USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
Procurement and Supply Management

Comprehensive Workforce Systems Approach:
Supply Chain Management Professionalization Framework

DECEMBER 2019

USAID FROM THE AMERICAN PEOPLE

PEOPLE THAT DELIVER

SAPICS THE PROFESSIONAL BODY FOR SUPPLY CHAIN MANAGEMENT

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Acknowledgements

This work has been a joint activity of People That Deliver (PtD), SAPICS, USAID and the USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project. The authors would like to thank the members of these organizations for their contribution and cooperation as together we seek to increase the availability of medicines to beneficiaries. Many individual colleagues gave freely of their time for interviews and to engage in focus group discussion for this work, we thank you for your contribution. This work was funded by the USAID Global Health bureau's Family Planning and Reproductive Health (FP/RH) program.

DISCLAIMER

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Acronyms

GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management
HR	human resources
HSCM	health supply chain management
PCC	PtD Competency Compendium
PtD	People that Deliver Initiative
SAPICS	South African Production and Inventory Control Society
SC	supply chain
SCM	supply chain management
SPBF	SAPICS Professional Body Framework
SCOR®	Supply Chain Operations Reference
USAID	United Stated Agency for International Development

Executive Summary

For health programs in all countries, health supply chains are a key enabler. In low- and middle-income countries, investments from USAID and other donors are helping to strengthen these systems to increase the availability of lifesaving health commodities.

An ongoing challenge, however, is ensuring that enough supply chain management (SCM) professionals, who have the competencies to deliver effective SCM, are available to countries' supply chain organizations. This need, combined with the knowledge that SCM professionals are in increasing demand in the private sector and other government institutions, indicates that SCM human resources (HR) challenges will continue and may become more acute in the future.

Within the broader supply chain community, a lack of process standardization is often encountered. This is underpinned by a limited view and a lack of integrated understanding of the activities that are housed within the scope of supply chain management. The effect on supply chain HR is often apparent, as staff members assigned to supply chain activities do not have the skills or understanding of the process to ensure supply chain objectives are realized.

To better understand the issues of availability and use of SCM human resources in a country context, the USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, in conjunction with USAID and People that Deliver (PtD), believes that a "whole of SCM labor market" approach provides a deeper and more holistic understanding of the SCM employment environment. We believe that an SCM professionalization framework containing an agreed-to competency framework core could be used by four distinct groups:

1. Governments to define standards for the profession
2. Employers to articulate SCM competency requirements and career pathways in their organizations
3. Institutions of learning to define clear learning and teaching courses
4. SCM employees to map out a professional career in SCM

This study has two goals:

1. Determine if SCM stakeholders working in low- and middle-income countries perceive the need to develop a professionalization framework, considering what it should include
2. Explore the similarities and differences between existing government health supply chain and private sector SCM competency frameworks, which could serve as the core of an SCM professionalization framework

In addressing our first goal, we used semi-structured interviews and a validation workshop to gain an understanding of the need for professionalizing supply chain workers in the public health sector, as well as what that may look like. Through the interviews, we collected perspectives on professionalization and explored broad themes on how to implement the framework.

In addressing our second goal, we conducted a desk study of competency content in the health care space. We believed that a comprehensive library of content was already available to create the competency model for professionalization; however, it had not yet been packaged correctly. Thus, the first output would be a comparison of the primary frameworks available to the team, including the SAPICS Professional Body Framework (Annex 6) and the PtD Competency Compendium (Annex 7).

This research confirms two key points:

1. Creating an SCM professionalization framework is of great interest to the health supply chain management (HSCM) community
2. Combining competency frameworks from SAPICS and PtD can ensure that such a professionalization framework encompasses the public and private sectors

Moving forward, a body of work is needed to achieve three goals:

1. Finalize the components of an SCM professionalization framework that could be implemented in a country context
2. Enhance the demand side of professional availability
3. Complete work that will enable academic and professional institutions to develop the courses required for improving supply of relevant SCM professionals

GHSC-PSM will continue to coordinate with PtD and SAPICS to realize the outcomes of this research.

Background and Goals

For health programs in all countries, health supply chains are a key enabler. In low- and middle-income countries, key investments from USAID and other donors are helping to strengthen these systems to increase the availability of lifesaving health commodities.

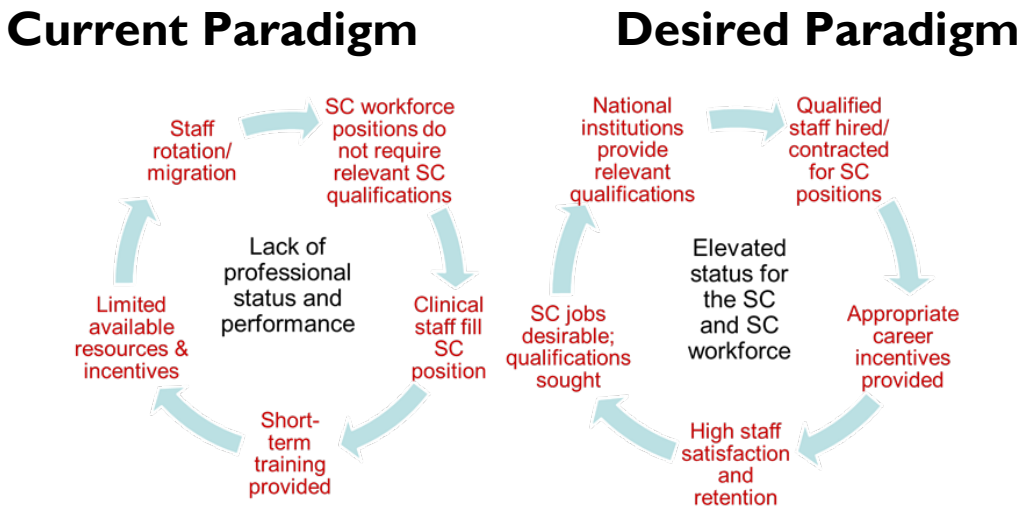
Ensuring that enough supply chain management (SCM) professionals with the competencies required for effective SCM are available to supply chain organizations in countries is an ongoing challenge. This need, combined with the knowledge that the private sector and other government institutions also have an increasing demand for SCM professionals, indicates that SCM human resource (HR) challenges will continue and may become more of a problem in the future.

The broader supply chain community often encounters a lack of process standardization. This is underpinned by a limited view and integrated understanding of the activities housed within the scope of an SCM operation.

This problem manifests itself in the form of organizations and countries that do not adequately incorporate supply chain activities within their strategic operating models. Therefore, the human workforce development activities that need to support supply chain processes are not formally planned for to ensure strategic supply chain objectives are met. Also, HR supply chain standards that align with process frameworks are limited.

As a result, staff members are often allocated to supply chain activities who do not have the requisite skills or process understanding to ensure optimal supply chain performance. This problem is exemplified by People that Deliver (PtD) through the paradigm shift required for HR systems improvement (PtD, 2019; see Exhibit 1).

Exhibit 1. PtD Required Paradigm Shift for Human Resources in the Health Supply Chain Context



Some proposed root cause statements underpinning the expansion of this problem statement highlight further dimensions of these workforce development issues, including a lack of:

- Global standards for public/private health care SCM process frameworks that feature enabling competencies, skills, aptitude, and experience

- Role-based definitions for industry-recognized health care SCM job functions and their associated competency-based best-practice descriptors
- Common alignment models that highlight different approaches and areas of congruence between private and public health care human resource frameworks
- Skills development needs analysis standards, specifically targeting public/private health care workforce development in a way that internally validates competency gaps exhibited by the staff member
- A harmonized curriculum framework offered by the health care supply chain community
- A fit-for-purpose learning curriculum that prepares learners for work within a private and a public health care supply chain environment, thus supporting workforce portability
- An industry body responsible for professional recognition and development that cuts across private and public health care supply chain sectors
- Ethical and accountable SCM standards, beyond those of the employers' own policies, and no body to which these individuals are accountable

To better understand issues in the availability and use of SCM human resources in a country context, the USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project, in conjunction with USAID and PtD, considers that a "whole of SCM labor market" approach provides a deeper and more holistic understanding of the SCM employment environment.

Whole of SCM labor market refers to the supply and demand for SCM labor in which employees are the supply and employers the demand in a specific country context. The country context includes urban, regional, and more remote environments and encompasses all the sectors where SCM technical personnel are employed in that country. Key stakeholders include government (ministries of labor, education, planning, and health, etc.), professional associations, academic institutions, private sector (resources industries, fast-moving goods, health, third-party logistics providers (3PL) and fourth-party logistics providers (4PL), etc.), and the humanitarian and development sectors.

Preliminary application of this approach in the Rwandan context has demonstrated an overall weak supply and demand for key SCM cadres needed for robust supply chains to be maintained across a variety of SC industry sectors. Although the marketplace for such human resources is weak, the overall desire for competent SCM professionals is growing, with a need to catalyze the SCM professional environment to increase supply and demand for SCM professionals who are active across a variety of commodity sectors.

An SCM professionalization framework containing an agreed-to competency framework core could be used by four distinct groups:

1. Governments to define the professional standards of the profession
2. Employers to articulate SCM competency requirements and career pathways in their organizations
3. Institutions of learning to define clear learning and teaching courses
4. SCM employees to map out a professional career in SCM

This study has two goals, to:

1. Determine if SCM stakeholders working in low- and middle-income countries perceive a need to develop such a framework, considering what such a professionalization framework should contain

2. Explore the similarities and differences between existing government health supply chain and private sector SCM competency frameworks, which could act as the core of an SCM professionalization framework

A Note on GHSC-PSM

GHSC-PSM recognizes that without a strong, skilled workforce at the national and local levels, system-based and technological improvements won't have their intended effect. Achieving a well-performing, motivated workforce requires strengthening the organizational systems, processes, and environment in which supply chain workers perform their duties.

The GHSC-PSM vision is to foster self-sufficient organizations with institutionalized systems. This in turn will help ensure high performance from a professionalized and consumer-centered workforce for effective and efficient delivery of health commodities through to the last mile.

The project goes beyond basic capacity building to look at long-term solutions to organizational and people development, considering the development of human resources systems as an investment. We do this by providing technical support to continuously improve the systems, processes, and factors affecting an organization's ability to plan for, manage, and support professionalized national cadres of supply chain professionals.

A Note on People that Deliver

With more than 250 organizational members globally, PtD advocates for interventions that improve the demand and supply of a qualified health supply chain professional in organizations, which in turn strengthens the individual practitioners within those organizations. Since 2011, PtD has contributed significantly to the human resources body of knowledge available for health supply chain practitioners. As custodians for the stepped-approach toolkit, which features the Competency Compendium for Health Supply Chain Management, PtD was an obvious partner in considering an SCM professional framework.

A Note on SAPICS

SAPICS has taken the step to professionalize SCM in South Africa by taking on the role of the professional body for supply chain management. Having served the profession for 50 years, it is well positioned to provide the services of the professional body that will see it uplift supply chain management as a profession as well as the practices and people within it. It also assists in fostering relationships with government to assist in addressing strategic imperatives for economic transformation in South Africa and the continent of Africa more broadly.

SAPICS awards professional designations based on technical supply chain competencies. These are presented as 11 competency groups in Exhibit 2.

Exhibit 2. SAPICS Competency Framework Groups

Methodology and Approach

To conduct this research, we adopted a three-step approach:

1. Semistructured in-depth interviews
2. A desk study
3. A validation workshop

Goal 1: Determining the Need for a Professionalization Framework

In addressing the first goal of our research, we used semistructured interviews and the validation workshop to gain an understanding of the need for professionalizing supply chain workers in the private and public health sectors, as well as to gain an understanding of what that may look like. Data were collected through in-depth semistructured interviews (Annex 1). We used this methodology to assess attitudes and opinions toward professionalization, as well as broad themes on how such a framework could be implemented.

We conducted interviews with ten participants, who are listed in Annex 2. They included in-country health care participants, donor organization representatives, private supply chain and human resources practitioners, and implementers within the health care supply chain space.

In the interviews, we took notes, made digital voice recordings, and collated them so that a progressive dataset may be used to further direct the interviews. We conducted direct thematic analysis to analyze the interview data and establish an overall attitude toward each question based on common findings. The advice and attitudes were then used in the next phase of the research in the validation workshop to further expand on the themes generated and to validate the overall data collected.

During this validation, we conducted a "world café" activity. It included the following steps:

1. Participants were asked to rank and categorize their opinions and thoughts on some of the key points found during the research.
2. Delegates were presented with six statements and/or questions. They were asked to give their opinions and/or answers to these and place them on a board for review.
3. Delegates then reviewed all given opinions and/or statements and voted on them. Those with the highest number of votes for statement/question were ranked highest, with rank decreasing by decreasing number of votes.
4. These data, along with notes taken during the workshop, were then incorporated into the final analysis and incorporated into the final solution set. Validation workshop attendees are listed in Annex 4.

Goal 2: Exploring Similarities and Differences in the Government and Private Sectors

To address our second goal, we conducted a desk study of competency content already available in the health care space. We believed that a comprehensive library of content was already available to create the competency model for professionalization; however, it had not yet been packaged

correctly. Thus, the first output would be a comparison of the primary frameworks available to the team. The primary works were from the SAPICS Professional Body Framework (SPBF) (overview provided in Annex 6) as well as the PtD competency compendium (PCC) (overview provided in Annex 7). We consulted additional documents, but they were not the primary focus of the desk study, which is provided in Annex 3.

The desk study included three steps:

1. Becoming familiar with the material to better understand the purpose and structure of the material.

2. Conducting a detailed thematic analysis of competency groupings, as these were laid out differently in both frameworks. The material in the PCC was in multileveled singular statements. Through considering the path from one statement to the next, one could understand its meaning, as shown in Exhibit 3.

3. Presenting the SPBF in broad statements of competency, as shown in Exhibit 4.

Exhibit 3. Construction of PtD Competency Compendium

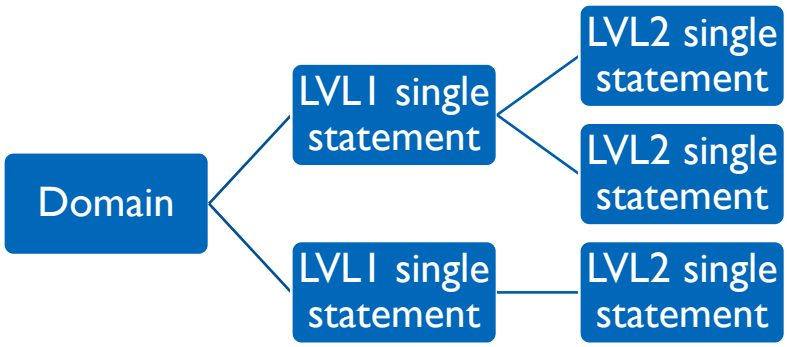
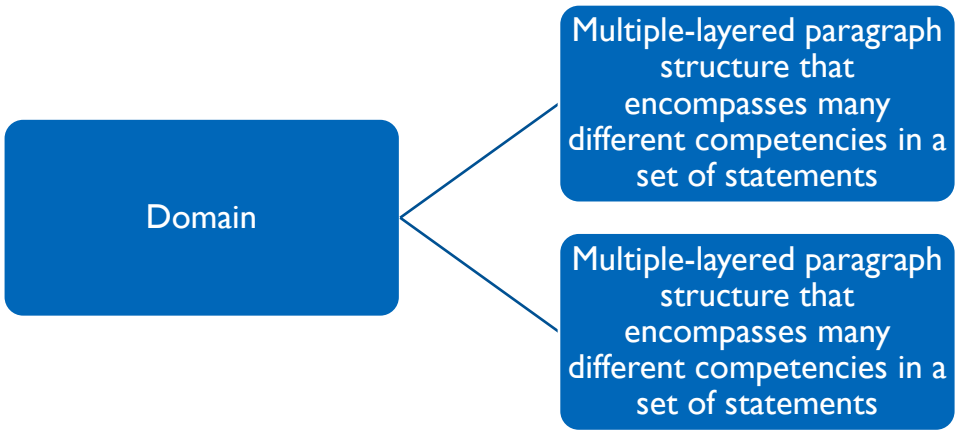


Exhibit 4. Construction of SAPICS Professional Body Framework



Because of these fundamental differences, the only way to merge or compare the two works was to analyze the core themes of each sentence.

We followed this process:

1. Since the SPBF is industry agnostic, we selected the PCC as the master material. Anything found in the SPBF that was not represented in the PCC became a candidate for addition and public health care "translation," and anything found to be common became a candidate for merge.

2. Candidates for merge were competency paragraphs from the SPBF that may fit multiple competencies within PCC and require further analysis on how to integrate them into the PCC.

3. We compiled and compared classifications of "merge" or "add" to the SCOR framework (APICS, 2019), briefly comparing against the SCOR process domains within SCOR level 3 domains of the Make-to-Order and Make-to-Stock level 2 domains.

4. We ranked domains within the PCC by degree of congruence to the SPBF, counting the number of times a full domain was encapsulated within a paragraph from the SPBF. If it was found to be only a partial match, we gave it a score of 0.5 for that match.

Results and Discussion

Results included the following:

1. Participants in the validation workshop and in our interviews confirmed that a professionalization framework is stimulating for the health care supply chain industry in bolstering supply of, and demand for, skilled personnel.

2. Suggestions for how to develop a SCM professionalization framework were validated and implemented.

3. The concept of the merger of the PtD and SPBF was tested and validated as a primary method for moving forward with the merger of the two models to develop a common competency framework.

Goal 1: Determining the Need for a Professionalization Framework

The first objective was to gain insight, through in-depth semistructured interviews, into thoughts about, and attitudes toward, the professionalization initiative of health supply chain management (HSCM) practitioners within the African context.

We then analyzed the data collected to gain insight into the overall response to each question and compared the perspective shown during the validation workshop in the world café activity. Full results are provided in Annex 5.

The following is a summary of answers to each question posed in the interviews. The first set of questions deals with the perceived importance of developing a professionalization framework. It begins with whether the core concepts of a framework are believed to be valid.

Do you think that it is important for countries to define the competencies required by different levels of health care SCM staff?

- Resounding "yes" from all participants
- All the interviewees mentioned that they would like to open up and assist in developing and/or advocating for the professionalization of health care supply chain professionals
- People in positions from top to bottom do not have competencies to achieve required results
- Yes, and maintenance must be a priority to maintain the framework in light of new technology and methods
- Yes, it will provide motivation for improvement

As can be observed from the above, participants believe that competencies within multiple levels of health supply chain management should be defined. This question then led to the following:

Do you think it is important to define the health care SCM education requirements needed to meet agreed SCM competencies?

- Yes, or else we would not understand the gap that needs to be closed
- Yes, and it should be linked to job roles

- Yes, it would assist in reducing the tendency to award employment based on having the correct connections only

Again, the overall perspective on this topic was positive for multiple reasons. Thus far the main components of the concept behind the framework are gaining significant validation; however, aspects still need to be considered in the overall design of the framework and whether it should be contextualized by country:

Would a "professional framework standard" that could be contextualized to specific country contexts assist countries to do this?

- Yes, standardization is an issue in health care supply chains, so we need reliability of outcome; also, each country has its own peculiarities that we need to accommodate
- Yes, because countries have different perspectives on hierarchy and where they fit in
- Yes, but it's a huge scope of work
- I don't think so when building a framework; we need to standardize around a single set of information [because] if we don't standardize, the maintenance of the framework becomes too complex

Of those interviewed, only one participant disagreed with contextualizing the framework per country (no detailed reason provided). The perspective on this question was then further validated by the world café activity during the validation workshop, where the overall highest-ranked answers to this question encompassed contextualizing the framework as in the following:

Highest-rated comment: "…Guide may be more appropriate, definitions may need to be country-specific."

In addition to contextualizing the framework by country, knowing whether the framework should cover the public and private sector is also important. As within the health care sector there may be a perception that the two are mutually exclusive. Therefore, this assumption must be tested. This was done through the following question:

Should such a framework cover the private and public sectors?

- Yes, we are partners and we must work toward the same objective and what is best for industry
- Yes, we have seen the challenge with reinforcing learning, when they are skilled up, they leave for the private sector and so by standardizing we can have true cross-pollination across both sides
- Yes, competencies must be covered across the entire supply chain, including private and public; also, as donor funding situations change, countries will become more reliant on the private sector
- Yes, but there is still a lot of work to bring them together
- Not sure; there are different motivations between the two, but standard operating procedures are similar

The overall perspective was that the framework should encompass the private and public sectors, and this was further confirmed through the world café activity with the highest-ranked comment:

> *"Agree. Since people should be able to switch jobs both in the private and public sector, both sectors should be well encompassed."*

Also, aside from the structure and scope of the framework it is important to classify where the professionalization toolkit and framework may reside and who may be entrusted with its maintenance. It was important, then, to ask what type of entity should be responsible for this:

Do you think that an international professional association is the right entity to hold that standard at the global level?

- There needs to be a body that can control and maintain the competencies and links to job descriptions and education, something like a pharmacy council
- Yes, it must be housed in an organization with this scope and financial resources or financial model to maintain the framework
- This initiative will benefit from a recognized professional body stamp of approval
- I can't think of a better solution
- Yes, but you will also need the assistance of the donor organizations
- Should be held at the country level like Pharmacy Councils
- Yes, but perhaps it should be aligned with Pharmacy Councils and similar organizations across Africa
- Yes, but in-country resources must have the freedom to customize to their environment

Answers to this question were more vague than previous questions but leaned toward housing the framework in an international professional body; however, uncertainty on this topic was significant. To further illustrate this, the highest-ranked comment from the validation workshop was as follows:

> "…council established by an act of parliament to regulate practice…"

This would suggest an organization like a pharmaceutical council; however, a close second on this topic was:

> *"…this depends on the country…This will be entirely context specific…"*

This further alludes to the community being divided on the matter and thus, it is believed, further work must be done to discover this answer. However, two perspectives were agreed to during the workshop and in the interviews. The professional association must:

- Have the credibility to add validity to the initiative
- Have the resources to maintain the standard with limited donor funding

With the responses to these three questions confirmed, it is now possible to get a better view of what the requirements for the design of the framework should be. To summarize the sentiment:

The framework is perceived to be a tool of value in this sector and should be designed around the principle that the framework must:

- Link to job roles
- Incorporate public and private sectors
- Have a mechanism for contextualization within each country
- Be housed in an organization that has the credibility to add validity to the initiative
- Be housed in an organization that has the resources to maintain the standard with limited donor funding

The next responses that needed to be collected center around the methodology of implementation, answering the question as to what may be required to support the professionalization framework and the tools required to do so.

What is required in countries to implement such a professional standard for those working in HSCM?

- Must have a solid implementation process
- Must get top-level buy-in for implementation, the value must be quantifiable, and evidence-based
- Perhaps there should be a "carrot" in the form of conditionality for funding
- Country-level advocacy

The response to this question centered mostly on getting the process for implementation correct, which should incorporate a mechanism for gaining buy-in from the top levels of each country or organization. This response then led well into the following question:

What tools and/or guidance is required to assist countries in implementing such a standard for those working in HSCM?

- The framework needs to be circulated internally and between organizations and countries
- Solid implementation process, which incorporates change management from top to lower levels of staff in SCM
- Walked through in country, run workshops, and create champions and mentors
- Examples of the results of compliance should be created and used to motivate for implementation
- Partner with interested countries in creating a Proof of Concept to show the value proposition

This question was used to focus the conversation to enable the participant to give more specific answers to the types of tools a country or organization needs to implement the suggested standard. Similarly, to the previous question, the need for a solid implementation process but also some further insight was given as to how to gain buy-in from within the structures. One of the more powerful examples is the need to provide a reference as to the effect of implementing this standard in a Proof of Concept form. From the validation workshop this topic came up often. It also needs to be noted, as the initiative will require a first-mover country for this Proof of Concept.

Once implementation suggestions were collected, the next thoughts needing to be collected were the expected barriers to implementation and proposed solutions:

What barriers would you see in implementing such a professional standard for those working in HSCM?

- Resistance to change
- We never had it before, but we have been operating efficiently before
- Could be influenced by generational differences
- It could also upset promotion plans for some individuals
- Government may be worried that there could be a reduction in headcount

- Government may not have the budget to upskill their staff nor the budget to retain them once they're upskilled
- A worry that if this becomes legislated, the cost of compliance may make private sector organizations uncompetitive
- Fear of "brain drain," as the professionals can move from one country to another anywhere in Africa
- Not many barriers, must make sure decision-makers understand the importance of the initiative, everything must be evidence-based, must be sustainable
- Language barriers, for example, Francophonic countries
- People in power change all the time, which makes "selling" longer-term projects difficult
- If the assessment process is online, it may be a problem to roll out
- Labor brokers may be vehemently against this, as there may be a fear of invalidating the workforce

Also, participants' thoughts on how these barriers may be overcome needed to be collected:

How could these barriers be overcome?

- Build a solid change management plan, involving communication sessions for staff across the supply chain
- Decision makers need to understand that upskilling gives them the ability to scale
- The private sector must be shown that following the standard will make them more competitive
- Use professionalization as a criterion for labor broker workers to be converted to permanent staff
- Create in-country champions; use them to unlock budget for the initiative
- Show decision makers tangible value to implementing the change
- Go in with a trusted stakeholder
- Be careful not to overpromise

Results to this point provided a consensus on tools and processes, as well as an insight into expected barriers. Each point must be carefully considered when developing the approach for this initiative to succeed. These perspectives were also further corroborated by the validation workshop.

The final step to the interviews was to gain any insights as to what the participants thought we should add to the framework, that is, is there anything in the field of health care SCM that is similar enough to what the project aims to achieve and as such should be incorporated:

Can you recommend any other input works that we should consider?

- Maturity models already in play in the health care supply chain
- SCOR model skills and enablers
- UNICEF training needs analysis toolkit
- USAID HR assessments
- Job descriptions (in development)

- PCC—Review of Competencies

Does your country or organization use an internal supply chain competency framework that governs recruitment and upskilling activities?

- No, and I think we must do better
- Yes, JSI has a framework but I have never seen a successful implementation

These artifacts must be considered going forward in developing the competency framework and any supporting enablers that surround it.

The conclusion that can be made from this was summed up by some closing comments from participants:

- "Looks good"
- "You've got my backing"
- "You have a big job ahead of you"

Goal 2: Exploring Similarities and Differences in the Government and Private Sectors

In the desk study, we concluded that PCC and SPBF should be compared according to the methodology outlined above. The ultimate objective was to compare both competency sets to identify what work needs to be done to combine existing work into a holistic framework that may work not only for public health care but also the private sector. For this the domains within the PCC and SPBF needed to be classified by their congruence with each other. This ultimately resulted in two categories of domain: add and merge.

The first category for consideration is the domains where we found some congruence between the PCC and SPBF. Due to the nature of the two frameworks, any domain from the SPBF that had congruence with a minimum of one of the PCC domains was considered for merge. Domains considered for merge are shown in Exhibit 5.

Exhibit 5. SAPICS Professional Body Framework Domains for Merge with PCC

Developing supply chain strategy	Execution management
Understanding different types of supply chains	Inventory control
Demand management strategy	Procurement execution
Strategic sourcing	Supply chain sustainability
Demand sensing and shaping	Supply chain performance indicators
Demand planning	Implementation of outsourcing
Supply planning	Process optimization across the supply chain
Developing multimodal solutions	Systems technology deployment
Transport operational management	Contract and supplier performance management

Reverse logistics management	Supply chain cost management (including total cost of ownership)
Fleet management	Governance and risk management across the supply chain
Production planning and scheduling	

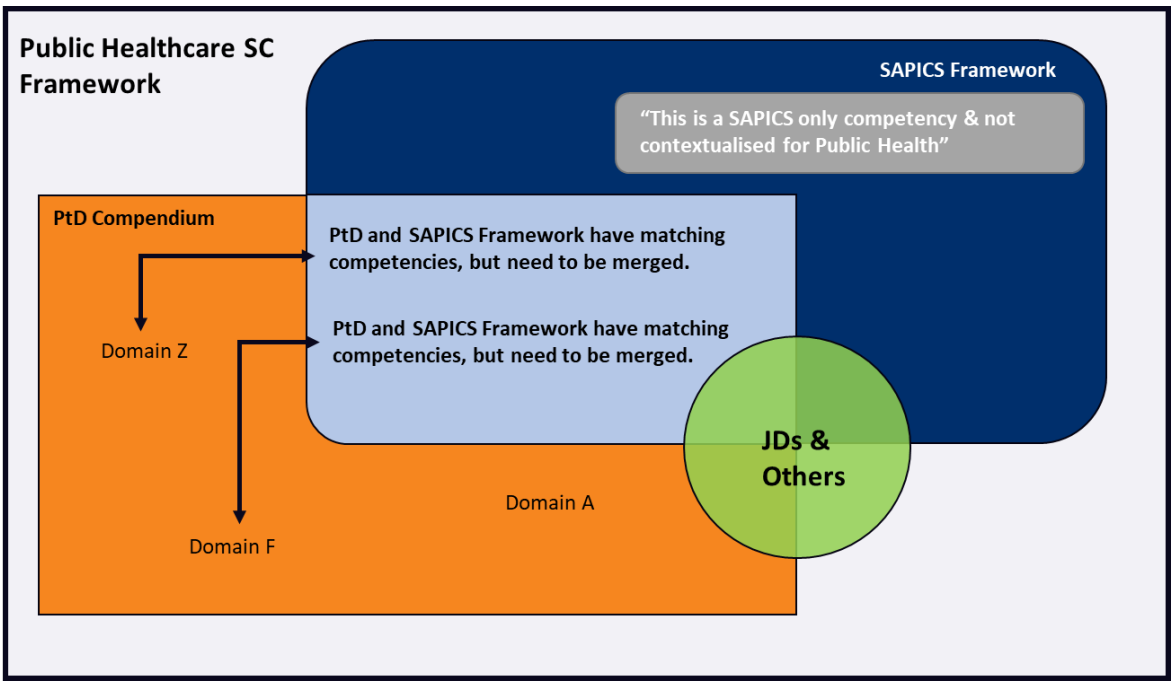
Once congruence was found between these domains, we could draw out those domains that occur in the SPBF but not in the PCC. (See Exhibit 6.) From this, we could begin to classify domains that need to be added to the PCC to incorporate aspects not specific to the public health care supply chain but required if the combined framework is to satisfy the private sector as well.

Exhibit 6. Domains for Inclusion into the Public Health Care Professionalization Framework

Product development	Determine manufacturing strategy
Portfolio management	Product design
Developing a demand fulfilment strategy	Facility design and layout
Demand and supply balancing	Facilities operational management
Operations scheduling	Materials handling
Customer relationship management	Environmental management
Customer order management	Supply chain improvement concepts
Global supply chain integration	Structuring and change management
Developing global logistics strategies	

These domains, while they are believed to be pertinent to the health care industry supply chain, will require some wording changes to fulfill their role within this specific industry. (See Exhibit 7.)

Exhibit 7. Framework Domain Congruence



Finally, to verify the comparison, we collated an overall estimate of congruence for each major PCC domain with the expected similarity between the more supply chain–focused domains, e.g., Resource Management being higher than personal and pharmaceutical-specific domains, e.g., Use. The ranked similarity is shown in Exhibit 8.

Exhibit 8. PCC Domains Ranked by Degree of Congruence Descending

Domain	Congruence Count
5, Resource Management	4.5
3, Storage and Distribution	3.5
2, Procurement	3.5
1, Selection and Quantification	2
4 and 6, Use, Professional and Personal	<2

Then, in consultation with members of USAID, the GHSC-PSM and PtD team began putting together a skeleton for how this professionalization framework could be constructed. The conclusion from the interviews and the desk audit was that it cannot just be competency to job role; it needed to be a framework that would be what the team terms "service based" (allowing for different cadres to take on SCM roles, depending on country context). Therefore, to extend some of the SPBF thinking, the idea is to use the competencies discovered and allocate them a value, based on what that competency may look like at multiple conceptual levels.

Exhibits 9–12 are all linked by either the competency vertical, in this case, processor, specialist, or charted practitioner, or job role, or both so that there is a golden thread back to the standardization of the combined competency framework throughout any change and customizations a country or organization may require at the job role or educational levels.

Exhibit 9. Representation of Framework

	PtD/SAPICS Competency Definition	Processor	Specialist	Chartered Practitioner
Picking in a DC warehouse	*X*	*Y* = limited aspects of *X*	*Z*=*Y* + additional aspects of *X*	*X* and its relation to other competencies

Note: any names or allocations are for demonstrative purposes.

Exhibit 10. Example of Structure of Job Roles and Definitions Linking to Proposed Framework

Competency/Job Roles	Warehouse Manager	Supply Chain Manager
Warehousing	Chartered Practitioner	Chartered Practitioner
Warehouse People Management	Chartered Practitioner	Chartered Practitioner
Supply Chain Management	Specialist	Chartered Practitioner

Note: any names or allocations are for demonstrative purposes.

Exhibit 11. Linkage of Educational Artefacts to Competencies

Competency/ Educational Artefact	Manage Logistics Operations	Strategic Supply Chain Management
Warehousing	Chartered Practitioner	Chartered Practitioner
Warehouse People Management	Chartered Practitioner	Chartered Practitioner
Supply Chain Management	Specialist	Chartered Practitioner

Note: any names or allocations are for demonstrative purposes.

Exhibit 12. Example of Education Mapping to Competencies and Job Descriptions

Course Name	Learning Outcomes	Competency	Framework Vertical	Job Role
Manage Logistics Operations	1	Supply Chain Management	Specialist	Warehouse Manager
	2			Logistics Manager
	3			Procurement Officer
	4			
	5	Warehousing	Chartered Practitioner	Warehouse Manager
	6			Logistics Manager
	7			Procurement Officer
	8			Supply Chain Manager
	9			

Note: Any names and attributions are for example purposes only.

Several conceptual ideas around change management and implementation methodologies were outlined and discussed at the validation workshop. Some of these concepts are detailed below.

Moving forward, a body of work needs to be completed to:

1. Finalize the necessary components of an SCM professionalization framework that could be implemented in a country context

2. Improve the demand side of professional availability

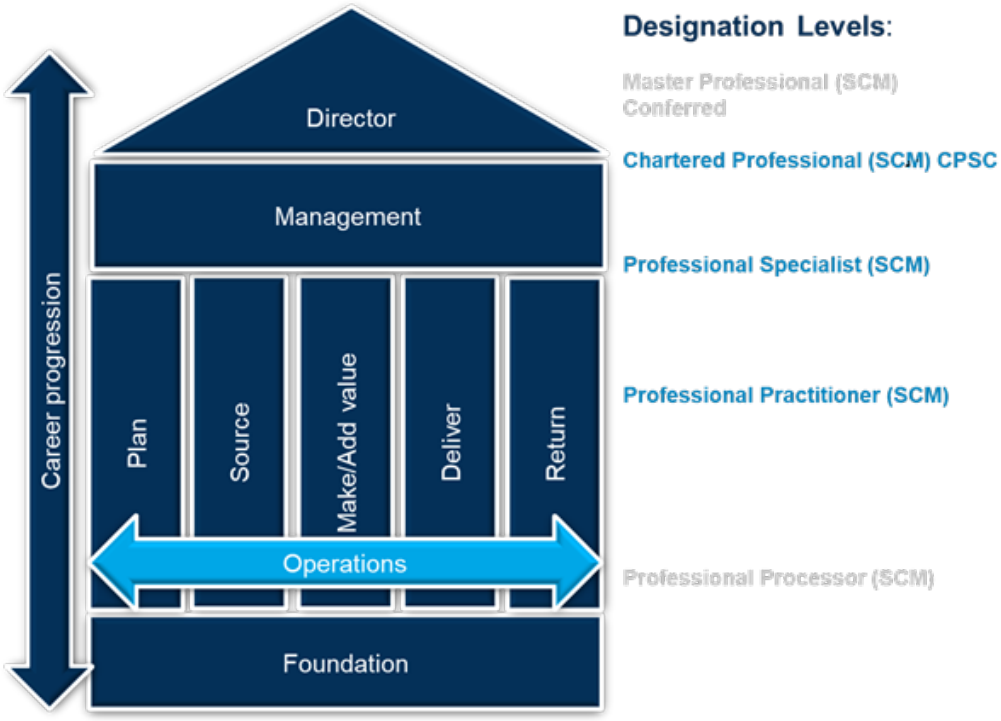
3. Complete the work required to enable academic and professional institutions to develop the required courses to develop supply of relevant SCM professionals

The next section provides a more detailed explanation of the suggested components of a proposed SCM professionalization framework, with a suggested time for implementation and estimation of effort for completion.

Next Steps for the SCM Professionalization Framework

The professionalization framework will include the tools needed for country stakeholders to come together to validate and implement the framework for creating the catalyst for marketplace improvement for SCM professionals in that country. It is understood that the final framework will have an SCM competency core meeting public and private sector needs, with suggested designation levels on the right and aligned education and training offerings on the left. The SAPICS framework, Exhibit 13, would be modified to fit the agreed-to professional framework. It is provided here as an example.

Exhibit 13. SAPICS Professional Framework



Feedback from key stakeholders during interviews and the validation workshop provides the following design inputs to be considered in further developing the SCM professionalization framework. The framework must:

- Link to job roles
- Incorporate public and private sectors

- Have a mechanism to contextualize within each country
- Be housed in an organization that has the credibility to add validity to the initiative
- Be housed in an organization that has the resources to maintain the standard with limited donor funding

All participants must believe that this is definitely the way to go.

The framework outlined below is believed to satisfy the first three requirements listed above.

The proposed SCM professionalization framework has four components, described below. The level of consultant effort required and timeline for developing these components are provided in Annex 8. This framework will be developed through a joint collaboration of PtD, USAID, and GHSC-PSM, overseen by a technical working group made up of these members.

As an initial activity, the team will develop detailed scopes of work for these components. Components 1–3 are interrelated and will be developed in parallel before the detailed country implementation methodology is completed.

1. **Finalize the competency framework that aligns the private and public sectors**

   An agreed-to competency framework is the core of this professional framework, providing the links needed to align the supply and demand components outlined below.

   This technical paper provides the groundwork for completing a combined PCC and SPBF competency set. The resulting competency framework will include technical and managerial elements that will form the core of the SCM professionalization framework, including a maturity approach in competency areas as staff move from "processor" to "chartered professional."

   The domains found within the desk study should be merged where needed and added similarly. As we found during the interviews, the community should be engaged to provide context to the merger and addition of these domains, for which there is significant interest in participation. For the proposed merged framework, we recommend undertaking the following tasks:

   - Describe and contextualize the 17 competency candidates for inclusion in the model
   - Describe and merge the 28 competencies to be merged into the model

2. **Create a repository of SCM job descriptions and roles (Demand)**

   With the revised competency framework as the core, a range of roles with associated job descriptions should be developed to span the width of SCM competencies captured in the framework (Plan to return) and the potential career maturity of these role (e.g., from processor to chartered professional). This needs to be structured in a way that allows flexibility of implementation at the country level and aligns with the "designations" defined in the supply component explained below. The following three aspects should be included:

   - Study job roles from a large sample set of health care organizations and countries to define the professional levels and ranking
   - Align these roles and structure to the education, training, and credentialing framework

- Create example organograms and job descriptions, including reference to key performance indicators

3. **Develop education, training, and credentialing framework (supply)**
    - **Qualification and Certification:** With the revised competency framework as the core, academic and professional education pathways need to be developed that align with the suggested job roles and job descriptions.
    - **Designations:** These job roles then need to be aligned with a career path for SCM professionals that can be adopted by professional associations and/or professional councils (depending on country context). This alignment with job roles will then show clear education and career pathways for SCM professionals across the competency framework (e.g., moving between plan through to return), as well as through the competency framework (e.g., from processor to chartered professional). This needs to be structured in a way that allows flexibility of implementation at the country level.
4. **Create a country implementation methodology**

With the three components, a country implementation methodology needs to be created in partnership with HSCM country stakeholders (e.g., Rwanda and Nigeria are noted due to their current interest in improving professionalization). The resulting methodology will be a practical set of steps with supporting tools that seek to engage all relevant stakeholders in a country context with a view of what changes need to be made in a country for the proposed SCM professionalization framework to be implemented. A clear change management approach needs to be embedded in this country implementation methodology. The implementation methodology will consider an approach that validates the framework and agrees on a white paper for implementation. The implementation white paper would seek to:

- Define stakeholder roles
- Align employers with the demand side of the framework (government and private)
- Align professional bodies and government professional credentialing bodies with agreed designations
- Align academic and professional education and training institutions with the framework
- Educate existing and potential SCM professionals with the framework

Conclusion

Our research reveals that creating a SCM professionalization framework is of great interest to the community. In the desk audit to bring together SAPICS, PtD material, and GHSC-PSM thinking to produce a draft approach, we identified main elements and established next steps.

Moving forward, work is needed to finalize the components of an SCM professionalization framework and to validate that framework in a specific country context, with the aim of catalyzing the SCM labor market in that country.

The question remains of framework custodianship, which at the end of this research requires more study to provide this insight. This answer is believed to be tightly linked to the method of contextualization within each country, and this question can be further pursued when a completed framework is validated within a country.

GHSC-PSM will continue to coordinate with PtD, USAID, and SAPICS to further the outcomes of this research.

Limitations

The study would have been served well by incorporating more in-country ministerial appointed personnel as well as medical practitioners. The small number of interviews and validation workshop participants is believed to be sufficient to provide consensus for moving forward, but the authors acknowledged that a wider group of informants would have added further weight to the current findings.

References

APICS. (2019, 06 26). *APICS:SCOR® model*. Retrieved from APICS:SCOR® model: https://www.apics.org

People that Deliver. (2019, January 26). *People that Deliver*. Retrieved from People that Deliver: https://peoplethatdeliver.org/ptd/about-us/who-we-are

Annex 1. Data Collection Instrument

- Do you think that it is important for countries to define the competencies required by different levels of SCM staff?
- Do you think it is important to define the SCM education requirements required to meet agreed-to SCM competencies?
- Would a "professional framework standard" that could be contextualized to specific country contexts assist countries to do this?
- Should such a framework cover both the private and public sector?
- Do you think that an international professional association is the right entity to hold that standard at the global level?
- What is required in countries to implement such a professional standard for those working in HSCM?
- What tools and/or guidance is required to assist countries in implementing such a standard for those working in HSCM?
- What barriers would you see in implementing such a professional standard for those working in HSCM?
- How could these barriers be overcome?
- Can you recommend any other input works that we should consider?
- Does your country or organization use an internal supply chain competency framework that governs recruitment and upskilling activities?

Annex 2. Interview Participants

Anita Kalema	Pharmacy Coordinator, GHSC-PSM, Rwanda
Craig Usswald	Supply Chain Director, Village Reach
Samuel Chakela	Director (Head) Talent & Learning, DSV
Glenda Maitin	Program Director Public Health Supply Chain Initiative, ASCM
Dominique Zwinkels	Executive Manager, People that Deliver Initiative
Ingrid Gazquez	Learning and Development Specialist Supply Chain, Global Fund
Elizabeth Igharo	Managing Director, International Association of Public Health Logisticians
Gamal Khalafallah	Supply Chain Transformation Chief Strategist, Pamela Steele Associates
Bridget McHenry	Senior Organizational Development Advisor, Commodities Security & Logistics, USAID
Qaqamba Qauka	Training and Development Manager, UPD

Annex 3. Documents Consulted

Document	Link
PtD Competency Compendium for Health Supply Chain Management, PtD	https://peoplethatdeliver.org/ptd/sites/default/files/resource_contents_files/Feb%2014th%20FINAL%20PtD%20Public%20Health%20SCM%20Competency%20Compendium%20with%20ISBN%20and%20CC%20and%20publisher.pdf#overlay-context=resources/stepped-approach-documents
Introduction to training the immunization supply chain workforce	https://www.who.int/immunization/programmes_systems/workforce/Standard_Immunization_Competencies_Framework_DRAFT.pdf?ua=1
Review of competency compendium for health supply chain management, PtD	Supplied via Email
Compendium of Supply Chain Roles and Job Descriptions Draft June 2019, PtD	Supplied via email, Incomplete
PtD Theory of Change, PtD	https://peoplethatdeliver.org/ptd/sites/default/files/resource_contents_files/PtD%20Theory%20of%20Change%20Full%20Outcomes%20Map%200718_1.pdf
SAPICS Professional Body Framework	Not openly distributed
DSV Job Descriptions	Provided courtesy of DSV Pharmaceuticals
Global Health Supply Chain Program-Procurement and Supply Management Mozambique Warehouse Assessment Report	https://static1.squarespace.com/static/58d339a29de4bbb170151bd2/t/598270e8cd0f68915ce5b9f2/1501720809363/GHSC-PSM-Mozambique-Warehouse-Assessment-Report-Axios-formatted.pdf
Supply Chain Management Degree and Certificate Programs: A Landscape Analysis of African-based Offerings	https://peoplethatdeliver.org/ptd/download/file/fid/737
Introduction to Training the Immunization Supply Chain Workforce	https://www.technet-21.org/iscstrengthening/media/attachments/2018/07/30/i-introduction-to-training-the-iscm-workforce.pdf

Annex 4. Validation Workshop Participants

Attendee	Organization/Role
Andrew Brown	Workforce Development Specialist, USAID GHSC-PSM
Bridget McHenry	Senior Organizational Development Advisor, Commodities Security & Logistics, USAID
Dominique Zwinkles	Executive Manager, People that Deliver Initiative
Alexis Strader	Project Officer, People that Deliver Initiative
Keitaro Hara	Research Analyst, People that Deliver Initiative
Richard dos Santos	GHSC-PSM Consultant
Andrew dos Santos	Director, CLX
Craig Usswald	Supply Chain Director, Village Reach
David Crew-Brown	Supply Chain Consultant, Guidehouse
Khadija Jamaloodien	Director, National Department of Health South Africa
Tonya Lamb	Business Development Manager, SAPICS
Jenny Froome	Executive Director, SAPICS

Annex 5. Results of World Café

Question 1	**A professional framework will be created with suggested country customization points defined**	Rank
Answers	Should also include thinking on stakeholder engagement and how to generate the necessary political will	1
	Agree, A common maturity model would be useful and country contexts should be more around adoption guidelines than adaption of description standards	2
	Yes. Country specific would be required but I would like to see the generic framework be very standard across all countries	2
	Agree, but what will be the process for the customization? Who is responsible for the authority on that?	3
	Mostly agree. However, once you start doing that they will be less harmonized. As a result, you cannot compare country by country	4
	Professional framework is overdue in South Africa	4
	Yes. For example, in SA we have the PfMA (Public finance Management Act). Certain legislation may have an impact—policies around import and export	4
Question 2	**The professional framework will encompass private and public sector supply.**	
Answers	Agree. Since people should be able to switch jobs both to private and public, both sectors should be well encompassed.	1
	Perhaps we need to stop referring to "private sector and public sector processes"—they are essentially the same processes	2
	Agree. Health SCs are not entirely embedded in either the public or private sectors and the framework needs to include both	3
	Agree. Public sector is also dependant on efficiencies in the private sector. Private sector–contracted suppliers also need to be upskilled	3
	I would suggest both bee calculated simultaneously but separately. The chasm between perceived competency may be daunting for public and demonizing for the private sector	5
	Yes. Supply chain management is the same in its generic principles across both. There may be some adaption required due to legislation and policies.	5
	Agree	6
Question 3	**Pharmacists are willing to adopt a supply chain focused professional framework.**	
Answers	Maybe. Although they are willing, they often are set in their ways (learned on the job). Sometimes legislation stands in the way. You need to be a pharmacist to run a warehouse…	1
	The case will need to be made (with evidence presented) as to why this is necessary and how it will ultimately benefit the pharmaceutical profession—expect some resistance.	2
	Pharmacist are historically clinically oriented. To encourage SCM professionalism, change management is needed. Δmx => enabler	2
	I would hope so, but this is a new area for me. The fact that these discussions are taking place indicates yes.	3
	Disagree. It's ideal, but if pharmacists keep doing SC-related tasks, there will be no place for real SC professionals. Also, it is highly understandable that pharmacists want to pursue their own career.	4
	Yes pharmacists are, but government ministries are not.	4
	They probably get it. They feel the pain of a stockout more acutely than other practitioners	4
	Disagree. There will be resistance and the adoption should come from the main authority in country.	4

Question 4	**The professional framework will be used to define both, in-country supply chain education curriculum and SCM roles in organizations.**	
Answers	Define => may be too strong a term. "Guide" may be more appropriate. Definitions may need to be country specific.	1
	Agree, but input should come from local academic institutions and local supply chain organizations to ensure the right definition.	2
	Probably important for continuity; the second half SCM roles in organizations is vital for a career pathway.	3
	"The framework may be used to define both…" let the user determine how to use.	4
	See this as a challenge. Many obstacles to overcome such as existing frameworks structures.	5
	Yes. It should drive towards this… if the prof framework is well defined, it should generate need for the role def & then training result to educate toward efficiencies in that role.	6
	Agree. Only if it's possible and if framework can be kept clear and concise.	7
Question 5	**What in country entity (professional body, association, council, etc.) would implement and maintain such a professional framework?**	
Answers	A council established by an act of parliament to regulate practice. Association/professional body management -> membership and profession	1
	This will be entirely context specific. However, framework needs to address what to do when an appropriate entity is not apparent.	2
	Unfortunately, I have no idea outside of SA. But this will require lots of investigation.	2
	This depends on the country. E.g., in Kenya it would be KISM, in ZA it would be SAPICS, but in other countries it might be the NLWG.	2
	Not sure. In SA probably SAQUA. It will have to be independent overview body. Not on training organisation but independent. Engineering council as an example. Not that easy in SC as so broad.	3
	It should be allowed for different organisation to take the role. The key is to be reliable, sustainable, and useful.	3
	The pharmacist council should sign off but should be implemented and maintained by a local professional association.	4
	No idea—I was surprised at treasury involvement. There are so many sectors it is hard to tell. Maybe finance. It's all about frugality.	4
Question 6	**What other comments would you like to make regarding the development of a professional framework for health supply chain management?**	
Answers	In pharmaceutical space ->multidisciplinary team need - Gap: Use => therefore need pharmacist in clinical practice to guide forecasting/estimation needs to expand beyond just pharmaceuticals. Pharmaceuticals is a highly regulated space -> extremely complex. Complexity increases when the supply chain for APIS also needs to be managed ->supply chains with a supply chain. Advocacy change management needed. Understanding that Rome wasn't built in a day. "High- level targets"?	1
	Need to build a plan for advocacy and awareness raising to build the buy-in from MOH/local SC organisations	1
	Need for development of a communication strategy for those less engaged in this sphere and key decision makers	1
	Recommend developing advocacy messages to support/help buy in that are simple, clear for non-SC pros.	1
	Planning on getting endorsement from global entities such as WHO, UNICEF?	2
	Training was stated as the first casualty in budget cuts. Training needs to be seen as an immediate job enhancer versus disrupter.	3
	To rigid framework might prevent newcomers or people who want to have a new career from entering SC industry.	4
	It's long overdue.	5

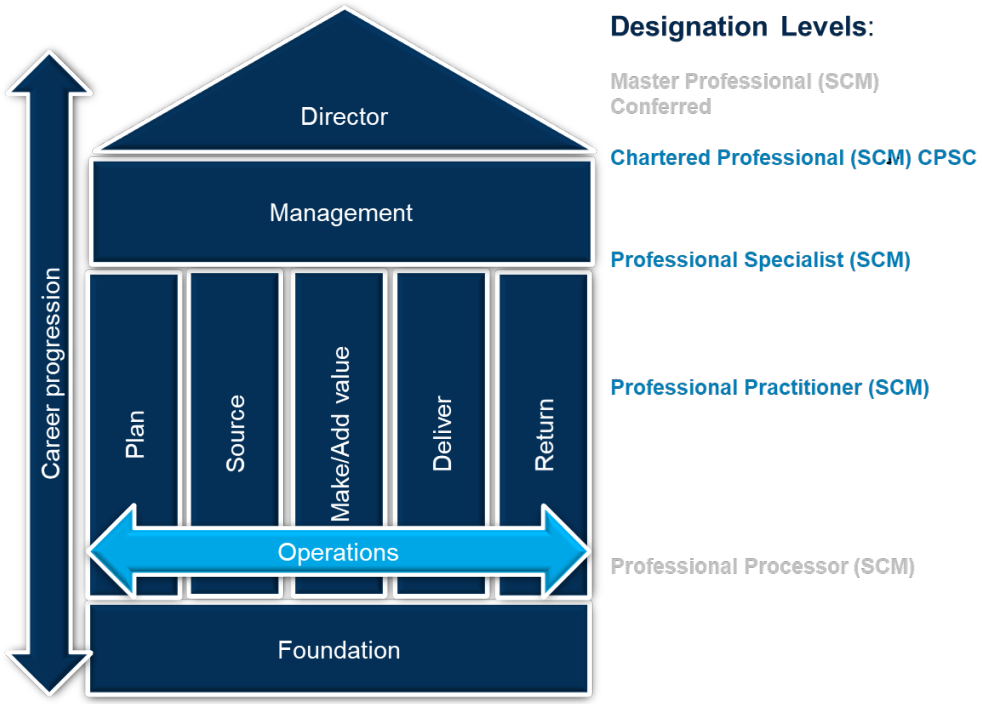
	Much needed and yet in current role and structure, work being done in SA. Interestingly, though the roles and activities are very similar between private sector and pharma.	5

Annex 6. Overview of SAPICS Professional Body Framework

The current SAPICS competency framework was designed to be industry agnostic. It outlines supply chain practices and competencies to that of the designation levels (professional processor practitioner to chartered supply chain professional). The goal is to standardize supply chain professional recognition across the continent. The framework is built on the SCOR model.

Exhibit A-1. SAPICS Path to Professional Status

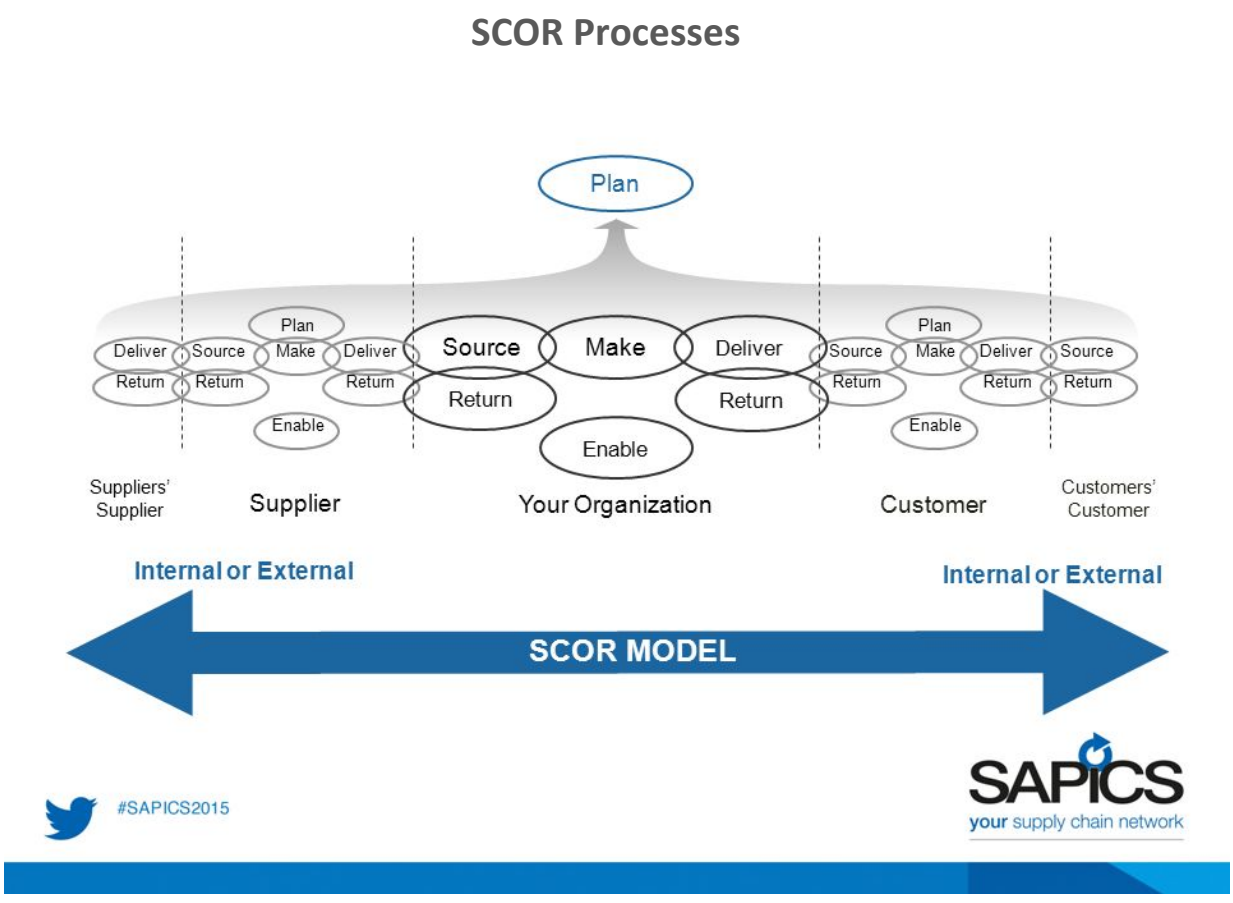
Exhibit A-2. SAPICS Designation Levels



The SCOR is a management tool used to address, improve, and communicate supply chain management decisions within a company and with suppliers and customers of a company (1). The model describes the business processes required to satisfy a customer's demands. It also helps to explain the processes along the entire supply chain and provides a basis for how to improve those processes.

The SCOR model was developed by the supply chain council, now Association for Supply Chain Management (ASCM)(http://www.supply-chain.org), with the assistance of 70 of the world's leading manufacturing companies. It has been described as the "most promising model for supply chain strategic decision making (2)." The model integrates business concepts of process re-engineering, benchmarking, and measurement into its framework (2). This framework focuses on five areas of the supply chain: plan, source, make, deliver, and return. These areas repeat again and again along the supply chain. The supply chain council says this process spans from "the supplier's supplier to the customer's customer (3)."

Exhibit A-3. SCOR Model



(1) SCOR Model, Supply Chain Council, October 7, 2004.

(2) Huan, Samuel. Sheoran, Sunil. Wang, Ge. A research and analysis of supply chain operations reference (SCOR) model. *Supply Chain Management: An International Journal*, Vol. 9, Num. 1, 2004.

(3) Supply Chain Operations Reference Model. Supply Chain Council. October 7, 2004.

Annex 7. Overview of PtD SCM Competency Compendium

Building a supply chain workforce requires mapping out the supply chain tasks and accompanying knowledge, skills, and abilities (competencies) in a supply chain. The goal is professional education and certifications to develop those competencies and build cadres of staff to fill those positions.

A critical activity of the PtD Initiative has been drafting a supply chain management competency compendium and making it available to public health supply chain programs globally. In collaboration with PtD member organizations and led by the University of Canberra, the Technical Working Group of the PtD Initiative has compiled this "Supply Chain Competency Compendium" (2014). It includes a SCM Competency Mapping Tool and further guidance on creating an SCM Competency Framework. The compendium draws on already developed competency frameworks of more than 30 organizations, allowing countries to select competencies that relate specifically to their supply chain workforce.

The compendium outlines six domains for supply chain management. Each domain has a set of competencies and associated behaviors linked to them. The approach is designed to be service based, that is, specific cadres who may conduct SCM competencies are not listed as these vary between country context.

As a result of implementing the competency mapping tool, a country will develop a map of broad supply chain competency areas at any or all levels of the supply chain with additional detail on the specific behavioral competencies required to complete those tasks by specific cadres. If desired. a program could move on to the next step of developing a competency framework for each cadre represented in the supply chain. Such frameworks can then be used to develop job descriptions, create training plans, and/or identify staffing gaps. Internationally, the use of competency-related terminology can vary, so the following definitions are offered here for explanation:

Competency compendium is a comprehensive catalogue of competency areas with associated behavioral competencies with linkages to over 30 examples of supply chain competency frameworks. The competency areas referenced within the compendium are not outlined by particular cadres (i.e., a warehouse manager, dispensing officer, etc.), but rather, are listed by particular supply chain functions so users can select the competencies relevant to their programs and relevant levels of the supply chain. For example, the supply chain management competency compendium, as developed by PtD, is a catalogue of competencies that a program may use as a basis for first mapping out competency areas required for their supply chain workforce.

Domains are the high-level groups, or clusters of competency areas within a given competency framework, or in this case, compendium. Traditionally, domains do not exceed six. For example, professional/personal, resource management, selection and quantification, procurement, storage and distribution, and use are the six domains suggested by PtD.

Competency areas concern the overarching capacity/skills of a person to perform in a specific area. For example, within the domain of Procurement, PtD has suggested 9 competency areas:

1. Manage procurement costs and budget
2. Build and maintain supplier relationships
3. Manage tendering processes and supplier agreements

4. Undertake contract management and risk management
5. Ensure quality of products
6. Manage import and export of products
7. Manage donations of products
8. Prepare for product supply during disasters and emergencies
9. Undertake or manage manufacturing or compounding of products

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

Competency framework is a collection of competency areas with associated behavioral competencies which define the expected requirements of a particular cadre. For example, a program may develop one competency framework for a warehouse manager and would have a separate competency framework for a hospital pharmacist. Country-based, cadre-specific competency frameworks will also depend on the structure of the supply chain and at which levels various competencies are allocated.

Exhibit A-4. Relationship of Competency Framework, Domains, Competency Areas, and Behavioral Competencies

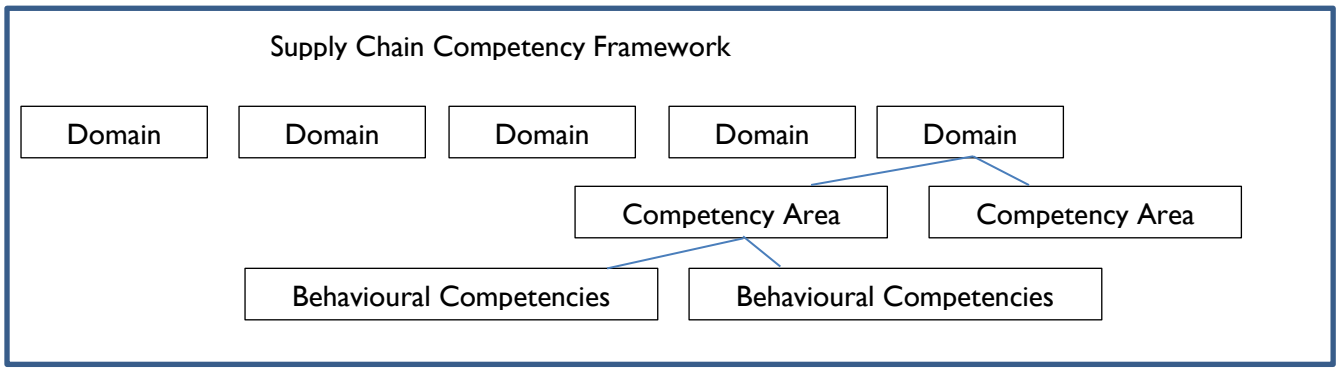
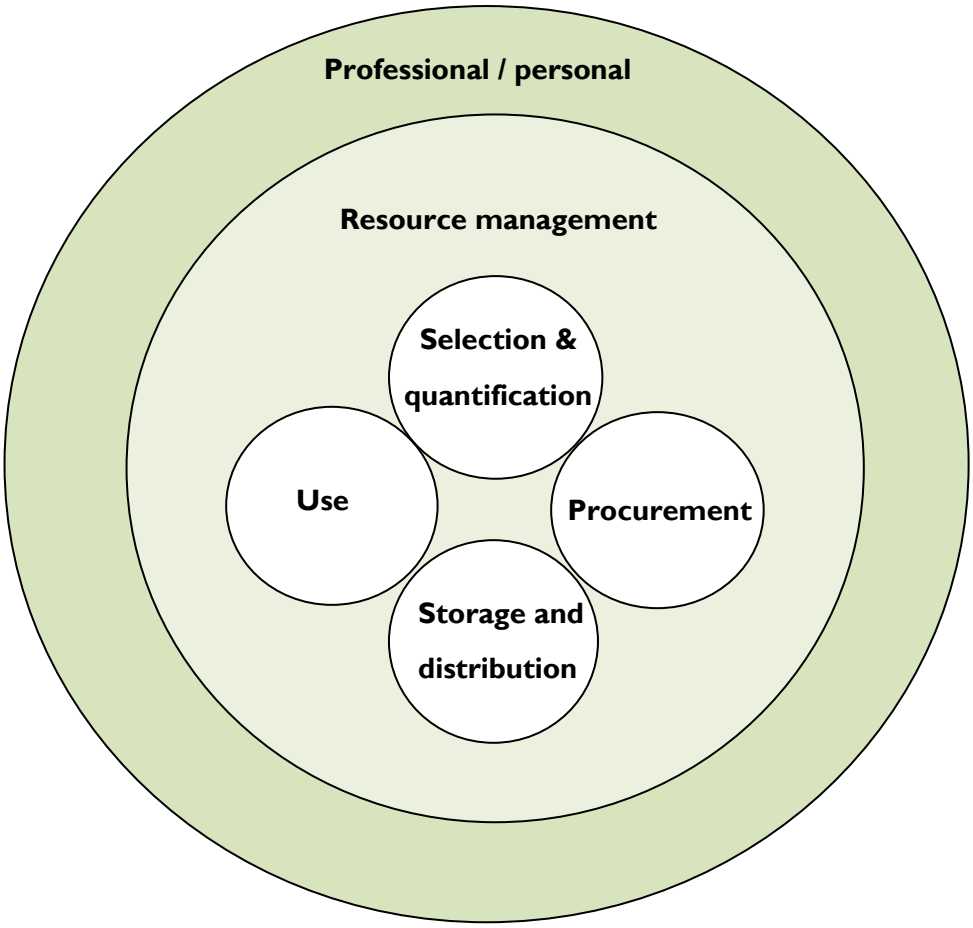


Exhibit A-5. Relationship of the Six Competency Domains Detailed in the PtD Competency Compendium



Annex 8. Steps and Timeline to Create a Validate the SCM Professionalization Framework

Component	Consultant days	Implementing partner lead	Oct–Dec 19	Jan–March 20	April–Jun 20	Jul–Sep 20
1. Finalize the competency framework that aligns the private and public sectors		**GHSC-PSM**				
• Describe and contextualize the 17 competency candidates for inclusion in the model	15 days		X			
• Describe and merge the 28 competencies into the model	20 days		X			
2. Create a repository of SCM job descriptions and roles (Demand)		**People that Deliver**				
• Study job roles from a large sample set of health care organizations and countries to define the professional levels and ranking • Align these roles and structure to the education, training, and credentialing framework	15 days		X			
• Create example organograms and job descriptions, including reference to key performance indicators	5 days		X			
3. Develop education, training, and credentialing framework (Supply)		**GHSC-PSM**				
• **Qualification and Certification**: With the revised competency framework as the core, develop academic and professional education pathways that align with the suggested job roles and job descriptions. • **Designations:** Align these job roles with a career path for SCM professionals that can be adopted by professional associations and/or professional councils, depending on country context)(e.g., from processor to chartered professional).	15 days		X			
4. Country Implementation Methodology		**GHSC-PSM**				
• With the three components complete, consider a country implementation methodology that seeks to engage all relevant stakeholders in a country context with a view to what changes need to be made in a country for the proposed SCM professionalization framework to be implemented. Embed a clear change management approach. In the implementation methodology, consider an approach that validates the framework and agrees on a white paper for implementation that seeks to:	16.5 days		X			

○ Define stakeholder roles ○ Align employers with the demand side of the framework (government and private) ○ Align professional bodies and government professional credentialing bodies with agreed designations ○ Align academic and professional education and training institutions with the framework ○ Educate existing and potential SCM professionals with the framework						
• Implement in a specific country context (e.g., Rwanda or Nigeria)	16 days			X		
• Share results though a workshop aligned with international SCM activity					X	X