

PEOPLE that DELIVER

MEETING TOMORROW'S HEALTH CHALLENGES THROUGH WORKFORCE EXCELLENCE IN SUPPLY CHAIN MANAGEMENT



People that Deliver Health Supply Chain Competency Framework for Managers & Leaders

February 2015

An activity of the People that Deliver Initiative through the Gavi People and Practice Priority Working Group with the assistance of UPS.

People that Deliver

Health Supply Chain Competency Framework for Managers & Leaders

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The validation of a competency framework is only possible with engagement of professionals who are active in the field in a variety of country contexts. To this end we would like to thank the broader membership of the International Association of Public Health Logisticians (IAPHL) and People that Deliver who so generously took time to provide feedback on the framework.

For enquiries regarding this document please contact info@peoplethatdeliver.org

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Background and introduction

The People that Deliver (PtD) Initiative's mission is "to build global and national capacity to implement evidence-based approaches to plan, finance, develop, support and retain the national workforces needed for the effective, efficient and sustainable management of health supply chains". One of its strategic goals is to achieve "global recognition that strong supply chains are essential for positive health outcomes and require a competent, recognized and supported supply chain workforce with significant technical and managerial capacity." In order to build this supply chain workforce, the required supply chain tasks and accompanying knowledge, skills and abilities (competencies) must be mapped out in a supply chain with the goal that professional education and certifications develop these competencies and build cadres of staff to fill those positions (www.peoplethatdeliver.org).

Recognizing the importance of in-country health supply chains to meet their aims, the GAVI Alliance partners, GAVI Secretariat, WHO, UNICEF and the Bill & Melinda Gates Foundation have developed a supply chain strategy to increase investment in supply chains, coordinate global activities on the issue, and ensure that more children receive the vaccines they need. The five components of the strategy include: Leaders, Plans, Data, Cold Chain Equipment, with System Design for selected countries.

Within the People and Practice component of the strategy, the development of immunization supply chain leaders has been identified as a key activity, with a Competency Framework for health supply chain leadership an initial key requirement.

It is envisaged that this competency framework for supply chain managers and leaders will be relevant across all health supply chains including the vaccine supply chain.

Competency terminology and definitions

Internationally, the use of competency-related terminology can vary and so the following definitions are offered here for explanation:

Competency compendium: is a comprehensive catalogue of competency areas with associated behavioural competencies compiled from a number of frameworks.

E.g. 'PtD Competency Compendium for Health Supply Chain Management 2014'

(<http://www.peoplethatdeliver.org/sites/peoplethatdeliver.org/files/Feb%2014th%20FINAL%20PtD%20Public%20Health%20SCM%20Competency%20Compendium%20with%20ISBN%20and%20CC%20and%20publisher.pdf>) The competency areas referenced within the PtD compendium are not outlined by particular cadres (i.e. a warehouse manager, dispensing officer, etc.), but, rather, are listed by particular supply chain functions to allow users to select the competencies relevant to their cadres and levels of the supply chain.

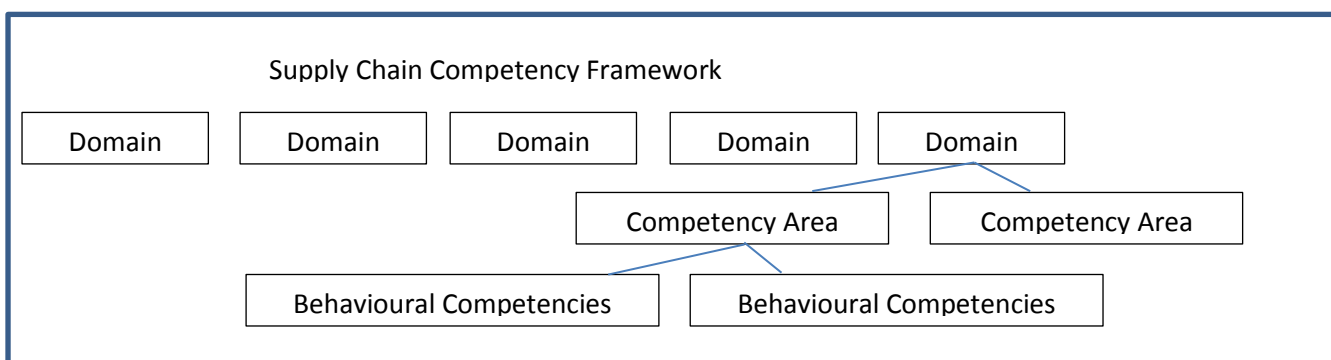
Domains: are the high level groups, or clusters, of competency areas within a given competency framework. Traditionally domains do not exceed six. The six domains used in this framework are: *Professional/personal, Resource management, Selection and quantification, Procurement, Storage and distribution, and Use.*

Competency area: concerns the overarching capacity/skills of a person to perform in a specific area. E.g. Within the domain of Procurement, PtD has suggested 10 competency areas: *Manage procurement costs and budget, Build and maintain supplier relationships, Manage tendering processes and supplier agreements, Undertake contract management and risk management, Assure quality of products, Manage import and export of products, Manage donations of products, Prepare for product supply during disasters and emergencies, Undertake or manage manufacturing or compounding of products.*

Behavioural competencies: are expressions of what an individual does and is observed when effective performers apply motives, traits and skills to a relevant task. E.g. For the domain of 'Procurement', and the competency area of 'Manage tendering processes and supplier agreements,' such behavioural competencies may include: 'Develop bidding documents', 'Use WHO prequalification system to confirm quality suppliers', 'Manage a tender process using country systems', 'Formalise contracts with successful companies' etc.

Competency framework: is a collection of competency areas with associated behavioural competencies which define the expected requirements of a particular cadre. E.g. A competency framework may be developed for a warehouse manager, while a separate competency framework would be required for a hospital pharmacist. The composition of country-based, cadre-specific competency frameworks will also depend on the structure of the supply chain and at which levels various competencies are allocated. This leadership competency framework focuses on Level 2 and 3 of the health supply chain.*

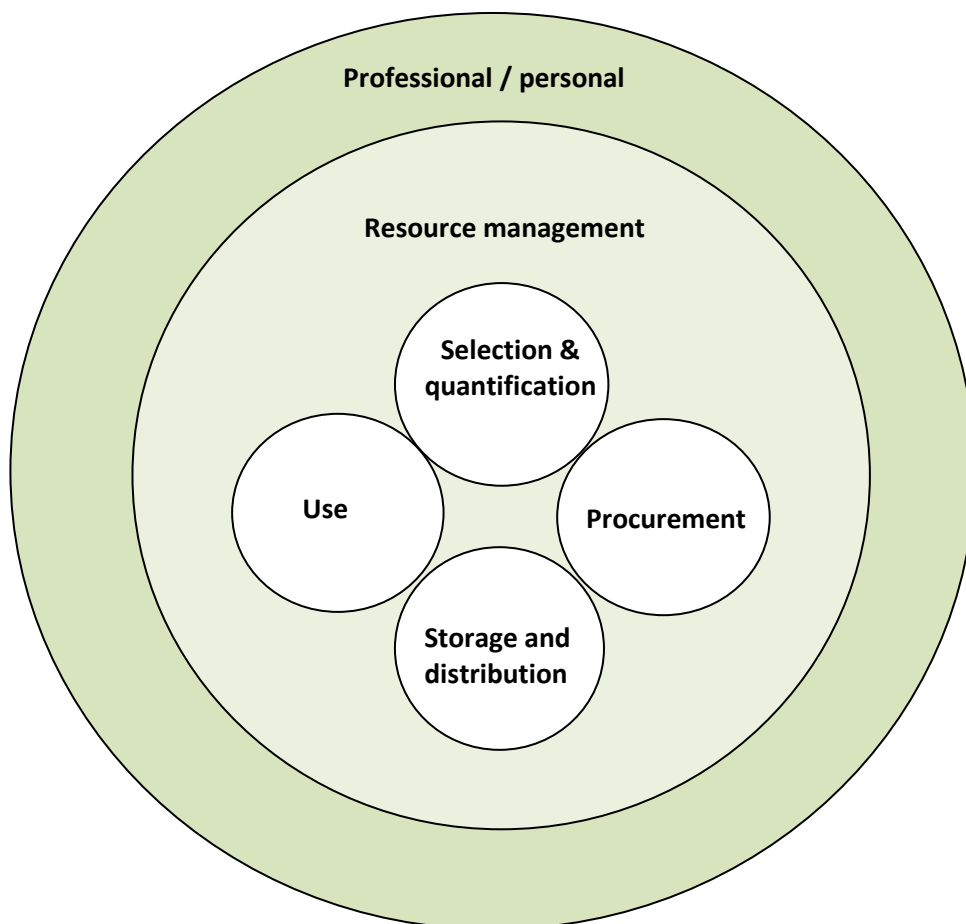
Figure 1. The structure of competency frameworks



*** Explanation of supply chain levels:**

- Level 1 workers supply medical supplies to patients at service delivery points. They are responsible for storage and may be responsible for forecasting, ordering, receipt and disposal of medical supplies depending on their role. Examples include nurses and village health workers at aid posts, health centres and dispensaries and dispensers at hospitals.
- Level 2 workers supply medical supplies to Level 1 workers or other Level 2 workers and may supply directly to patients depending on their location and role. They have a wider range of responsibilities than Level 1 workers in terms of managing the distribution of medical supplies to dependent facilities and typically are responsible for forecasting, ordering, receipt, storage and disposal of medical supplies. Examples include pharmacists and other pharmacy staff at provincial hospitals, store personnel at area medical stores or transit stores and nurses at larger health centres or dispensaries who supply smaller dependent facilities.
- Level 3 workers forecast, procure and distribute medical supplies at a country level, enabling supply to Level 2 and Level 1 and may also supply directly to patients depending on their location and role. They may influence national medicine policies and guidelines and have financial and managerial roles. Examples include country principal pharmacists, senior pharmacists, health program coordinators and national medical stores managers, principal nursing officers, supply managers, logistics officers, procurement officers and pharmaceutical advisers.

Figure 2. The relationship of the six domains within the PtD Public Health Supply Chain Competency Compendium



Methodology

This 'PtD Health Supply Chain Competency Framework for Managers and Leaders' was developed through the following three step process:

1. Formation of a draft competency framework

The following four inputs were used to develop the draft competency framework:

- i. PtD Competency Compendium for Health Supply Chain Management (2014): (<http://www.peoplethatdeliver.org/sites/peoplethatdeliver.org/files/Feb%2014th%20FINAL%20PtD%20Public%20Health%20SCM%20Competency%20Compendium%20with%20ISBN%20and%20OCC%20and%20publisher.pdf>),
- ii. Proceedings of the USAID SCM Leadership workshop January 2014 summary (provided by USAID),
- iii. IAPHL discussion forum on the '7 Habits of a Supply Chain Professional': (<http://www.peoplethatdeliver.org/sites/peoplethatdeliver.org/files/7%20Habits%20of%20highly%20effective%20health%20supply%20chain%20professionals%20Final%20July.pdf>)
- iv. A UPS Secondee to Gavi reviewed the initial draft copy of the framework for alignment with private sector practices.

Using the structure of the PtD Competency Compendium for Health Supply Chain Management, a draft competency framework was developed and the language reviewed to ensure suitability in a wide range of international contexts where English may be a second language.

2. Initial focus group validation

The two Management Domains: 'Five Resource Management' and 'Six Professional and Personal' were reviewed by 120 participants at the PtD leadership workshop on the 28th of October 2014, Copenhagen, Denmark (<http://www.peoplethatdeliver.org/content/scm-leadership-workshop#overlay-context=media/369>).

3. Online validation

The revised framework was validated internationally through the use of an online survey tool. Participants were asked to rate each behaviour using a four point categorical scale based on relevance to what is expected of a health supply chain leader in their country context: Highly Relevant, Relevant, Low Relevance, Not Relevant.

Each behaviour has been given a 'Relevance Value' that ranges between 1 (Not Relevant) and 4 (Highly Relevant). This value is the averaged result as determined by the online validation process with 'n' indicating the number of respondents who contributed to the validation of that behaviour through the online tool.

This methodology builds on the methodology used by Brown for similar work developing a competency framework for pharmaceutical services in the Pacific Islands.¹

¹ Andrew Brown. PhD Thesis. New tools for culturally appropriate training, to develop competency in Pacific Island Countries in pharmaceutical healthcare service delivery
<http://www.canberra.edu.au/researchrepository/items/faa38e11-70ee-2fc7-9e8f-a6bd274b7d64/1/>

Brown, A. Gilbert, B. Bruno, A. (2012) Using participatory action research to develop an essential medicine supply competency framework for primary health care personnel in Pacific Island Countries International Journal of Nursing 1 , 2 2012
<http://www.ijnonline.com/index.php/ijn/article/view/23>

Brown, A. Gilbert, B. Bruno, A. Cooper, G. (2012) Validated Competency Framework for Delivery of Pharmacy Services in Pacific-Island Countries J Pharm Pract Res 2012; 42: 268-72.
<http://search.informit.com.au/documentSummary;dn=059218138673435;res=IELHEA>

Results

A validated competency framework for managers and leaders of health supply chains is presented. The framework contains six domains and 33 competency areas.

The results of the online validation process are presented in four sections below.

- i. **High level summary of Domains and Competency Areas**
- ii. **Domains, Competency areas and the most relevant Behaviours**
- iii. **Domains, Competency areas and all validated Behaviours**
- iv. **Demographic profiles for each of the surveys**

i. **High level summary of domains and competency Areas**

The Competency Framework is presented by domain. Under each 'Domain' you will find a table outlining the 'Competency' and 'Behavioural competency':

Table 1: Relationship between Domain, Competency and Behavioural Competencies

Domain #

## Competency	Behavioural Competencies
Overarching capacity/skills of a person to perform in a specific area. <i>These competencies will be numbered sequentially with the Domain # for easier reference.</i>	Expressions of what an individual does and is observed when effective performers apply motives, traits and skills to a relevant task

The framework outlines six domains for supply chain management and each of them have groups of competencies linked to them. Table 2 briefly describes each of the domains and Table 3 summarises the high level Competency areas included in each domain. The six domains considered in this framework have been further subdivided into 'Technical' and 'Management' Domain groupings (Table 2). The structure of this PtD Health Supply Chain Competency Framework for Managers and Leaders is based on the structure used in the PtD Health Supply Chain Competency Compendium 2014.

Table 2: Domain descriptions

	Domain	Domain plain language description
Technical Domains	1. Selection & 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).
	2. Procurement	The competencies that are required by a worker to be able to procure the supplies needed for their work situation.
	3. Storage & 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.
	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.
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.
	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.

Table 3: Summary list of domains and competency areas

	Domain	Competency
Technical	1. Selection & Quantification	1.1 Select the appropriate product
		1.2 Define the specifications and quality of the product
		1.3 Take into account any special considerations for the product
		1.4 Forecast and quantify product needs
	2. Procurement	2.1 Manage procurement costs and budget
		2.2 Build and maintain supplier relationships
		2.3 Manage tendering processes and supplier agreements
		2.4 Undertake contract management and risk and quality management
		2.5 Assure quality of products
		2.6 Manage import and export of products
		2.7 Manage donations of products
		2.8 Prepare for product supply during disasters and emergencies
		2.9 Undertake or manage manufacturing or compounding of products
		2.10 Undertake or manage re-packing of products
	3. Storage & Distribution	3.1 Undertake storage, warehousing and inventory management
		3.2 Supply commodities to facilities
3.3 Manage transport for commodities		
3.4 Manage disposal of products		
3.5 Dispense or provide commodities to patients/users		
4. Use	4.1 Understand use of medical products including medicines and equipment	
Management	5. Resource Management	5.1 Manage, plan and implement projects
		5.2 Manage resources and financial activities
		5.3 Oversee human resources (e.g. recruitment, training, team management/supervision)
		5.4 Implement quality assurance and risk management activities
		5.5 Recognise and understand the complementary requirements of a sustainable supply chain management (SCM) system
		5.6 Oversee and/or support operation of a Logistic Management Information System (LMIS)
		5.7 Manage outsourcing SCM functions
	6. Professional and Personal	6.1 Demonstrates basic generic skills (e.g. literacy, numeracy, technology)
		6.2 Demonstrates strong communication skills
		6.3 Utilizes problem solving skills
		6.4 Exhibits professional and ethical values
		6.5 Proves leadership abilities
		6.6 Abides by rules/laws/legislation

ii. Domains, competency areas and the most relevant behaviours

Technical. Selection and Quantification: Domain 1 (most relevant behaviours only)

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).

Competency	Behavioural competencies	Relevance value /4 (n=85)
1.1 Select the appropriate product	Describe the broad concepts of National Medication Policy, Essential Medicines Lists, Essential Equipment lists, Standard Treatment Guides and “Dangerous Drug” (DDA) or narcotics policy	3.53
1.2 Define the specifications and quality of the product	Advise on specifications for procurement	3.47
1.3 Take into account any special considerations for the product (e.g. temp. requirements, size, implications for infrastructure)	Working knowledge of cold chain or temperature sensitive requirements	3.60
1.4 Forecast and quantify product needs	Effectively reconcile needs with available funds	3.59

Technical. Procurement: Domain 2 (most relevant behaviours only)

The competencies that are required by a worker to be able to procure the supplies needed.

Competency	Behavioural competencies	Relevance value /4 (n=75)
2.1 Manage procurement costs and budget	Working knowledge of public procurement regulations	3.47
2.2 Build and maintain supplier relationships	Develop and implement supplier relationship management plans (e.g. sourcing, frequency of meetings, negotiate and monitor benchmarks for performance, etc.)	3.44
2.3 Manage tendering processes and supplier agreements	Ensure ethical behaviour with no conflict of interest	3.60
2.4 Undertake contract management and risk and quality management		
2.4.1 Place commodity orders	Monitor and manage the national commodity pipeline	3.49
2.4.2 Addresses risk and ensures quality management	Develop and implement contingency plan for shortages	3.51
2.5 Assure quality of products	Ensure health commodities are not counterfeit and meet quality standards	3.59
2.6 Manage import and export of products	Demonstrates knowledge about international business processes (e.g. shipping, air cargo, clearing and forwarding, financial transactions, business ethics)	3.47
2.7 Manage donations of products	Working knowledge of the national donations policy referring to appropriate ministry for advice	3.28
2.8 Prepare for product supply during disasters and emergencies	Describe the procurement and logistic requirements for emergency and disaster supply	3.40
2.9 Undertake or manage manufacturing or compounding of products	Compound under the good manufacturing practice for pharmaceutical (GMP) medicines	2.76
2.10 Undertake or manage re-packing of products	Demonstrate a safe system for repacking	3.00

Technical. Storage and Distribution: Domain 3 (most relevant behaviours only)

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.

Competency	Behavioural competencies	Relevance value /4
3.1 Undertake storage, warehousing and inventory management	Efficiently distribute products among suppliers, distribution centres, warehouses and customers through a logistics network	3.61 (n=74)
	Develop and follow organization processes, instructions, rules, and parameters for warehouse and inventory management and use of equipment (e.g. annual stock turns, expiry date tracking, stock procurement,	3.61 (n=74)
3.1.1 Manage storage of commodities during disasters	Conduct a rapid assessment of logistical needs in emergencies	3.31 (n=74)
3.2 Supply commodities to facilities	Develop and implement a formal logistics strategy and plan including scheduling	3.58 (n=73)
3.3 Manage transport for commodities	Demonstrate knowledge of policies and procedures related to handling and transporting special products such as vaccines, HIV/AIDS drugs, other high value products and narcotics	3.52 (n=73)
3.3.1 Manage transport for commodities during disaster	Working knowledge of the different types of transport and their characteristics for emergency or disaster supply	N/A
3.4 Manage disposal of products (e.g. expired, damaged, redundant products)		
3.4.1 Define and direct process for managing redundant and returned stock	Describe and/or demonstrate recall procedures to be used in response to a product recall notice or to access the information promptly.	3.39 (n=72)
3.4.2 Manage process for disposal of returned stock	Dispose of expired medications and/or medical equipment according to national policy	3.43 (n=72)
3.5 Dispense or provide commodities to patients/users (i.e. ensuring the product goes “the last metre” appropriately)	List which medicines are allowed to be prescribed by different prescribers and how this is monitored	3.08 (n=72)

Technical. Use: Domain 4 (most relevant behaviours only)

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.

Competency	Behavioural competencies	Relevance value /4
4.1 Understand use of medical products including medicines and equipment (e.g. safety, dispensing protocols, standard treatment/testing guidelines)	Identify medicines by their generic name and medical equipment by their common names, have a general understanding of what various medicines and medical equipment are used for.	3.25 (n=71)

Management. Resource Management: Domain 5 (most relevant behaviours only)

The competencies that are required by a worker to be able to manage money/people etc., to ensure the system work effectively.

Competency	Behavioural competencies	Relevance rating/4
5.1 Manage, plan and implement projects	Ability to create project or an operational plan that is consistent with the organization's strategic plan that links specific goals to the strategies, and that identifies the key performance indicators to be used to measure progress	3.67 (n=146)
5.1.1 Execute strategic decision making	Identify the key constraints of a complex issue and quickly develop solutions	3.59 (n=135)
5.1.2 Manage partnerships	Understand the roles and function of government agencies in regulating and supporting supply chain organizations	3.66 (n=128)
5.1.3 Direct/Participate in team work	Work with team members to establish achievable goals and strategies that are consistent with those of organization	3.75 (n=119)
5.2 Manage resources and financial activities	Identify and reduce or eliminate waste in all areas of a supply chain	3.57 (n=116)
5.3 Oversee human resources (e.g. recruitment, training, team management/supervision)		
5.3.1 Recruit staff	Orientate new staff to the workplace explaining standard operating systems and procedures	3.39 (n=114)
5.3.2 Train and retain staff	Ensure members of staff have the necessary skills and understanding for safe work practices	3.68 (n=114)
5.3.3 Supervise and retain staff	Provide feedback, encouragement and support to team members	3.68 (n=110)
5.4 Implement quality assurance and risk management activities		
5.4.1 Ensure quality assurance activities are taking place across the supply chain	Develop key performance indicator measurements	3.59 (n=108)
5.4.2 Oversee risk management	Describe the risks affecting supply, transformation, delivery, and customer demand	3.54 (n=108)
5.5 Recognise and understand the complementary requirements of a sustainable SCM system (i.e. to work, a system also needs the right tools, infrastructure and funding alongside workers with these competencies)	Understand that supply chains and logistics are a system of organizations, people, technology, activities, data/information, funds and other resources involved in moving a product from supplier to customer	3.71 (n=106)
	Know the characteristics unique to health logistics and supply chain and demonstrate an awareness of the factors that could contribute to or hinder the delivery of logistic services	3.71 (n=106)
5.6 Oversee and/or support the operation of a Logistic Management Information System (LMIS)	Monitor the supply pipeline and assess stock status	3.57 (n=106)
5.7 Manage outsourcing of SCM functions	Effectively negotiate and manage contracts with outside parties for the delivery of logistics and supply chain services	3.52 (n=106)

Management. Professional and Personal: Domain 6 (most relevant behaviours only)

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.

Competency	Behavioural competencies	Relevance rating/4
6.1 Demonstrates basic generic skills (e.g. literacy, numeracy, technology)		
6.1.1 Exhibits high understanding of literacy and numeracy	Formulate and communicate information, ideas and opinions clearly in written and verbal form	3.74 (n=86)
6.1.2 Has a command of technology	Use technology to maximise both effectiveness and efficiency	3.57 (n=79)
6.2 Demonstrates strong communication skills	Be truthful, trustworthy and supply accurate information at all times	3.81 (n=79)
6.2.1 Practices cultural awareness	Promote cultural awareness and sensitivity treating all people with fairness, respect and dignity	3.58 (n=78)
6.3 Utilizes problem solving skills	Critically review, analyse, synthesize, compare and interpret information; draw conclusions from relevant and/or missing information; understand the relationship among facts and apply this understanding when	3.70 (n=77)
6.3.1. Negotiates	Model solution-focussed approaches to further the mission of the organisation	3.47 (n=76)
6.3.2 Practices effective time management	Demonstrate good practice for the team in terms of timekeeping, meeting targets and deadlines in an effective way	3.72 (n=76)
	Establish priorities according to team and project goals	3.72 (n=76)
6.4. Exhibits Professional and Ethical values		
6.4.1 Demonstrates Integrity	Accept responsibility for own work tasks, performance and emotions	3.74 (n=76)
	Recognise that the leader is the role model for others to follow	3.74 (n=76)
6.4.2 Engages in continuous professional development	Continuously seeks out opportunities to learn and integrate new knowledge and skills into their work	3.53 (n=74)
6.5 Proves leadership abilities	Be a role model, inspire others through professional excellence, innovation and communication	3.72 (n=74)
6.5.1 Demonstrates resilience and ability to manage stress	Ability to see the bigger picture and help others to do the same	3.58 (n=74)
6.6 Abides by rules/laws/ legislation	Comply with the legislation that covers the practice of public health supply chains and health care and describe its purpose	3.69 (n=72)

iii. Domains, competency areas and all validated behaviours

Technical. Selection and Quantification: Domain 1 (all behaviours)

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).

Competency	Behavioural competencies	Relevance value /4
1.1 Select the appropriate product		(n=85)
	Describe the broad concepts of National Medication Policy, Essential Medicines Lists, Essential Equipment lists, Standard Treatment Guides and “Dangerous Drug” (DDA) or narcotics policy	3.53
	Use the processes required to add and subtract items from the Essential Medicines List and the Essential Equipment list	3.14
	Follow the processes required to alter standard treatment guidelines, dangerous drug policy and national medication policy	3.14
	Confirm the type of supplies and services that are required	3.36
1.2 Define the specifications and quality of the product		(n=85)
	Advise on specifications for procurement	3.47
	Describe the characteristics of a good specification	3.42
	Describe the procurement staff responsibilities in the specification process	3.45
1.3 Take into account any special considerations for the product (e.g. temperature requirements, size, implications for infrastructure)		(n=80)
	Describe the principles and processes of category management including market segmentation principles	3.10
	Demonstrate knowledge about exceptional considerations in the quantification of program-specific products (e.g. ARVs, family planning commodities, vaccines etc.)	3.49
	Working knowledge of other special handling requirements (e.g. controlled substances, security)	3.39
	Working knowledge of cold chain or temperature sensitive requirements	3.60
	Working knowledge of country regulatory environment	3.53
	Working knowledge of current international trends in commodity availability	3.23
1.4 Forecast and quantify product needs		(n=80)
	Identify the factors that affect usage patterns of medication and equipment and how this affects ordering (e.g. disease outbreaks), using national policies as a guide ensuring consistent application	3.56
	Working knowledge of the critical requirements for effective forecasting: establishing time horizons, level of detail, use of data	3.56
	Establish policies and procedures for forecasting control	3.45
	Quantify product requirements using a variety of methods	3.38
	Demonstrate knowledge about various tools used in quantification (e.g. quantification software)	3.33
	Effectively use various data sources for commodity forecasting (e.g. consumption data, services data, demographic data, etc.)	3.50
	Effectively reconcile needs with available funds	3.59
	Establish key performance indicators of forecasting accuracy	3.49

Technical. Procurement: Domain 2 (all behaviours)

The competencies that are required by a worker to be able to procure the supplies needed.

Competency	Behavioural competencies	Relevance value /4
2.1 Manage procurement costs and budget		(n=75)
	Working knowledge of public procurement regulations	3.47
	Demonstrate sound understanding and application of financial and management accounting practices within procurement	3.23
	Working knowledge of commercial factors which contribute towards cost reduction, price savings and value improvement opportunities	3.32
	Working knowledge of the principles of foreign exchange rates and impact on price	3.07
	Describe the different funding options that are available	3.16
2.2 Build and maintain supplier relationships		(n=75)
	Develop and implement supplier relationship management plans (e.g. sourcing, frequency of meetings, negotiate and monitor benchmarks for performance, etc.)	3.44
	Working knowledge and ability to monitor the processes for prequalification and tender contracting	3.43
	Develop and maintain long-term relationships with trading partners who can help the purchaser meet profitability and customer satisfaction goals	3.21
	Working knowledge of the difference between strategic and non-strategic suppliers and the associated supplier management principles	3.25
	Describe a good supplier	3.37
2.3 Manage tendering processes and supplier agreements		(n=75)
	Manage or participate in procurement planning and develop a wide range of briefs, specifications and commercial documentation	3.40
	Engage clients across the public sector in presentations demonstrating benefits of a range of strategic projects designed to ensure cost savings and value for money for government procurement	3.13
	Provide high level guidance for high-value and politically-sensitive procurements	3.44
	Facilitate the process of developing and managing contracts	3.31
	Possessing working knowledge of appropriate legislation and policy in regard to procurement processes, and what is required to comply	3.44
	Demonstrate effective procurement planning including a yearly activities schedule	3.51
	Participate in effective internal and external procurement networks	3.12
	Possessing working knowledge of local and international health commodity prices and understand the factors affecting them	3.24
	Demonstrate the use of request for qualifications (RFQ), Invitations to Bid (ITB) and request for proposals (RFP) methods and when to choose which method	3.31
	Demonstrate knowledge of local and international tendering procedures (e.g. open competitive bidding, restricted tender, competitive negotiation, direct procurement)	3.36
	Select procurement strategy and methods appropriate to special commodities and contextual situations	3.43
	Ensure ethical behaviour with no conflict of interest	3.60
	Evaluate tender bids based on the specification and evaluation criteria	3.43
Describe some of the key issues relevant to negotiating supply contracts (e.g. volume usage over time, price volume agreements, alternate supplier clauses, duration of contract, period of review, terms for contract termination and renewal)	3.33	

2.4 Undertake contract management and risk and quality management		(n=75)
2.4.1 Place commodity orders	Working knowledge of authorisations required to administer the contracts	3.23
	Design, implement and monitor a purchasing and supply plan in line with national priorities	3.41
	Monitor and manage the national commodity pipeline	3.49
	Comply with policies and procedures to order required stock and equipment	3.45
	Identify any problems with the delivery of orders	3.35
2.4.2 Addresses risk and ensures quality management	Describe the importance of contract administration and supplier management	3.25
	Conduct reviews of performance against agreed key performance indicators	3.47
	Provide timely and expert guidance to deal with procurement performance issues and contract disputes	3.37
	Evaluate contract responsiveness, negotiate changes to a contract (contract variations)	3.28
	How to terminate contracts legally and appropriately if necessary	3.23
	Working knowledge of the fundamentals of risk planning and assessment	3.24
	Provide risk assessments for the procurement process (technical, commercial, administrative)	3.19
	Identify any problems with the procurement of supplies in the supply chain	3.45
Develop and implement contingency plan for shortages	3.51	
2.5 Assure quality of products		(n=75)
	Use and monitor the process for prequalification of suppliers	3.45
	Ensure health commodities are not counterfeit and meet quality standards	3.59
	Implement, conduct and maintain a reporting system of pharmacovigilance (e.g. adverse drug reactions) and equipment faults	3.27
2.6 Manage import and export of products		(n=75)
	Demonstrates knowledge about international business processes (e.g. shipping, air cargo, clearing and forwarding, financial transactions, business ethics)	3.47
	Comply with import and export procedures and requirements	3.40
2.7 Manage donations of products		(n=75)
	Working knowledge of the national donations policy referring to appropriate ministry for advice	3.28
2.8 Prepare for product supply during disasters and emergencies		(n=75)
	Communicate with the national disaster planning team	3.39
	Describe the procurement and logistic requirements for emergency and disaster supply	3.40
	Describe the importance of the assessment of local capacity before the emergency or disaster supply	3.32
	Describe the factors that may restrict emergency or disaster supply to take place	3.19
2.9 Undertake or manage manufacturing or compounding of products		(n=75)
	Compound under the good manufacturing practice for pharmaceutical (GMP) medicine	2.76
2.10 Undertake or manage re-packing of products		(n=75)
	Predict when re-packing or pre-packs are required	2.93
	Demonstrate a safe system for repacking	3.00

Technical. Storage and Distribution: Domain 3 (all behaviours)

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.

Competency	Behavioural competencies	Relevance value /4
3.1 Undertake storage, warehousing and inventory management		(n=74)
	Efficiently distribute products among suppliers, distribution centres, warehouses and customers through a logistics network	3.61
	Apply a total systems approach to designing and managing the entire flow of information, materials, and services	3.57
	Secure the medical store and limit access to appropriate staff	3.36
	Working knowledge of special handling processes like cold chain and high value high risk security	3.57
	Develop and follow organization processes, instructions, rules, and parameters for warehouse and inventory management and use of equipment (e.g. annual stock turns, expiry date tracking, stock procurement, rotation and retrieval, equipment maintenance)	3.61
	Develop policies and procedures for stock handling, distribution and withdrawal consistent with maintaining safety (e.g. policies for distribution of concentrated electrolyte solutions and cytotoxics, identification of cytotoxic drug products within the work environment, separation of like name or like packaged products)	3.54
3.1.1 Manage storage of commodities during disasters	Describe the types of warehouses available for emergency or disaster supply	3.24
3.1.1 Manage storage of commodities during disasters	Develop predetermined contingency plans and practice their execution	3.24
	Conduct a rapid assessment of logistical needs in emergencies	3.31
3.2 Supply commodities to facilities		(n=73)
	Working knowledge of the sources of distribution demand (customers)	3.44
	Develop and implement a formal logistics strategy and plan including scheduling	3.58
	Demonstrate use of order policies for planned order generation	3.19
	Secure financing and manage budgets to support distribution operations	3.56
	Analyse information on the storage locations and facilities	3.47
	Measure customer satisfaction and develop loyal customers by using performance metrics taken from the customer perspective, with criteria such as on-time delivery, perception of quality, complaints and length of wait times	3.33
3.3 Manage transport for commodities		(n=73)
	Manage distribution activities, including a fleet of vehicles and distribution schedules, to deliver health commodities to facilities.	3.42
	Demonstrate knowledge of policies and procedures related to handling and transporting special products such as vaccines, HIV/AIDS drugs, other high value products and narcotics	3.52
	Choose shipping methods, considering trade-offs between costs and benefits	3.36
	Working knowledge of all local and national laws/requirements for vehicle safety, driving regulations and licensing	3.05
	Identify and implement proper packing and labelling methods for transportation of hazardous materials	3.33

3.3.1 Manage transport for commodities during disaster		
3.3.1 Manage transport for commodities during disaster	Working knowledge of the different types of transport and their characteristics for emergency or disaster supply	N/A
3.4 Manage disposal of products (e.g. expired, damaged, redundant products)		(n=72)
3.4.1 Define and direct process for managing redundant and returned stock	Confirm information on the supplies being returned	3.26
	Collate, prepare and analyse data on the flow of returned supplies	3.38
	Describe and/or demonstrate recall procedures to be used in response to a product recall notice or to access the information promptly.	3.39
3.4.2 Manage process for disposal of returned stock	Dispose of expired medications and/or medical equipment according to national policy	3.43
3.5 Dispense or provide commodities to patients/users (i.e. ensuring the product goes “the last metre” appropriately)		(n=72)
	List which medicines are allowed to be prescribed by different prescribers and how this is monitored	3.08

Technical. Use: Domain 4 (all behaviours)

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.

Competency	Behavioural competencies	Relevance value /4
4.1 Understand use of medical products including medicines and equipment (e.g. safety, dispensing protocols, standard treatment/testing guidelines)		(n=71)
	Identify medicines by their generic name and medical equipment by their common names, have a general understanding of what various medicines and medical equipment are used for.	3.25

Management. Resource Management: Domain 5 (all behaviours)

The competencies that are required by a worker to be able to manage money/people etc., to ensure the system work effectively.

Competency	Behavioural competencies	Relevance rating/4
5.1 Manage, plan and implement projects		(n=146)
	Ability to create project or an operational plan that is consistent with the organization's strategic plan that links specific goals to the strategies, and that identifies the key performance indicators to be used to measure progress	3.67
	Demonstrate bottom up planning developed from top down guidance	3.3
	Demonstrate the use of information gathering techniques from stakeholders; analysing situations and identifying implications to make decisions	3.51
	Prioritize competing tasks according to their importance; finds new ways of organizing or planning work to improve efficiency	3.6
	Select and apply tools or technological solutions as appropriate and provide to staff	3.3
	Describe the key features of a successful change management strategy	3.15
	Demonstrate ability to monitor progress and to make changes as required	3.62
	Facilitate meetings of planning, organization and monitoring of logistics activities	3.48
5.1.1 Execute strategic decision making		(n=135)
	Balance workloads and areas of responsibility for self and staff	3.42
	Allocate time for consultation with relevant stakeholders	3.37
	Check assumptions against known facts	3.36
	Demonstrate an understanding of both the short and long term impact of decisions	3.56
	Identify the key constraints of a complex issue and quickly develop solutions	3.59
	Make strategic decisions that are in the interest of the organisation's goals	3.56
	Communicate decisions and ensures they are incorporated into policies and processes	3.56
	Undertake inclusive and consultative strategic planning to establish strategic objectives	3.45
Identify emerging trends and practices	3.30	
5.1.2 Manage partnerships		(n=128)
	Leverage multiplicity and diversity of supply systems and partners	3.33
	Promote innovation and creativity in partnership work	3.40
	Communicate key information with partner members	3.57
	Involve and value partners in all aspects of programming (including health programs)	3.38
	Provide feedback, encouragement and support to team members	3.65
	Identify problems with supply chain relationships	3.65
	Describe how the partner is aligned in the organizational structure and describe their responsibilities and accountabilities	3.34
	Communicate effectively with nurses, doctors and other members of the health care team	3.29
	Respond to consumer complaints or comments	3.32
	Describe the structure of the organisation, environment and/or service in which they work	3.23
	Know the reporting requirements of partners	3.2
	Outline the structure of the health system at a national/provincial/regional level and explain this to others	3.46
Understand the roles and function of government agencies in regulating and supporting supply chain organizations	3.66	
5.1.3 Direct/Participate in team work		(n=119)
	Work with team members to establish achievable goals and strategies that are consistent with those of organization	3.75

	Develop an organisational chart which shows the lines of reporting and responsibility of all staff levels	3.3
	Describe how to achieve team based problem-solving and decision making practices	3.48
	Describe roles and responsibilities in relation to an employee's expertise	3.39
	Foster collaboration and consultation across the sector and encourage team work	3.55
	Encourage input from other key actors in the humanitarian sector and develop relationships with a cross section of actors	3.2
	Monitor team performance in relation to the organisation's mission and goals	3.56
	Know the stages of team development and how to effectively support the team at each stage	3.38
5.2 Manage resources and financial activities		(n=116)
	Describe the general monetary value of medicines and equipment	3.28
	Manage resources applying budgetary principles (human, financial, material and knowledge resources)	3.48
	Create and manage budgets (national, regional etc.) with associated information recording (e.g. wages budget, touring budget, stationery budget, project budgets for using NGO funds)	3.30
	Describe good accounting practices that ensure financial transparency	3.21
	Describe financial funding requirements	3.23
	Know how to ensure timely decision making with regard to financial shortfalls	3.47
	Demonstrate ability to analyse financial statements and explain components of a balance sheet and income statement	3.08
	Identify and reduce or eliminate waste in all areas of a supply chain	3.57
	Calculate the total system cost of delivering a product or service to the customer	3.44
	Describe the key considerations for developing a business plan	3.22
	Describe key performance indicators used to monitor business performance (e.g. turnover, profitability)	3.37
	Describe strategies for minimising the risk of fraudulent activity (e.g. reconciliation of purchase orders, receipts and payment approvals, dual signatory arrangements for funds transfers)	3.4
	Describe investigative processes and options for confirming the existence of fraudulent activity (e.g. sample audits, forensic accounting services)	3.18
	Describe how to prepare funding applications for trusts and grants	2.97
5.3 Oversee human resources (e.g. recruitment, training, team management/supervision)		
5.3.1 Recruit staff		(n=114)
	Develop and use a relevant local system for staff recruitment, appraisals, development, retention, performance monitoring, and staff exit, with reference to the local labour market	3.26
	Describe the legislative issues impacting on human resource policies and procedures	2.99
	Orientate new staff to the workplace explaining standard operating systems and procedures	3.39
	Prepare human resource forecasts and plans to meet the future staffing needs of the organisation	3.36
	Explain key features and measures used for monitoring a personnel retention strategy (e.g. recruitment costs, staff turnover, staff surveys)	3.18
	Develop training and recruitment plans to fill any identified gaps and shortages	3.27

5.3.2 Train and retain staff		(n=114)
	Ensure members of staff have the necessary skills and understanding for safe work practices	3.68
	Identify staff training needs at all levels of the supply chain	3.60
	Identify, promote participation in, and coordinate relevant learning and development opportunities	3.45
	Create an environment that is supportive of learning and professional development	3.65
	Support colleagues to develop a professional development plan and suggest ways in which the plan may be progressed through relevant training and/or experiential learning opportunities	3.46
5.3.3 Supervise and retain staff		(n=110)
	Describe the nature of the supervisory role, what is meant by direct supervision, and where responsibility for outputs and outcomes rests	3.46
	Identify situations where supervised personnel are experiencing difficulties in completing work activities and/or where a formal warning for inappropriate behaviour needs to be given	3.46
	Describe signs/cues from supervised personnel that indicate additional guidance or support is needed (e.g. hesitancy, distress, seeks clarification from less authoritative sources)	3.29
	Provide feedback, encouragement and support to team members	3.68
	Monitor and supervise projects and staff to ensure continuous improvement	3.61
	Use a performance management process with all personnel	3.48
	Provide progression opportunities for employees who have prepared themselves through development	3.42
	Discuss in a constructive manner areas where performance should/could be improved and provide resources for this to occur	3.5
	Describe situations where additional expertise should be sought (e.g. counselling in the event of workplace violence or in situations of diminished performance due to drug or alcohol abuse)	3.25
	Explain the complaints management process	3.05
	Plan and conduct supervisory tours of dependent facilities	3.22
	Ability to use and assess HR systems and the reports generated by the system	3.25
5.4 Implement quality assurance and risk management activities		
5.4.1 Ensure quality assurance activities are taking place across the supply chain		(n=108)
	Understand and apply quality improvement methodologies	3.56
	Understand and apply process improvement methodologies	3.53
	Benchmark "Best-in-class" companies and organizations	3.19
	Develop key performance indicator measurements	3.59
Provide the results of the analysis to colleagues	3.54	
5.4.2 Oversee risk management		(n=108)
	Develop a shared commitment to creating a safe working environment	3.53
	Demonstrates the role of insurance as a tool to reduce risk	3.04
	Demonstrate knowledge of relevant safety and health laws, and regulations; comply with safety codes, standards, and guidelines; adhere to work-site safety programs; understand emergency response plans; demonstrate knowledge of how to handle hazardous commodities and first aid procedures	3.3
	Describe the risks affecting supply, transformation, delivery, and customer demand	3.54
Identify unsafe working conditions and take prompt, corrective action; stay alert to, and take preventive action against hazards and threats; recommend measures to protect	3.41	

	employees or workers from hazardous working conditions; follow protocol for reporting safety violations; investigate accidents to determine how to prevent them in the future	
	Implement key security systems and appropriate levels of access for the workplace (e.g. for cash, narcotics and other controlled substances, investigational drugs, consumer records, entry and exit points)	3.35
	Develop and/or implement training programs in which personnel participate (e.g. fire and armed hold-up drills, safe manual handling practices, use of mandatory safety clothing)	3.25
	Develop risk mitigation plans and apply systems of review (e.g. audit) to check compliance with policies and procedures intended to maintain workplace safety (e.g. manual handling technique, correct use of protective clothing)	3.34
5.5 Recognise and understand the complementary requirements of a sustainable SCM system (i.e. to work, a system also needs the right tools, infrastructure and funding alongside workers with these competencies)		(n=106)
	Understand that supply chains and logistics are a system of organizations, people, technology, activities, data/information, funds and other resources involved in moving a product from supplier to customer	3.71
	Demonstrate a high level of industry knowledge	3.12
	Understand all management activities carried out in the course of running an organization, including controlling, leading, monitoring, adjusting, organising, planning and executing	3.48
	Anticipate obstacles and critical events for ensuring the Six Rights of Logistics Management (right quantity, product, condition, place, time and cost develop and execute contingency plans to address them; monitor progress and take necessary corrective action when needed	3.62
	Know the characteristics unique to health logistics and supply chain and demonstrate an awareness of the factors that could contribute to or hinder the delivery of logistic services	3.71
5.6 Oversee and/or support the operation of a Logistic Management Information System (LMIS)		(n=106)
	Demonstrate a detailed knowledge of the national medicines supply information system	3.51
	Design a responsive, agile and efficient supply chain that has the ability to meet the changing needs of customers, deliver high-quality products with short lead times at low cost	3.56
	Integrate activities across organisations on the supply chain by ensuring information visibility in inventory levels, production and materials in transit	3.53
	Monitor the supply pipeline and assess stock status	3.57
	Aggregate, analyse and interpret logistics data to produce reports on logistics system performance	3.51
	Disseminate reports to all appropriate stakeholders	3.39
	Utilize data/information for advocacy for SCM funding	3.49
5.7 Manage outsourcing of SCM functions		(n=106)
	Understand that although government is responsible for ensuring health commodity availability, government does not need to own and run the health logistics and supply chain system but outsourcing to appropriate private partners is an appropriate alternative.	3.32
	Effectively negotiate and manage contracts with outside parties for the delivery of logistics and supply chain services	3.52
	Know the many different nodes of the supply chain, analyse and determine which are a good fit for outsourcing and those that aren't	3.49

Management. Professional and Personal: Domain 6 (all behaviours)

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.

Competency	Behavioural competencies	Relevance rating/4
6.1 Demonstrates basic generic skills (e.g. literacy, numeracy, technology)		
6.1.1 Exhibits high understanding of literacy and numeracy		(n=86)
	Speak clearly and confidently, organize information in a logical manner and consider voice tone and pace	3.56
	Receive, attend to, interpret, understand and respond to verbal messages and other cues (active listening)	3.67
	Formulate and communicate information, ideas and opinions clearly in written and verbal form	3.74
	Communicate information accurately, concisely and confidently in writing and verbally	3.70
	Practice a level of mathematics suitable to the job held	3.28
	Demonstrate knowledge of visual presentation techniques including charting, histograms and flow sheets	3.24
	Read and comprehend at a level necessary to properly complete duties of the position. Interprets written information in documents such as reports, SOPs, LMIS forms, graphs, calendars, schedules, notices, and directions	3.71
	Pay attention to detail and Identify the main ideas, detect inconsistencies and identify missing information in documents	3.63
	Apply computer skills such as Word, Excel, PowerPoint and WWW	3.57
6.1.2 Has a command of technology		(n=79)
	Demonstrate the use of technology suitable to the job held	3.47
	Keep abreast of new developments and technologies in the sector	3.30
	Seek and make use of specialist tools/resources to assist in the delivery of health logistics and supply chain activities. Including field based technology (e.g. radio, GPRS, Thurayas)	3.16
	Experiment with new technologies and recognises potential benefits for the sector	3.06
	Ensure that resources and support are provided across the organisation to enable colleagues to make the best use of the available technology	3.48
	Ensure that the organisation has a strategy for its use of technology	3.34
	Take steps to minimise environmental damage through use of technology	3.05
	Use technology to maximise both effectiveness and efficiency	3.57
6.2 Demonstrates strong communication skills		(n=79)
	Be truthful, trustworthy and supply accurate information at all times	3.81
	Know the vocabulary, communication style and form for both written and verbal communications that is appropriate for the situation, the audience and the material being communicated (e.g. avoids unnecessary jargon, clearly explains medical and supply chain management terminology)	3.63
	Encourage open communication within constraints of confidentiality	3.59
	Participate in meetings with regard to expressing own opinions and being aware of the needs of others, being appropriately assertive when required	3.54
	Have perspective into the point of view of others, understanding their needs and goals, practicing meaningful two-way communication	3.59
	Influence others by persuasively presenting thoughts and ideas	3.47

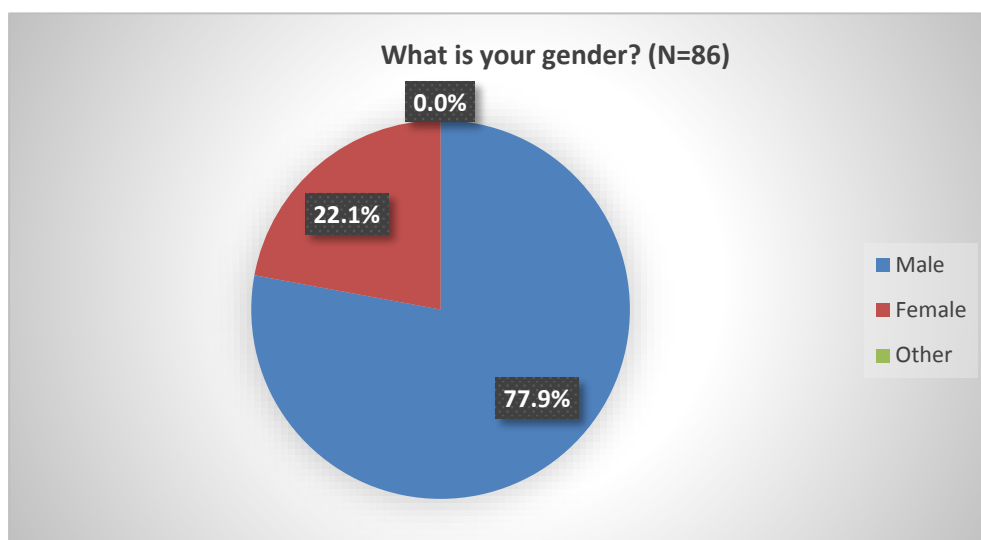
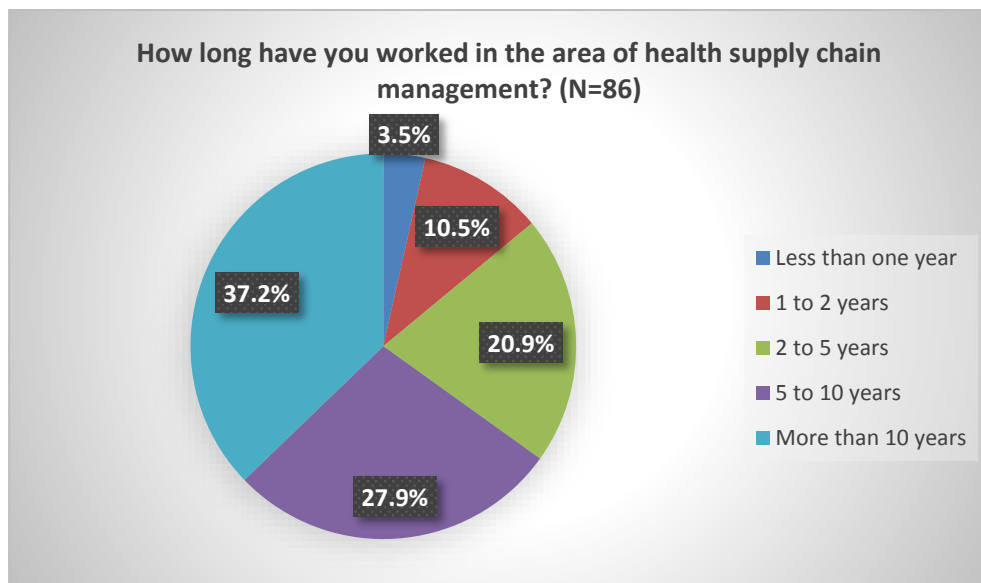
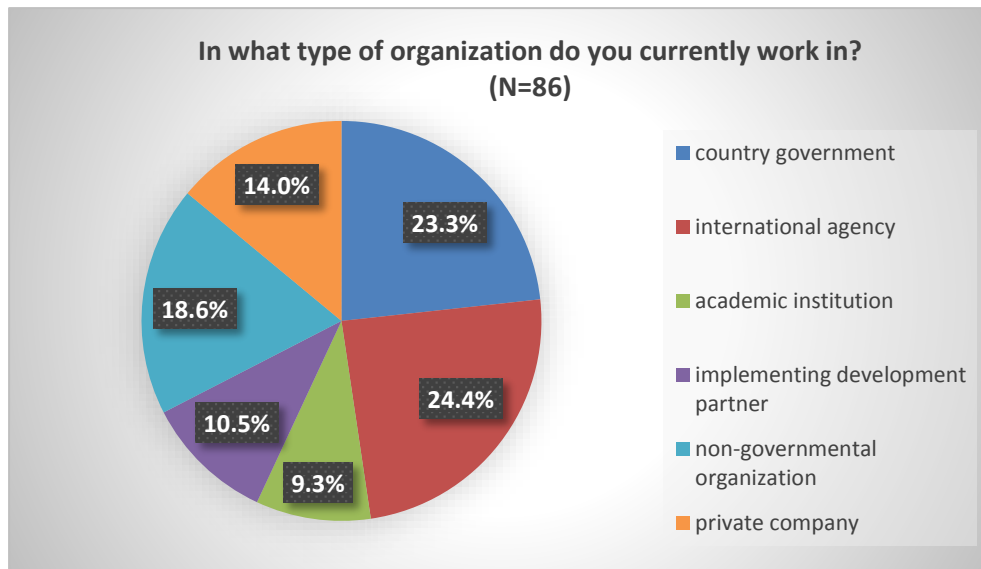
	Apply assertiveness skills to deal with unreasonable requests and/or refusals that would compromise practice or consumer care	3.56
	Maintain a positive, supportive and appreciative attitude	3.63
	Demonstrate the ability to balance the needs of the organisation and the needs of the customer	3.62
	Demonstrate self-control by maintaining composure and keeping emotions in check even in very difficult situations; deal calmly and effectively with stressful situations	3.54
	Express opinions and provide information in written and/or verbal form in a manner that does not elicit concern, anger or other adverse response	3.52
	Seek practical ways to overcome barriers to communication	3.54
	Gives both positive and negative feedback sensitively	3.56
6.2.1 Practices cultural awareness		(n=78)
	Promote cultural awareness and sensitivity treating all people with fairness, respect and dignity	3.58
	Implement anti-discriminatory practices within the organisation including HR and disciplinary procedures	3.42
	Describe strategies and/or resources for communicating effectively with people from different cultural backgrounds	3.38
	Respect the values, beliefs and cultural backgrounds of consumers that may influence the way professional services are provided	3.54
6.3 Utilizes problem solving skills		(n=77)
	Anticipates problems through analysis of monitoring and evaluation data	3.60
	Address and manage day to day and complex problems in a timely manner	3.61
	Understand a problem situation and its step-by-step transformation based on planning and reasoning without apportioning blame	3.57
	Critically review, analyse, synthesize, compare and interpret information; draw conclusions from relevant and/or missing information; understand the relationship among facts and apply this understanding when solving problems	3.70
	Describe a range of possible approaches/strategies that are effective for resolving conflict in the workplace (e.g. negotiation, collaborative problem-solving, mediation, arbitration)	3.43
	Scrutinize and break down facts and thoughts into strengths and weaknesses	3.31
	Practice goal-directed thinking and action in situations where no routine solutions exist	3.56
	Use difficult or unusual situations to develop unique approaches and useful solutions	3.22
	Commit to a solution in a timely manner, and develop a realistic approach for applying the chosen solution; evaluate the outcomes of the solution to see if further action is needed and identify lessons learned	3.66
	Describe the impact of conflict in the workplace (e.g. tension, low morale, absenteeism, system or service failure, and aggressive or uncooperative behaviours)	3.29
	Follow up problems to ensure they are solved	3.65
	Describe situations where referral is warranted (e.g. severe emotional distress, intractable dispute)	3.19
6.3.1. Negotiates		(n=76)
	Apply the principles of negotiation and aim for 'win-win' outcome	3.51
	Manage and resolve relationship issues within and outside of the team	3.45
	Model solution-focussed approaches to further the mission of the organisation	3.47
	Build consensus among parties	3.46
	Present or propose alternative ways of doing things to others	3.29
	Adapt style to cultural differences regarding negotiation	3.45
		(n=76)

6.3.2 Practices effective time management	Demonstrate good practice for the team in terms of timekeeping, meeting targets and deadlines in an effective way	3.72
	Identify factors and/or criteria (e.g. urgency, importance, possibility of using alternative products or personnel) that have an impact on the priority assigned to tasks	3.66
	Monitor own progress against objectives, time keeping and targets	3.67
	Make strategic decisions with regard to time and resources	3.68
	Develop and use systems to organise and plan workload	3.47
	Establish priorities according to team and project goals	3.72
	Manage interferences (e.g. telephones, interruptions) that consume time without contributing to task completion	3.18
	Assist others in organising and managing their workloads	3.25
	Identify and justify tasks or elements of tasks that may be appropriately delegated to other available personnel	3.47
	Recognise and describe the limitations applicable to delegation of specific tasks	3.32
6.4. Exhibits Professional and Ethical values		
6.4.1 Demonstrates Integrity		(n=76)
Accept responsibility for own work tasks, performance and emotions	3.74	
Recognise that the leader is the role model for others to follow	3.74	
Work within a framework of clearly understood humanitarian values and ethics	3.53	
Stand by decisions and holds others to account when necessary	3.54	
Does not abuse one's own power or position	3.68	
Ensure team members do not abuse their power or position	3.67	
Identify where individuals or the organisation is straying from agency goals and challenges them to uphold ethics	3.58	
Resist undue political pressure in decision making	3.57	
Support staff in maintaining ethical stances	3.58	
Show consistency between expressed principles and behaviour	3.54	
Incorporate principles, values and ethics in policy development	3.53	
Ensure and promotes transparency in decision making structures and processes	3.59	
Ensure programmes are acting with integrity and recognises the impact of not doing so	3.54	
Recognise own limitations and acts upon them	3.45	
Follow all standard operating procedures	3.53	
Demonstrate appropriate attire and presentation for the role and situation	3.14	
Create and maintain an environment in which others can talk and act without fear of repercussion	3.54	
Keep commitments	3.70	
6.4.2 Engages in continuous professional development		(n=74)
Continuously seeks out opportunities to learn and integrate new knowledge and skills into their work	3.53	
Identify gaps in their knowledge and skills to complete specific tasks and develops a plan to acquire them	3.49	
Listen to and invites feedback on own performance from others	3.47	
Employ reflective learning within the team where lessons are captured and integrated into future projects	3.42	
Open to new ideas and different perspectives	3.45	
Use multiple techniques to acquire new knowledge and skills; process and retain information; identify when it is necessary to acquire new knowledge and skills	3.38	
Participate in professional organisations and/or committees	3.08	
Contribute to the professional development of others	3.42	
Take opportunities to share experiences and learning's internally / externally	3.34	
Stay current on industry trends, information and developments	3.32	

	Proactively seek out challenging projects outside of core experience and achieves solid results	2.89
6.5 Proves leadership abilities		(n=74)
	Proactive input to meetings and programme development	3.55
	Understands political relationships and balances it with public health priorities	3.51
	Working knowledge of future trends and issues, and assist agency to meet the challenges	3.46
	Create a collaborative working environment	3.62
	Drive for change and improvement, developing opportunities for the organization and the sector	3.55
	Communicate with influence	3.39
	Show courage to take an unpopular stance when needed	3.45
	Steer and implement change organisationally	3.55
	Anticipate and resolve conflict	3.53
	Exemplify personal drive and integrity	3.62
	Be a role model, inspire others through professional excellence, innovation and communication	3.72
	Adapt leadership style to fit the situation (e.g. directive versus consultative style in the event of a crisis)	3.70
6.5.1 Demonstrates resilience and ability to manage stress		(n=74)
	Identify symptoms of stress and take steps to reduce stress, in one's self, employees and other colleagues	3.49
	Ability to see the bigger picture and help others to do the same	3.58
	Recover quickly from setbacks	3.39
	Create a working environment that aims to minimise pressure and stress	3.46
	Work well under pressure	3.57
	Identify and make use of personal support mechanisms	3.32
	Help others to identify personal support mechanisms	3.27
6.6 Abides by rules/laws/legislation		(n=72)
	Comply with the legislation that covers the practice of public health supply chains and health care and describe its purpose	3.69
	Understand when to question existing rules/laws/legislation and constructively seeks change where required (e.g. to improve efficiency, reduce bias etc.)	3.49
	Describe requirements of professional codes, guidelines and standards adopted as part of the legislative framework	3.33
	Comply with international regulations in decision making in the distribution system including customs regulations on import and export requirements e.g. trade tariffs and duties on imported goods, security regulations etc. (e.g. 2007 SAFE Ports Act, NAFTA or European Union trade agreements)	3.40
	Apply knowledge in relation to the principals of business economics and intellectual property rights including the basics of patent interpretation	3.14
	Working knowledge of applicable procurement law and understands the practical effects of terms and conditions of contract	3.47
	Working knowledge of current industry and government regulations governing sustainability	3.26
	Working knowledge of key hazardous materials handling laws	3.18
	Develop and implement policies and procedures relating to workplace safety that are consistent with recognised standards	3.28
	Describe professional standards and conventions as well as workplace policies and procedures for the preparation of pharmaceutical and medical device products	3.22

iv. Demographic profiles for each of the surveys

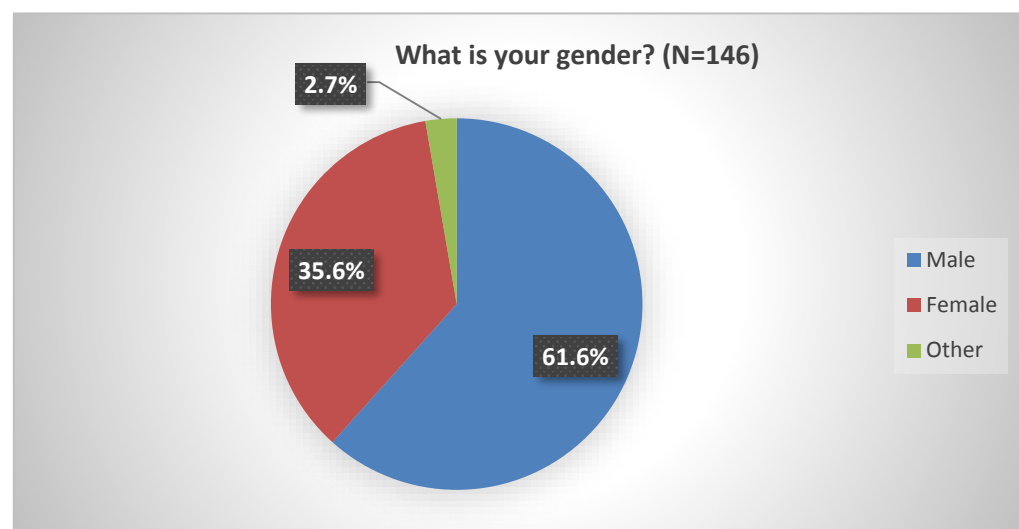
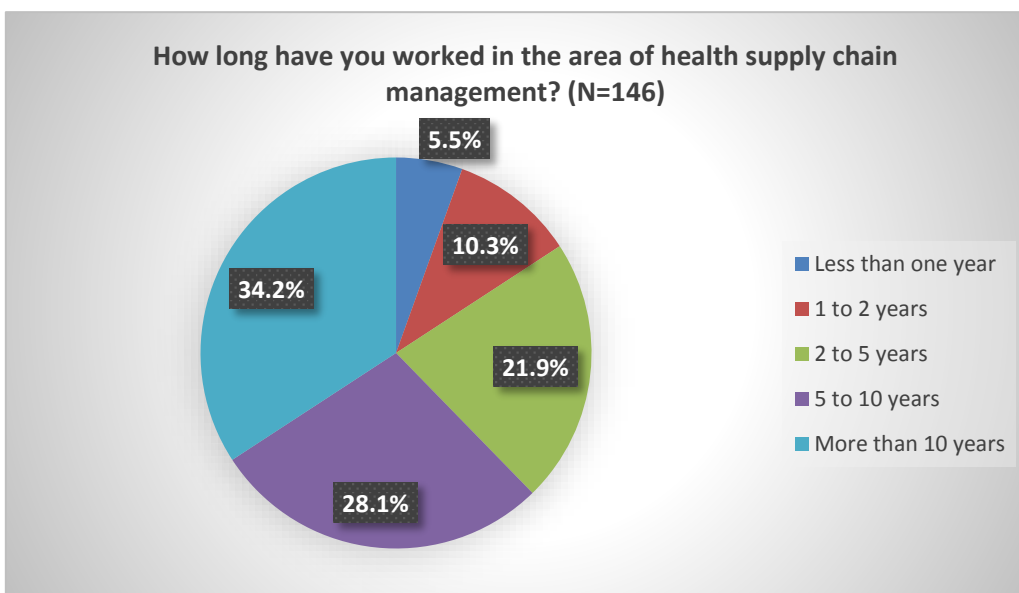
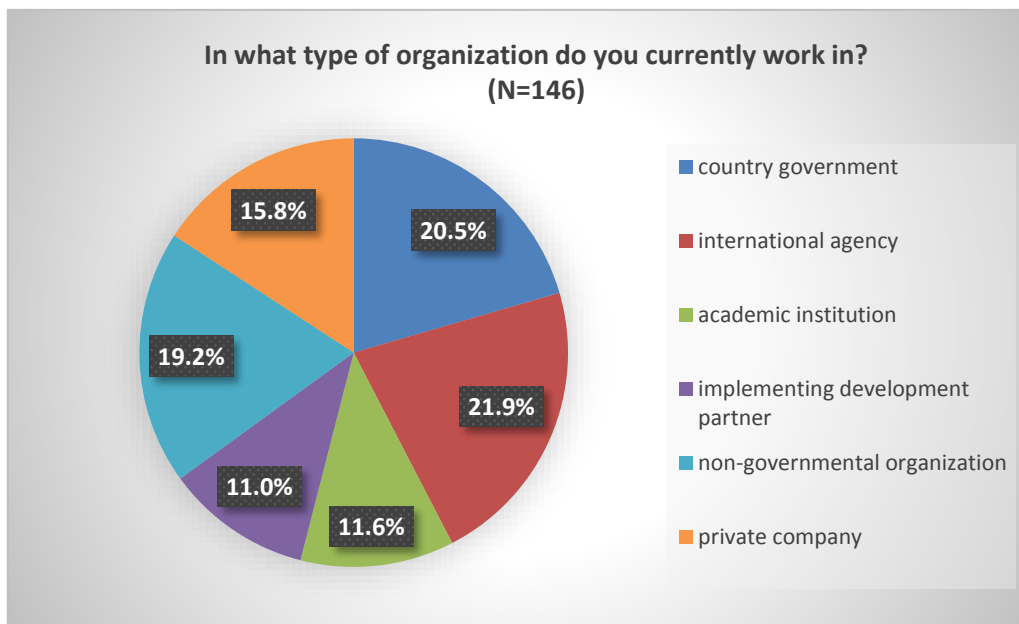
Demographics for validation of Technical Domains 1-4



44 countries which participants nominated as their main place of work (N = 86)

Bangladesh –	Burkina Faso –	Cameroon –	Democratic Republic of the Congo –	Denmark –	Egypt –	Ethiopia –	Federated States of Micronesia –	Fiji –	Ghana –
1	1	2	3	3	1	5	1	2	4
India –	Ireland –	Ivory Coast –	Kenya –	Kiribati –	Laos –	Lesotho –	Madagascar –	Malawi –	Malaysia –
3	1	2	6	1	1	1	2	1	1
Mali –	Mauritania –	Mozambique –	Nepal –	Nigeria –	Pakistan –	Peru –	Philippines –	Republic of the Congo –	Rwanda –
1	1	4	1	3	2	1	1	1	2
Solomon Islands –	Somalia –	South Africa –	Spain –	Sudan –	Suriname –	Swaziland –	Switzerland –	Tanzania –	Uganda –
1	1	1	1	3	1	1	1	2	1
United States –	Vietnam –	Zambia –	Zimbabwe –						
14	1	2	1						

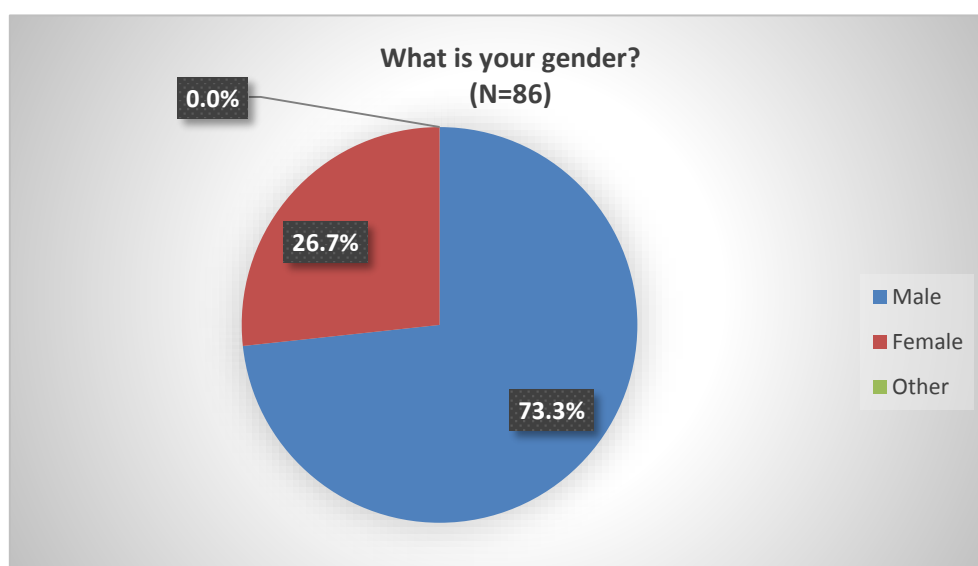
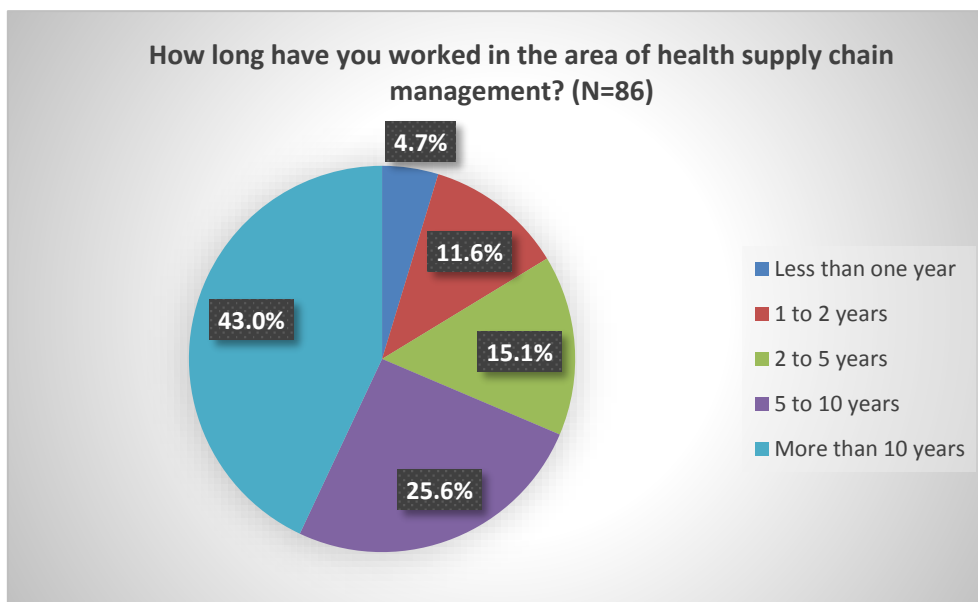
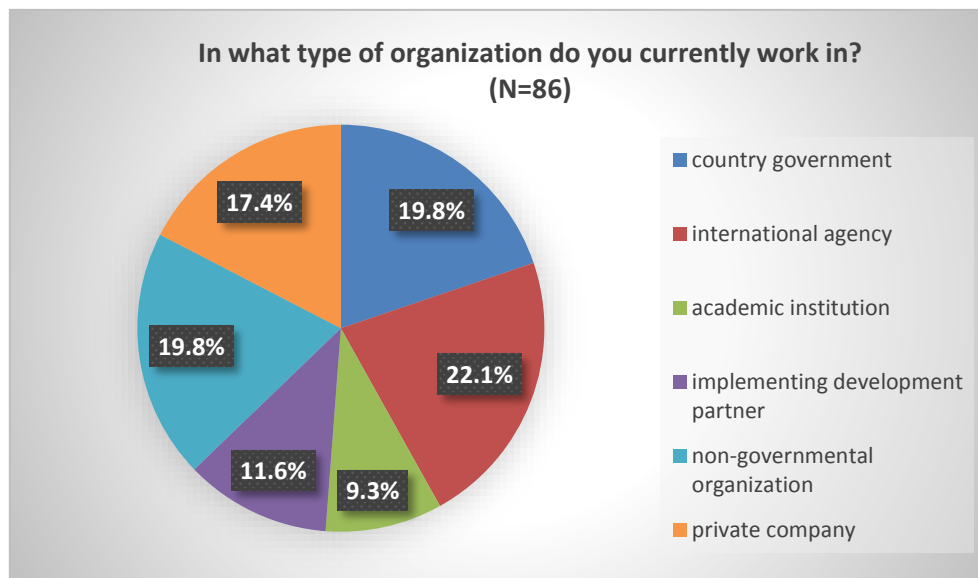
Demographics for validation of Domain 5 - Management. Resource management:



61 countries which participants nominated as their main place of work (N = 146)

Aland Islands (Finland) –	Australia –	Austria –	Bangladesh –	Bhutan –	Brazil –	Burkina Faso –	Burma –	Burundi –	Cameroon –
2	3	1	1	1	1	2	1	1	2
Canada –	China –	Colombia –	Democratic Republic of the Congo –	Denmark –	Egypt –	Ethiopia –	Federated States of Micronesia –	Fiji –	Germany –
1	3	1	3	4	2	6	1	1	1
Ghana –	India –	Indonesia –	Ireland –	Ivory Coast –	Kenya –	Kiribati –	Laos –	Lesotho –	Malaysia –
3	6	3	1	1	10	1	2	1	1
Mali –	Moldov –	Mozambique –	Namibia –	Nepal –	Netherlands –	Nigeria –	Pakistan –	Peru –	Philippines –
1	1	2	1	3	2	8	2	1	1
Rwanda –	Senegal –	Sierra Leone –	Somalia –	South Africa –	South Sudan –	Sudan –	Suriname –	Swaziland –	Switzerland –
4	2	2	1	3	1	4	1	1	3
Tanzania –	Tonga –	Turkey –	Uganda –	United States –	Uzbekistan –	Vanuatu –	Vietnam –	Yemen –	Zambia –
8	1	1	2	15	1	1	1	1	4
Zimbabwe –									
1									

Demographics for validation of Domain 6 - Management. Professional and personal



44 countries which participants nominated as their main place of work (N = 86)

Bangladesh –	Burkina Faso –	Cameroon –	Democratic Republic of the Congo –	Denmark –	Egypt –	Ethiopia –	Federated States of Micronesia –	Fiji –	Ghana –
1	1	2	3	3	1	5	1	2	4
India –	Ireland –	Ivory Coast –	Kenya –	Kiribati –	Laos –	Lesotho –	Madagascar –	Malawi –	Malaysia –
3	1	2	6	1	1	1	2	1	1
Mali –	Mauritania –	Mozambique –	Nepal –	Nigeria –	Pakistan –	Peru –	Philippines –	Republic of the Congo –	Rwanda –
1	1	4	1	3	2	1	1	1	2
Solomon Islands –	Somalia –	South Africa –	Spain –	Sudan –	Suriname –	Swaziland –	Switzerland –	Tanzania –	Uganda –
1	1	1	1	3	1	1	1	2	1
United States –	Vietnam –	Zambia –	Zimbabwe –						
14	1	2	1						

Discussion

Competency frameworks as a tool to be applied

The competency framework presented in this document is a resource and needs to be applied for it to be effective. It can be applied to any health supply chain context private or public, integrated or vertical.

Competency frameworks can be used to develop supply chain staffing models, job descriptions, education and training plans and performance management tools, with an end goal of improving supply chain performance.

The 'PtD Health Supply Chain Competency Framework for Managers and Leaders' has been used:

- i. **In Ethiopia by the University of Addis Ababa (School of Pharmacy) to map the competencies of pharmacists involved in health supply chains at all levels of health supply chain system.**
- ii. **By the East African Community (EAC) to develop courses for supply chain management cadres to be offered by the EAC Regional Centre of Excellence for Health Supply Chain Management (RCE-HSCM) at the University of Rwanda.**
- iii. **By the Humanitarian Logistics Association (HLA) as a basis to draft a competency framework for humanitarian logisticians.**

In March 2014 this framework was used as a tool to engage immunization supply chain managers of the EAC to map the competency areas required by different cadres in this supply chain and demonstrates the application of this framework to this often vertical supply chain (Appendix One). In the context of the People and Practice Working Group, of the GAVI Supply Chain Strategy, this framework will be used to develop a leadership competency development workshop by UPS for use in low and middle income countries.

Conclusion

This research presents an international competency framework for managers and leaders of health supply chains. The framework has been validated through global engagement with a range of health logistics and supply chain professionals, from a wide range of countries and organisations. The framework is currently being used to map the competencies of cadres involved in managing health supply chains and as a basis for preparing the curriculum required for managers and leaders in this field. Stakeholders involved in strengthening the human resources required to manage and improve health supply chains in low and middle income countries are encouraged to apply this tool to their context. PtD through its members, will continue to support international and country based systematic approaches to the professionalization of cadres engaged in health logistics and supply chain functions.

Appendix 1 A focus on immunization supply chain managers

The 4th EAC Regional Vaccine and Immunization Managers Meeting was held from 23rd to 26th March, 2015, at Serena Hotel, Kampala Uganda. During this meeting a workshop was held focusing on human resources issues in the immunization supply chain with one of the key activities 'Defining the required supply chain skills and competencies'.

The breakout session was attended by 6 participants representing 4 of the member states (Kenya, Tanzania (and Zanzibar), Rwanda and Uganda).

The group reviewed the high level domains of the PtD health supply chain competency framework for managers and leaders, adding more detailed descriptions of these domains to highlight immunization supply chain (Table i.).

Further group work was then undertaken to identify which skills and competencies were relevant for each role in the immunization supply chain (Table ii.). This mapping of competencies to the roles and tasks could then be used to define the training and development plan and inform the capacity development strategy.

	Competency	Description
Technical Domains	1. Selection & Quantification	The competencies which 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). <i>Vaccine forecasting and supply planning, Cold chain capacity assessment and planning, CCE forecasting and equipment selection, technologies and innovation</i>
	2. Procurement	The competencies which are required by a worker to be able to procure the supplies needed for their work situation. <i>Vaccine procurement, arrival procedures, Cold chain equipment selection and procurement (including temperature monitoring devices, voltage regulators and stabilizers)</i>
	3. Storage & Distribution	The competencies which 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. <i>Vaccine handling and management (including stock management), temperature monitoring, distribution planning, transportation, cold chain organisation, distribution of CCE, preparation and installation of CCE</i>
	4. Use	The competencies which 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 <i>Vaccine handling and management, training of users, CC maintenance (preventative, corrective), maintenance planning and schedules, temperature monitoring, disposal of CC equipment and devices</i>
Management domains	5. Resource Management	The competencies which are required by a worker to be able to manage money/people etc., to ensure the system work effectively. <i>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</i>
	7. Professional and Personal	The competencies which 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. <i>Communication, problem solving, planning and organisation, team working, managing people, supervising and mentoring</i>

Table i. – High level supply chain competency domains with an emphasis on immunization supply chain

National	Country EPI Logistics Co-ordinator Vaccine Store Management Officer National Cold Chain and Logistics Officer National EPI Logistician Logistics Program Officer Vaccines Quality Assurance and Commodity Security Officer 1,2,3,4,5,6	Program Manager 1,2,3,4,5,6	Surveillance Officer AEFI Investigation Officer 1,2,3,4,5,6
	Epidemiologist 1,2,3,4,5,6	Training and Communication Officer Trainers 1,2,3,4,5,6	Program Data Manager 1,2,3,4,5,6
	National Store Manager 2,3,4,5,6	Program Technician 1,2,3,4,5,6	National Vaccine Store Manager 2,3,4,5,6
Regional	Store Keepers Store Managers 1,3,4,5,6	Regional Immunization and Vaccines Officers (RIVOs) 3,4,5,6	
	Regional Cold Chain Technician 3,4,5,6	Regional EPI Logistician 1,2,3,4,5,6	
District	Vaccines Pharmavigilance Officer Store Managers 1,3,4,5,6	District Logistics and CC Officer Immunization and vaccine officer 3,4,5,6	
	District Depot Manager District Store Keepers 3,4,5,6	District Cold Chain Technician (DCCT) 3,4,5,6	
Facilities	Nurses Immunization staff 3,4,6		
Community	CHWs (Mobilization and defaulter tracing only in Kenya) 3,4,6		

Table ii. – High level supply chain competency domains mapped against immunization supply chain roles and levels within the supply chain.