity building efforts. At its core, performance management is the center of the continuous improvement system for all supply chain processes. Institutionally, it usually consists of a team within the core management of the health supply chain, for example, the logistics management unit, vested with authority and accountability for health supply chain performance.

Figure 9-2 illustrates the supply chain performance management cycle. It is not a one-off, episodic activity, but an ongoing cycle taking place continuously during supply chain operations to provide supply chain managers with insight into how well the system is achieving objectives and where to focus improvements.

The cycle must be based on an accurate and thorough assessment of the current situation in which the supply chain operates, including external factors that affect the supply chain as well as mapping the actual (not theoretical) organizational relationships, based on analysis of the current state and indicators selected to describe it. The assessment ought to be updated periodically, perhaps annually.

More in-depth analysis of the supply chain operations will reveal the strengths and potential areas for improvement in the various logistics functions, including warehousing, distribution, transportation, procurement, LMIS, human resources among others. To the extent this deeper dive analysis is based on quantitative data, indicators can be derived that can be compared to future performance for ongoing continuous improvement.



 Countries typically progress through an evolutionary process to achieve an integrated public health supply chain to manage complexity and improve performance. In actuality, most public health supply chains perform at various points along the continuum from ad hoc to organized. The supply chain integration framework, developed by JSI, adapts commercial sector supply chain maturity models for public health.

Supply Chain Compass is a web-based diagnostic and planning tool to rapidly diagnose the supply chain's level of maturity across seven managerial and functional areas: strategic planning and performance management, MIS, HR, forecasting and supply planning, product selection and procurement, warehousing and inventory control, and transportation. Having been deployed in India, Madagascar, and Zanzibar to-date, it generates a customized report rating the level of maturity as well as recommending interventions and further technical resources.

Based on the analyses, leadership determines the supply chain goals and objectives, plans activities to achieve the goals and objectives, and analyzes metrics for monitoring progress towards those goals and objectives. Activities might include targeted training, supervision, infrastructure improvements such as warehousing, transportation assets, investing in information systems, contracting with private partners, etc.

9.3 KEY PERFORMANCE INDICATORS

Performance management involves monitoring key performance indicators measuring whether the organization is meeting its objectives and overarching strategy. KPIs are measures defined by a business/organization that allow for observation of actual values as they emerge from business applications and their comparison to established targets. If a KPI reveals an actual value that deviates too far from (or in some cases, closely approaches) a pre-defined target, then further analysis is warranted to determine the root cause of the problem and potential solutions. Observations made during analysis should identify actions to solve the problem, set new (or adjust existing) expectations, and predict what may happen based on decisions. As the goals of the supply chain are determined, the incentives of various participants need to be analyzed, understood, and aligned and the KPIs synchronized. If KPIs are not rationalized, contradictory incentives can unwittingly be built into the supply chain and discordant activities and behaviors undertaken undermining the achievement of supply chain goals.

KPI's exist for all supply chain functions: (1) goal level KPIs such as supply availability; (2) functional level KPIs addressing warehousing, transportation, order tracking, distribution, procurement; and (3) process level KPIs such as LMIS reporting rates, managing 3PLs. KPIs range from essential measures to more robust indicators that may require more sophisticated data availability and processes and must be judiciously selected so that they are manageable and also provide the required insight. The more sophisticated tools and robust data are available, the more specific and granular the KPIs can be.

The more sophisticated tools and robust data are available, the more specific and granular the KPIs can be (see Chapters 7, 8, and 10 for specific KPIs particularly applicable to inventory control; warehousing, and distribution; and workforce).

However, there is often an intricate relationship among KPIs which can be challenging to decipher. Further, disagreement can arise over which KPI takes precedence over another and there may be trade-offs necessary to manage KPIs. For example, a balance may need to be



Several tools are available to support conducting this analysis. In industry, among the most widely accepted tools is Supply Chain Council's SCOR (Supply Chain Operations Reference) model. Others include the National Supply Chain Assessment Tool, developed by the Supply Chain Management System project and the Logistics Indicators Assessment Tool (LIAT) developed by the USAID I DELIVER PROJECT.

struck between having sufficient stock-on-hand to meet unforeseen demands and maintaining carrying costs at a desirable level. If one KPI entails optimizing inventory turnover rates, that needs to be synchronized with other KPIs, for example, to control transportation costs. If inventory is to turn over rapidly, that implies more frequent distribution and consequently may incur higher transportation cost.

Even if the supply chain is extensively outsourcing operations, many of the control measures that the supply chain leadership is responsible for overseeing remain and must be included in the terms of the 3PL contracts. Even if the national leadership has decided to outsource functions and the reporting of the KPIs, national leadership must continue to actively review and analyze the KPIs on a routine basis, adjust the program accordingly, and plan future strategy. In particular, KPIs for monitoring contracts need to be judiciously selected and stringently monitored.

Illustrative examples of KPI's for monitoring contracts include:

- Percent shipments resulting in product loss or damage
- Percent shipments delivered within acceptable time window
- Percent proofs of delivery returned
- Percent of emergency deliveries supported within 48 hour period
- Number of deliveries planned
- Total volume of deliveries planned (m3)

As mentioned in Chapter 1, public sector supply chain managers are often responsible for leadership and stewardship of the supply chain regardless of whether 3PLs are involved.



For further information on potential KPIs refer to Measuring Supply Chain Performance: Guide to Key Performance Indicators for Public Health Managers, (USAID I DELIVER PROJECT) or the Supply Chain Council's SCOR (Supply Chain Operations Reference) model. Other references are listed at the end of this chapter.

Useful criteria for key metrics include that they should be robust, valid, integrative, and useful. A robust indicator is one that is defined similarly by various entities and therefore is somewhat comparable when assessing performance. A valid metric captures the activities accurately and can be



Photo courtesy of A. Makulec, Ethiopia

controlled or adjusted for external factors that might otherwise impact or distort the value of the indicator. An integrative indicator captures the relevant aspects that contribute to that process and relates to other metrics across functions. A useful indicator is one that is well understood by management and can point the way to revise and continuously improve processes.

The metrics that are selected for KPI should be balanced, not weighted disproportionately towards one aspect of the supply system or another. For example, a commercial sector balanced metric system might include measures for (1) efficiency, (2) asset utilization, and (3) customer response. These can readily be adapted for the public health supply chain. Efficiency metrics might include cost of operating the supply chain and labor productivity. Asset utilization might include facility utilization and inventory turns. Customer response indicators could include order fulfillment, quality, and product availability at facilities (stockouts). The manager with his staff must select and craft the measures that provide management with the best vision into the functioning of the system on a routine basis without overwhelming it and the personnel. Analysis of these metrics can reveal concerns that merit further investigation and might be adjusted going forward to provide a more informative view into the system.



In Pakistan, the government used the inventory turnover ratio to analyze the performance and efficiency of the supply chain, estimate the impact of a piloted web-based LMIS, and understand the speed with which commodities are moving through the system. Increasing inventory turnover ratios can demonstrate an improving rate of return and suggest that reducing the amount of buffer stock may be possible since the stock is regularly moving through the system.



Photo courtesy of A. Makulec, Ethiopia

Sources of data can be varied, for example, LMIS, warehouse management system, transportation management system, packing lists and issues vouchers among others. To be most effective, users of specific KPIs must be able to calculate or visualize them themselves. Ideally, these KPIs will be summarized electronically in a format and media that is accessible to all those who need to refer to them, often via one or more electronic dashboards.

Often public health supply chain performance management systems are driven by perceived information needs at the national level and the needs at the community level might be neglected. It is important that the performance management system includes all levels of the supply chain, including the community level.



IMPACT (Information Mobilized for Performance Analysis and Continuous Transformation Team Network) teams (sometimes called quality improvement teams) are an innovative approach to managing performance at the community level that have been tested in three countries, by the JSI-implemented Supply Chains for Community Case Management (SC4CCM): Malawi, Myanmar, and Rwanda, where they are now being scaled up. The IMPACT teams meet regularly and use a quality improvement approach to interpret data, prioritize problems, find solutions, and take actions to strengthen the supply chain. Interventions include simple demand-based resupply procedures, using mobile technology and traditional methods for communication, and multi-level, performance-driven QI teams. Teams reinforce correct supply chain procedures and create transparency and accountability.

Performance based incentives (also referred to as results based financing or performance based financing) are increasingly included in supply chain performance management systems. Through these schemes, the supply chain organization formally agrees to provide a performance incentive, either in-kind or cash, to a contracting entity contingent upon achievement and documentation of pre-determined results and indicators. These arrangements can be with third party logistics providers or internally with other units within the network. USAID and the USAID | DELIVER PROJECT successfully tested a performance based incentive (PBI) approach in Mozambique with the Central de Medicamentos e Artigos Medicos with impressive results (see the discussion of performance based financing in Chapter 10 for more information).



For further information on PBI, refer to “Options Guide: Performance Based Incentives to Strengthen Public Health Supply Chains,” (USAID | DELIVER PROJECT).