Understanding Gender Imbalance in the Public Health Supply Chain Workforce

*Research Findings and Recommendations*

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*VillageReach transforms health care delivery to reach everyone.*
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### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CIPS</td>
<td>Chartered Institute of Procurement &amp; Supply</td>
</tr>
<tr>
<td>DRC</td>
<td>The Democratic Republic of Congo</td>
</tr>
<tr>
<td>IAPHL</td>
<td>International Association of Public Health Logisticians</td>
</tr>
<tr>
<td>ISTM</td>
<td>Institut superieur technique medical (Higher Technical Institute for Medicine)</td>
</tr>
<tr>
<td>KII</td>
<td>Key informant interview</td>
</tr>
<tr>
<td>KUHeS</td>
<td>Kamuzu University of Health Sciences</td>
</tr>
<tr>
<td>LEED</td>
<td>Logistics Education, Emerging and Developing</td>
</tr>
<tr>
<td>LMIC</td>
<td>Low- and middle-income countries</td>
</tr>
<tr>
<td>MCHS</td>
<td>Malawi College of Health Sciences</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>PHSC</td>
<td>Public health supply chain</td>
</tr>
<tr>
<td>PSA</td>
<td>Pamela Steele Associates</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply chain management</td>
</tr>
<tr>
<td>STEM</td>
<td>Science, technology, engineering, and mathematics</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>USAID</td>
<td>US Agency for International Development</td>
</tr>
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<td>WHO</td>
<td>World Health Organization</td>
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</table>
Executive Summary

Understanding Gender Imbalance in the Public Health Supply Chain Workforce

Women are the backbone of the care system, comprising 67% of the global health and social care workforce, and performing 76% of unpaid work. Globally, women in the health workforce are still underrepresented in positions of leadership, overrepresented in unpaid work and earn on average 27% less than men. This includes supply chain management, where women make up 41% of the overall public health supply chain (PHSC) workforce, and only 26% of supply chain management (SCM) positions.

Given that women and children are priority targets for primary health care services, and that quality health services require access to health products, women’s perspectives are important to ensuring that supply chains are designed with women’s needs and preferences in mind. A gender imbalance within the PHSC profession has the potential to impact the accessibility, acceptability and affordability of community health care services, particularly among women. Female supply chain professionals are needed to ensure that supply chains are designed with women in mind; logistics systems must be designed with elements such as last mile delivery, digital tools and supply chain capacity that are compatible with the realities that female health workers face. VillageReach led exploratory research in order to better understand and address gender inequities along the PHSC career pathway in low- and middle-income countries (LMICs).

Who are Public Health Supply Chain Professionals?

The PHSC workforce consists of all the people responsible for forecasting, procurement, storage, distribution and proper use of medicines, vaccines and other health products.
Research Overview

Using the Jhpiego Gender Analysis Framework, we set out to answer three research questions.

1. How does the social and cultural context influence the entry and retention of women in the PHSC workforce?

2. What are women’s experiences throughout the educational and career pathways to the PHSC workforce?

3. How does the enabling environment currently affect gender balance in the PHSC workforce?

To respond to these research questions, we conducted qualitative interviews with PHSC students, educators and professionals in two African countries (the Democratic Republic of Congo (DRC) and Malawi) and with global stakeholders. We also conducted a brief online survey of PHSC professionals from the International Association of Public Health Logisticians (IAPHL) and received responses from 69 members across 18 countries.

Key Findings

Our findings confirm that a gender imbalance exists in the PHSC workforce and that women experience unique challenges that require tailored solutions to meet their needs. These challenges occur throughout the educational and career pathway and are related to social and cultural norms as well as practical and environmental factors that hinder female participation in the PHSC workforce.

IAPHL survey findings

QUESTION: In your experience, are there currently more men or women carrying out PHSC roles & responsibilities?

On a scale of 1 to 10, both male and female respondents agreed that gender imbalance is a highly important issue, with 64% of female respondents rating the topic’s importance at eight or higher compared to 42% of male respondents.

Challenges experienced by women along the career pathway: from Education to Advancement

- Limited awareness of supply chain as a profession among youth and women
- Perceptions that women are not suited to supply chain careers due to perceptions that supply chain work only involves heavy physical labor (i.e., lifting boxes, driving trucks or motorbikes)
- Limited networking and mentoring opportunities for women working in PHSC due to few female role models in PHSC and cultural norms around socialization between men and women
- Respondents unaware of any supportive policies among employers and academic programs to improve and/or measure gender imbalance and improve work-life balance (i.e., recruitment practices, family leave)
- Lack of policy and safe reporting procedures related to sexual harassment in both academic and work settings
- Negative perceptions of women who travel to carry out supply chain duties or attend training due to competing domestic responsibilities
- Lack of structural and financial support for women, such as safe accommodation and transport for women when traveling to health facilities or scholarship opportunities specifically for women
- Cultural and social norms may limit opportunities for women to enter PHSC leadership and participate in decision-making
Recommendations

Our recommendations address challenges women experience at the education stage, early career stage and the advancement stage of their career pathway. They fall under three categories: (1) strengthening PHSC career pathways from education to advancement, (2) creating an enabling environment and (3) elevating female decision-making.

1. **Strengthening PHSC career pathways** for women from education to advancement

   - Increase awareness among women of PHSC as a potential career
   - Foster mentorship opportunities among women at all stages of the career pathways (education to advancement)
   - Introduce PHSC curricula and degree programs at educational institutions
   - Create more internship and training opportunities for women in the PHSC workforce

2. **Creating an enabling environment** that promotes full participation of women in the PHSC workforce

   - Implement gender-responsive processes for recruitment to ensure hiring practices are equitable
   - Implement policies that address family leave to help with work-life balance and policies that protect women from sexual harassment
   - Create programs that target women for recruitment and advancement in the PHSC
   - Provide structural and financial support for women in education and in PHSC professions (e.g., academic scholarships and access to safe transport and accommodation for work-related travel)
   - Collect gender-disaggregated workforce data to better track improvements and changes to the workforce over time

3. **Elevating female decision-making** in PHSC and ensuring women have equitable opportunity for advancement

   - Leaders in the PHSC workforce intentionally include women in decision-making bodies, technical working groups and committees to ensure a gender-balanced selection of participants for capacity building opportunities, such as training, site visits and conference participation.
A Call to Action for PHSC Stakeholders

Governments should address policy issues that impede women’s entry into the PHSC workforce.

Employers should actively engage women during the early education stage and create mentorship programs for women.

Academic institutions should intentionally recruit female students, and make sure they have access to housing, scholarships and safe environments.

Implementing partners and donors can partner with government in establishing tailored programs to recruit and support women along the PHSC career pathway.

A gender-balanced and professional PHSC workforce contributes to building high-performing supply chains that are equitable, people-centered, resilient and sustainable. We need intentional action and targeted solutions to achieve this goal. Primary health care systems in LMICs are struggling to meet the needs of the most under-reached communities - particularly women, adolescents and children where global health outcomes remain the lowest. Having more women in the PHSC workforce is one way to make supply chains people-centered and gender responsive, which in turn will help serve under-reached communities moving us closer to universal health coverage.

The time to act is now. Stakeholders must collectively develop solutions to increase women’s participation in the PHSC.

VillageReach works with governments, partners and communities to build responsive primary health care systems that deliver health products and services to the most under-reached populations. Our work on supply chain professionalization focuses on creating clear educational and career pathways in Africa; and in alignment with our Gender Strategy, we believe women’s full participation in the PHSC workforce will enable high-performing supply chains that are equitable, people-centered, resilient and sustainable.
Gender inequity in the health workforce continues to be a problem globally. Women are the backbone of the care system, comprising 67% of the global health and social care workforce and performing 76% of unpaid work. Women are critical users of primary health care services, but the roles they hold are often considered not highly skilled or are not part of health systems decision-making. Women have historically faced institutional discrimination and social inequities that affect their access to education and resources and shape their involvement in the health care workforce. A 2024 World Health Organization (WHO) report, Fair Share for Health and Care: Gender and the Undervaluation of Health and Care Work, notes that traditionally women have been excluded from practicing certain medical professions (i.e., physicians), and women’s health work has often not been considered true professional work. The undervaluing of women’s health and care work is compounded by a lack of sex or gender-disaggregated data on wage conditions, employment conditions and unpaid work, which means gender imbalance in the health workforce is inadequately recorded, reported and acted upon.

Globally, women in the health workforce are still underrepresented in positions of leadership, overrepresented in unpaid work and earn on average 27% less than men. Policy research demonstrates that women in decision-making roles are more likely to respond to community concerns, prioritize the needs of women and other under-reached groups as well as advance research on women’s health, compared with their male counterparts.

Gender inequities in the health workforce are even more pronounced in Africa, where women make up only 28% of physicians. Research has demonstrated that countries with a higher number of female physicians also experience better public health outcomes, such as lower maternal and infant mortality and longer life expectancy. A gender analysis of the health care workforce in Sierra Leone, Zimbabwe, Uganda and Cambodia demonstrated that because women hold the majority of household responsibilities in these cultures, they had less access to training to enhance their skills and limited ability to travel outside the home, which subsequently limited their career advancement.

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opportunities and income growth. Women have unique skills, perspectives and knowledge that are frequently missing in health care management and decision-making in low- and middle-income countries (LMICs), including supply chain management. Their involvement in supply chain management is crucial to inform key decisions on product selection, distribution, tracking, storage and delivery, which have the potential to save lives and promote effective primary health care.

GENDER AND SUPPLY CHAIN WORKFORCE

Women are also under-represented within the health supply chain workforce, making up 41% of the overall supply chain workforce and only 26% of supply chain management (SCM) positions. Health supply chains are a key determinant of how health products and services are accessed, through factors such as supply chain design, forecasting and products procured and distribution strategies. When women are part of the public health supply chain (PHSC) workforce, they bring their lived experience to improve equitable access to health products and services among women and children.

Given that women and children are priority targets for primary health care interventions primary health care services, and quality health services require access to health products, women’s perspectives are important to ensuring that supply chains are designed with women’s needs and preferences in mind.

For example, family planning product delivery was disrupted during the COVID-19 pandemic, which resulted disrupted access to contraceptives for 12 million women in resulting in an estimated 1.4 million unintended pregnancies across 115 LMICs. Male-dominated supply chain decision-making during humanitarian emergencies have resulted in the

Understanding the Supply Chain Workforce

The health supply chain workforce consists of all the people who manage the forecasting, procurement, storage, distribution and proper use of medicines, vaccines and other health products that providers need to deliver health care. In Africa, this includes pharmacists, logisticians, supply chain managers, data managers and warehouse and transportation personnel, as well as doctors, nurses and other clinical and administrative staff who take on supply chain responsibilities in addition to their regular duties. This workforce is responsible for the availability and potency of health products in both urban and rural settings. The health supply chain workforce is often unrecognized as a distinct profession within health care systems in Africa, which means both men and women in these roles lack the specialized skills needed to effectively and efficiently do their jobs, and ministries of health often do not adequately plan for or support these roles.

Supply chain professionals work across all levels of the supply chain—starting with health workers at the last mile who provide products to people, all the way up to ministry of health decision-makers at the national level who determine supply chain policies, priorities and budgets. Managing high-performing supply chains that are equitable, people-centered, resilient and sustainable requires a professional supply chain workforce. People that Deliver, a multisectoral coalition convened by UNICEF’s Supply Chain Division, defines professionalization as “the action or process of giving an occupation, activity, or group professional qualities, typically by increasing training or raising required qualifications.”

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purchasing of gender-insensitive products (e.g., one-size-fits-all sanitary pads) and men misjudging the needs of women, causing wasteful spending and poor-quality services for women. A study on gender in the immunization supply chain by Gavi, the Vaccine Alliance, Logistimo and other partners in two regions of Senegal also highlighted that female health workers exhibited better adherence to standard operating procedures and stock management practices. This study is an example of how the availability of gender-disaggregated data is useful to inform supply chain management decision-making.

There is a need to better understand the experiences of the most under-reached populations to ensure equitable decision-making for health systems. Investing in women’s health and increasing the number of women in leadership roles can lead to better health policies, intervention design, outcomes, innovation and return on investment. It is critical for supply chain professionals to understand female clients and prioritize their needs in supply chain planning and decision-making. The intersection of gender and health supply chains, and particularly the role that women logisticians play in shaping health supply chains in LMICs, is of great interest; however, it is underexplored in current published literature.

SUPPLY CHAIN AND GENDER AT VILLAGEREACH

VillageReach works with governments, partners and communities to build responsive primary health care systems that deliver health products and services to the most under-reached populations. Having a well-trained, paid, supported and gender-balanced PHSC workforce is critical for strengthening supply chains because it is the backbone of responsive primary health care systems. Increasing the number of female supply chain professionals is necessary to ensure that supply chains are designed with women in mind, and that logistics systems are designed with elements such as delivery at the last mile, digital tools and supply chain capacity that are compatible with the realities faced by female health workers. Women and children are targeted consumers for a significant proportion of the health products in the supply chain, and therefore it is crucial to include the input of female supply chain professionals in the design and implementation of supply chain initiatives. Doing so will ensure that products are responsive to the needs and preferences of those targeted consumers. A gender imbalance within the PHSC profession has serious implications for accessibility, acceptability and affordability of community health care services and products, particularly among women.

VillageReach’s work related to professionalization of the PHSC workforce focuses on creating clear educational and career pathways for supply chain professionals in Africa. We do this work through global-level advocacy as a member of the People that Deliver coalition and through program implementation in African countries to establish curriculum

and degree programs in supply chain logistics. In Africa, there are generally two pathways to becoming a supply chain professional, as shown in Figure 1. The first pathway (Pathway A) is less common for both men and women, whereby they obtain specific PHSC degrees and education. The second and more common pathway (Pathway B) is for health care professionals, such as pharmacists and nurses, who are assigned supply chain duties as part of their role. As Figure 1 illustrates, the pathway to becoming an established, skilled, supported and motivated supply chain professional is filled with challenges. These challenges start at the education stage and continue through career entry and career advancement.

Figure 1: Health supply chain professional career pathways—the challenges

As part of VillageReach’s Gender Strategy, 19 we recognize that gender plays a pivotal role in determining the availability of and access to health products and services. We therefore strive to incorporate gender-responsive strategies throughout the design and implementation of a program to address gender-specific needs. To better understand and address gender inequities along the career pathway to becoming a PHSC professional in Africa, VillageReach conducted exploratory research to better understand the gender imbalance in the PHSC workforce.

RESEARCH OBJECTIVES
The role of gender in the PHSC workforce is not well understood, in part because the supply chain has not typically been recognized as a distinct profession within the health workforce in Africa. VillageReach conducted exploratory research to better understand and describe the experience of women working in PHSC and to identify recommendations for improving gender equity in the PHSC workforce in LMICs.

Our specific objectives were as follows:

1. Describe the potential pathways to entering the PHSC workforce and identify potential barriers for women;
2. Explore the differences and similarities in the experiences of men and women who are currently working in PHSC; and
3. Gather suggestions on how to improve gender equity in the PHSC workforce.

CONCEPTUAL FRAMEWORK
Gender analysis is a powerful way to identify, understand and address inequalities in health systems, given that gender norms have a strong impact on shaping the work men and women do and how that work is valued. Many different gender analysis frameworks have been developed and utilized in health systems research. Key areas commonly examined include attitudes and gender norms, gendered activities and the division of labor, access to and control over resources and agency and decision-making. When designing the exploratory research, we evaluated several available gender analysis frameworks and conceptual models, including the US Agency for International Development’s Delivering Gender Equality framework and the Bill & Melinda Gates Foundation’s Gender Equality Toolbox. Most of the frameworks we reviewed focused on service delivery rather than the health workforce. Ultimately, we selected Jhpiego’s Gender Analysis Framework as the basis of our research because it was adaptable to the health workforce and it met our research objectives.

The framework consists of four domains:

- **Access to assets**: includes financial resources, as well as intangible assets such as knowledge, education and information.
- **Practices and participation**: includes information on men’s and women’s different roles and their decision-making capacity.
- **Beliefs and perceptions**: includes beliefs and norms around men and women’s behavior.
- **Institutions, laws and policies**: includes men and women’s rights and the different ways that policies govern institutions, and access to legal services.

We adapted the framework to meet our research objectives and developed the following research questions:

1. How does the social and cultural context influence women’s entry and retention in the PHSC workforce?
2. What are women’s experiences throughout the educational and career pathways to the PHSC workforce?
3. How does the enabling environment currently affect gender balance in the PHSC workforce?

To enable us to answer the second question, we combined the “access to assets” and “practices and participation” domains. We also assessed the broader enabling environment for women working in PHSC, leveraging the “institutions, laws and policies” domain.

**COUNTRY SELECTION**

When selecting countries for primary qualitative data collection, we considered two African countries—the Democratic Republic of Congo (DRC) and Malawi—where VillageReach has existing offices in order to facilitate the process. For each country, we analyzed gender-related indicators from the World Bank and the World Economic Forum and found that DRC and Malawi offered distinct perspectives. In DRC, achievement on key gender-related development indicators is typically lower than average in sub-Saharan Africa. In Malawi, on the other hand, achievement on these indicators is typically slightly higher (See Table 1).

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Table 1: Gender-related indicators by domain in the Democratic Republic of Congo, Malawi, and sub-Saharan Africa

<table>
<thead>
<tr>
<th>Domain</th>
<th>Indicators</th>
<th>DRC</th>
<th>Malawi</th>
<th>Sub-Saharan Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to assets</td>
<td>1. Literacy rate, youth (ages 15-24), gender parity index (values &lt;1 indicate more male youth are literate, values &gt;1 indicate more female youth are literate)</td>
<td>0.88</td>
<td>1.01</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>2. Employment to population ratio (15+, female)</td>
<td>58%</td>
<td>65%</td>
<td>55%</td>
</tr>
<tr>
<td>Practices and participation</td>
<td>3. Women who believe a husband is justified in beating his wife (any of five reasons)</td>
<td>75%</td>
<td>16%</td>
<td>N/A</td>
</tr>
<tr>
<td>Beliefs and perceptions</td>
<td>4. Proportion of seats held by women in national parliaments</td>
<td>13%</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>Institutions, laws and policies</td>
<td>5. Proportion of women subjected to physical and/or sexual violence in the last 12 months (percentage of ever-partnered women ages 15-49)</td>
<td>37%</td>
<td>24%</td>
<td>N/A</td>
</tr>
<tr>
<td>Power</td>
<td>6. Global Gender Gap (0 to 1, higher is better)</td>
<td>0.58</td>
<td>0.67</td>
<td>0.68</td>
</tr>
</tbody>
</table>

*a Source: World Bank World Development Indicators*

*b These five reasons include (1) when she argues with him, (2) when she burns the food, (3) when she goes out without telling him, (4) when she neglects the children, and (5) when she refuses sex with him.

*c, Gender Gap Index measures four dimensions: (1) economic participation and opportunity, (2) educational attainment, (3) health and survival, and (4) political empowerment.

*d Source: World Economic Forum Global Gender Gap Report*

METHODS
To conduct this exploratory research, we used an online survey to collect responses from PHSC professionals in multiple countries to obtain a broader perspective of whether a gender imbalance exists in the PHSC workforce. We also conducted qualitative interviews in DRC and Malawi and with global stakeholders to gain additional insights that would help answer our research questions.

ONLINE SURVEY
The survey was conducted in April 2023 with members of the International Association of Public Health Logisticians (IAPHL), which promotes the professionalization of public health logistics through education and information sharing. IAPHL has over 8,000 members from 151 countries. The survey (Appendix A) was designed to more broadly understand whether a gender imbalance exists in PHSC education and the workforce. Invitations were sent to IAPHL members through the IAPHL mailing list to complete the online survey on SurveyMonkey. A reminder was sent one week after the initial invitation. A total of 69 members responded, representing 18 African countries and 8 additional countries globally. The highest number of responses from a single country came from Ethiopia (8), followed by Nigeria (7) and Zimbabwe (4). Survey results were downloaded to a Microsoft Excel spreadsheet and quantitative responses were analyzed for frequency. This quantitative data provided a broader perspective from a group of PHSC professionals but because this was exploratory research, the survey results were not meant to represent the global PHSC workforce or the IAPHL membership.
KEY INFORMANT INTERVIEWS

We conducted key informant interviews (KIIs) with global and in-country stakeholders. The global stakeholders had direct experience in PHSC solutions, and KIIs were conducted using virtual teleconferencing software. In DRC and Malawi, we conducted KIIs with (1) women enrolled in health sciences educational programs, (2) health science education professionals (male and female) familiar with the educational systems that train professionals entering the PHSC workforce, and (3) women and men working in PHSC. KIIs in DRC and Malawi were conducted by experienced data collectors hired and trained by VillageReach research staff. Interview guides are available in Appendix B.

Key informants were categorized according to the following target groups:

**Global stakeholders:** Global stakeholders were asked to describe the challenges women encounter when entering and working in the PHSC profession. They were also asked to describe existing policies, solutions or strategies designed to improve gender balance in the PHSC workforce. Stakeholders included representatives of the Africa Resource Centre, Gavi, John Snow Inc., UNICEF, People that Deliver, and the Bill & Melinda Gates Foundation.

**Health sciences education students:** To understand PHSC education, we interviewed female students currently studying health sciences, whose general interests may align with a career in PHSC. In Malawi, we selected female students from across four pharmacy programs because a dedicated health supply chain program did not exist and most pharmacists in Malawi take on PHSC responsibilities in their careers. In DRC, we selected female students from the health logistics track within the Health Organization Management section at the Higher Technical Institute for Medicine (Institut superieur technique medical [ISTM]) in Kinshasa, a program that was launched three years ago. Student respondents were asked questions about gender balance in their education programs, their experience as female students and how they chose the PHSC profession.

**Health sciences educators and administrators:** We interviewed education professionals, such as academic advisors, administrators or professors in health sciences, to learn about the enabling academic environment needed to support female students in completing their programs successfully. We selected educators and administrators from the same institutions that female student respondents attended. Respondents were asked about social and cultural norms that impact the types of PHSC jobs female students pursue.

**Women and men working in PHSC:** Both women and men working in the PHSC workforce were asked to describe their role in PHSC, their general educational backgrounds and their training specific to PHSC. They also described their job requirements, including work hours and travel requirements and any challenges these requirements pose. They were asked about any instances of gender-based discrimination in the workplace and if they were aware of protocols to report such discrimination.
Table 2: Summary of key informants by target group, country, gender and affiliation

<table>
<thead>
<tr>
<th>Key Informant</th>
<th>Country</th>
<th>Gender</th>
<th>Affiliation</th>
<th># of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health science education students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRC</td>
<td>Female</td>
<td></td>
<td>ISTM Kinshasa Health Organization Management, Health Logistics track</td>
<td>9</td>
</tr>
<tr>
<td>Malawi</td>
<td>Female</td>
<td></td>
<td>Malawi College of Health Sciences (MCHS), Kamuzu University of Health Sciences (KUHeS), Progressive Healthcare Institute</td>
<td>8</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
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<tr>
<td>Health science education administrators</td>
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<td>DRC</td>
<td>Male</td>
<td></td>
<td>ISTM Kinshasa Health Organizations Management</td>
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<tr>
<td>Malawi</td>
<td>Female</td>
<td></td>
<td>Ekwendeni College of Nursing and Midwifery, Holy Family College of Nursing, Kamuzu University of Health Sciences (KUHeS)</td>
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<tr>
<td>Male</td>
<td></td>
<td></td>
<td>Malawi College of Health Sciences (MCHS)</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
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<td>Health science education respondents</td>
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<td>PHSC professionals</td>
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<td>DRC</td>
<td>Male</td>
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<td>National MoH</td>
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<td>Provincial MoH</td>
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<td>Health facility</td>
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</tr>
<tr>
<td></td>
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<tr>
<td><strong>Subtotal Male</strong></td>
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<tr>
<td></td>
<td>Female</td>
<td></td>
<td>National MoH</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td><strong>DRC Subtotal</strong></td>
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<tr>
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<td>National MoH</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>District MoH</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Health facility</td>
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</tr>
<tr>
<td><strong>Subtotal Male</strong></td>
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<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td>National MoH</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>District MoH</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Health facility</td>
<td>1</td>
</tr>
<tr>
<td><strong>Subtotal Female</strong></td>
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<td></td>
<td></td>
<td>9</td>
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<tr>
<td><strong>Malawi Subtotal</strong></td>
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<td><strong>PHSC professional respondents</strong></td>
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<td><strong>Global stakeholders</strong></td>
<td>Female</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td><strong>Total respondents</strong></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
</tr>
</tbody>
</table>
In DRC and Malawi, ethical approval was granted by the Kinshasa School of Public Health Ethical Review Committee and the National Health Sciences Research Committee, respectively. VillageReach hired experienced independent consultants to lead data collection and transcription. In DRC, the VillageReach DRC monitoring and evaluation team lead trained and supervised data collectors, whereas in Malawi, a VillageReach global staff researcher remotely trained local data collectors through virtual conferencing. VillageReach staff familiar with the PHSC in Malawi suggested educational institutions and key informants to interview. The consultants sampled from across the possible institutions to ensure diverse perspectives, and used snowball sampling to finalize the set of participants.

In DRC, all interviews were conducted in person in October 2022. In Malawi, interviews were held in December 2022 and January 2023, using WhatsApp call (18), Zoom teleconference platform (5), in person (3), and by written response (1).

All interviews were transcribed, translated and provided to VillageReach’s global Research, Evidence and Learning team for analysis. The team developed a list of codes based on the four key pillars of Jhpiego’s Gender Analysis Framework and categorized interview content according to key themes in the framework. For example, if a respondent described a mentor who helped them network and get a job in the PHSC workforce, it was coded as “access to assets” and “social networks.” The team used ATLAS.ti software to assign codes to interview content. Subsequently, a thematic analysis was conducted by reviewing all of the content, by code, and pulling out key connections, patterns and emerging themes. This thematic analysis was then distilled into the “key findings” of the research.

The respondents were categorized by location (with “G” for global respondents, “D” for DRC respondents, and “M” for Malawi respondents), participant number, sex and their role (e.g., M18, female PHSC professional). Responses from the interviews revealed common themes that informed our recommendations. It is important to note that the responses from Malawi and DRC cannot be extrapolated to represent the entire African continent. Despite this limitation, the responses provided a range of perspectives that may be applicable to other contexts and could inform future research.
Findings: Barriers Along the Career Pathway

SURVEY FINDINGS
The online survey results confirmed our assumption that a gender imbalance exists in the PHSC workforce. Respondents, consisting of IAPHL members from multiple countries around the globe, agreed that more men than women carry out PHSC roles and responsibilities in general. In fact, 77% of male respondents and 92% of female respondents reported that slightly or many more men carry out PHSC responsibilities.

Figure 3: IAPHL responses to survey question: in your experience, are there currently more men or women carrying out PHSC roles and responsibilities?

To examine this issue further, we also asked IAPHL respondents how important exploring gender in the PHSC workforce is to them, on a scale of 1 to 10. Both male and female respondents agreed that it is a highly important issue, with male respondents averaging 7.1 out of 10 and female respondents averaging 7.6 out of 10. Women may feel more strongly about this topic, though, as 64% of female respondents rated the topic’s importance at 8 or higher compared with 42% of male respondents.
INTERVIEW FINDINGS
Building on the survey results, we conducted the KII interviews to provide context around why this imbalance exists. Interview findings are categorized by the three stages we identify as part of the PHSC career pathway: (1) PHSC education, (2) establishing a PHSC career and (3) advancement in the PHSC workforce. At each stage, findings suggest that women experience unique challenges that require tailored solutions to meet their needs. These challenges are related to social and cultural norms as well as practical and environmental factors that hinder female participation in the PHSC workforce.

STAGE 1: PHSC EDUCATION
Many African countries do not have specific educational programs for health supply chain logistics, and those that do exist are often outdated and in need of updating to conform to current supply chain trends and best practices.

In DRC, we interviewed students and educators at ISTM who are part of the health logistics track for the degree in management of health institutions. The degree has three education tracks—management of health organizations, health logistics and medical secretary—with health logistics being the newest track that began in December 2021. The health logistics track is meant to train future PHSC professionals.

In Malawi, however, there are no PHSC-specific degree programs, as a majority of supply chain work in the country is carried out by pharmacy personnel. We interviewed students and educators from five universities in Malawi that had supply chain course work for the following academic programs: pharmacists (degree holders), pharmacy technicians (diploma holders) and pharmacy assistants (certificate holders).

Health Logistics Track at ISTM
As one of three education tracks as part of the bachelor’s degree in management of health institutions at ISTM, the health logistics track provides training for students interested in supply chain management. The program teaches students skills such as how to:

- Analyze the logistics system of a health care organization;
- Optimize inventory management;
- Build a logistics action plan using available tools; and
- Establish a logistics network in a health care organization.

Table 3: Public health supply chain degree programs in DRC and Malawi

<table>
<thead>
<tr>
<th>Country</th>
<th>School</th>
<th>PHSC Degree or Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRC</td>
<td>Institut superieur technique medical (Higher Technical Institute for Medicine);</td>
<td>3-year bachelor’s degree in management of health institutions; 2-year master’s degree in management of health Institutions</td>
</tr>
<tr>
<td>Malawi</td>
<td>Malawi College of Health Sciences</td>
<td>2-year pharmacy assistant certificate; 3-year pharmacy technician diploma</td>
</tr>
<tr>
<td>Malawi</td>
<td>Kamuzu University of Health Sciences</td>
<td>5-year bachelor of pharmacy, honors</td>
</tr>
<tr>
<td>Malawi</td>
<td>Progressive Healthcare Institute</td>
<td>2-year pharmacy assistant certificate</td>
</tr>
<tr>
<td>Malawi</td>
<td>Ekwendeni College of Health Sciences</td>
<td>2-year pharmacy assistant certificate</td>
</tr>
<tr>
<td>Malawi</td>
<td>Holy Family College of Health Sciences</td>
<td>2-year pharmacy assistant certificate</td>
</tr>
</tbody>
</table>
Limited Awareness of the PHSC Profession

Respondents in DRC and Malawi, including students, educators and PHSC professionals, consistently agreed that there is limited awareness and understanding of the supply chain profession and what the career pathway looks like. Even in DRC where specific degree programs are designed for PHSC professionals, the career is not well-known or well-understood by young people who the courses are designed to attract. Most respondents reported that this lack of awareness should be addressed early in the educational process, so that prospective students take the right courses to prepare them for a supply chain career. It is important for youth to understand that a supply chain career can be rewarding and impactful and that it entails more than just logistics, but also has elements of data analytics and technology/innovation. Most current PHSC professionals in both Malawi and DRC reported following the career path of a supply chain “practitioner,” meaning that they originally entered the workforce as a pharmacist or other medical professional (see Figure 1, Pathway B), and then either learned supply chain skills on the job when assigned new tasks or participated in a training after employment. Both male and female student respondents noted that they were not aware that pharmacist duties also included procurement, storage and tracking of medication.

“At first I thought pharmacy was only about prescribing medicines to patients; I didn’t know there is also procurement... you are responsible for buying and also dispersing drugs to the end users.” – M18, female PHSC professional

At the global level, respondents observed a similar lack of awareness of supply chain as a distinct career in the health workforce. However, multiple global stakeholders noted that they had observed a shift in awareness around the importance of PHSC as a distinct profession since the COVID-19 pandemic.

“I think perhaps with the recent COVID-19 [pandemic] and the supply chain disruption, that supply chain has gained some currency. Otherwise, not many people knew supply chain.” – G1, female PHSC professional

While the objective of this research was to explore gender imbalance and specific challenges faced by women in the PHSC workforce, it is important to note that a general lack of awareness about the PHSC profession is a larger, non-gender-specific problem that must be addressed at the educational stage for all youth. Interventions designed to raise awareness of the PHSC profession, however, must also require gender-specific solutions that consider the unique barriers women face.

Gender Norms

Social and cultural norms create ideas about how women and men should live and act. These norms are often internalized early in life and can establish a life cycle of gender socialization and stereotyping.25 In both DRC and Malawi, respondents reported a general perception that girls are expected to perform poorly in math and science courses compared with boys. This perception affects the types of degree programs women apply for, since math and science courses are foundational for entry into pharmaceutical or other health worker degree programs.

“At lower levels of education, I think [young girls] are not properly guided, they drop subjects because...[they say] a subject is difficult...very few [women] survive... Pharmaceutical sciences, it involves chemistry, math, physics—so I think women don’t do well in these.” – M4, male PHSC professional

This kind of rhetoric that girls hear from a young age can affect their educational and professional choices. One female pharmacy student from Malawi responded that girls often grow up thinking that if they want to work in health care, they can only be a nurse. In addition, one female DRC student respondent said that because women only like to do what is “easy,” they do not explore degree programs where the course work is seen as advanced or more difficult. These comments from students demonstrate the pervasive social and cultural norms around what courses women should study, sometimes internalized by the women themselves.

“I think it’s just fear of [the] unknown. Mostly we females, we look down on ourselves. We also easily believe what others are saying, so when one says that the course is difficult, we plant it in our heads that indeed it is hard.” – M5, female PHSC professional

Future solutions to encourage more women to apply for degree programs to enter the PHSC workforce must take these gender norms into account. All programs should strive to meet girls where they are and understand that from a young age, many female students may have discounted a PHSC career and may even be afraid to pursue a course of study that focuses heavily on science and math.

PHSC educators in DRC noted that trends in enrollment are starting to shift, as seen in the health logistics track, which is attracting more female students. Two female students from DRC indicated that they chose this track because they believed the skills would be in high demand after graduation, whereas other respondents from DRC indicated they perceived the health logistics track to be easier. One DRC educator noted that male students prefer the degree program’s management track.

“When we welcome new students... we try to explain to newcomers what the target occupations are... we find, curiously, for logistics and secretarial services, there’s many girls who have opted for that, while many boys put their emphasis to the management of health services.” – D2, male educator in health logistics track

**Structural and Financial Barriers**

Both male and female students experienced challenges related to their ability to pay educational fees, find adequate housing close to campus and purchase all of the necessary supplies for school. Although Table 4 indicates that four of the Malawi schools have on-campus housing, one student interviewed from KUHeS mentioned that there is not enough on-campus housing available. The respondent said students are made to reapply for housing each year during the five-year degree program and returning students are often prioritized for housing, which means new students are not guaranteed an on-campus housing placement. Without access to campus housing within walking distance, students have to budget for daily transportation fees in addition to other school expenses.

<table>
<thead>
<tr>
<th>School</th>
<th>Location(s)</th>
<th>Campus Housing Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malawi College of Health Sciences</td>
<td>Lilongwe and Blantyre</td>
<td>Yes</td>
</tr>
<tr>
<td>Kamuzu University of Health Sciences</td>
<td>Lilongwe and Blantyre (pharmacy program in Blantyre only)</td>
<td>Yes</td>
</tr>
<tr>
<td>Progressive Healthcare Institute</td>
<td>Lilongwe</td>
<td>No</td>
</tr>
<tr>
<td>Ekwendeni College of Health Sciences</td>
<td>Ekwendeni, Northern Malawi</td>
<td>Yes</td>
</tr>
<tr>
<td>Holy Family College of Health Sciences</td>
<td>Phalombe District, southern Malawi</td>
<td>Yes</td>
</tr>
</tbody>
</table>
ISTM does not have on-campus housing for students; therefore, students must acquire accommodation within the city of Kinshasa, as it is not feasible to commute daily to campus from the outskirts of Kinshasa.

While respondents noted that challenges related to fees and supplies exist for all students, there is evidence that women have an additional disadvantage when it comes to obtaining the necessary supplies. A male educator in DRC noted that students need computers, access to the internet and mobile phone credits to download course materials sent through WhatsApp or email (D2, male educator in health logistics track). Women in LMICs are 7% less likely than men to own a mobile phone and 17% less likely than men to own a smartphone and 19% less likely than men to use mobile internet. In DRC, 35% of men reported having internet access compared with 14% of women.

Additionally, respondents in DRC and Malawi noted that financial assistance through scholarships is limited, even nonexistent in DRC, for both genders.

“A number of girls and boys fail to achieve their goals in terms of education simply because of fees... a number of students reserve their place at the college but because of fees issues, they never come back.” – M3, male educator in pharmacy program

Students with scholarships often obtain them through an informal process that requires them to ask community or business leaders for assistance. Educators interviewed noted this leads to inequitable access to scholarships because men tend to be more willing to seek financial support informally. One male educator in Malawi said that women worry about endangering their lives or being exploited so they do not want to go out and solicit funding for their studies. Women tend to use only the formal scholarship application process, but even where a formal scholarship application process exists, men are still more likely to receive the funding. One female educator from Malawi noted that most scholarships for pharmacy students in Malawi are given to men.

“Maybe the attitude of those that were recruiting, maybe they thought the program is for males.” – M1, female educator in pharmacy program

Even though housing, supplies and scholarships affect both male and female students, these issues have a disproportionate impact on women. Therefore, solutions at the education stage need to consider any structural or financial barriers related to attending school.

Female Role Models

Educators interviewed noted how female role models were influential in encouraging more women to enroll in PHSC degrees. In fact, one female educator in Malawi felt her leadership position resulted in more female applicants to pharmacy programs. Additionally, another educator observed that when female students are sent to rural health centers for a practicum, they demonstrate for young girls in that community that a career in PHSC is available to them.

“... we get some of these questions from the girls out there. ...that ultimately leads to [more] girls in terms of their numbers being enrolled at the college currently.” – M3, male educator in pharmacy program

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When female students in both countries were asked whether they consulted with someone to select their course of study, many said the subject was recommended by family members, both male and female, who had prior experience with pharmacy or medicine. Additionally, having the support of female role models allows female students to see someone like them performing PHSC roles and responsibilities. These role models can help students navigate challenges and encourage their participation at the education stage as well as facilitate professional connections and provide mentorship along the career pathway. One female PHSC professional noted:

“I was motivated because a certain lady is certified in Supply Chain for CIPS [the Chartered Institute of Procurement & Supply, a global professional body]... I even talked to her on Facebook... she told me everything, and if all goes well, this year I will start... the only issue is that women, we look down on ourselves, like that CIPS course, women say that the exams are tough, but this lady encouraged me not to listen to what people say, the only solution is to work hard.” – M16, female PHSC professional

Sexual Harassment

Despite more female students starting to enroll in PHSC education programs, respondents noted that sexual harassment of women is a problem in the university system. Some schools do not have any official reporting procedures, but even for universities where such procedures exist, the process often involves female students reporting harassment to a male authority figure.

“Normally these students when there’s sexual harassment, they shy from reporting and also because the main contact person... is normally the dean and that one is male, so I am sure these girls can shy out, so I can say it’s a challenge unless we change that one. Maybe also do some sort of sensitization to the girl students, so that they are aware in terms of these events that occur to them, to whom they can report to, perhaps if there was a female dean that can take the issue up there that would be okay...” – M3, male educator

In addition to a lack of reporting procedures for women, respondents noted there is also a perception that sexual harassment in schools is not a significant problem. One female educator from Malawi noted that when she was a student, her classmates’ attitude was that sexual harassment was just women complaining and that they were not truly being harassed.

“So this [was] the attitude for most of my classmates from college, so if my classmates are thinking like that, it’s so hard to produce solid evidence that shows you are being harassed.” – M2, female educator in pharmacy program

Ensuring that women feel safe and are able to address issues of harassment in their environment is important for organizations to consider if they wish to engage more women to study in male-dominated programs. An educational environment that does not address sexual harassment could prevent women from enrolling.

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Of note, none of the respondents from DRC or Malawi knew of policy initiatives at the academic or career stages that could address issues related to sexual harassment or gender imbalance in the PHSC workforce.

**STAGE 2: PHSC CAREER**

The current PHSC professional environment is dominated by men, which in itself creates barriers to entry for women. In addition, there are more male graduates from PHSC degree programs, making the pool of potential job applicants mostly men. One male PHSC professional from DRC said he had to hire people based on their credentials and education, so sometimes he was unable to hire a woman because none of the female applicants had appropriate credentials. The same issue exists in Malawi, as illustrated below:

“Pharmacy technicians should [fill the role]. I think we have had only one lady who is a technician who was by quality available for that position.” – M7, male PHSC professional

When more men are hired into the PHSC workforce, it creates a gender imbalance that will continue unless responsive actions are taken to level the playing field and make PHSC an attractive, attainable and respected profession for women.

**Perceptions of Working Women**

Findings from the KIIs revealed several societal perceptions that affect women in the PHSC workforce. A common perception noted across respondents from Malawi, DRC and at the global level is that PHSC jobs are best suited for men. This perception is related to a general lack of awareness about the PHSC profession and the misconception that supply chain jobs mostly involve driving large trucks and lifting heavy boxes, which many perceive as physically challenging for women.

Respondents from Malawi and DRC also consistently noted two perceptions of women that seemed contradictory. On the one hand, women were perceived to be better candidates because of their work ethic and trustworthiness, stemming from their roles as wives and mothers; on the other hand, there is a perception that women should prioritize their roles at home.

For example, some respondents reported that women were perceived to be more hard-working and morally superior to men because they are mothers.

“I find that women are more sensitive to certain things, for example, the supply chain aims to ensure that products of all qualities are available to anyone who needs them... a man will understand that it is a question of doing the work but if you say it to a woman... [she] will go so far as if the medicine doesn’t arrive... that the child can die and that means that the woman who carried this child in her womb is in the process of picturing herself in the place of the mother whose child risks dying because of medicines that are missing. If we take ten men and ten women, I will find that eight women will give themselves more to achieve this result because they are mothers.” – D4, male PHSC professional

Some female PHSC professional respondents noted that employers try to recruit women for PHSC roles because people believed men were more likely to steal medicines and health products for resale. One female PHSC professional from Malawi said she thought she received a supply chain management role because of this belief, which
is problematic because women should be hired based on their skills and ability to be a PHSC professional, and not based on assumptions of being more trustworthy.

“I just felt that they were stranded... [with no pharmacy personnel.] I don’t think it would have been the same with a male, because males are not trusted... they might mess with the drug store, and because I am a lady that I will handle it well.” – M15, female PHSC professional

This belief that women are more trustworthy because they are wives and mothers can also create a barrier for young unmarried women looking to enter the PHSC workforce.

“I think [a married woman] would be [more] respected because of the marriage and the kid because most of the people in the village would respect someone [more] who has kids than someone who is going to school even if there is age difference, for example they would respect someone who has a kid and is only 15 years old [more] than someone who is 25 years old but going to school.” – M11, female pharmacy student

Although wives and mothers were perceived to be more trustworthy, women were still expected to prioritize their role at home.

“Most Malawian women would say that women are not there for working, women are there to be married and to be looked after by their husbands.” – M20, Male PHSC professional

This contradiction in beliefs—that wives and mothers are more hard-working but yet women should prioritize taking care of their families—places unrealistic expectations on women. Stereotypes about women, even if they might seem positive, can perpetuate systemic differences in power and privilege. Assigning positive or negative stereotypes to women (or men) assumes that all members of the group behave as a monolith, and it devalues individuals and their diversity of perspectives and behaviors.

**Work-Life Balance Challenges**

Given the social and cultural norms around women as wives and mothers, there is a practical challenge in balancing work and household duties. Female respondents from Malawi and DRC talked about waking up early, or going home to make dinner during their lunch breaks to ensure they maintain all of their household duties. While work-life balance difficulties for women are not unique to the PHSC profession, the expectation to travel for these positions makes balancing work and household responsibilities more difficult. One male PHSC professional from Malawi even noted that in addition to household responsibilities, women also have responsibilities to their community that can prevent them from working.

“In your neighborhood if there is a funeral, they would expect that [a woman] should be there all the time with them. The moment you prioritize your job, I think you are taken as somebody who is not considerate... of course females would suffer more [than men], because they are the ones expected to be participating more in community activities.” – M8, male PHSC professional

Traveling for Work

One female student from DRC said that female PHSC professionals who travel for work are often viewed negatively by communities. For example, they see a woman traveling for work and think she must be cheating on her husband because she is not at home, whereas the same community perceives men traveling for work as working hard to support their family. Another student from Malawi noted:

“Because she is female and she is traveling a lot, they would think that she is having a sexual relationship with her boss.” – M13, female pharmacy student

In addition to this negative perception of women who travel for work, there are practical issues related to travel that prevent women from carrying out PHSC duties. PHSC workers are expected to go to remote areas to procure or deliver products or conduct supervision, as well as sometimes travel to the capital city for ministry of health training or travel internationally to conferences. This can be challenging for women for several reasons, including the expectation that a woman must ask for her husband’s permission to travel, as one respondent from the DRC noted:

“The law says: a married woman cannot go to work far from her husband’s residence and even if you have the skills, you will be assigned elsewhere.” – D3, male educator in health logistics track

Another barrier for women who need to travel to remote areas is a lack of available modes of transportation and accommodation. Motorcycles are often the only type of vehicle available to PHSC professionals, according to respondents in Malawi and DRC. Respondents noted that women were capable of driving a motorcycle, but many thought women were afraid because motorcycles can be unsafe, especially during the rainy season when roads are extremely difficult to navigate. One male educator from DRC said communities often saw men fall off motorcycles while trying to deliver health products. Another male educator mentioned that male PHSC workers are able to sleep at rural health clinics when they are sent to remote areas, but women do not have this same option because it would be unsafe and social unacceptable for them to stay in a health clinic alone.

“At least a male can stay [in the rural health center] and maybe the wife can also stay [there]... It’s mostly men that are more willing to [take a rural placement] mostly because of their comfort... for example some use motorbikes, which is a bit challenging for some females to use, so unless there is a car that is going there, they can’t go.” – M1, male educator in pharmacy program

One female pharmacy student from Malawi noted she was willing to learn to drive a motorcycle. For many women, however, the lack of options makes traveling for work hard, and sometimes impossible. When assigning roles and responsibilities to PHSC professionals, it is critical to consider these travel-related issues and ensure that women have appropriate modes of transportation and accommodation to carry out their duties.

Harassment and Workplace Safety

In the interviews, female PHSC professionals mentioned problems with sexual harassment at work, which can be exacerbated in male-dominated fields. For example, a female PHSC professional in DRC recounted a story about a male coworker who made romantic advances toward a female coworker, and when she was not receptive, the work
environment for the woman became hostile. Problems with sexual harassment can be an even larger barrier for women because most PHSC leadership positions are held by men.

“I have seen one going viral on social media because of reporting their boss that was harassing them, and the way people commented, it was not really nice to see, so I wouldn’t [report], unless if the whole policy of how you report harassment and how it’s handled was a bit human, but currently the one I have seen, I wouldn’t recommend. [Men] have so much power, so you reporting them wouldn’t change much.” – M2, female educator in pharmacy program

Respondents from Malawi and DRC also noted that official sexual harassment policies or clear reporting procedures do not exist. With no recourse available, female PHSC professionals have to weigh their desire to carry out their professional duties in an environment that does not have protections in place for them.

In addition to the lack of policies to protect women from sexual harassment at work, there are also important safety considerations for both men and women in PHSC roles. One male respondent from Malawi left his job at a pharmacy because he received threats when he would not allow external parties to gain access to health products.

“If I was a female handling the department like I did... I think she would have been attacked directly, because I know there was an incident... there was a female pharmacist who was delegated to manage the tablets section, and because she was very strict, people could not have access to that section.... and she was harassed. She was coming from work, and... she was hit by a stone...” – M8 male PHSC professional

Women need to feel safe and supported in their work environment. Thus, any efforts to encourage women to enter the PHSC workforce need to happen in tandem with adapting or developing workplace policies and practices to ensure their safety and well-being.

STAGE 3: ADVANCEMENT IN THE PHSC WORKFORCE

Similar to trends observed in the overall health workforce, respondents noted that women were more heavily represented in entry-level PHSC positions than in leadership roles. As a female global supply chain expert observed:

“When you move into those roles that are more consistently... pure [supply chain]... that tends to be where the transition [in gender imbalance] happens. And either because of choice or because there’s not opportunities for women, maybe because of where [the role is] located or they want to be closer to family, there tend to not be as many women in those roles.” – G6, female supply chain expert

Leadership and Decision-Making Norms

Women in the PHSC workforce face additional barriers when it comes to obtaining leadership and decision-making roles. These barriers can stem from their experiences during the education stage, which often influence the degree programs they choose for their future profession. Respondents from both Malawi and DRC also indicated that some social and cultural norms create barriers for women advancing in their careers. For example, one female educator
from Malawi said her co-workers believed that to be a leader, it was necessary to have an authoritative voice that made students afraid. The respondent said her voice was not considered authoritative, so her opportunities to take on leadership roles were negatively impacted. Another female global supply chain expert commented that people do not always see women as decision-makers.

“Obviously you are getting into a male dominated field and sometimes, you know, when you enter, people don’t really see you as a decision-maker or that you really deserve to be there... maybe they look at you... in the leadership meeting, [and say], ‘Why don’t you take notes?’” – G2, female supply chain expert

Additionally, one male PHSC professional from Malawi observed that more men than women were in the PHSC profession overall, which he believed can cause women to feel inferior and afraid to participate in decision-making. As one male respondent in Malawi said:

“I have noted that there is low self-esteem in most women, as a result, once they have been given, let’s say, higher positions, they end up being defensive in their actions and sometimes they end up not [being] objective in their decisions that they make...” – M8, male PHSC professional

Female respondents also noted that male colleagues had dismissive attitudes toward them. One female PHSC professional from DRC indicated that she felt insecure when she had to speak up for herself, and often told herself just to keep quiet. Another female PHSC professional from DRC noted that her male colleagues dismissed her before she even had the opportunity to speak.

“At a workshop [in the province], when I had to answer I was told ‘oyo aza muasi na biso’ (this is our wife). I said that I came not to be someone’s wife, but because I have a job and I have to be given the time to express myself like everyone else.” – D16, female PHSC professional

As a result, women in the PHSC workforce do not have opportunities to participate in discussions, in addition to being perceived as uncomfortable with decision-making or unwilling to speak up. These barriers may in turn reduce the likelihood of women being considered for leadership roles or other professional development opportunities that could advance their careers.

**Traveling for Training**

As PHSC professionals progress toward higher levels of the hierarchy, the roles become more specialized and require more specific training, such as degrees and certifications. Currently, master’s degrees and specialized certifications, such as those offered by CIPS, are not offered at institutions in DRC or Malawi. This means individuals would have to travel internationally because most professional accreditations for PHSC management roles are based in Europe or the United States. Respondents noted that traveling internationally is more of a barrier for women than men.

“They say that the husband is the head of the family. He can go and spend two or three years, that is his role. Not a woman... it will be said that this woman does not love her husband and children... sometimes it will be said that she has another husband at work.” – D24, female PHSC professional

When women do not have access to the same opportunities for training and advancement as men due to travel considerations, they are continually being held back at various points along their career pathways as supply chain professionals and practitioners. Deliberate efforts should be made to put women forward for professional advancement opportunities. Lack of capacity development opportunities can be demotivating and deter women from entering a field that they feel has no realistic pathway to advancement.
Navigating Male-Dominated Spaces

Even if women are able to advance into PHSC management roles, they often experience additional challenges in their supervisory roles over male colleagues. Respondents noted that some social and cultural norms about gender roles, and what are considered appropriate interactions, create an unsupportive environment for female supervisors. A female nurse supervisor in DRC noted that sometimes she was unable to perform her supervision duties because she could not find the male nurses in their offices during supervision visits. She felt that if she were a man, she could connect with the men outside of work socially, since she saw male supervisors go out for drinks with the men they supervised, but she could not.

These gender norms have a negative impact on women, preventing them from performing their roles as supervisors of male colleagues or networking with male colleagues. One female PHSC professional from DRC expressed the ambition to get a job with the national Expanded Programme on Immunization, but without a network there, she had little confidence that she would achieve her ambition. For women, networking with male colleagues and finding mentors can be challenging. This is especially true when most of the leadership roles are held by men who are in positions to mentor women and help them advance and build networks to meet their career goals. Male respondents noted that mentoring women can make them uncomfortable.

“I was the in-charge... the mindset that we have, it becomes challenging to mentor a female if you are a man, because of our culture... because if you spend much time with a woman, you are mentoring her, people think maybe you are not doing work things.” – M8, male PHSC professional

However, respondents noted that the availability of female mentors can encourage more women to obtain PHSC degrees and seek out the profession. Engagement and coaching early in women’s education were essential to build awareness around the various roles in PHSC and make informed choices.

“We need women in the boardroom, but it’s not going to [just] happen because they don’t grow on trees. You don’t pick them from a supermarket shelf. You’ve got to nurture them.” – G1, female supply chain expert

Background research demonstrates that input from women in PHSC roles is critical to designing and investing in supply chain solutions that consider women’s health care needs and preferences. Therefore, building a pipeline of talented and qualified women for PHSC jobs requires solutions that start early and are targeted to address women’s specific concerns or combat stereotypes that keep them out of the profession. It will be important to generate future evidence and ensure better data tracking on gender imbalances globally in order to develop and sustain solutions that address gender inequity in the PHSC workforce.
Recommendations

Findings from the KIIs demonstrate that women face a number of challenges related to cultural norms, harassment and access to resources. Understanding these norms, and addressing them whenever possible, will be important to increase the number of women in the PHSC workforce and support them in their careers. The recommendations in this report focus on direct actions for stakeholders including donors, governments, technical partners, academic institutions and employers to support women along the PHSC career pathway, because currently these pathways are poorly defined for both men and women.

Challenges along the career pathway to becoming an established PHSC professional start early with lack of awareness, barriers to accessing PHSC education and limited training (Figure 1). Figure 4 highlights solutions to address the challenges both men and women experience along both career pathways. The first pathway (Pathway A) is that of the “supply chain professional” who chooses to study and specialize in supply chain through a formal degree or certification program, such as the health logistics track at ISTM in DRC. The second pathway (Pathway B) is that of the “supply chain practitioner,” a health worker who gains supply chain responsibilities and skills while on the job. The findings from our research confirm that the second pathway is the most common way to enter the supply chain workforce.

Figure 4. Health supply chain professional career pathways—the solutions
The solutions identified in Figure 4 addresses both pathways and include the following:

- Sensitize youth and women about the PHSC profession, so that they are aware of the various job options in the public and private sector, skill requirements, and can objectively decide whether a PHSC career is a good match for them. This sensitization can be done via professional networks, (e.g., boom! global community for women in supply chain), internship programs, career fairs, ministry of health engagement and outreach to youth/students.
- Update health professional training curricula so that the basics of supply chain management is included in pre-service training for nurses and other health technicians who tend to participate in supply chain activities.
- Create and refine PHSC academic programs and certifications so that country-level supply chain degree programs are aligned in their content and teach the most current supply chain best practices, including the latest technology, digital solutions and innovations in the field (e.g., through the LEARN Logistics education program).
- Institutionalize PHSC as a profession in national-level health and human resource structures (e.g., using People that Deliver’s supply chain management professionalization framework).
- Promote and increase access to online learning and PHSC skills development (e.g., through IAPHL’s online learning opportunities and People that Deliver’s Strategic Training Executive Programme [STEP 2.0]).
- Strengthen PHSC professional associations, such as IAPHL, to encourage ongoing learning, collaboration and motivation among PHSC professionals.

The findings from our exploratory research also confirm that awareness about the PHSC profession is needed among both men and women; however, women face unique challenges and, therefore, require tailored solutions to increase their participation in the PHSC workforce and ensure that opportunities along the career pathway are more equitable.

A more equitable workforce will, in turn, help make supply chains more equitable and responsive to women’s needs.

Our recommendations for tailoring solutions to meet the unique challenges uncovered from this exploratory research fall under three main categories:

1. **Strengthen PHSC career pathways for women, from education to advancement**
2. **Create an enabling environment that promotes full participation of women in the PHSC workforce**
3. **Elevate female decision-making in PHSC**

**STRENGTHEN CAREER PATHWAYS: EDUCATION TO ADVANCEMENT**

We recommend adapting the solutions outlined in Figure 4 to address the specific challenges that women face along both career pathways—Pathway A (supply chain professionals) and Pathway B (supply chain practitioners). For example, for Pathway A, we recommend tailored sensitization programs for youth and women to understand the roles and responsibilities of PHSC professionals. This means clearly defining what a PHSC job entails and raising awareness among young women to dispel the myth that supply chain jobs are better suited for men. Sensitization requires addressing the specific barriers that prevent women from entering the PHSC workforce including social and cultural norms, work-life balance, transportation challenges and safety concerns.
These solutions should start early in the education stage and link women to information about the PHSC profession, PHSC career opportunities in the public and private sector, and potential PHSC degree and certificate programs. WHO indicates that improving access to education for women is a key policy objective that will enhance their labor participation in the health workforce. Specific recommendations for stakeholders include the following:

- Increase awareness among women about PHSC as a potential career through:
  - Engaging women at secondary schools or career fairs and encouraging them to enter STEM (science, technology, engineering and mathematics) fields. Showcase the various roles and opportunities available in PHSC and provide information about pathways to enter the field.
  - Encouraging ministry of health and other supply chain employers to partner with academic institutions to discuss job opportunities with women.
  - Planning local supply chain conferences with special events and sessions for women with consideration of the timing, transportation and fees for events.
  - Developing resources, such as webinars and talking points, for universities and career counselors dedicated to showcasing diverse career opportunities within PHSC and female participation in those roles.
  - Collaborating with women’s organizations and advocacy groups to promote awareness of careers in PHSC.

- Introduce PHSC curricula and degree programs at educational institutions and build awareness about these programs among women.
- Build awareness among educators and administrators about supply chain career pathways, so they can advise incoming female students and address specific challenges such as harassment and how to navigate male-dominant spaces.
- Create more internship and training opportunities for women in the PHSC workforce.

FOSTER MENTORSHIP OPPORTUNITIES AMONG WOMEN

One critical way to support women at each stage of the PHSC career pathway is through increasing mentorship and networking opportunities for women. Respondents from the KIIIs indicated that the availability of female mentors influenced their choice of study and willingness to enter the PHSC profession. When young women have female mentors, they see what is possible, which helps to combat the negative impact of gender norms that influence perceptions about what women can and cannot do. Opportunities for mentorship and networking along the career pathway are crucial for women to share their experiences and learn from each other. Organizing networking events, workshops and seminars focused on women in PHSC enables women to connect with industry professionals, learn
about career paths and gain insights about the profession. These types of networks can also help them advocate for
themselves as a cohort and demand changes to policies and practices that interfere with their career advancement
opportunities.

Mentorship programs could take many different forms; for example, donors and technical organizations could
establish structured programs in LMICs to mentor women in PHSC. Public and private sector supply chain employers
could also institute fewer formal programs, and instead host networking events where female employees at all levels
have the opportunity to interact and find support.

2 CREATE AN ENABLING ENVIRONMENT

RECRUITMENT

Employers must review standard processes for recruitment to ensure hiring practices are equitable and do not favor
men. (See VillageReach’s Gender Strategy for practical guidance, including how to develop gender-sensitive
recruitment practices.) Specific ways to create equitable hiring practices include the following:

• Use gender-neutral language in job descriptions, encouraging women to apply;
• Advertise in a wide variety of forums, including those that are frequently accessed by women;
• Balance gender in interview panels;
• Review the application and selection criteria to remove gender bias;
• Avoid questions on salary history, gender and marital status in applications;
• Implement a gender quota for the final pool of candidates; and
• Conduct implicit bias training for hiring managers.

ENABLING POLICY

KII respondents from both Malawi and DRC said they were unaware of any policies or strategies in their countries to
improve the gender imbalance in PHSC workforce. According to WHO, stakeholders must focus on gender-equitable
investments coupled with gender-transformative policies in order to increase the value of health and care work for
women. This should include investments in programs that target women for recruitment and advancement in the
PHSC workforce, as well as policies that address family leave to help with work-life balance and protect women from
sexual harassment. A systematic approach is needed to plan, finance, attract, develop, support and retain more
women in the PHSC workforce.

Key policies that would help enable more women to work in PHSC include: (1) antidiscrimination or equal opportunity
policies to address gender and other forms of discrimination as it relates to recruitment, workplace safety and pay; (2)
gender-responsive leave policies that offer maternal, paternal and family leave options; and (3) sexual harassment
policies that protect women and create reporting mechanisms when they face harassment in an educational or work
setting. Countries must adopt zero-tolerance policies around harassment and discrimination and provide mechanisms
to address these issues across the entire career pathway, from education through advancement.

See WHO’s Gender Value Gaps framework in the Fair Share Report for transformative policy action to see policy levers
to close the gender gaps in care, participation, earnings, working conditions, data and investment.

STRUCTURAL SUPPORT

Academic institution support: Stakeholders need to consider the type of support necessary for women both studying
and working in PHSC. For example, at the education stage, women need access to safe and secure housing, equitable
access to scholarships as well as resources and supplies. Programs that offer women scholarships or donor-funded initiatives, such as the Strategic Training Executive Programme,\(^{31}\) are good examples of academic and training support for women. For advancement in the PHSC career pathway, women need access to more online training opportunities, particularly for certification programs hosted in Europe or the United States.

**Travel support:** In the PHSC workforce, which requires travel, employers must ensure safe modes of transportation or places to stay while traveling. Public and private sector employers should consider offering logistics support to women who need to travel for work, enabling them to access resources and navigate personal challenges associated with travel. Some examples of specific support include collating a list of safe accommodation facilities with clean and accessible washrooms, securing safe transportation and ensuring women are accompanied by a female colleague for travel.

**Access to technology:** Given that women have less access to information technology, this is another important consideration for advancement in PHSC jobs. If the use of mobile phones and computers is required for the job, solutions must help women access training to use these tools, as well as access to internet and mobile phones, to improve their employment prospects.

*To understand gender equity in the PHSC workforce and how to design interventions, see People that Deliver’s human resources for supply chain theory of change and supply chain management professionalization framework to define supply chain management roles, competencies and career pathways.*

**COLLECT GENDER-DISAGGREGATED DATA**

Improving the gender imbalance in the PHSC workforce requires better data to track improvements and changes to the workforce over time. For example, in the public sector, relevant data can inform stakeholders about the proportion of men versus women occupying various roles at different levels across the supply chain, from entry level to leadership positions. Data could be collected from an existing logistic management information system or other supply chain data system, or if those do not exist, a human resources information system such as the OpenHIE Health Worker Registry. These systems can be leveraged to collect and analyze data related to the PHSC workforce disaggregated by gender and age and focus on areas that promote equal opportunity across the PHSC career pathway.

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30 Pamela Steele Associates (PSA). Girls on the Move: Program Factsheet. Kisumu, Kenya: PSA; 2023. Accessed May 10, 2024. [https://www.gotm.pamsteele.org/_files/ugd/1c81aa_a52f4f59a4df64c5e83704b5f5f7f758bc.pdf](https://www.gotm.pamsteele.org/_files/ugd/1c81aa_a52f4f59a4df64c5e83704b5f5f7f758bc.pdf)

for women. Health supply chain program managers, donors and academic institutions also have a role to play in collecting gender-disaggregated data to inform this field.

**Program managers** (i.e., at ministries of health and implementing partner organizations) who focus on supply chain capacity-building activities should track male and female participation to inform training curricula and the selection of participants in future training. Any supply chain training should be developed with a gender lens and include specific content on gender for training participants. Additionally, organizations implementing supply chain interventions should collect gender-disaggregated data on participation and outcomes. The availability of this data will help inform gender analyses to improve program design and implementation.

**Donors** can help ensure that gender-disaggregated PHSC data is collected and used in reporting by partners ministries of health, as well as encourage updates or adaptations to existing digital tools that are not disaggregated by gender.

**Academic institutions** that have gender-disaggregated data can track female participation and retention in the various supply chain educational pathways. Colleges, universities and technical schools should track the gender breakdown of student enrollment in PHSC programs, course performance, graduation rates and ideally, employment rates after graduation.

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### ELEVATE FEMALE DECISION-MAKING

In addition to increasing women’s participation in the PHSC workforce, stakeholders must also make strides to ensure women have equitable opportunities for advancement, leadership and decision-making positions. As we work toward increasing the number of women in leadership positions, in the interim there are important ways to ensure they are involved in all aspects of the supply chain from forecasting to distribution of products. Leaders in the PHSC workforce also need to purposefully select and include women in decision-making bodies, technical working groups and committees, as well as ensure the gender-balanced selection of participants for capacity-building opportunities, such as training, site visits and conference participation. Intentionally including women in decision-making processes, even if they do not hold high-level positions, will make supply chain decision-making more robust and equitable.
VillageReach’s exploratory research findings demonstrate that a gender imbalance exists in the PHSC workforce and that stakeholders need to address the challenges women experience across the career pathway. While some of our findings are related to cultural norms and cannot be directly or quickly influenced, our recommendations highlight several opportunities for donors, governments, technical partners and academic institutions to implement in order to increase the number of women in the PHSC workforce and support them along the way. Without addressing the needs of women and ensuring that necessary supports are in place, it is unlikely that more women will become aware of the PHSC workforce or be willing to take jobs in the sector. We recommend the following opportunities for stakeholders:

- **Governments** should address policy issues that keep women out of the PHSC workforce
- **Employers** should actively engage women during the early education stage and create mentorship programs within ministries of health for women.
- **Academic institutions** should intentionally recruit female students, and make sure they have access to housing, scholarships and safe environments.
- **Implementing partners** and **donors** can assist the government in establishing tailored programs to recruit and support women along the PHSC career pathway.

Gender balance in the PHSC workforce contributes to stronger supply chains that are high-performing, equitable, people-centered, resilient and sustainable. Supply chains with these attributes are a critical component of responsive primary health care systems that meet the needs of the most under-reached communities, especially women, adolescents and children whose global health outcomes remain the lowest.\(^{32}\) Intentional efforts to respond to the health needs of women and children are critical to achieving universal health coverage because they are the main clients of primary health care services. Increasing the number of women in the PHSC workforce and supporting them along their career pathway is one important way to better meet the health care needs of women and children.

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[https://apps.who.int/iris/bitstream/handle/10665/206971/9789290613176_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/206971/9789290613176_eng.pdf)
Appendix A: IAPHL Survey

VillageReach is conducting a survey to understand men’s and women’s participation in the public health supply chain (PHSC) workforce, including the norms, beliefs, policies and resources that may impact individuals as they take on these roles and pursue careers in the PHSC. The PHSC workforce consists of all the people who select, procure, store and distribute the medicines and other health commodities that providers need to deliver healthcare.

1. Whether or not your primary focus is PHSC, do you carry out any of the following roles or responsibilities related to PHSC? (Select all that apply.)

- Quantification of health supply chain (selecting the appropriate product or equipment or forecasting product needs)
- Procurement of health supply chain (managing procurement budgets, managing supplier agreements or contracts, importing or exporting products, or conducting quality assurance of products)
- Storage of health supply chain (warehousing, managing inventory or transporting commodities to facilities)
- Health product use (providing information on products to the user, dispensing products to patients, monitoring and reporting on product use)
- Human resources for health supply chain (overseeing human resources, or training staff)
- Health supply chain strengthening (designing improved practices and policies or advocating for improved practices and policies)
- Other responsibilities not listed here

* 2. Have you attended any formal training (such as an educational program or organized training) to build your skills in carrying out PHSC roles or responsibilities?

- Yes, I have attended formal training related to my PHSC responsibilities.
- No, I have never attended formal training related to my PHSC responsibilities.

* 3. Where did you attend formal training related to your PHSC roles and responsibilities?

- During secondary or tertiary education
- Some other program before joining the workforce
- While employed in the PHSC workforce
- At another point in my career

4. In your experience, are there currently more men or women carrying out PHSC roles and responsibilities?

- Currently many more men than women carrying out PHSC responsibilities
- Currently slightly more men than women carrying out PHSC responsibilities
- Men and women are currently equally represented
- Currently slightly more women than men carrying out PHSC responsibilities
- Currently many more women than men carrying out PHSC responsibilities

5. What contributes to there being [insert response above] carrying out PHSC responsibilities?
* 6. How important do you think it is to explore how gender affects participation in the PHSC workforce?

[ ] 0  [ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10

Not at all important  Very important

* 7. What could be done to ensure that both men and women can equally participate in the PHSC workforce?

8. Do you have any other comments about how norms, beliefs, policies or resources affect men and women in the PHSC workforce?

**Demographic Questions:** These questions will be used to explore differences between respondents. All demographic questions are optional.

9. What is your gender identity?

[ ] Male  [ ] Female  [ ] Prefer not to say  [ ] Gender identity not listed here (optional to specify)

10. What age are you?

[ ] 18-24  [ ] 25-34  [ ] 35-44  [ ] 45-54  [ ] 55-64  [ ] 65+

11. What is your country of origin?

12. In which country are you currently based?

13. How many years have you been carrying out PHSC roles?

[ ] Less than 1 year  [ ] 1-2 years  [ ] 3-5 years  [ ] 6-10 years  [ ] 11-20 years  [ ] More than 20 years

14. What is your current professional affiliation?

[ ] Government  [ ] Private company  [ ] University or research institution, including student  [ ] Non-profit organization  [ ] Other affiliation
Appendix B: KII Guide

Gender analysis of public health supply chain (PHSC) workforce
Key informant interview – men and women in PHSC workforce

Instructions: Interviewer reviews the consent form with the respondent and responds to any questions before beginning interview.

Interview location:

Respondent Background
- What is your job title?
- Who is your employer?
- What is your gender?
- How old are you?
- What is the title of your supervisor?
- What gender is this person?
- What town are you from?
- Is this the same as where you live now? If not, where are you living now?
- What is your marital status?
- Do you have any children or are you responsible for caring for any children? If yes, how many?

PHSC Role
1. We are interested in learning more about the experience of people who select, procure, store and distribute medicines and other health commodities. We call this the “health supply chain workforce,” and those who carry out these functions within the government’s healthcare system are the “public health supply chain workforce,” or “PHSC.” Can you please describe your current roles and responsibilities related to PHSC?
   a. Would you consider PHSC to be the primary focus of your role?
      i. If not, what is the primary focus of your role?

2. How long have you had responsibilities related to PHSC or been working in PHSC?

3. How did you come to be working in PHSC? Did you decide to take on a role or responsibilities in PHSC, or were they assigned to you?
   a. If PHSC responsibilities were assigned to you, by whom?

4. Do you work with a team to carry out PHSC responsibilities? For example, do you work with a colleague to order medicines when there is a stock-out?
   a. If yes, how are shared PHSC responsibilities divided between the team? Who decided which responsibilities were assigned to which team member? Why were responsibilities assigned to particular team members?
b. If yes, thinking about the people you currently work with to carry out PHSC responsibilities, how does the number of men compare to the number of women?
   i. If there are more men than women or more women than men, why do you think there is an imbalance?

General Educational Background
5. What is the highest level of formal education you have completed, whether or not it is specifically related to PHSC?
   a. Did you specialize or focus on a particular field of study? If yes, what was this? (If related to PHSC, try to be as specific as possible.)
      i. If yes, why was this field of study chosen? What factors were considered?
      ii. If yes, how did you decide on this field of study? Did you consult anyone or discuss this with anyone?
   b. Within this educational program, how did the number of men compare to the number of women?
      i. What do you think would be the ideal proportion of men and the ideal proportion of women within the educational program? Why?
      ii. If there were more men than women or more women than men, why do you think there was an imbalance?
   c. Within the highest level of education you completed, were there any services, programs or practices to enable women to participate fully?
      i. Probe: Were there any safety or security services or practices to help ensure safety of all students, including women?
      ii. Probe: Were there on-campus residences or lodging available for students, including women?
      iii. Probe: Were there scholarships reserved for women to attend the educational program?
         1. If yes, what do these scholarships provide?
         2. If yes, are you familiar with the application process for these scholarships?
      iv. If any services, programs or practices are identified, do you think these were effective? Why or why not?
   d. Whether or not you were aware of any existing services, programs or practices to enable women to participate fully in educational programs, what could help women to participate more fully or to resolve any challenges women might face in pursuing higher education?

PHSC Training or Education
6. Whether or not your formal education was related to PHSC, did you receive any additional training or orientation before beginning your role in PHSC? If yes, what? (Please consider any formal training program or course as well as any informal orientation.)
   a. If yes, how long was this training or orientation?
   b. If yes, was this training or orientation conducted individually or for a group of learners?
      i. If conducted for a group of learners, how did the number of men compare to the number of women in this group?
   c. If yes, were there any financial costs associated with attending the training or orientation, including registration fees, transport costs, childcare costs, etc.? 
      i. If there were any financial costs, who paid these?
      ii. If there were any financial costs, was there any financial assistance or support available?
   d. If yes, did you experience any challenges attending or completing this training or orientation? What were they?
i. **[For women only]** Did you experience any challenges specific to being a woman? What were these? *(Probe: Finding transport, traveling alone, access to women’s restrooms, access to childcare, etc.)*

ii. **[For women only]** Do you think that a man would have faced similar or different challenges? Why or why not?

iii. What could be done to address the challenges you encountered?

e. If you did not receive any training of orientation before beginning your role, do you know if such training was available?

   i. If this training was available but you did not attend, why not?

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**Job Requirements**

7. In a normal work week, what are your working hours?

   a. Are there times that you work extended or non-standard hours?

   b. Are you satisfied with these hours? Why or why not?

8. How do you travel from your residence to your workplace each day?

   a. How long does travel take you?

   b. Does travel cost you anything? If yes, what?

   c. Does your job require travel away from your workplace?

      i. If yes, where and how often?

      ii. If yes, does this travel cost you anything? If yes, what?

   d. Are you satisfied with the travel requirements of this job? Why or why not?

9. Do you experience any challenges carrying out your current roles and responsibilities in PHSC? If yes, what are these?

   a. **[For women only]** Do you experience any challenges specific to being a woman? What are these? *(Probe: Travel to work location or to carry out duties, long job hours, etc.)*

   b. **[For women only]** Do you think that men working in PHSC face similar or different challenges? Why or why not?

   c. In carrying out your work duties, do you ever feel unsafe? Why or why not?

   d. What could be done to address the challenges you are facing now?

10. Are you satisfied with your compensation for your roles and responsibilities in PHSC? Why or why not?

    a. Do you believe that your compensation is similar or different from the opposite sex with similar roles and responsibilities related to PHSC? Why or why not?

11. In five years, what goals do you have for your career? How do you hope that your employment is similar or different by that time?

    a. Do you hope that you still have a role or responsibilities related to PHSC? Why or why not?

    b. Do you know of anyone who has already achieved similar goals that you can look up to?

       i. If yes, what gender is that person?

    c. What support or resources would you need in order to achieve these goals?

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**Community Perceptions of Job Requirements**

12. How do members of your community perceive women with any full-time employment outside the home? Why?

    a. Is this the same for all women, including young women, women with young children, women with multiple children, married women, women whose husbands must also travel for work, and women with limited incomes? Why or why not?

    b. How do members of your community perceive men with full-time employment outside the home? Why?
13. How do members of your community perceive women with employment with long or non-standard working hours? Why?
   a. Is this the same for all women, including young women, women with young children, women with multiple children, married women, women whose husbands must also travel for work, and women with limited incomes? Why or why not?
   b. How do members of your community perceive men with employment with long or non-standard working hours? Why?
14. How do members of your community perceive women whose employment requires them to travel away from the community frequently? Why?
   a. Is this the same for all women, including young women, women with young children, women with multiple children, married women, women whose husbands must also travel for work, and women with limited incomes? Why or why not?
   b. How do members of your community perceive men whose employment requires them to travel away from the community frequently? Why?

Income Allocation
15. We are interested in learning about how men and women make decisions about the way income is spent within the household. We want to learn about whether this might influence the way men and women make decisions about their employment. Who provides the main source of income in your home?
16. How is your income allocated within your household?
   a. Who decides what your income will be spent on? Why?
   b. If you wanted to apply for a different job, who would make this decision? Why?
   c. If you wanted to stop working outside the home or reduce your hours, who would make this decision? Why?

Gender-Based Discrimination
17. [For women only] Have you ever experienced a situation at work in which you were treated negatively because you are a woman? If yes, do you mind sharing briefly about the situation?
18. [For men only] Are you aware of any situations at work in which a woman was treated negatively because she was a woman? If yes, do you mind sharing briefly?
19. In general, do you feel that women often encounter negative treatment because they are women carrying out supply chain responsibilities? Why do you think this?
20. If a woman were to experience harassment or a threat to her safety in your workplace, what could she do in response?
   a. Probe: Is there a process to report incidents like this? If yes, what is that process? Is this process used frequently? Why or why not?

Overall Recommendations
21. Would you recommend to young women a career that involves carrying out responsibilities in PHSC? Why or why not?
22. What qualities would make a woman successful in a career in PHSC?
23. Do you have any recommendations for programs, policies or practices that might help more young girls pursue a career in PHSC?
24. Do you have any recommendations for programs, policies or practices that might improve the experience of women currently working in PHSC?