

ASSESSMENT OF THE HUMAN RESOURCES LANDSCAPE FOR IMMUNIZATION SUPPLY CHAIN MANAGEMENT



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Any errors that remain in the text are the author's.

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ACRONYMS

AMP	Agence de Médecine Préventive
CC	cold chain
CCE	cold chain equipment
CHAI	Clinton Health Access Initiative
DLS	dedicated logistics system
EAC	East Africa Community
EPI	Expanded Programme for Immunization
EU-SIGN	European Union-Support to Immunization Governance in Nigeria
EVM	Effective Vaccine Management
FMOH	Federal Ministry of Health
GCMU	Grand Contract Management Unit
HR	human resources
HRIS	human resource information systems
HRM	human resource management
HU-PACE	Howard University-Pharmacists and continuing Education
IT	information technology
JSI	John Snow Incorporated
KPI	key performance indicator
LMIS	logistics management and information systems
MoH	Ministry of Health
MSH	Management Sciences for Health
NLWG	National Logistics Working Group
P&P PWG	People and Practice Priority Working Group
PD	Programme Division
PFSA	Pharmaceutical Funds and Supply Agency
PSB	Procurement Services Branch
PST	pre-service training
PtD	People that Deliver
SCM	supply chain management
SD	Supply Division
SDP	service delivery point
SIAs	supplementary immunization activities
SIDHAS	Strengthening Integrated Delivery of HIV/AIDS Services
SOPs	standard operating procedures
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UPS	United Parcel Service
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

OVERVIEW

Approved by the GAVI Board in June 2014, the GAVI Alliance Immunization Supply Chain Strategy leverages the Alliance's global capabilities – advocacy, policymaking, standard-setting, influence and funding – and in-country resources to establish a powerful enabling environment for end-to-end supply chain improvement. The strategy promotes five fundamental building blocks: planning and management, system design, human resources, logistics data and cold chain systems.

The strategy's theory of change states that if GAVI Alliance partners work to support countries strengthening these fundamentals, then EPI programmes will better reach the strategic objectives – ensuring that potent vaccines are available and delivered efficiently. These key objectives of the immunization supply chain strategy support the broader GAVI Alliance strategic goals of increasing coverage and equity while continuing to introduce new vaccines, which in turn links to decreasing under-five mortality and improving overall health outcomes in countries.

One of the fundamental building blocks is human resources. Recognizing that in order to create the change that is needed, every immunization supply chain needs an effective leader. Hence a key priority initiative under this building block is to establish and/or reinforce the position of immunization supply chain manager, and to ensure that these managers have the appropriate levels of expertise, authority and resources to oversee the supply chain within a strengthened overall management system.

The present paper provides an assessment of the human resources (HR) landscape for supply chain management (SCM) in immunization supply chains, which is intended to inform the GAVI Alliance Immunization Supply Chain Strategy.

Through a desk review of the literature on HR in SCM for immunization supply chains, and through data gathered from 40 survey respondents in 32 countries involved in these supply chains, the paper aims to clarify which

HR components help to ensure the success of an immunization supply chain at the country level, and to make clear where different country immunization supply chains are currently positioned.

METHODOLOGY OF THE ASSESSMENT

The methodology of the assessment involves four components:

1. A desk review of the literature on HR in SCM of immunization supply chains;
2. A survey of 40 respondents involved in immunization supply chains;
3. One-to-one interviews with a smaller number of respondents, to provide greater understanding of the issues raised in the desk review and survey*;
4. A workshop with the GAVI Alliance Immunization Supply Chain Strategy Task Force (the Task Force), to present and validate the findings from the previous steps.

*At the point of writing this report, because of time constraints the one-to-one interviews had not yet been conducted.

ASSESSMENT DELIVERABLES

The deliverables of this assessment project include: the present report, which sets out the key findings and conclusions of the assessment of the HR landscape for SCM in immunization supply chains, as well as recommendations for next steps; and the presentation of the findings and conclusions to the GAVI Task Force.

RESULTS OF DESK REVIEW

The desk review found that staff involved in immunization supply chains in developing countries are generally unqualified, poorly trained, un-empowered and poorly managed. The review revealed that supply chains are not considered a strategic factor in health, and that technical and infrastructural constraints, and inadequate HR capacity, mean that the organization of health (including immunization) supply chains is still often ad-hoc. The desk review found evidence that a shift from the

current ad-hoc organization of immunization supply chains to dedicated logistics systems where there are supply chain roles in charge of distribution, forecasting and procurement could reduce cost and increase coverage.

RESULTS OF SURVEY

Taking as its starting point different studies that have set out the competencies required by HR in SCM in immunization supply chains, a survey of 40 respondents involved in these supply chains (who mostly work in Africa) was carried out, to improve the picture of the current HR landscape for SCM in immunization supply chains. The survey questions covered topics such as supply chain evolution (the use of standard operating procedures [SOPs], the use of logistics management and information systems [LMIS], the establishment of a logistics management unit, etc.); the level of maturity of HR systems, policies and procedures, as connected to supply chain components; the supply chain structure – both physical and in terms of responsibility lines (including the role of ministries of health and supply chain leadership and management); and supply chain competencies (and the lack of them) among supply chain workers, as well as training and performance management.

The survey results reveal that:

- Logistics and SCM do not play a strategic role in immunization supply chains, and that HR for immunization SCM is not a high priority for ministries of health.
- While HR components for SCM are recognized as a strong facilitator for increasing efficiency and for strengthening immunization supply chains, there is currently a need for capacity development across the range of identified HR competencies, especially supply chain system design.
- Alongside the lack of training to improve capacity, performance appraisal for HR competencies in immunization supply chains is missing or discontinuous.
- Supply chain data are not always collected, and when they are collected, they are not always used to inform supply chain-related decisions.

Overall, from the survey responses it is clear that some changes are happening, and that immunization supply chains are slowly evolving,

but there are some clear challenges to overcome in order to improve the current situation, where logistics and supply functions are arranged for single programmes on an ad-hoc basis and SCM is not considered to be a strategic priority.

RECOMMENDATIONS

Based on the results of the desk review and the survey, this report makes a number of recommendations regarding how HR in SCM for immunization supply chains can be improved:

- Logistics and SCM should play a strategic role in immunization supply chains.
- Logistics and supply chain staff should contribute to the definition of the strategy for vaccines and immunization. (To achieve this objective, a logistics unit should be established within ministries of health, to lead the supply chain, and greater control over budgets should be provided to logistics and supply chain staff).
- HR for immunization SCM should be made a priority for ministries of health, with respect to both policy development and implementation.
- HR components for SCM in immunization supply chains should be introduced and strengthened, with a greater focus on training HR (training on system design is particularly needed).
- Supply chain performance should be measured through the use of performance indicators, and there should be supervision of HR in the supply chain, as well as follow-up.
- Supply chain working groups should be supported and promoted. An in-depth study of such groups should be carried out to understand what configuration and working mode is most effective, and what can be replicated in different countries.
- Salary and contractual terms for HR in immunization supply chains need to be improved
- The visibility of operational programme needs and plans should be increased.
- LMIS should be developed and data visibility improved. Once collected, supply chain data should be used to inform supply chain-related decisions, and these should be reported back to the lower levels in the supply chain.

DESK REVIEW

DESK REVIEW BACKGROUND

The GAVI Alliance Immunization Supply Chain Strategy has been developed by the Alliance partners in consultation with regional offices, countries and other development partners to help countries strengthen the fundamental areas required for effective immunization supply chain management. In doing so, the Alliance foresees that Expanded Programme on Immunization (EPI) programmes will be better enabled to reach their strategic objectives of ensuring that potent vaccines are available, and that they are delivered more efficiently.

The Strategy objectives aim to support countries to continue to effectively introduce new vaccines and increase coverage and equity, which in turn is linked to reducing under-five mortality and improving overall health outcomes.

The Strategy promotes five fundamental building blocks: continuous improvement plans, system design, supply chain leadership/HR, data for management and better cold chain equipment.

The Assessment of the HR Landscape aims to address the HR component of the Strategy by first conducting a landscape assessment to better understand the current status of the HR for immunization SCM and to define a baseline, and then by helping countries to develop a strategy and implementation plan for strengthening their HR for SCM. The goal is to ensure that:

“Countries have dedicated and competent immunization supply chain leaders with adequate numbers of skilled, competent, accountable, motivated, and empowered personnel at all levels of the health system to overcome existing and emerging immunization supply chain challenges.”

OVERVIEW

With few exceptions, vaccine supply and logistics systems around the world are unable to keep pace with growing immunization programmes (Zaffran et al., 2013).

The need to go deeper into the relationship between HR and immunization supply chains has been clearly spelled out in the recent GAVI Supply Chain Strategy People and Practice Evidence Review report, which, based on the existing literature, concludes that: “Despite the advancements made in terms of technology and tools available, the overall performance of health supply chains, especially for vaccines administration and immunization systems in developing countries, are well below the international targets. There is strong empirical research claiming that rates of out-of-stock and wastage are high also due to staff being generally unqualified, poorly trained, un-empowered and poorly managed” (Steele, 2014).

The problem described in this quotation had already been detected in earlier research: in 2011 Project Optimize summarized the key gaps and issues related to HR for vaccine supply chains (VillageReach, 2014), as follows:

- The role of supply chain manager does not receive the same recognition and motivation as that of other health care workers;
- SCM typically does not require pre-service training and adequate certifications (which would document competence in this area) in the manner that others are trained and certified;
- The health system has an inadequate number of supply chain specialists, which means logistics functions are passed on to other health workers. Additionally, less attention is paid to SCM at the last mile, where health workers are stretched as a result of having too many responsibilities; and
- Synergies typically do not exist among programmes and donors; for example, support for SCM may exist in HIV programmes but is lacking in maternal and child health programmes.

The present desk review surveys the existing literature in order to better understand the relationship between HR and SCM, and to put these in the context of immunization and vaccine programmes. First, general contributions that investigate how the two domains intersect are

presented. Second, the links between the two domains are contextualized in relation to health supply chains. Third, we describe the latest contributions that define the competencies required among HR for immunization supply chains.

HR MANAGEMENT AND SCM IN THE LITERATURE

The connection between HR policies and procedures and supply chains and logistics has been investigated in the past few years (McAfee et al., 2002; Menon, 2012), especially in connection to supply chain integration (Shub and Stonebraker, 2009), customer satisfaction and organizational performance (Gómez-Cedeño, 2015). Through a systematic literature review of 109 papers published between 1998 and 2014, Hohenstein et al. (2014) identify seven research streams (see Fig. 1): skills, knowledge and abilities; training and development; HR management (HRM) impact on organizational and supply chain performance; education and teaching (SCM within curricula); hiring and recruiting; compensation and pay; and global mindset. The last three of these research streams are the least represented among published studies.

Several other contributions have tried to connect and explain the causal relationship between HRM and SCM, showing that the resources devoted to HR policies and practices predict an impact on a supply chain, and on organizational performance.

Shub and Stonebraker (2009) have investigated the human impact on supply chains at a theoretical level, providing a solid framework for connecting HR resource strategies –

staffing, training, evaluation, compensation and organization strategies – structure, culture, and empowerment, to supply chain integration and performance (Fig. 2). The model they present is soundly built on a theoretical framework, though not tested through any empirical investigation.

Gómez-Cedeño et al. (2015) have provided one of the first attempts to empirically test the relationship between HR and SCM. In their work they extend their analysis of the impact of HR on SCM to the impact on the level of customer satisfaction and overall organizational performance (Fig. 3). Data have proven their model to be robust, demonstrating that HR practices positively influence not only supply chain performance, but also the general outcome of the organization. The authors recognize that more research is required in order to clarify which HR practices have the greatest impact on supply chain outcomes.

In regard to HRM, Gómez-Cedeño et al. (2015) provide a slightly larger qualification than do Shub and Stonebraker (2009), defining HRM as covering: 1. compensation and benefits; 2. training and employee development; 3. communicative management style (which includes performance management); 4. cultural awareness and diversity management; and 5. recruitment and employee selection.

The existing literature on the intersection between HRM and supply chain performance strongly supports a positive impact of the former on the latter. Although more empirical work is advocated to generalize the results, there is agreement in support of the causal effect. While the present subsection has covered the intersection between

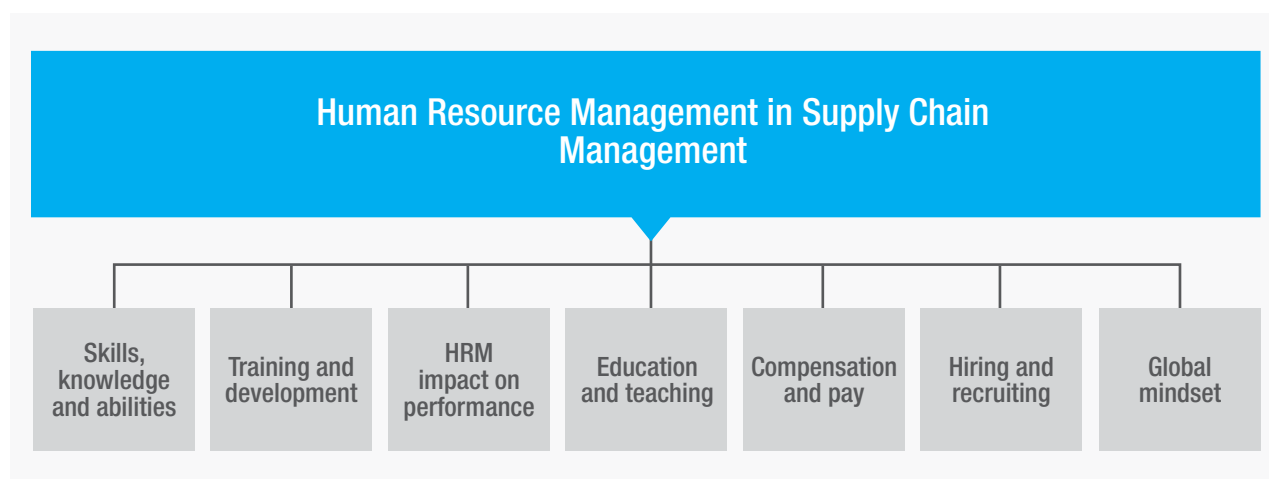


Figure 1 HRM/SCM research streams (Hohenstein et al., 2014)

HR and SCM at a general level, the following subsection aims to contextualize it within the health supply chain environment.

HRH AND SCM IN HEALTH AND IMMUNIZATION SUPPLY CHAINS

Supply chains and logistics have gone through a substantial evolution in the last decade, moving from being a support service to a core function, with supply chain and logistics managers sitting on the boards of commercial companies

(Wilding et al., 2010). Different evolutionary stages in the private sector have been detected and described thoroughly, with the logistics and procurement processes becoming part of the broader supply chain function. The Lockamy and McCormack private sector evolutionary model has been adapted to developing country public health systems (McCord and Olson, 2011). This model consists of four evolutionary stages that are characterized by increasing coordination and supply chain performance, namely: 'ad-hoc', 'organized', 'integrated', and 'extended'.

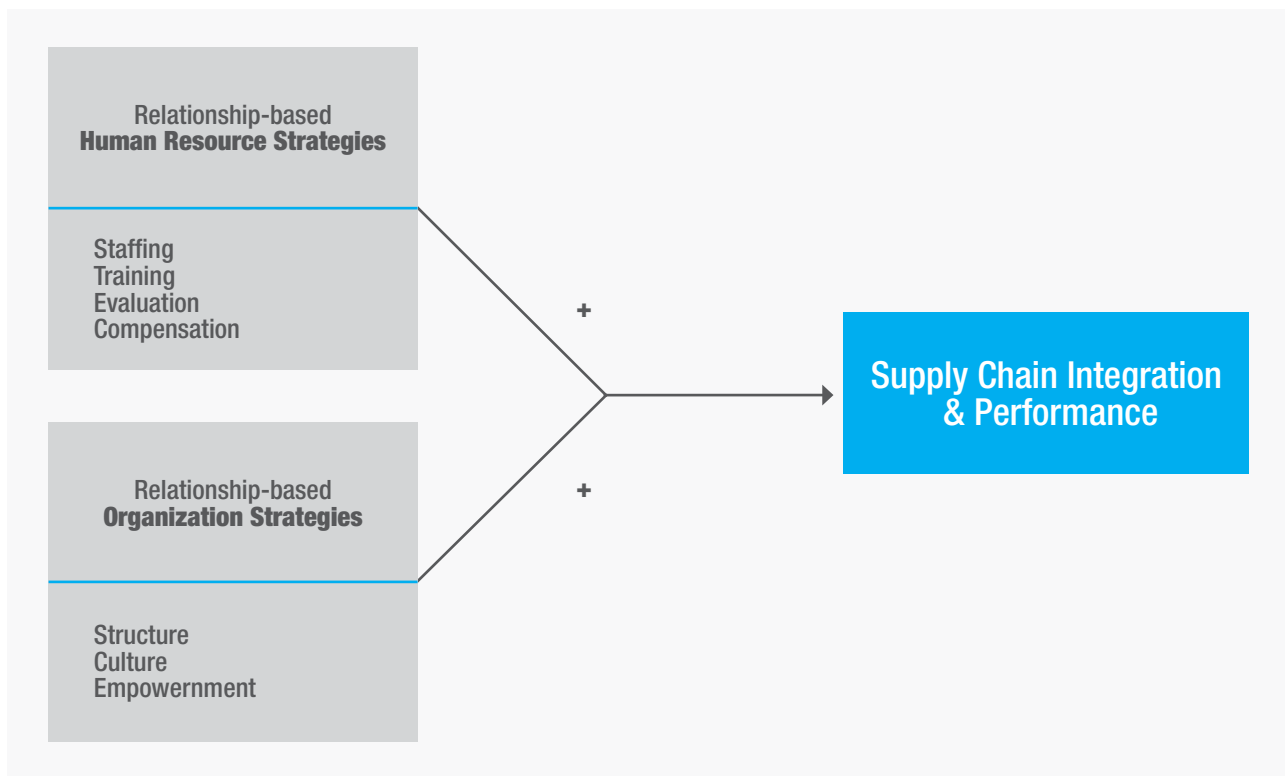


Figure 2 An integrative model of human and organization variables with supply chain performance (Shub and Stonebraker, 2009)

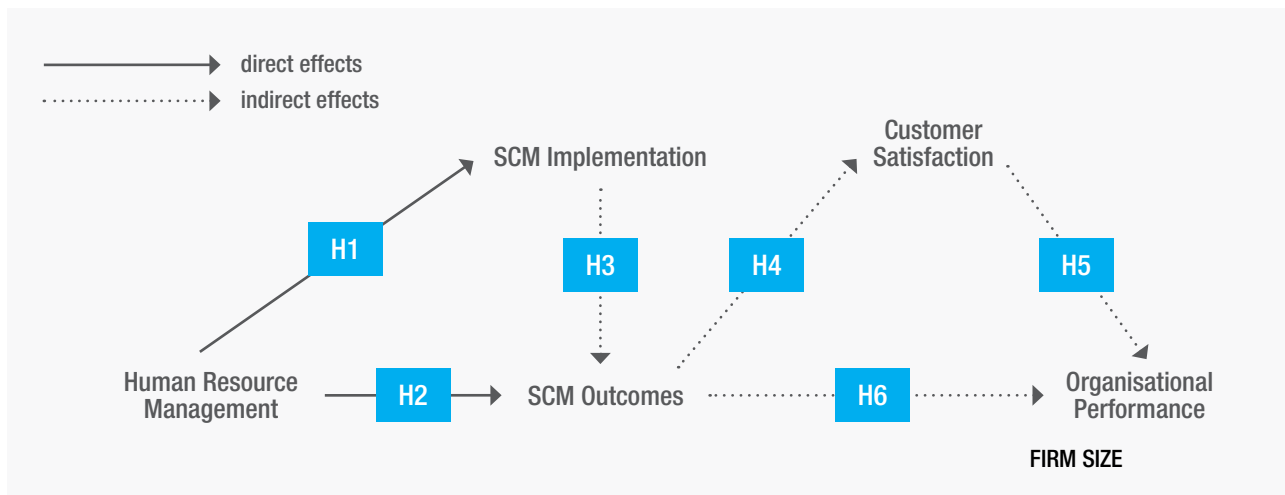


Figure 3 Relationship between HR and SCM (Gómez-Cedeño et al. 2015)

The ad-hoc configuration is characterized by non-defined structures with limited, if any at all, performance indicators. Targets are rarely defined and costs are high – the success of the procedures is connected to the ability of the individual, not to operating procedures that are replicable.

The evolution into the more sophisticated stages requires a number of changes, some technical, some connected to HR policies and procedures. Whereas in the ad-hoc stage logistics tasks are performed with no clear and pre-defined structure, in the organized stage standard operating procedures (SOPs) and the definition of the individual logistics functions are typical. The evolution to integrated supply chains is made possible by the capacity building of specialized central logistics personnel. Table 1 summarizes the required investments to migrate from one evolutionary stage to another.

A core investment is represented by the LMIS as a tool to provide transparent and accurate logistics information along the chain. Among other things, this helps to overcome a long-standing issue related to forecasting: that forecasting is often performed on the basis of a rule of thumb rather than on actual data. Also, given the failures of order fulfillment systems, forecasting is biased by the inconsistency between what has been ordered and what has been delivered at health facility level (VillageReach, 2014).

As has been proven in the private sector, HR can be pivotal for sustaining enhanced performance and coordination along the supply chain, given all the differences that exist between the private and the public sector, especially in developing countries. Often the existing literature relating to health supply chains points to a paucity of professionals or to the limited skills of other cadres that perform logistics tasks – such as

	Organized Logistics System	Integrated Supply Chain	Extended Supply Chain
Required Supply Chain Strengthening Investments for Reaching This Stage	<p>System assessments, design of SOPs, TOT and national roll-out for individual logistics functions and LMIS</p> <p>Definition and strengthening of individual logistics functions through provision of tools, capacity building, and supervision</p> <p>Potential establishment of LMU to support receipt and basic use of collected logistics data for forecasting and central use</p> <p>Strengthening of information systems to improve visibility in organization, development and implementation of electronic systems, and connection of existing data systems or development of cross-functional information systems</p> <p>Mapping of overlapping distribution streams in the broader health system and various actors and levels that support multiple logistics functions</p>	<p>Continued strengthening and improvement of logistics functions</p> <p>Supply chain re-engineered through segmentation, costing studies, network optimization, etc., based on supply chain data to distribute resources nationally and strengthen central-level oversight role across entire system</p> <p>Empowerment through advocacy and capacity building of specialized central logistics personnel who comprise a dedicated LMU</p> <p>Support of supply chain champions throughout health reform process to produce stronger supply chain unit, and efforts to achieve upstream, downstream, and horizontal coordination through centralized supply chain management</p> <p>Development and support of technical working groups to support cross-program and partner coordination</p> <p>Outsourcing of logistics activities to private third parties if appropriate to leverage existing, cost-effective private sector capacity</p>	<p>Continued efforts, including shared market analysis, to achieve collaboration with upstream, downstream, and horizontal supply chain partners</p> <p>Policy reform and systems strengthening to facilitate further definition, monitoring, and coordinated management of all logistics operations for multiple product segments</p> <p>Adoption of advanced procurement approaches such as reverse auctions and framework contracts that support supply chain integration across partners</p> <p>Extension of visibility to external partner through web-based applications and EDI</p>

Table 1 Supply chain evolution investments for developing country public health systems (McCord and Olson, 2011)

nurses, doctors and pharmacists – as the root cause of substandard performance. Logistics and distribution networks, though, often demonstrate an insufficient capacity, resulting in poor outcomes, as they are unable to support the processes. The combination of both technical and infrastructural constraints, and inappropriate HR capacity, usually condemns health supply chains to a primitive evolutionary stage. This can be reversed, however.

While there is a scarcity in the literature of comprehensive contributions on the link between HR and SCM in health and immunization, actual practice provides broad studies and methodologies for evaluating the former in order to strengthen country health supply chains. USAID|DELIVERY PROJECT (Task Order 4, 2013) developed the Human Resource Capacity Development in Public Health Supply Chain Management Assessment Tool in order to offer a complete analytic methodology to evaluate the capacity of a human resource support system for a country’s supply chain.

The Assessment Tool (Fig. 4) is used to determine the level of maturity of human resource systems, policies and procedures that affect SCM through five building blocks. The HR for health building blocks are as follows:

- Building Block 1 – Powerful Constituencies: Constituencies, or stakeholders, are needed who will provide technical leadership and advocacy in the field of SCM, as well as human resource management.
- Building Block 2 – Optimized Policies and Plans: There need to be policies, plans and associated SOPs that support human resource capacity development and management, including financing and human resource information systems (HRIS).
- Building Block 3 – Develop Workforce: Initiatives need to be put in place that focus on identifying and building a robust workforce, including recruiting, competency modeling and development, and pre-service and in-service education.
- Building Block 4 – Increase Workforce Effectiveness or Performance Management: Initiatives need to be carried out that identify and enhance workforce performance, including retention, supervision, mentoring and coaching, and task shifting.
- Building Block 5 – Professionalization of Supply Chain Management: A process needs to be carried out to make or establish supply chain roles as a profession, or the set of responsibilities or competencies of such professionals.

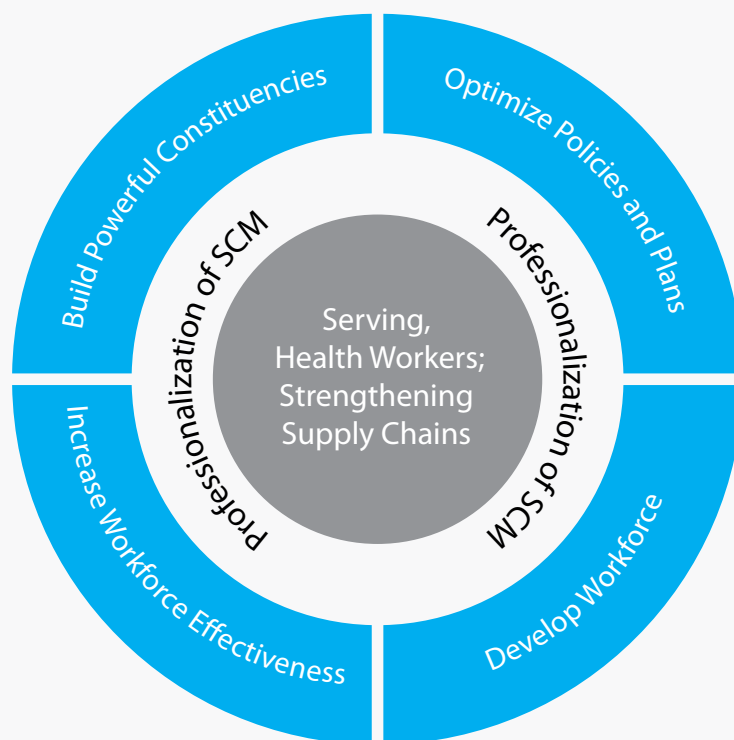


Figure 4 HR for health building blocks (USAID|DELIVERY PROJECT Task Order 4, 2013)

The building blocks summarize the typical commercial supply chain aspects in terms of operating procedures, HR policies, IT support solutions, and performance management. However, health supply chains, especially in developing countries, involve greater complexity and present different dimensions, which are explained below.

On the one hand, there is a need to empower the main stakeholders whose competencies often do not include SCM (e.g. ministries of health, where logistics and supply chain functions are considered as a service function, rather than a core competency to develop). A recurrent theme is the presence of a supply chain champion who is able to advocate and to be a leader along the vaccines chain. While studies have proven the need for a dedicated immunization supply chain role/team/unit (VillageReach, 2009), it is unclear how such a role/team/unit should fit into the existing country ministry of health (MoH) structure. Research from People that Deliver has clarified that one of the main challenges is the lack of understanding and engagement of administrative and political leaders who determine the priorities and funding allocation in government (People that

Deliver, 2015). The same study suggests that in some countries only a few central MoH staff devote only part of their time to SCM. However, it remains unclear where supply chain roles sit within the broader MoH structure and how they relate with other departments. According to the GAVI Supply Chain Strategy People and Practice Evidence Review (Steele, 2014), the poor availability of accurate national data and misunderstandings regarding the importance of SCM in relation to global health are key impediments to MoH empowerment as SCM responsibilities further down in the chain become more confused. According to Bornbusch et al. (2014), “Governments in particular must understand first and foremost that their core competency is not in operating supply chains. . . . Instead they must see themselves as stewards providing vision, guidance, and oversight to ensure that supply chains achieve results – serving the needs of customers and helping improve and maintain people’s health.” Hence, the survey carried out as part of this project, and discussed later in this report, will better clarify how at the country level the MoH influences, guides or hinders SCM efficiency and effectiveness through HR policies and practices.

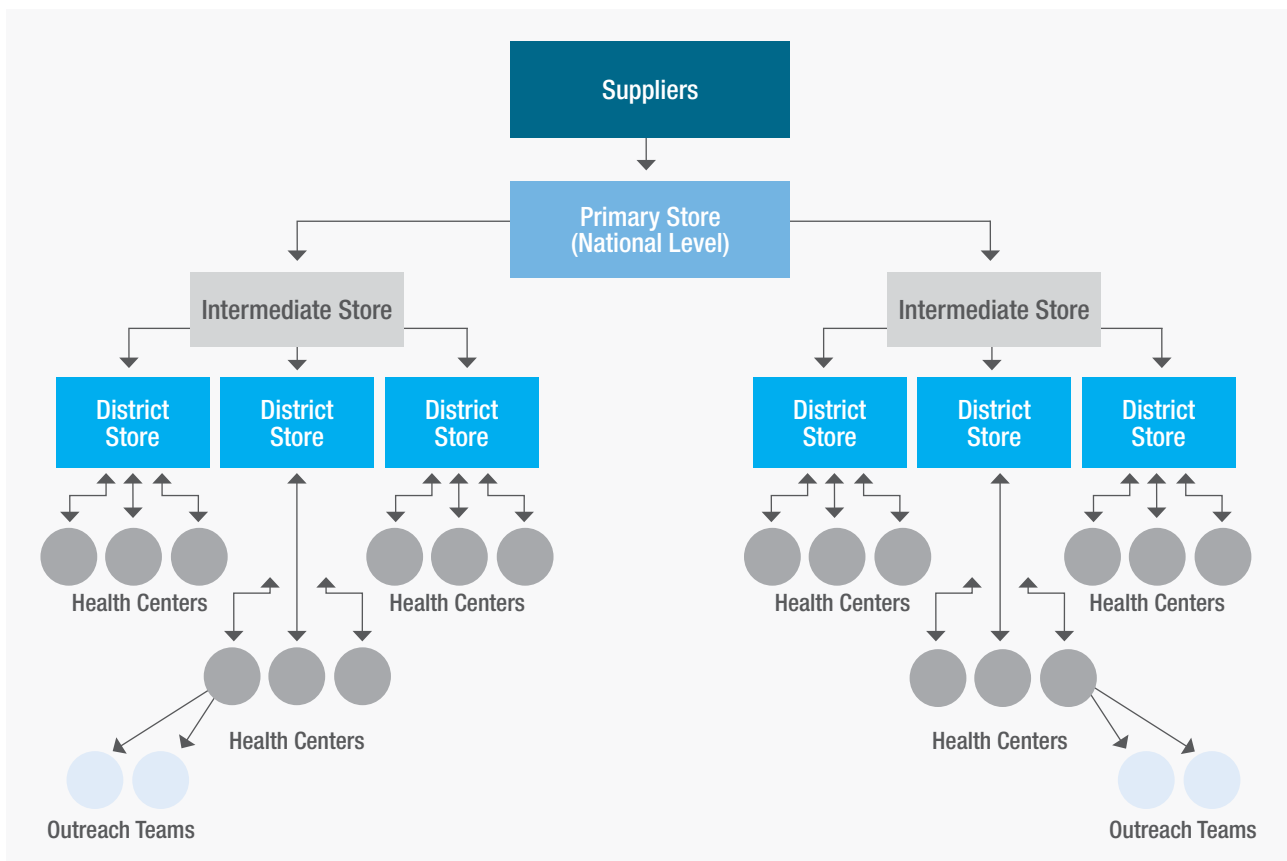


Figure 5 Common multi-tiered vaccine supply chain (VillageReach, 2009)

On the other hand, there is a need to professionalize the cadre in an environment where, as mentioned before, other cadres perform logistics and supply chain tasks. For this reason, more effort has been exerted to try to define what competencies are needed to perform these duties. This is particularly important, especially in this context, where pharmacists, nurses and doctors might be in the position to perform some of these duties at the facility level. In fact, several contributions suggest how other cadres can master logistics tasks at the health facility level (Brown et al., 2012). Nevertheless, dedicated logistics professionals are required to increase efficiency and effectiveness. A dedicated logistics management unit is also required to achieve this end (McCord and Olson, 2011). The skilled personnel could be located at any level of the chain: national, regional or even at the health facility, according to the characteristics of the existing immunization supply chain.

A recent pilot in Mozambique has shown how the supply chain structure and HR practices can play a central role in providing enhanced performance and lower costs for distribution and delivery. As mentioned above, the traditional

multilayer health supply chain (Fig. 5) does not involve a dedicated logistics team, or dedicated roles.

VillageReach (2009) tested a different supply chain structure where health cadres were lifted up from their logistics functions by a centralized logistics team based at the intermediate (province) level, which was in charge of the distribution of vaccine supplies and equipment, site visits to record and stock inventory, servicing of equipment, collecting data, training and supportive supervision. The number of human resources needed in this situation was found to be lower for a return in increased performance and an increase in the amount of time dedicated to patients.

The benefits of a shift from a traditional vaccine supply chain to a dedicated logistics systems, where there are supply chain roles at the district level in charge of distribution, forecasting and procurement, are summarized in Fig. 6.

The summary suggests that, for a shift from tasks diffused to 134 workers to tasks consolidated to six workers, personnel costs are reduced from 28 per cent to 12 per cent of vaccine logistics

	Common Multi-Tier Model	DLS
Description	<ul style="list-style-type: none"> • HWs responsible for picking up vaccines & supplies from the district/provinces • Health centers closed during this time instead of providing services • HW face challenges in securing transport to make vaccine run • Difficulty maintaining vaccine temperature during transport 	<ul style="list-style-type: none"> • Dedicated teams focused on logistics, cold chain, inventory management, supportive supervision, data collection • Responsibility, accountability, authority assigned to small dedicated team, instead of being diffused among all HWs • Frees up HW time to focus on patient care
Personel	Task diffused to 134 workers	Task consolidated to 6 workers
Personel Costs	<ul style="list-style-type: none"> • \$75,482.23 (\$40,106 more) • Per diems for many HWs • Personel costs are 28% of vaccine logistics costs 	<ul style="list-style-type: none"> • \$35,376 • Negotiated per diems for small number of full-time distribution workers • Personel costs are 12% of vaccine logistics costs
Staff Days/Month	348	138
Results	<ul style="list-style-type: none"> • 498,624 vaccines delivered (peryear) • \$1.50, total cost per dose of vaccine delivered • 70% DTP-3 coverage rate 	<ul style="list-style-type: none"> • 889,152 vaccines delivered (peryear) • \$1.18, total cost per dose of vaccine delivered • 95.4% DTP-3 coverage rate

Figure 6 Multi-tier system versus dedicated logistics system (VillageReach, 2009)

costs (the study includes five types of vaccines and three types of syringes), and the coverage rate increases from 70 per cent to 95.4 per cent.

IMMUNIZATION SUPPLY CHAIN COMPETENCIES

Given the different configurations immunization supply chains can assume, it appears even more relevant to define what competencies are needed, and how the connected behaviors can be measured against standard performance indicators. For instance, Gediff (2014) mapped the competencies of Ethiopian health personnel working at different levels of the health supply chains to understand the training needs in a country where health supply chain performance has not kept pace with steady economic growth and increased health care spending. The study confirmed some of the issues detected in previous studies and translated them to the health facility level. The internal issues are:

- Poor SCM systems
- Inadequate number of SCM personnel
- SCM personnel with limited expertise
- Lack of performance support and motivation for SCM-related tasks
- High turnover and mobility.

The external issues at health facilities level are:

- Pharmaceutical supply from Pharmaceutical Funds and Supply Agency (PFSA)
- Benefit package of professionals working in SCM
- Inadequate, infrequent and non-comprehensive training
- Inadequate government procurement policy
- Lack of systematic coordination between PFSA and other units in the health care system.

Gediff's work is based on a Health Supply Chain Management Competency Framework for Managers and Leaders (2014b) developed by People that Deliver (2014), which covers health supply chains, including vaccines and immunization programmes. The Competency Framework is based on six domains, namely: selection and quantification, procurement, storage and distribution, use, resource management, and professional and personal.

The behavioral competencies related to each domain have been drawn from the existing literature and 20 frameworks, and were

validated during 2014 through an extensive survey. The authors of the Competency Framework recognize that in health supply chains it is very unlikely that a single job profile could be responsible for, and master, all the competencies. However, the framework is particularly useful for evaluating the training and capacity development needs without necessarily challenging the idea of eradicating logistics and supply chain-related responsibilities from these health cadres (Systems for Improved Access to Pharmaceuticals and Services, 2014).

A further clarification of the existing Framework was provided during a breakout session of the 4th EAC Regional Vaccine and Immunization Managers Meeting, held in Uganda in March 2015. The group reviewed the high-level domains of the original framework, adding more detailed descriptions of these domains to highlight immunization supply chains. This version has been used in the survey to understand the training and development needs of the respondents (Table 2).

	Domain	Description
Technical domains	1. Selection and quantification	The competencies that are required by a worker to be able to select and quantify the correct supplies for their work situation (e.g. their country, the needs and capacity of their facility). Vaccine forecasting and supply planning, cold chain capacity assessment and planning, CCE forecasting and equipment selection, technologies and innovation.
	2. Procurement	The competencies that are required by a worker to be able to procure the supplies needed for their work situation. Vaccine procurement, arrival procedures, cold chain equipment selection and procurement (including temperature monitoring devices, voltage regulators and stabilizers).
	3. Storage and distribution	The competencies that are required by a worker to be able to store and distribute the supplies needed for their work situation. This includes moving supplies to their facility and sending them to other facilities. It also includes the competencies required to manage the outsourcing of these activities, and partnerships related to these activities. Vaccine handling and management (including stock management), temperature monitoring, distribution planning, transportation, cold chain organization, distribution of CCE, preparation and installation of CCE.
	4. Use	The competencies that are required by a worker to be able to ensure the best possible outcomes from the use of the supplies in their work situation where patients are treated. Vaccine handling and management, training of users, CC maintenance (preventative, corrective), maintenance planning and schedules, temperature monitoring, disposal of CC equipment and devices.
Management domains	5. Resource management	The competencies that are required by a worker to be able to manage money/people etc., to ensure the system works effectively. Vaccine management, cold chain management, planning cold chain capacity, maintenance and rehabilitation, CC inventory management, training and supervision, developing and updating SOPs, monitoring and supervision, budgeting.
	6. Professional and personal	The competencies that are required by a worker to be able to manage his/her day-to-day responsibilities and create a path for future career development. This includes competencies such as communication, stress management and time management skills. Communication, problem solving, planning and organization, team working, managing people, supervising and mentoring.

Table 2 Modified Competency Framework

The present Assessment of HR Landscape is the first attempt we know of to map the existing training and capacity development needs at country level. The results represent a clear road

map to develop the workforce and to promote an adequate match between the competencies and the connected behaviors.

SURVEY BACKGROUND

The desk review provided useful background that informed the approach to the survey which was launched on 27 May 2015 and ran for six weeks. The survey protocol consists of seven areas of investigation, which are aligned to the existing literature on HR management and SCM both in the commercial sector and in the context of immunization/vaccine programmes:

- Supply Chain Leadership and Management;
- Supply Chain Organization, Policies and Procedures
- Professionalization
- Training and Development
- Incentives and Performance Management
- Supply Chain Strategy Implementation
- Supply Chain Data and Decision-Making

The web-based questionnaire design and content were informed by the existing literature, the documents provided by the UNICEF and the GAVI Alliance, and the extensive experience of the consultant and the people and practices priority working group (P&P PWG) members.

The survey background is divided into three sections, which cover the seven survey areas relating to leadership and HR management in immunization supply chains as follows:

1. Health and immunization supply chain evolution: Supply Chain Leadership and Management; Supply Chain Organization, Policies and Procedures; Supply Chain Strategy Implementation
2. Linking immunization supply chain to HR practices: Professionalization; Training and Development; Incentives and Performance Management
3. Supply chain decision-making: Supply Chain Data and Decision-Making

HEALTH AND IMMUNIZATION SUPPLY CHAIN EVOLUTION

Under the heading 'Health and immunization supply chain evolution' is explained the origin of the survey questions in the areas of:

1. Supply Chain Leadership and Management;
2. Supply Chain Organization, Policies and Procedures;
3. Supply Chain Strategy Implementation

Regardless of the actual SCM system implementer(s), there is consensus that a national government, usually through the MoH, has overall responsibility for ensuring sufficient quantities of essential commodities exist at the correct locations in the country. The quality of pharmaceutical commodities is addressed by establishing policies and monitoring mechanisms to ensure quality standards are maintained. Quantities and availability are addressed by policies related to who is authorized to distribute commodities and authorized distribution sites. The MoH should provide sufficient quantities of commodities in the correct locations by determining the SCM system to be used.

Traditionally, immunization and vaccine supply chains have been centralized, with the MoH playing a central role in operating them. Due to increasing complexity, health supply chains are now following the evolution of commercial supply chains: the concept of a network is now established as the new operating model. Supply networks are not static systems – they are complex adaptive systems that display dynamism. Supply networks adapt, as firms collectively attempt to fulfill demand through individual firm-level actions while responding to changes in both the environment and actions of other firms in the network. According to Bornbusch et al. (2014), "in most countries today, the reality is that public health supply systems are more like ecosystems, encompassing multiple supply chains and involving a multi-sectoral range of public, private, faith-based, and NGO facilities and distributors; diverse operational agencies and practices; and people from many organizations

and professions.” As mentioned above, the MoH plays the role of a steward, providing guidance and vision in regard to, but not exerting direct control over, services and facilities. The responsibilities of the MoH are shifting towards orchestrating, leveraging and engaging the array of partners and other nodes in the network to achieve a shared objective.

Common approaches of MoH include public sector implementation, outsourcing all functions, or individual functions, of the SCM system, and mixtures of public/private implementation mechanisms. All these activities should fall under an overarching supply chain strategy. Such a strategy is described as the definition and the combination of costs, availability and flexibility targets. It is unclear if the MoH defines a supply chain strategy in these terms, and if this strategy is connected to activities that aim to develop HR capacity.

Open questions were included in the survey to investigate these points and to understand how in reality this transition is happening in the vaccine and immunization supply chains at country level, and what specific features they exhibit in this context.

Immunization programmes and routine activities do not always guarantee a full coverage for the beneficiaries. Some of the inhibiting factors relate to how the immunization supply chain is structured and organized, if there is a dedicated supply chain and logistics team, how much time is employed for related activities, and at which level responsibilities are aggregated to allow an effective implementation of the strategy and the plans. The survey respondents were asked to indicate whether a dedicated immunization supply chain manager role exists, and, if so, to describe the responsibilities of that role and where it sits in the overall structure.

The Powerful Constituency building block of the USAID Human Resource Capacity Development Assessment Guide has been used to assess how the MoH supports HR practices for supply chains at central level, in terms of prioritization, dedicated qualified personnel, a multi-partner working group or national committee, and the presence of supply chain champions, based on a five-point Likert scale.

A specific focus has been placed on understanding the role of working groups/committees wherever

they exist. In fact, donors often create a demand for health supplies and then create initiatives to help national governments deal with inevitable shortages. Such initiatives focus on identifying common, significant supply chain-related issues, and raising awareness about the importance of supply chains, advocating policy improvements, and developing and implementing action plans to improve supply chains. This requires political commitment from national governments, adequate financing to procure commodities, building national competencies in long-term commodity planning, and building national competencies in implementing supply chain functions, as well as openness to alternative implementation strategies. To achieve this end, committees are formed, which function as catalysts for advocacy and action on supply chain issues, and which often contain representatives of the ministries of health, social security institutions, NGOs and international agencies. The involvement of representatives of various political and civil societies can help to ensure that such committees are successful in providing templates for policy and a faster reform implementation.

As described above, the structure and the organization of immunization supply chains has evolved in recent years. This evolution has been mapped to a limited extent. In order to better detect the causal effect between how the supply chain is organized and the overall performance, the survey respondents were asked to describe the organizational structure, how it is connected to the MoH structure, and how the national level relates to the regional, district and even health facility level in terms of communication, responsibilities and reporting. Also, respondents were asked to assess if, and describe how, the existing organizational structure adequately supports supply chain functions and delivery requirements. Open questions were accompanied by five-point Likert scale closed questions aligned to the Policies and Plan building block of the USAID Human Resource Capacity Development Assessment Guide – policies, plans, and associated SOPs that support human resource capacity development and management. These questions relate to the existence and use of human resource policies as connected to the requirements for supply chain functions and personnel, the definition of budget lines for human resource strengthening, the use of SOPs and the definition of pay scales.

LINKING IMMUNIZATION SUPPLY CHAINS TO HR

The session 'Linking immunization supply chains to HR' covers the following thematic areas within the survey:

1. Professionalization;
2. Training and Development;
3. Incentives and Performance Management

The evolution of health and immunization supply chains in recent years has included several aspects related to definition of roles and allocated responsibilities. However, a number of debates have taken place that have not been resolved in a convergent solution. One of these debates relates to which cadres should perform supply chain and logistics tasks. From the existing literature, it is evident that introducing and shifting responsibilities to the supply chain cadre of professionals is an exercise that might take years, since those professionals must be made available and formed. There are many examples, however, where health cadres have successfully contributed to immunization supply chain performance, especially at the health facility level. As has been discussed, the introduction of a dedicated logistics team at regional level has proven to be an effective solution. Three sections of the survey protocol – Professionalization, Training and Development, and Incentives and Performance Management – have been included in the survey in order to shed more light on this debate.

There is a variety of requirements in terms of the minimum or desired education standards for supply chain-related roles, and even more variety regarding how supply chains form a part of the existing curricula.

Moreover, supply chains face significant problems regarding staff recruitment and retention. Staff shortages and competition with the private sector for skilled labor slows down, and even prevents, the hiring of skilled supply chain personnel. Also, once workers have been hired, issues of productivity levels and training arise.

Specific activities have been identified to ensure that supply chains select and maintain a trained and informed workforce. There must be established recruitment and training standards, and the recruitment must focus on specialized logistics and supply chain personnel, utilizing

the available pool of local workers. Pre-service training (PST) has proved to be a sustainable and cost-effective way to achieve long-term results in the SCM workforce. PST works by introducing an SCM curriculum into graduate health programmes (including nursing and pharmacy programmes), which in turn builds competency for supply chain responsibilities.

Different countries may use different resources to ensure their supply chain staff attain the necessary qualifications. The usual methods include creating a task force of dedicated supply chain professionals in task shifting, ensuring that SCM professionals have PST while in universities, and outsourcing to the private sector.

The survey covers in detail those areas where respondents believe there is need for capacity development. The Assessment of HR Landscape is one of the first attempts that has been made to link specific supply chain responsibilities to training needs. The People that Deliver Health Supply Chain Competency Framework for Leaders and Managers (2015) has been adapted for the immunization context. The responses from this section are pivotal in seeking to understand the areas to be covered in future training, and to tailor them to the context and to the individual country.

This section covers another extremely relevant connection between HR and supply chains, as it investigates, through open questions, if there are procedures in place to measure personnel performance. Also, it is crucial to understand if SOPs are used to match behaviors and outcomes.

A strategic choice has been made by the consultant in regard to the fact that the respondents are not asked to rate the success of the operations they are a part of. Their qualitative remarks are matched with the quantitative methodology developed by WHO/UNICEF to measure the success of an immunization supply chain – EVM – in order to investigate, by country, what are the weaknesses and the strengths. This combination of data is meant to contribute to our understanding regarding which HR policies contribute to supply chain success. More insights will be provided by the one-to-one interviews.

SUPPLY CHAIN DECISION-MAKING

The session 'Supply chain decision-making' covers the thematic area of the survey:

1. Supply Chain Data and Decision-Making

Data management is a fundamental component for SCM as it provides evidence that can be used to manage the operations and make informed decisions for future development, as well as to evaluate the outcomes and the performance over time. When evaluating immunization and vaccine supply chains, some of the typical data that should be gathered are stock levels, vaccine consumption, waste and stock-outs, the number and location of beneficiaries, and vaccine temperatures. These data are collected at the health facilities – “in other words, the last mile of healthcare delivery is the first mile of data” (Prosser et al., 2015).

The problems usually identified regarding supply chain data are poor or non-existent systems of data record-keeping and the absence of an established inventory system for ordering and distributing supplies, which often leads to shortages or overstocking. At the level of staff and personnel, frequently personnel are not trained in basic stock-keeping and maintaining proper storage conditions.

The core task of health workers is to care for patients; stock management and data collection are added to this task but are usually seen as secondary activities due to an overload of patient care. Prosser et al. (2015) report a recent data burden assessment within clinical care and immunization programmes in low-income countries. They report the challenges faced by health workers in these situations: the proliferation of data points; data collection tools that are not used at the health facility level; lack of time to complete data collection; perceived mistrust regarding the quality of the data; and lack of connected systems. Additionally, from the existing evidence and literature, it appears that the data (even when they are collected) are only passed from the health facilities upwards in the chain. There is limited record of the data being manipulated and reported back to the point of collection, to be shared with the health workers. There are no standard tools for interpreting the results and for providing insights along the vaccine supply chains, which implies very limited contributions for improvements based on actual data.

Commercial supply chains have understood the importance of data, and IT represents a major budget item that is needed in order to gain insights regarding inventories, transport and availability at the point of sale, and to adjust operations accordingly. Sophisticated IT solutions have been developed and tailored to the needs of supply networks. Unfortunately, immunization and vaccine supply chains are nowhere near this level of sophistication, although LMIS have been introduced to increase the availability and accuracy of the data that are collected at health facility level.

Despite the relative advances in data collection and manipulation to empower management to make informed decisions, there is evidence of more innovative uses of the data to support supply chain (re-)design. USAID (2014) provides a few mini case studies of successful completion of supply chain implementation techniques to increase the performance and cost effectiveness of the supply chain functions. The data needed for supply chain design and optimization include: product data, site data, demand data and transport data (vehicle assets, capacity and operating costs).

Using simulation software and routine data, the optimization process identifies flexible strategies for locating warehouses, setting inventory levels, creating or revising transport routes, removing distribution tiers and reengineering business processes. As this process also helps determine the resource requirements for each option, it can lead to a rethinking of the types and numbers of personnel needed to manage logistics tasks, and can provide countries with a clearer understanding of the financial efficiencies of one HR plan over another, which otherwise may be difficult to quantify (VillageReach, 2014).

The survey therefore covers three specific aspects that were designed to allow us to better understand how data are collected, if there is LMIS software to support the data collection and a connected budget for improvements, and if the data available are used to make informed decisions.

SURVEY RESULTS

DEMOGRAPHICS

The 40 respondents to the survey are scattered around the globe but they mainly work in African countries.

Among the respondents, 32 are male and 8 female; 13 are pharmacists (1 is a candidate for an MSc in SCM), 10 are medical doctors, 5 are engineers, 5 have a supply chain and logistics background, 3 are public health officers, 1 is involved in social policy, 1 is involved in general management, 3 are nurses, 1 is a health technician and 1 has an epidemiology background. 27 work at national level, 6 at regional level and 1 at a UK headquarters (not all were asked, hence the reduced number of respondents in this category). The majority of our sample has responsibility for between zero and 50 people.

Among the respondents, 1 deals with routine immunization only, 5 with campaigns only and 20 do both. The commodities they handle are summarized as follows:

- 72.5 per cent deal with vaccines
- 38 per cent deal with HIV/malaria related items
- 33.28 per cent deal with reproductive health
- 42 per cent deal with general essential medicines.

The organizations for which the respondents work are reported in Table 3.

From the responses it is not clear how large the budget for logistics and supply chain operations is and how much the respondent's control. It seems rather limited in all cases, and a few respondents said they control nothing.

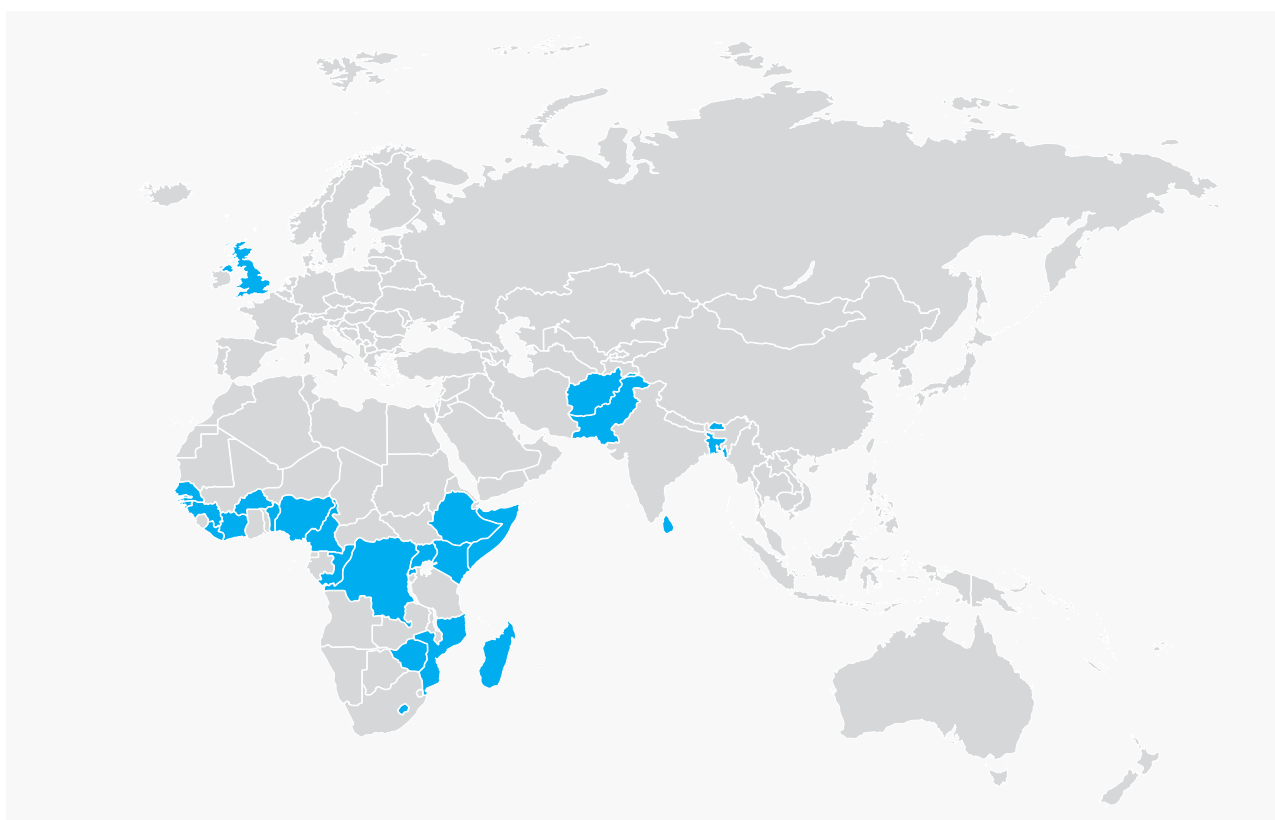


Figure 7 Geographical spread of the survey respondents: 4 respondents in Congo; 3 respondents in Nigeria; 2 respondents in Afghanistan, Malawi, South Sudan; 1 respondent in Bangladesh, Benin, Bhutan, Burkina Faso, Cameroon, Comoros, Côte d'Ivoire, Ethiopia, Gambia, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Mozambique, Pakistan, Rwanda, Senegal, Somalia, Sri Lanka, Swaziland, Tanzania, Tonga, Uganda, United Kingdom, Zimbabwe.

Respondents were asked to indicate if there is an immunization supply chain manager in their country, and, if so, for their contact details:

- 25 said there is an immunization supply chain manager in their countries (66 per cent)

These managers (where they exist) tend to work at the national level, at the EPI office. The full list provided by respondents is in Table 4.

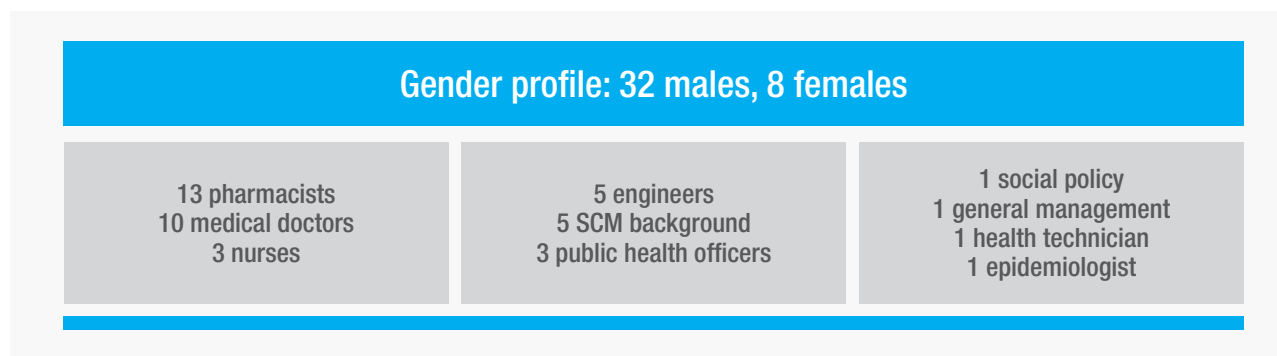


Figure 8 Profiling the respondents

Ministry of Health	19	Hospitals Management Board	1
WHO	4	Crown Agents	1
UNICEF	8	HU-PACE/SIDHAS	1
MSH	2	University Grants Commission of Bangladesh	2

Table 3 Profiling the respondents

Afghanistan	Mr Abdul Mateen, National Cold Chain Manager: tel +93 773834212; vsfmateen@yahoo.com
Benin	Segla Faustin: tel 00229 97312712; segla.faustin@yahoo.fr
Cameroon	Dr Djoko Jacques: tel +237677328999; jdjoko@yahoo.fr
Congo	Mr Massengo Hilaire
Gambia	Lamin Ceesay: mlceesay210@yahoo.com
Malawi	Nixon Mtambalika, Chsu, EPI, Pbag 65_lilongwe, Malawi
Nigeria	Dr Mustapha Zubair Mahmud, Director Department of Logistics and Health Commodities, National Primary Health Care Development Agency. Port Harcourt Crescent, Off Gimbiya Street. Area 11 Garki. Abuja, Nigeria.
Nigeria	Pharm. M S Dangana, Gimbiya Street, Area 11, Garki Abuja FCT, Nigeria
Senegal	Serge Ganivet: sganivet@unicef.org
Sri Lanka	Dr Paba Palihawadana, Chief Epidemiologist Epidemiology Unit: paba@health.gov.lk
Tanzania	William Msirikale: wmsirikale@yahoo.com
Tonga	Sr Afu Tei Vaiola, Hospital Nuku'alofa Tonga Is

Table 4 Immunization Supply Chain Managers' details

SUPPLY CHAIN CHALLENGES

The challenges for immunization supply chains found in the existing reports and literature are confirmed in this report, and in the survey responses. Although it is clear that some changes are happening and immunization supply chains are slowly but surely evolving, there are challenges, such as the lack of capacity building and training, the lack of qualified workers, inadequate equipment and the fact that logistics and supply functions are connected to the single immunization programmes on an ad-hoc basis.

SUPPLY CHAIN LEADERSHIP AND MANAGEMENT

- Nearly 50 per cent of countries/MOH had a supply chain strategy or plan in place; does not always include activities for developing HR capacity
- 47 per cent of cases reported the existence of a national logistics or supply chain working group (NLWG)

In 47 per cent of cases there is an NLWG, as against 38 per cent where there is no such established group. 15 per cent of respondents do not know if there is such a group in their country. The members of the working group reported by the respondents are listed in Table 5.

In Uganda the working group looks particularly active – the members are the MoH, health development partners (WHO, UNICEF, PATH, Clinton Health Access Initiative [CHAI]) and reports to the National Coordinating Committee. They are active only during supplementary immunization activities (SIAs) and they

provide guidance regarding vaccine availability, distribution and transport.

The responses suggest working groups are effective, as they enhance coordination. One respondent said his country relies on the technical input of the working group to make high-level decisions.

SUPPLY CHAIN ORGANIZATION, POLICIES AND PROCEDURES

- 50 per cent stated that current structures adequately support SC functions and delivery requirements (40 per cent said not adequate)
- 9 out of 12 responses reported there are lines of reporting and communication between the different levels, but the effectiveness of the communication and reporting is limited (e.g. no feedback mechanisms to lower levels)
- Only 33 per cent agree that there are clear and detailed HR policies, defined pay scales and SOPs
- There is only limited evidence of the existence of a dedicated logistics unit

The role of the MoH remains central in the organization and deployment of supply chain operations, with dedicated resources. However, there is no clear evidence that the traditional centralized model, with hierarchical layers of responsibilities, has been overcome by a more sophisticated model or network, or that logistics and supply chains have been given a more strategic position within immunization programmes. For instance, in Zimbabwe a respondent reports the following structure:

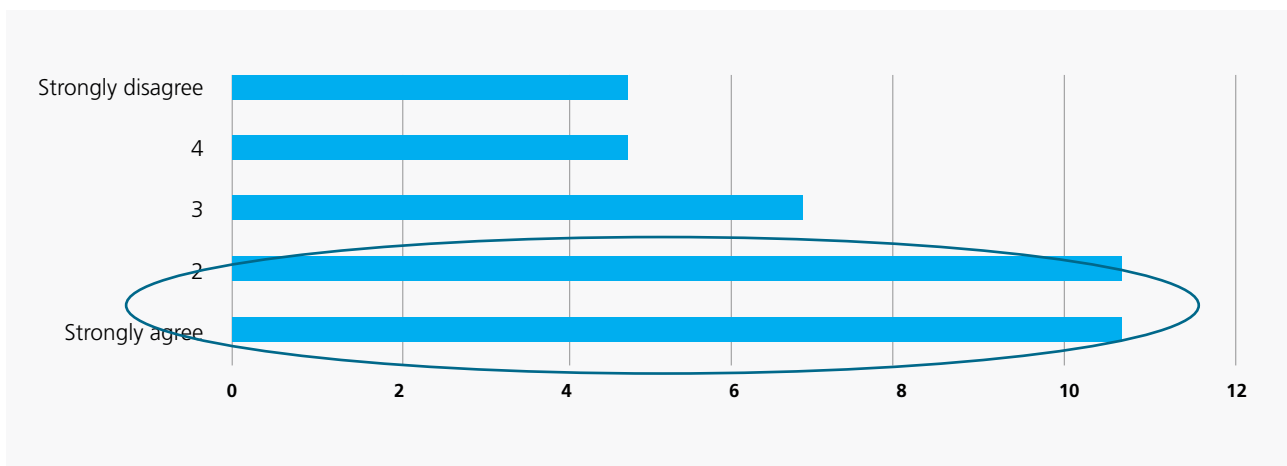


Figure 9 Supply Chain as a priority for MoH (1 = Strongly agree, 5 = Strongly disagree)

Afghanistan	The group was established recently after the recommendation of EVM assessment. The members are 1. National cold chain manager, 2. Cold chain engineers, 3. UNICEF cold chain officer, 4. WHO training coordinator, 5. Representative of GCMU (Grand Contract Management Unit) MOPH, which is responsible for coordination with implementing NGOs
Ethiopia	1. EPI Logistics coordinator FMOH 2. EPI programme core team officer (FMOH) 3. Pharma Fund Supply Agency, 4. Partners WHO, UNICEF, CHAI, ISI
Gambia	MoH staff, UNICEF, WHO and CSOs
Kenya	Dip partners, logistics officer head medical supplies, store manager
Liberia	Chair deputy EPI manager MOH, secretariat UNICEF, members WHO; however, it is not effectively functioning, giving number of reasons
Madagascar	National logistician EPI, national cold chain officer, national vaccine management officer, EPI manager
Mozambique	MoH, WHO, UNICEF, CHAI, VillageReach, USAID, FDC
Nigeria	Government, UNICEF, WHO, CHAI, EU-SIGN and recently other groups supporting the activities of the group like McKinsey, Solina Health, eHealth, etc.
Senegal	Logisticians and partners
Tanzania	Ministry of Health and Social Welfare, World Health Organization, UNICEF, CHAI, Medical Store Department and JSI
Tonga	The CEO and representatives from medical officers, dental officers, health officers and pharmacists and nursing
Uganda	MoH, UNAPI, Health development partners WHO, UNICEF, CHAI, PATH; stakeholders Red Cross armed forces; National coordinating committee

Table 5 Composition of National Logistics Working Group (NLWG)

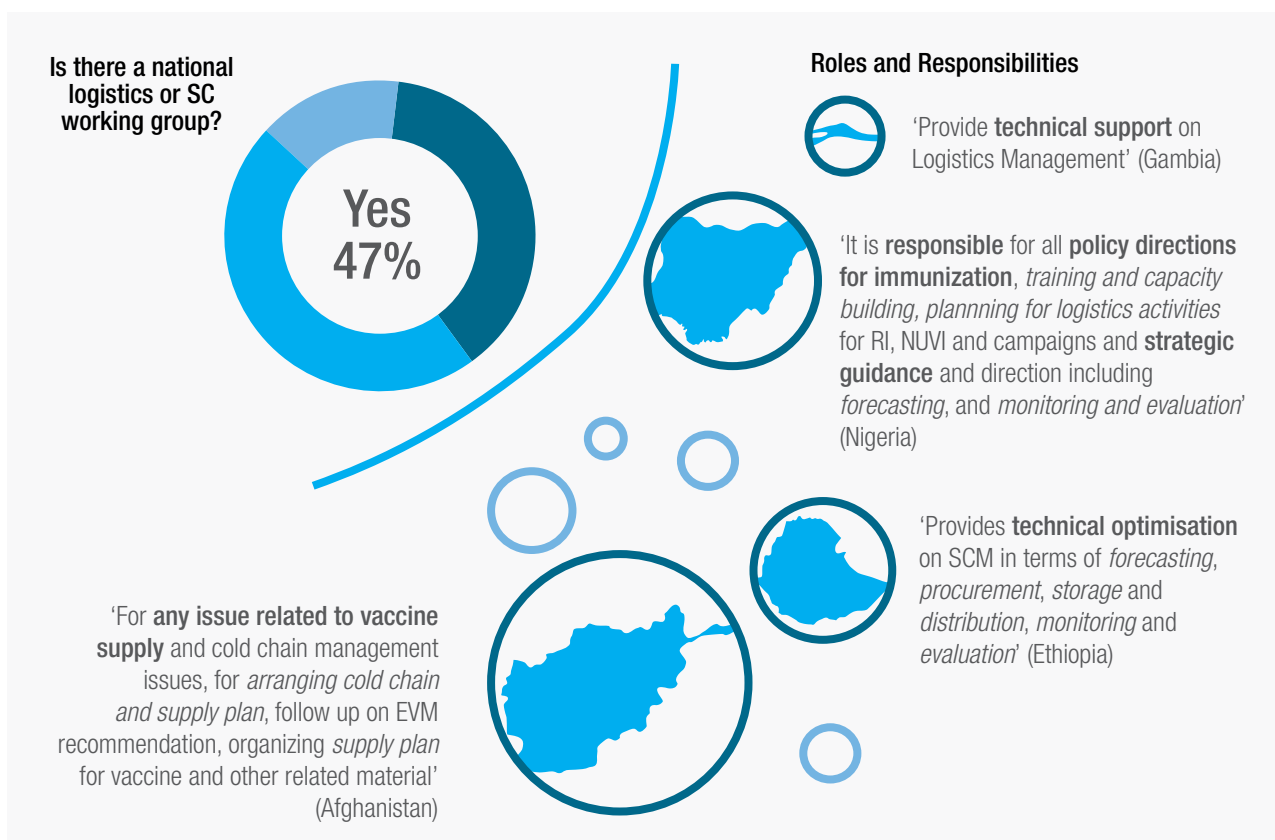


Figure 10 National Logistics Working Groups

“The EPI Programme Logistician reports to the EPI Programme Manager, who is under the Deputy Director of Administration and the Director of Finance and Administration.”

It is obvious that logistics and supply chains still serve as an operational support service.

It is interesting to notice that when asked, many of the respondents described the organization in terms of the distribution and delivery structure (regional, national, district, health centers).

In one case a parallel pharmaceutical/logistics structure is in place:

“Logistics specialists in line with deputy director pharmaceutical; chief pharmacist in line with departmental logistics officers as line two; pharmacists and technicians as third” (Malawi)

In another case,

“[T]he Supply Chain Officer reports to IVD Manager and he oversees all supply and logistic issues; he is in charge of about six logisticians at national level; however, there are 25 regional logistics officers who report to him and they in turn are responsible for over 176 district logistic officers.” (Tanzania)

Some of the shortfalls detected in the existing supply chains are the lack of working groups at lower levels, the lack of coordination, an absence of regular updates, a push system with routine replenishment every two months, no knowledge at national level of real-time stocks and vaccine availability, and no use of synthetic dashboards to show the current status of stocks and availability.

HR Components: On first impression, it seems that although some changes have been made in terms of HR components for immunization supply chain management, the lack of a comprehensive strategy and vision, and of other components (such as LMIS), means the system is not being pushed towards a more evolved stage and some ad-hoc mentality is still in place. The data seem to show that among the countries of the respondents, development of SCM is taking place at two different speeds – some countries are evolving more rapidly in terms of SCM and some HR features have been established and developed.

PROFESSIONALIZATION

- 60 per cent of respondents believe supply chain roles are performed by staff who do not have supply chain-related certifications in their country
- Among the respondents 50 per cent have a logistics/supply chain-related certification
- 46 per cent of respondents believe supply chain tasks are performed on an ad-hoc basis – against 31 per cent who are neutral, and 23 per cent who do not agree
- Health workers still do not have access to SCM-related training in their curricula.

Certifications and access to them are increasingly available, especially for health workers. However, a professional license or certification does not seem to be a prerequisite to work in a supply chain management role. The minimum certification declared by respondents varies from 12th grade to diplomas and certifications, to a bachelor’s degree. Often, a certificate is considered enough.

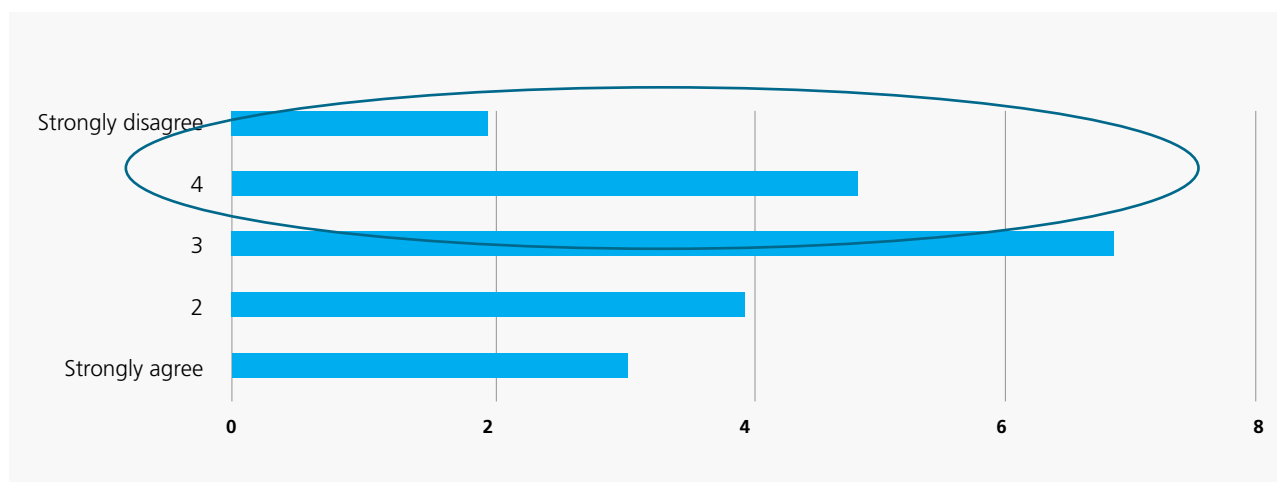


Figure 11 HR Strategic plans for SCM (1 = Strongly agree, 5 = Strongly disagree)

TRAINING

- A paucity of access to training in the last 12 months was reported, as well as an overall lack of training strategy.
- There is a widely shared view that there is comprehensive choice for training. Overall, the training was rated as being appropriate in terms of quality and applicability – albeit limited access to it is limited.
- Supply Chain System Design is the area where there is the highest need for training as lacking in the current courses.

In terms of capacity development, training is reported as being needed in all SC areas, in order for the respondents to better perform their roles. Training on system design seems to be particularly needed, with limited existing coverage of this subject in the available training.

INCENTIVES

All the suggested improvements for better supply chain operational efficiency have scored high among the respondents:

- improving salary and contractual terms
- higher visibility of operational programme needs and plans
- developing LMIS and improving data visibility
- measuring supply chain performance through the use of indicators.

When asked about more detailed aspects within the overlapping area between HR and supply chains, respondents tended to agree that supply chain competencies are defined for each level. Considering that logistics and supply chain tasks are often relegated to the status of merely operational activities, **it remains unclear how SC competencies are defined at higher levels in the organizational charts.**

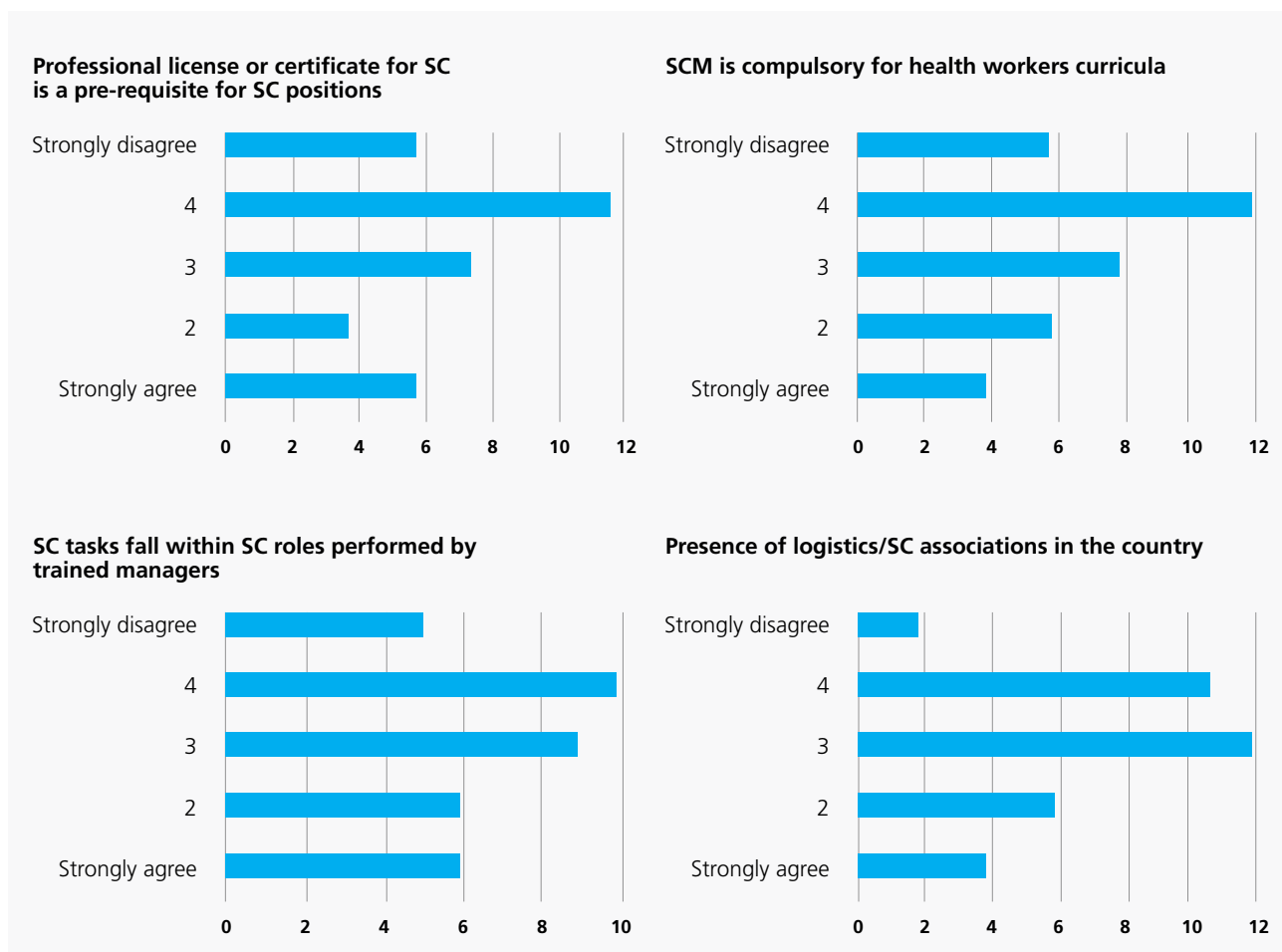


Figure 12 Certifications and affiliations (1 = Strongly agree, 5 = Strongly disagree)

PERFORMANCE MANAGEMENT

- 72 per cent of respondents declared there are no supply chain performance indicators in place
- In 50 per cent of cases there was reported to be no clear procedure for performance appraisal (formal procedure in 26 per cent of cases)
- Performance incentives can include training or attending conferences
- Supervision visits were reported as being scheduled by 34 per cent of respondents, and using SOPs was reported by 33 per cent of respondents.

The survey results did not shed light on the link between the required competencies and performance appraisal, as it is not clear how the roles are defined, what they are measured against, and what the competencies are for performing the roles.

SUPPLY CHAIN DATA AND DECISION-MAKING

The systems used to collect supply chain performance data were reported by the survey respondents as being very mixed, from the traditional use of paper to LMIS.

- 10 out of 17 respondents declared the presence of a LMIS: this does not necessarily mean the data are not collected on paper and then migrated to a soft version, or that they are then used to support the decision-making process
- 50 per cent of respondents do not know if there is a budget for information systems, 25 per cent declared that there is one, and 25 per cent that there is not
- Almost 90 per cent declared that there is a standard regarding collecting data, and 70 per cent stated that supply chain failures are identified quickly.

However, it seems the available data are not uniformly used to make decisions.



Figure 13 SC areas for capacity development

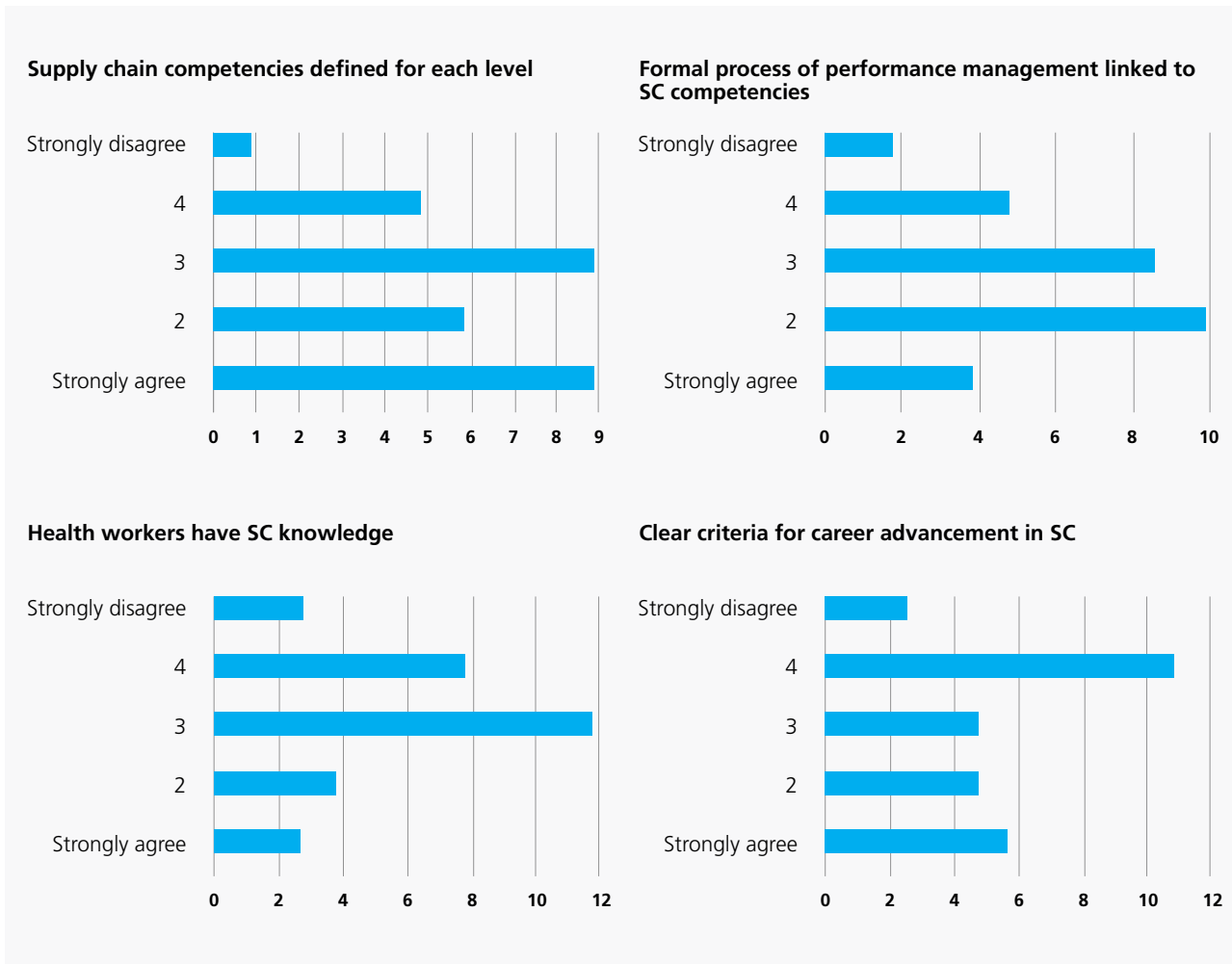


Figure 14 SC competencies (1 = Strongly agree, 5 = Strongly disagree)

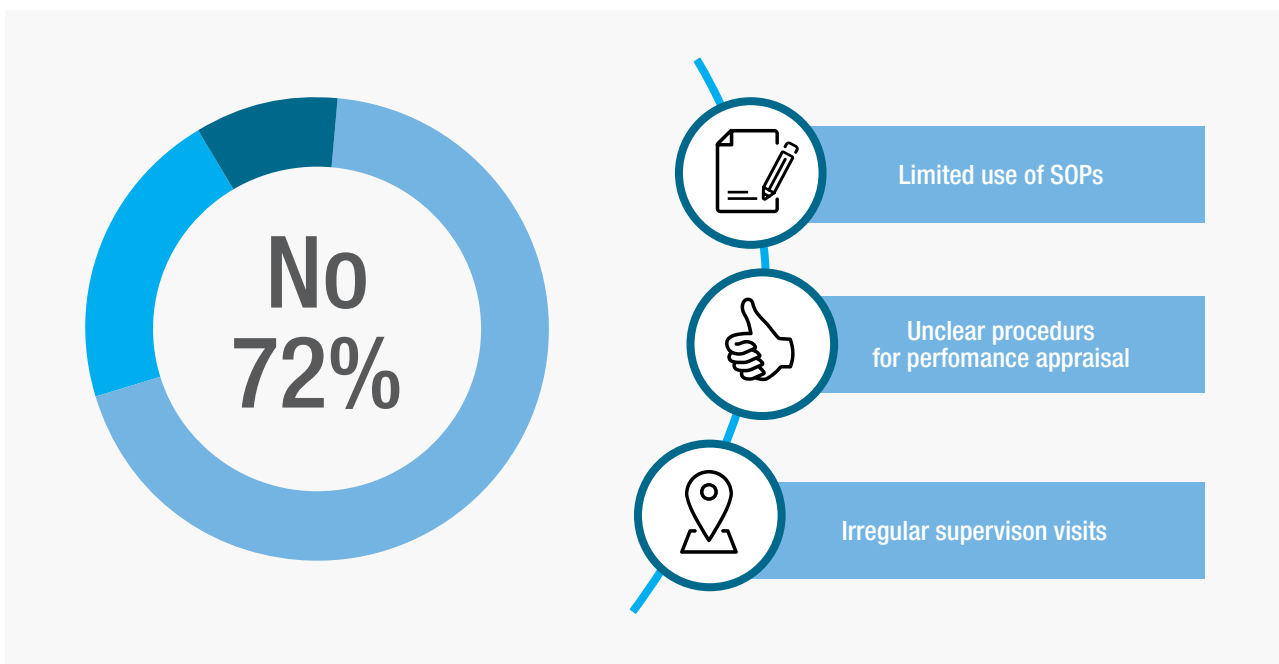


Figure 15 Presence of performance indicators for SC

ONE-TO-ONE INTERVIEWS

Due to time constraints the one-to-one interviews will be conducted after the date of this report.

CONCLUSIONS

Note: The conclusions do not include any insights that may be produced by the one-to-one interviews, which have not yet been carried out.

This paper has described the fact that vaccine supply and logistics systems around the world are unable to keep pace with growing immunization programmes, and that staff involved in immunization supply chains in developing countries are generally unqualified, poorly trained, un-empowered and poorly managed. The paper has showed that while supply chains in the commercial world have evolved dramatically, and are an important strategic consideration in boardrooms, the consideration of supply chains as a strategic factor in health is at its infancy. It was found that the combination of both technical and infrastructural constraints, and inadequate HR capacity, usually mean that the organization of health (including immunization) supply chains is often ad-hoc and requires substantial investment.

Against this backdrop the paper described the limited research in the literature regarding HR in SCM of immunization supply chains. Notwithstanding the paucity of studies on the topic, the desk review found evidence of the benefits of a shift from the currently widespread ad-hoc organization of immunization supply chains to dedicated logistics systems where there are clear supply chain roles in charge of all supply chain/logistics functions. These benefits include increased efficiencies, more availability, reduced costs and ultimately an increase in coverage. The desk review also found that different studies in the literature have analysed the skills and competencies required for HR to take on this logistics and SCM work in immunization supply chains.

With this understanding of the necessary competencies for HR in immunization supply chains in mind, the paper sought to map the existing training and capacity development needs at country level in various countries, with a view to defining how the immunization supply chain HR can be developed. This was done by administering a survey to 40 respondents involved in immunization supply chains. The respondents, who mostly work in Africa, come from a variety of organizations and hold a variety of positions. The survey responses can be summarized as offering seven key messages regarding the state of HR for immunization supply chains.

Key message #1: Despite more effort being devoted to supply chain issues by ministries of health, there is no clear evidence that logistics and SCM play a strategic role, rather than being considered as a support service.

Key message #2: HR for immunization SCM does not emerge as a priority for ministries of health in terms of policy implementation.

Key message #3: Professional certifications are still not a prerequisite for occupying immunization supply chain managerial roles.

Key message #4: There is strong agreement regarding the need for capacity development across the range of identified HR competencies, especially system design.

Key message #5: HR components for SCM are recognized as a strong facilitator for increasing efficiency, and for strengthening immunization supply chains.

Key message #6: Performance appraisal for HR competencies in immunization supply chains is

lacking because it is not clear how the roles in the supply chain are defined, what they should be measured against and what the competencies are for performing these roles.

Key message #7: Even where they are collected, supply chain data do not seem to be used to inform supply chain-related decisions, and do not seem to be fed back to the lower levels in the chain (district stores or health facilities).

Overall, from the survey responses it is clear that some changes are happening, and that im-

munization supply chains are slowly but surely evolving, but there is a lack of capacity building and training, a lack of qualified workers, inadequate equipment, a lack of working groups at lower levels, a lack of coordination, little use of synthetic dashboards to show the current status of stock and availability, little knowledge at national level of real-time stocks and vaccine availability, a lack of updates, an absence of feedback to lower levels and the fact that logistics and supply functions are arranged for single programmes on an ad-hoc basis.

RECOMMENDATIONS

Note: This list of recommendations does not include any potential recommendations that may be generated as a result of the one-to-one interviews, which have not yet been carried out.

The conclusions that arise from the desk review and the results of the survey point to a number of recommendations regarding how HR in SCM of immunization supply chains can be improved.

The main recommendation is that logistics and SCM should play a strategic role in immunization supply chains: HR for immunization SCM should be made a priority for ministries of health, in terms of policy development and implementation, and logistics and supply chain people should contribute to the definition of the strategy for vaccines and immunization (rather than having decisions made at higher levels, and logistics and supply chain staff being asked to execute them). To achieve this objective, a logistics unit should be established within ministries of health to lead the supply chain, and greater control over budgets should be provided to logistics and supply chain people.

At the same time, HR components for SCM in immunization supply chains should be introduced and strengthened. There should be a greater focus on the multiple building blocks for a sustainable approach to HR, to ensure they have the required competencies, with training on system design being particularly needed. In tandem with this focus on training, supply chain performance should be measured through the use of performance indicators. To achieve this, roles in the supply chain need to be better defined, and it needs to be decided what performance should be measured against. Once this has been established, clear procedures for performance appraisal should be put in place, as well as for supervision and follow-up.

As the survey results show that supply chain working groups enhance supply chain coordination, it is recommended that these groups be supported and promoted. In particular, a more in-depth study should be carried out to understand which configuration and working modes for supply chain working

groups are most effective, and which are replicable in different countries – especially in regard to countries where a national working group for logistics and SCM has not yet been established.

Since all the suggested improvements for better supply chain operational efficiency scored highly among the survey respondents, it is recommended that these improvements be pursued. Thus it is recommended that salary and contractual terms be improved; the visibility of operational programme needs and plans be increased; LMIS be developed and data visibility improved; and, once collected, that supply chain data be used to inform supply chain-related decisions, and be fed back to the lower levels in the supply chain.

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APPENDIX 1 – ENGLISH

Interview protocol

Overview of the survey sections

The survey is divided into nine sections, covering various areas of leadership and human resource management:

- I. Demographics
- II. Supply Chain Leadership and Management
- III. Supply Chain Organization, Policies and Procedures
- IV. Professionalization
- V. Training and Development
- VI. Incentives and Performance Management
- VII. Supply Chain Strategy Implementation
- VIII. Supply Chain Data: Access, Availability and Decision-Making

It will take up to 30 minutes to complete the survey.

I. Demographics

1. Q. Which country do you represent? (Drop-down menu from the list of selected countries)
2. Q. Which organization do you work for?
3. Q. Which department do you work in?
4. Q. What is your job title?
5. Q. What is your gender? (Male/female/other)
6. Q. Whom do you report to? (Please indicate the job title of your line manager)
7. Q. What is your professional background?
8. Q. What is your academic qualification? (Drop-down menu: Secondary school diploma, College non-university diploma, Vocational diploma, Undergraduate University degree, University master's degree, Doctorate/PhD, Other)
9. Q. At which level of your organization do you work?
 - National
 - Regional
 - District
 - Service Delivery Point
 - Other, please specify
10. Q: How many people fall under your responsibility?
 - 0
 - Less than 10
 - Between 10 and 50
 - Between 50 and 100
 - More than 100
11. Q. Which commodities do you handle? Select all the appropriate items.
 - Vaccines
 - HIV/malaria
 - Reproductive health
 - General essential medicines
 - Other (please specify)

11. Q. Are you involved in (tick as appropriate)
- Routine immunization
 - Campaigns
 - Both
12. Q. Is there a specific budget for supply chain and logistics operations? (Yes/No/Don't know)
- 12b. Q. What is the budget you control?
13. Q. Please indicate which percentage of the budget is actual, for the following activities:
- Operational costs (clearance, warehousing, transportation, vaccines)
 - Buying new equipment
 - Education and training
 - Salaries
 - Supervision
 - Other (Please specify)
- 13b. Which are, in your opinion, the major challenges around human resource policies for logistics/supply chain management roles?

II. Supply chain leadership and management

14. Q. Is there a dedicated immunization supply chain manager in your country?
By immunization supply chain manager is meant the person responsible for managing the immunization supply chain. Other commonly used terms or designations with a similar definition are national cold chain and logistics officer/manager, national cold chain manager/technician, EPI manager, national cold chain and logistics officer/manager (Yes/No; if yes go to the next question, if no skip to question 18)
15. Q. If yes, can you please write down his/her name and contact details?
16. Q. Where does s/he sit within the organization?
17. Q. Does s/he have nationwide responsibilities?
18. Rate your agreement/disagreement with the following statements regarding human resource practices for supply chain at central level (e.g. MoH) (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- Supply chain management is a fully funded priority within the MoH immunization strategic plan.
 - Personnel with supply chain expertise (selection and quantification, procurement, storage and distribution, use, resource management, system design) guide and inform MoH immunization supply chain-related strategic, policy, programmatic and funding decisions.
 - A multi-partner national logistics/supply chain working group or committee is led by the government (e.g. MoH) to lead and coordinate immunization supply chain activities and improvement initiatives.
 - There are senior level champions for supply chain management and developing human resource capacity.
 - If a supply chain issue arises, staff are clear on whose responsibility it would be to fix it.
 - The structure of the supply chain leadership is known to personnel at all levels.

III. Supply chain organization, policies and procedures

Open questions

19. Q. Please describe the supply chain/logistics organizational structure
20. Q. Where does it sit within the MoH structure?
21. Q. How does the national level relate to the regional, district and lower levels of the supply chain in terms of communication/responsibilities/reporting?
22. Q. Does the supply chain organizational structure adequately support supply chain functions and delivery requirements? (If yes, how? If no, why?)
23. Q. Is there a national immunization logistics or supply chain working group? (Yes/No. If yes go to the next question, if no skip to question 27)
24. Q. Who are the members of the group?
25. Q. Whom does this group report to?
26. Q. What is the group responsible for?
- 26b. Q. How effective is the work of the group?
27. Q. Rate your agreement/disagreement with the following statements regarding HR practices for supply chain within your organization or supply chain (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
 - A strategic plan that addresses human resources requirements for supply chain functions and personnel is in place and fully implemented at all levels.
 - Clear and detailed human resource policies (including for supply chain personnel) are available and fully implemented.
 - Distinct and permanent budget line items exist for supply chain human resource strengthening activities (i.e. salaries, training, coaching and performance management) at national level, with an allocated budget.
 - Distinct and permanent budget line items exist for supply chain human resource strengthening activities at lower levels (states, regions, districts, SDPs), with an allocated budget.
 - Pay scales for supply chain roles are well defined and easily accessible by all staff.
 - Standard operating procedures (SOPs) for supply chain tasks are available and utilized at all levels.

IV. Professionalization

28. Q. Rate your agreement/disagreement with the following statements (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
 - In my country there are enough qualified workers to fill health supply chain-related roles.
 - In my country health supply chain tasks are normally performed by pharmacists or health workers.
 - In my country staff performing health supply chain roles have supply chain-related certifications.
 - In my country supply chain tasks are performed on an ad-hoc basis.

29. Q. Rate your agreement/disagreement with the following statements (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- A professional license or certification to work in a supply chain management role is defined, approved and administered, and is a prerequisite for employment in a health supply chain/logistics position.
 - Supply chain management is a compulsory part of the curricula for nursing, lab technician, medical, pharmacy and health policy students pursuing a degree or diploma programme.
 - Supply chain tasks fall within the boundaries of a formal supply chain role and are completed by a dedicated and formally trained supply chain manager.
 - Recognized international and/or local supply chain/logistics associations are established, with local chapters, and are present in the country.
30. Q. What minimum or desired education standards are there for logistics/supply chain management positions? (Open question)

V. Training and development

31. Please rate from 1 to 5 the areas where you feel most capacity development is needed to improve logistics/supply chain management (where 1 = very, 5 = not at all)
- Selection and quantification: the competencies that are required to be able to select and quantify the correct products to meet programme demands (vaccines and consumables forecasting and supply planning, cold chain capacity assessment and planning, CCE forecasting and equipment selection, technologies and innovation)
 - Procurement: the competencies required to procure the supplies needed against the available budget, and to manage supplier relationships (vaccine procurement, arrival procedures, cold chain equipment selection and procurement, including temperature monitoring devices, voltage regulators and stabilizers)
 - Storage and distribution: The competencies required to manage warehouses and inventories, and distribution to the facilities (vaccine handling and management [including stock management], temperature monitoring, distribution planning, transportation, cold chain organization, distribution of CCE, preparation and installation of CCE)
 - Use: the competencies to ensure products are administered until the point of use according to national/international regulations to ensure the best possible outcome (vaccine handling and management, training of users, CC maintenance [preventative, corrective], maintenance planning and schedules, temperature monitoring, disposal of CC equipment and devices)
 - Resource management: the competencies required to manage money, people, information and infrastructure to ensure the system works effectively (vaccine management, cold chain management, planning cold chain capacity, maintenance and rehabilitation, CC inventory management, training and supervision, developing and updating SOPs, monitoring and supervision, budgeting)
 - Professional and personal: the competencies required to manage the day-to-day responsibilities and manage future career development, communication and time management skills. (communication, problem solving, process improvement, innovation, planning and organization, team working, managing people, supervising and mentoring)
 - System design: the competencies required to assess the efficiencies of the supply chain by considering all components needed to create a flexible and optimized system (understanding of modeling, efficient transportation, best use of CCE, change management and leadership to advocate for optimized systems)

32. Q. Rate your agreement/disagreement with the following statements (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- There is a transparent progression for supply chain management professionals within my organization.
 - I have access to organization-sponsored training that I need in order to perform my job.
 - There is an adequate choice for supply chain-related programmes that I can have access to.
 - There is an adequate choice for health supply chain-related programmes that I can have access to.
 - I received formal sponsored supply chain training in the last 12 months.
 - There is a training unit at central level that informs the content of logistics/supply chain-related training and ensures training is linked to competency models.
 - A training strategy identifying available education opportunities for all supply chain roles is in place.
33. Q. Do you have any certification relating to logistics/supply chains? If yes, which one? (Yes/No – If yes go to the next question, if no skip to question 36)
34. Q. Regarding the last training on supply chain you participated in: describe the training in terms of the title, who delivered it and when. (Open question)
- 34b. Q. Do you agree with the following statements? (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- The material provided was easy to follow.
 - The size of the class was adequate to promote interaction and active learning.
 - The material was adapted to my local context.
 - The learning was consolidated after each session.
 - I felt I could apply the learning to my job.
35. Q. Rate your agreement/disagreement with the following statements (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- The required supply chain competencies (selection and quantification, procurement, storage and distribution, use, resource management, professional and personal, system design) are defined and specified for each level.
 - There is a formal process for performance management appraisal linked to supply chain competencies.
 - Health workers have formal supply chain knowledge.
 - There are clear criteria for career advancement for supply chain personnel.

VI. Incentives and performance management

36. Q. Rate your agreement/disagreement with the following suggestions for improving the organization's logistics/supply chain performance (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
- Improving salary and contract conditions
 - Providing the logistics department with higher visibility of operational programme needs and plans
 - Developing the LMIS system and improving data visibility
 - Measuring supply chain performance through the use of indicators to be able to prove the operational impact of the supply chain function
37. Q. Is there a supply chain performance measurement system in place, with clear indicators? (Yes/No)

38. Is there a clear procedure for performance appraisal and is it conducted regularly?
39. Q. Can you provide examples of performance incentives for supply chain personnel?*
40. Q. Are there scheduled supportive supervision visits for supply chain personnel? (Yes/No)
41. Q. Are SOPs used to guide these visits? (Yes/No)
42. Q. Is there follow-up with adequate mentoring and coaching during the process? (Yes/No)

VII. Supply chain strategy implementation

43. Q. Does the MoH have an immunization cold chain logistics/supply chain strategy in place? (Yes/No)
44. Q. Does the supply chain strategy include activities for developing human resource capacity? (Yes/No)
45. Q. Which activities are covered in this or other capacity development plans?

VIII. Supply chain data: Access, availability and decision-making

46. Q. What system do you use to collect supply chain performance data (e.g. stock level, inventory, consumption) at national, regional, district and health facility levels? (Open question)
47. Q. Is there an automated LMIS software? (Open question)
48. Q. Is there a budget for software development, training and maintenance? (Yes/No)
49. Q. Rate your agreement/disagreement with the following statements regarding the visibility of data across the supply chain (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree)
 - Supply chain failures, e.g. stock-outs, can be identified quickly.
 - There is a standard format for supply chain data.
 - Data collection, key performance indicators (KPIs) and reporting protocols are clearly defined.
 - Procurement or order pipeline data are linked to stock data.
 - Data are adequately available and readily accessible to support decision-making.
 - Supply chain managers are empowered and supported to take decisions.
 - Supply chain managers routinely make use of dashboards or similar tools to highlight areas requiring action.

50. Thanks for your time – after completing the survey, would you like to confirm, add or modify your previous comments about the challenges around human resource for logistics/supply chain roles within your organization?

APPENDIX 2 – FRENCH

Evaluation de la situation des ressources humaines de GAVI

Contexte du sondage

La stratégie de GAVI Alliance pour la chaîne d'approvisionnement des vaccins a été élaborée par les partenaires de l'Alliance en concertation avec les bureaux régionaux, les pays ainsi que d'autres partenaires œuvrant pour le développement en vue d'aider les pays à renforcer les domaines essentiels à la gestion efficace des chaînes d'approvisionnement de vaccins (SCM). Ce faisant, l'Alliance prévoit que les programmes PEV seront plus à même d'atteindre leurs objectifs stratégiques, à savoir assurer la disponibilité et une livraison plus efficace de vaccins à fort pouvoir immunisant.

Les objectifs de la stratégie visent à aider les pays à introduire efficacement de nouveaux vaccins afin d'en accroître la couverture et l'équité d'accès, qui sont liés à leur tour à une réduction des taux de mortalité des enfants de moins de cinq ans et à l'amélioration des résultats obtenus dans l'ensemble dans le domaine de la santé.

La stratégie promeut cinq éléments constitutifs fondamentaux—des plans d'amélioration continue, la conception de systèmes, la direction/les ressources humaines (RH) de la chaîne d'approvisionnement, les données de gestion, et de meilleurs équipements de chaîne du froid.

Ce projet vise à aborder l'élément « ressources humaines » de la stratégie susmentionnée en menant tout d'abord une évaluation afin de mieux comprendre la situation actuelle dans les pays et définir une ligne de référence, et pour aider ensuite les pays à élaborer une stratégie RH et un plan de mise en œuvre pour renforcer la chaîne d'approvisionnement des vaccins. Par ailleurs, ce sondage ambitionne de recenser les compétences, les rôles et les responsabilités du début à la fin de la chaîne d'approvisionnement.

Le but est que:

Les « pays » possèdent des dirigeants de chaînes d'approvisionnement spécialisés et compétents, ainsi que des personnels en nombre suffisant, qui soient qualifiés, compétents, responsabilisés, motivés et habilités à tous les niveaux du système de santé afin de relever les enjeux existant et émergeant des chaînes d'approvisionnement des vaccins ».

Aperçu des sections du sondage

Le sondage est structuré autour de 9 sections couvrant divers domaines de conduite et de gestion des ressources humaines:

- I. Données démographiques
- II. Direction et gestion de chaîne d'approvisionnement
- III. Organisation, politiques et procédures liées aux chaînes d'approvisionnement
- IV. Professionnalisation
- V. Formation et développement
- VI. Mesures incitatives et gestion des performances
- VII. Stratégie et plans de chaîne d'approvisionnement
- VIII. Données et prises de décision en matière de chaînes d'approvisionnement

Il vous faudra environ 30 minutes pour répondre au sondage.

I. Données démographiques

1. Q. Quel pays représentez-vous? Autre (veuillez spécifier)
2. Q. Pour quelle organisation travaillez-vous?
3. Q. Dans quel département travaillez-vous?
4. Q. Quel est votre intitulé d'emploi?
5. Q. Quel est votre sexe? (Homme, Femme, Autre)
6. Q. Quel est votre supérieur hiérarchique? (Veuillez indiquer l'intitulé d'emploi de votre supérieur hiérarchique)
7. Q. Quel est votre parcours professionnel?
8. Q. Quel est votre niveau d'études le plus élevé?
Diplôme de fin d'études secondaires,
Diplôme de collège, non universitaire,
Diplôme d'études professionnelles,
Diplôme universitaire de premier cycle,
Master,
Doctorat
9. Q. À quel niveau de votre organisation travaillez-vous? Autre (veuillez spécifier)
 - National
 - Régional
 - District
 - Point de prestation de services
 - Autres, veuillez préciser
10. Q: Combien de personnes avez-vous sous votre responsabilité?
 - 0
 - Moins de 10
 - Entre 10 et 50
 - Entre 50 et 100
 - Plus de 100
11. Q. De quels produits vous occupez-vous? Sélectionnez les éléments appropriés
 - Vaccins
 - VIH/paludisme
 - Santé reproductive
 - Médicaments essentiels généraux
 - Autre (veuillez préciser)
12. Q. Êtes-vous impliqué dans des
 - Vaccinations de routine
 - Campagnes
 - Les deux
13. Q. Un budget spécifique a-t-il été établi pour les opérations de chaîne d'approvisionnement et logistiques? (Oui/Non/Ne sais pas)
14. Q. Quel budget contrôlez-vous?

15. Q. Veuillez indiquer le pourcentage du budget qui est réellement affecté aux activités suivantes
- Coûts opérationnels* (dédouanement, entreposage, transport, vaccins)
 - Achat de nouvel équipement
 - Éducation et formation
 - Salaires
 - Supervision
 - Autre (veuillez préciser)

Coûts opérationnels: dédouanement, entreposage, transport, vaccins

16. Q. Si « Autre » a été choisi à la Question 15, veuillez préciser
17. Q. Quels sont, à votre avis, les enjeux majeurs pour les politiques de ressources humaines en ce qui concerne les postes de logistique/gestion de chaîne d'approvisionnement?

II. Direction et gestion de chaîne d'approvisionnement

18. Q. Votre pays a-t-il un gestionnaire attitré à la chaîne d'approvisionnement des vaccins ? (Si non, passez à la question 22)
(Oui/Non/ne sais pas)

Entendez-vous par gestionnaire de chaîne d'approvisionnement des vaccins, la personne chargée de gérer la chaîne d'approvisionnement des vaccins. Les autres expressions ou dénominations couramment utilisés qui ont une définition comparable sont les suivantes: gestionnaire/officier national logistique et de la chaîne de froid, Technicien/gestionnaire national de la chaîne du froid, Gestionnaire PEV, National Cold Chain and logistique Officer/manager.

Si Non, ou Ne sais pas, allez à la Question 22

19. Q. Si Oui, veuillez indiquer son nom et ses coordonnées
20. Q. Quelle place cette personne occupe-t-elle dans l'organisation?
21. Q. Cette personne a-t-elle des responsabilités à l'échelle nationale?
- Oui
 - Non
 - Ne sais pas
22. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants concernant les pratiques de ressources humaines pour la chaîne d'approvisionnement au niveau central (par exemple le ministère de la Santé) (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)
- La gestion de la chaîne d'approvisionnement est une priorité entièrement financée qui s'inscrit dans le plan stratégique des vaccinations du Ministère de la Santé.
 - Les personnels possédant une expertise en matière de chaîne d'approvisionnement* guident et influencent les décisions stratégiques sur la chaîne d'approvisionnement des vaccins et les décisions politiques, programmatiques et de financement du ministère de la Santé.
 - Un groupe de travail ou un comité national logistique/de chaîne d'approvisionnement constitué de multiples partenaires dirige et coordonne sous la direction du gouvernement (par exemple du Ministère de la Santé) les activités de chaîne d'approvisionnement des vaccins et les initiatives d'amélioration
 - Il existe des champions de haut niveau pour la gestion de la chaîne d'approvisionnement et le renforcement des capacités en ressources humaines

- Si un problème lié à la chaîne d'approvisionnement se présente, les personnels savent précisément qui est chargé de le régler
- La structure de la direction de chaîne d'approvisionnement est connue des personnels à tous les niveaux

sélection et quantification, acquisitions, stockage et distribution, utilisation, gestion des ressources, conception de systèmes

III. Organisation, politiques et procédures liées aux chaînes d'approvisionnement

23. Q. Veuillez décrire la structure organisationnelle de la chaîne d'approvisionnement/logistique
24. Q. Comment s'articule-t-elle avec la structure du Ministère de la Santé?
25. Q. Comment le niveau national se positionne-t-il par rapport au niveau régional, du district, et des niveaux inférieurs de la chaîne d'approvisionnement sur le plan des communications/responsabilités/du reporting?
26. Q. La structure organisationnelle de la chaîne d'approvisionnement soutient-elle de manière adéquate les fonctions de la chaîne d'approvisionnement et les exigences de livraison?* (Si Oui, comment? Si Non, pourquoi?)
27. Q. Existe-t-il un groupe de travail national sur la logistique ou la chaîne d'approvisionnement des vaccins? (Oui/Non/Ne sais pas)

Si Non ou Ne sais pas, passez à la question 32.

28. Q. Qui sont les membres du groupe?
29. Q. À qui ce groupe fait-il rapport?
30. Q. De quoi le groupe est-il responsable?
31. Q. Dans quelle mesure le travail du groupe est-il efficace?
27. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants concernant les pratiques de ressources humaines pour la chaîne d'approvisionnement au sein de votre organisation ou pour la chaîne d'approvisionnement (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)
 - Un plan stratégique qui aborde les exigences en ressources humaines pour les fonctions et les personnels de la chaîne d'approvisionnement est en place et pleinement mis en œuvre à tous les niveaux.
 - Des politiques claires et détaillées de ressources humaines (y compris pour le personnel de chaîne d'approvisionnement) sont disponibles et pleinement mises en œuvre.
 - Des postes budgétaires distincts et permanents existent pour les activités de renforcement des ressources humaines de la chaîne d'approvisionnement (c'est-à-dire salaires, formation, accompagnement, et gestion des performances) au niveau national avec un budget alloué.
 - Des postes budgétaires distincts et permanents existent pour les activités de renforcement des ressources humaines de la chaîne d'approvisionnement à des niveaux inférieurs (états, régions, districts, points de prestation de services) avec un budget alloué.
 - Les barèmes salariaux des postes de chaîne d'approvisionnement sont bien définis et facilement accessibles par tous les personnels.

- Les Procédures opérationnelles standard pour les tâches de la chaîne d'approvisionnement sont disponibles et utilisées à tous les niveaux.

IV. Professionnalisation

33. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)
- Dans mon pays il y a suffisamment de travailleurs qualifiés pour pourvoir les postes de chaîne d'approvisionnement sanitaire.
 - Dans mon pays les tâches liées à la chaîne d'approvisionnement sanitaire sont normalement accomplies par les pharmaciens ou les travailleurs de santé.
 - Dans mon pays les personnels exerçant des fonctions dans la chaîne d'approvisionnement sanitaire ont des certifications en gestion de la chaîne d'approvisionnement.
 - Dans mon pays les tâches liées à la chaîne d'approvisionnement sont réalisées de manière aléatoire.
34. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)
- Une autorisation ou certification professionnelle pour travailler à un poste de gestion de chaîne d'approvisionnement est définie, approuvée et administrée, et il s'agit d'une condition requise pour un poste de logistique ou de chaîne d'approvisionnement sanitaire.
 - La gestion de la chaîne d'approvisionnement fait obligatoirement partie du programme d'études pour les élèves infirmiers, les techniciens de laboratoire, les étudiants en médecine, en pharmacie et en politique sanitaire menant à un diplôme universitaire ou un diplôme.
 - Les tâches de la chaîne d'approvisionnement s'inscrivent dans le cadre d'une fonction officielle de la chaîne d'approvisionnement et sont accomplies par un gestionnaire attitré à la chaîne d'approvisionnement, qui est formellement formé.
 - Une association reconnue sur le plan international et/ou local en matière de chaîne d'approvisionnement/logistique est établie avec des sections locales et est présente dans le pays.
35. Q. Quelles sont les normes éducationnelles minimales ou souhaitées pour les postes de gestion de la chaîne d'approvisionnement/logistique?

V. Formation et développement

36. Q. Veuillez indiquer sur une échelle de 1 à 5 les domaines qui nécessitent à votre avis un renforcement des capacités pour améliorer la logistique/la gestion de la chaîne d'approvisionnement. (1 = Pas du tout, 5 = beaucoup)
- Sélection et quantification: Les compétences qui sont nécessaires à la sélection et la quantification des produits corrects pour satisfaire les demandes des programmes (1)
 - Acquisitions: Les compétences nécessaires à l'acquisition des fournitures requises dans le cadre du budget disponible et à la gestion des relations avec les fournisseurs (2)
 - Stockage et distribution: Les compétences nécessaires à la gestion d'entrepôts et d'inventaires, et à la distribution aux installations (3)
 - Utilisation: les compétences pour que les produits soient administrés jusqu'au point d'utilisation conformément aux réglementations nationales/internationales, afin d'assurer les meilleurs résultats possibles (4)
 - Gestion des ressources: Les compétences nécessaires pour gérer les fonds, les ressources humaines, l'information et l'infrastructure pour que le système fonctionne efficacement (5)

- Professionnel et personnel: Les compétences nécessaires pour gérer les responsabilités courantes ainsi que les perspectives de carrière, les compétences de communication et de gestion du temps (6)
- Conception des systèmes: Les compétences nécessaires pour évaluer l'efficacité de la chaîne d'approvisionnement, et cela en tenant compte de tous les éléments en vue de créer un système flexible et optimisé (7)

prévisions et planification de l'approvisionnement en vaccins et en produits consommables, évaluation et planification des capacités nécessaires à la chaîne du froid, prévisions et sélection des équipements de chaîne du froid, technologies et innovation

achat de vaccins, procédures d'arrivée, sélection et achat d'équipements de la chaîne du froid (y compris appareils de contrôle de la température, régulateurs de tension et stabilisateurs)

manipulation et gestion des vaccins (y compris la gestion des stocks), contrôle de la température, planification des distributions, transport, organisation de la chaîne du froid, distribution d'équipements de chaîne du froid, préparation et installation de la chaîne du froid

manipulation et gestion des vaccins, formation des utilisateurs, entretien de la chaîne du froid (préventif et correctif), planification et programmes d'entretien, contrôle de la température, élimination des équipements et des appareils de la chaîne du froid

gestion des vaccins, gestion de la chaîne du froid; planification des capacités pour la chaîne du froid, entretien et réhabilitation, gestion des stocks de la chaîne du froid, formation et supervision, élaboration et actualisation des Procédures opérationnelles standard, suivi et supervision, budgétisation

communication, résolution des problèmes, amélioration des processus, innovation, planification et organisation, travail en équipe, gérer, superviser et mentorer les ressources humaines compréhension de la modélisation, transport efficace, utilisation optimale des équipements de la chaîne du froid, gestion du changement et leadership pour préconiser les systèmes optimisés

37. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)

- La progression pour les professionnels de la gestion de la chaîne d'approvisionnement est transparente dans mon organisation
- J'ai accès aux programmes de formation parrainés par l'organisation dont j'ai besoin pour accomplir mon travail
- Il existe un choix suffisant de programmes liés à la chaîne d'approvisionnement auxquels je peux avoir accès
- Il existe un choix suffisant de programmes liés à la chaîne d'approvisionnement sanitaire auxquels je peux avoir accès.
- J'ai suivi une formation formelle et parrainée sur les chaînes d'approvisionnement au cours des 12 derniers mois.
- Il existe au niveau central une unité de formation qui influence le contenu des formations sur la logistique/chaîne d'approvisionnement, et qui veille à ce que les programmes de formation soient reliés aux modèles de compétences.
- Une stratégie de formation identifiant les opportunités d'éducation disponibles pour tous les postes de la chaîne d'approvisionnement est en place.

38. Q. Avez-vous une certification de logistique/gestion de chaîne d'approvisionnement? (Oui/Non)

39. Q. Si Oui, laquelle?

Si Non, passez à la question 42

40. Q. Réfléchissez au dernier stage de formation sur la chaîne d'approvisionnement auquel vous avez participé. Êtes-vous d'accord avec les énoncés suivants? (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)

- Le matériel dispensé était facile à suivre.
- La taille de la classe était adéquate pour promouvoir l'interaction et l'apprentissage actif.
- Le matériel était adapté à mon contexte local.
- L'apprentissage était consolidé à l'issue de chaque session.
- J'avais l'impression que je pourrai appliquer l'apprentissage à mon travail.

41. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)

- Les compétences nécessaires pour gérer la chaîne d'approvisionnement (sélection et quantification, acquisitions, stockage et distribution, utilisation, gestion des ressources, compétences professionnelles et personnelles, conception des systèmes) sont définies et spécifiées pour chaque niveau.
- Il existe un processus structuré pour la gestion et l'appréciation de performances liées aux compétences de gestion de chaîne d'approvisionnement.
- Les travailleurs de santé possèdent des connaissances formelles de la chaîne d'approvisionnement.
- Il existe des critères clairs pour l'avancement de carrière des personnels de la chaîne d'approvisionnement.

VI. Mesures incitatives et gestion des performances

42. Q. Veuillez indiquer votre accord ou votre désaccord avec les suggestions suivantes pour améliorer la performance logistique/de la chaîne d'approvisionnement de l'organisation (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)

- Améliorer les salaires et les conditions contractuelles
- Fournir au département logistique une plus grande visibilité des besoins et des plans des programmes opérationnels
- Élaborer un système SIGL et améliorer la visibilité des données
- Mesurer à l'aide d'indicateurs la performance de la chaîne d'approvisionnement afin de pouvoir prouver l'impact opérationnel de sa fonction

43. Q. Un système pour mesurer la performance de la chaîne d'approvisionnement est-il en place, avec de clairs indicateurs? (Oui/Non/Ne sais pas)

44. Existe-t-il une procédure claire pour apprécier les performances et cette appréciation est-elle réalisée régulièrement? (Oui/Non/Ne sais pas)

45. Q. Pouvez-vous fournir des exemples de mesures incitatives pour le personnel de la chaîne d'approvisionnement?

46. Q. Des visites de supervision de soutien programmées sont-elles organisées pour le personnel de la chaîne d'approvisionnement? (Oui/Non/Ne sais pas)

47. Q. Les Procédures opérationnelles standard sont-elles utilisées pour orienter ces visites? (Oui/Non/Ne sais pas)

48. Q. Un suivi est-il fait avec un mentorat et un encadrement adéquat pendant le processus? (Oui/Non)

VII. Mise en œuvre de la stratégie de la chaîne d'approvisionnement

49. Q. Le Ministère de la Santé a-t-il une stratégie en place pour la logistique de la chaîne du froid/chaîne d'approvisionnement des vaccins? (Oui/Non/Ne sais pas)
50. Q. La stratégie de la chaîne d'approvisionnement inclue-t-elle des activités pour renforcer la capacité RH? (Oui/Non/Ne sais pas)
51. Q. Quelles sont les activités couvertes par cette stratégie ou par d'autres plans de renforcement des capacités?

VIII. Données de la chaîne d'approvisionnement: accès, disponibilité et prises de décisions

52. Q. Quel système utilisez-vous pour recueillir des données sur la performance de la chaîne d'approvisionnement (par exemple niveau des stocks, inventaire, consommation) au niveau national, régional, du district et des installations de santé?
53. Q. Existe-t-il un logiciel SIGL automatisé?
54. Q. Existe-t-il un budget pour le développement de logiciels, la formation et l'entretien? (Oui/Non/Ne sais pas)
55. Q. Veuillez indiquer votre accord ou votre désaccord avec les énoncés suivants concernant la visibilité des données dans la chaîne d'approvisionnement (1 = fortement d'accord, 2 = d'accord, 3 = sans avis, 4 = pas d'accord, 5 = pas du tout d'accord)
- Les défaillances de la chaîne d'approvisionnement, par exemple ruptures de stock, peuvent être identifiées rapidement.
 - Un format standard existe pour les données de la chaîne d'approvisionnement.
 - Le recueil des données, les indicateurs de performance clé (KPI) et les protocoles pour les rapports sont clairement définis.
 - Les données des achats ou du carnet de commandes sont reliées aux données des stocks.
 - Les données sont disponibles de manière adéquate et elles sont facilement accessibles pour soutenir les prises de décisions.
 - Les gestionnaires de chaîne d'approvisionnement sont responsabilisés et soutenus pour prendre des décisions.
 - Les gestionnaires de chaîne d'approvisionnement recourent de manière routinière aux tableaux de bord ou à des outils similaires pour souligner les domaines nécessitant une intervention.

C'était la dernière question. Merci d'avoir pris le temps de répondre à cet important sondage.



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