



# Business case for investment in human resources for health supply chain management

## ISHUSHO YA 3: Virusi itera guhuza am

Basobanurire ibintu...

ret... bubiri tumaze kubona, virusi iter  
Mu... shobora gutuma umuntu ahuz a  
(inshinge za magendu, urwembe, ibikwasi, ub

Shimangira ko:

- Niba bibaye ngombwa ko umuntu ak  
(cyane cyane iyo azi ko yanduye).
- Umurwayi wese agomba kwirinda m

Basabe kubaza ibindi bibazo bijyanye n'iby

Niba nacyo habivuzeho bibutse ko hari ib  
nyamara bibeshya. Aha twavuye nko kura  
gukinana umupira, n'ibindi.

- Babaze niba hari icyo bazi ku itand

Dareke bagasubira, ukomeze ibisubirako

Handura umugabo umubonye umuntu

# **Business case for investment in human resources for health supply chain management**

March 2023

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## Acronyms

EPSS	Ethiopian Pharmaceuticals Supply Service
FEFO	First to expire first out
FP	Family planning
Gavi	Gavi, the Vaccine Alliance
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management
GHSC-TA FTO	Global Health Supply Chain (GHSC) – Technical Assistance (TA) Francophone Task Order
HR	Human resources
HR4SCM	Human resources for supply chain management
IAPHL	Association of Public Health Logisticians
World Bank income groups <sup>1</sup> :	
LIC	Lower income countries
LMIC	Low- and middle-income countries
UMIC	Upper-middle income countries
LMIS	Logistics management information system
MOH	Ministry of health
NGO	Non-governmental organisation
PA	Pharmacy assistant
PtD	People that Deliver
RH	Reproductive health
ROI	Return on investment
SCM	Supply chain management
ToC	Theory of Change
UN	United Nations
UHC	Universal health coverage
USAID	United States Agency for International Development
WHO regions:	
AFRO	African region
SEARO	South East Asian region
AMRO	Americas region
EMRO	Eastern Mediterranean region
WPRO	Western Pacific region

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<sup>1</sup> 2020 World Bank grouping based on gross national income (GNI) per capita

## Executive summary

Well-performing supply chains are essential to ensuring access to health supplies and meeting the goal of universal health coverage. However, the burden on health supply chains has increased significantly and will continue to increase owing to increasing volumes of supplies, the introduction of new health products, changing disease profiles and efforts to achieve universal health coverage (UHC).

At the same time there is also an insufficient number of adequately-trained staff, particularly logistics staff, to manage health supply chains. Health supply chain staff in countries face significant gaps in technical capacity and knowledge, often owing to a lack of experience or formal training, which can be gained either through supply chain management degree programmes or in-service training for staff. Many low- to middle-income countries also lack a professionalised supply chain occupational category, formed either via formal education or through the civil service structure. This professionalisation is critical to embedding a workforce with specific supply chain competencies in the health system.

Supply chain management (SCM) is complex and requires the appropriate staff, organisational structure, skills, working conditions and resources to function optimally. PtD's foundational framework, [the Human resources for supply chain management Theory of Change](#) (HR4SCM ToC), is a starting point for any procurement and supply organisation to strengthen and develop its workforce. The HR4SCM ToC helps to analyse the conditions needed to ensure that workers at every level of the supply chain perform optimally and fulfil all the necessary functions of an effective supply chain system.

The HR4SCM ToC maps four distinct pathways:

- 1) Staffing: that all necessary SCM positions and/or competencies are filled;
- 2) Skills: that SCM workers apply their skills as appropriate at every level of the supply chain;
- 3) Working conditions: that working conditions support performance; and
- 4) Motivation: that workers are motivated to do their jobs.

In line with the ToC, and whether through investing in an organisation's own resources or outsourcing, these four areas must be addressed (depending on the specific context, although equal priority should not necessarily be given to each one) if the health supply workforce is to perform optimally and access to health commodities is to increase. This business case, though, focuses on building an organisation's own capacity.

In this business case data collected from donors' budgeted investments at country level for human resources for supply chain management (HR4SCM) over the period 2017-2020, coupled with questionnaire responses and interviews with supply chain managers in country, reveals the value of allocations in these four areas.

It is clear that staffing and skills are the pathways that receive plentiful allocations while motivation and working conditions are neglected, and as the number of products managed by the health supply chain workforce increases, so should HR4SCM budget allocations in investments.

Interviews and questionnaire responses suggest that investments in HR4SCM offer value for money to improve health outcomes, and this is supported by two case studies: in Malawi and Ethiopia. The return on investment (ROI) in HR4SCM and related health outcomes is, however, not currently possible to determine as there are no monitoring processes in place in countries to measure the isolated impact of investments in HR4SCM.

## Key messages

### Staffing and skills are the pathways that receive plentiful allocations while motivation and working conditions are neglected

PtD's research shows that of the four pathways – staffing, skills, working conditions and motivation – as detailed in PtD's HR4SCM ToC, skills received 65 percent of allocations, followed by staffing with 27 percent. Motivation received 5 percent of allocations while the amount attributed to working conditions was insignificant. Donors' investments remain focused on training and skills development for government staff and other stakeholders and seconding or embedding staff into government agencies or other local institutions. It is unclear why this is the case, but key informants confirmed that training is often chosen to remedy supply-chain issues.

Key informant interviews and questionnaire responses suggest that a lack of investment in working conditions and motivation is having a negative impact on the health supply chain.

Questionnaire responses also indicate that despite continued investments in training (skills) countries are not seeing an ROI in training: at country level there is a perceived lack of trained supply-chain personnel. This raises the question of whether or not focusing resources on skills-building alone is an effective use of limited funds.

### Investing in HR4SCM offers value for money to improve health outcomes

The lessons from Malawi indicate that addressing all of the four pathways improves supply chain performance. As seen in the case study, making changes in these areas at health-centre level can improve data quality, dispensing quality and crucially free up significant time for clinicians to focus on their patients. The qualitative results, comprising the interviews and the questionnaire responses, indicate that investments in HR4SCM lead to improvements in supply chain performance.

The implementation of the HR4SCM ToC in Ethiopia also provides evidence to support investments in all of the four pathways. In this case, following interventions across the four areas, tangible supply chain improvements were seen, including a 25 percent decrease in procurement lead time, a 35 percent decrease in contract signing lead time and a 5.5 percent decrease in tender lead time.

### As the number of products managed by the health supply chain workforce increases, so should HR4SCM budget allocations in investments

Human resources for supply chain management allocations rose between 2017 and 2019, but then decreased in 2020.

But with 300 new drugs expected to be launched between 2021 and 2026, the health supply chain workforce will require increased support and more investment if it is to meet the needs of patients in LMICs<sup>2</sup>. Data from Chad has demonstrated that a 24-fold increase in the value of new vaccines introduced into a country resulted in a 5-fold increase in the workload for supply chain management. Strong supply chains are key and Gavi, the Vaccine Alliance estimates that vaccine volume per child will quadruple, while an increased number of doses will be used, new vaccines will be launched and stock keeping units will double to achieve these goals.

### There is no monitoring process in place to measure the impact of HR4SCM

The questionnaire responses indicate the absence of a monitoring framework – in countries and donor organisations – to specifically monitor the performance of supply chain investments in human resources. As the supply chain ecosystem is so complex with many different actors and simultaneous interventions, no specific outcome can be singularly attributed to an individual intervention. Consequently it is impossible to deduce the totality of impact of investments in the four pathways.

<sup>2</sup> IQVIA; The Global Use of Medicines 2022, 2021 [cited March 2023]. [online] Available at: <https://www.iqvia.com/insights/the-iqvia-institute/reports/the-global-use-of-medicines-2022>

## Purpose and hypothesis

PtD hypothesises that health supply chains will only function effectively if investments are made in the health supply chain workforce across the four pathways detailed above.

From research PtD has conducted over the years, the following challenges have been noted to cause a reduction in supply chain performance because of workforce related issues:

- Fragmentation of responsibility for managing the overall performance of the supply chain;
- Lack of planning and financing for the supply chain workforce;
- Lack of development and credentialing of supply chain managers; and
- Lack of accurate job descriptions.

A shift in the actions taken by key supply chain donors to improve HR for SCM is currently taking effect. Workforce development and supply chain professionalisation have become strategic priorities for Gavi the Vaccine Alliance and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Through USAID's NextGen global health supply chain suite of projects, their investments will extend beyond training and skills development to incorporate a systems approach and focus on institutional capacity building, promoting the transfer of skill to in-country counterparts, and establishing systems, institutions and mechanisms for sustainable local capacity building, with a focus on women, youth and underrepresented groups.

Capacity development and professionalisation is a new strategic pillar in the Gavi 5.0 strategy (2021-2025), through which Gavi is investing to adequately staff all levels of the immunisation supply chain with a motivated and competent workforce with the goal of leaving no-one behind and an emphasis on providing children with routine vaccinations (zero dose).

The Global Fund's new supply chain roadmap (2021) is driven by five strategic objectives and a focused set of thematic roles. The third thematic role focuses on capacity development to equip health workers with fundamental technical, managerial and leadership skills to support their career progression and competency development.

With significant health supply chain strengthening investments being made by international donors such as Gavi, the Global Fund and USAID, it is evident that a business case to demonstrate the value of investing in human resource systems in relation to other competing health supply chain priorities is necessary. The business case can be used by donors to persuade decision makers and stewards of health supply chains in-country of the value of investing appropriately and allocating adequate amounts of their health supply chain budgets to the workforce. This is supported by the PtD HR4SCM ToC which stipulates that when work performance is optimised, commodities are available at service delivery points to meet needs in the most effective way possible.



## Methodology

### Human resources for health supply chain management budget data

#### Standardising and categorising data

To advocate investing in human resources for supply chain management, USAID developed a methodology to quantify and categorise the types of investments made in HR4SCM, using the four pathways of the PtD HR4SCM ToC staffing; skills, working conditions and motivation. According to the ToC, addressing these four pathways is essential if workers at every level in a supply chain are to perform optimally. This methodology was applied to the workplans and budgets of the USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project and the USAID Global Health Supply Chain (GHSC) – Technical Assistance (TA) Francophone Task Order (FTO).

This methodology was replicated by Gavi and the Global Fund and three sets of data were shared with PtD for review and analysis.

The data that PtD collected was from the donors' budgeted investments at country level for human resources for supply chain management (HR4SCM) over the period 2017-2020.

It was acknowledged that budget data would not allow PtD to precisely depict the actual HR4SCM spend in countries. This is because budgets don't necessarily reflect the actual amount spent. The data, however, does provide an illustrative overview of the budget allocations attributed to HR4SCM in countries, which is sufficient for the purpose of this business case. From here on, these budget allocations are called 'allocations'; these differ from investments as in some cases we cannot be certain of the actual amount expended.

### Analysing the data

The standardised HR4SCM budget data 2017-2020 from the donors was consolidated into a database. Subsequently, a list of key dimensions was established, such as donor, year, country/region, income group and ToC pathway, and an analysis was conducted to establish key findings and trends from the data.

### Measuring the impact of investments in HR4SCM

#### The challenge

The overarching challenge of measuring the effects of investments in HR4SCM is connected to:

- The causal relationship of supply chain performance and investments in HR4SCM
  - The overall performance of the supply chain in terms of commodity availability and access is linked to all the components of the supply chain in which HR4SCM investments are contributing to parts of these components. It is hence challenging to isolate the portion of supply chain performance development that is directly linked to investments in HR4SCM.
  - In addition to the investments made by these donors, governments were investing their own resources in supply chain improvements, including, in many cases, their own investments in elements of HR4SCM. Simultaneously, other donors, such as UNFPA and the Bill & Melinda Gates Foundation (BMGF), may have been making supply chain investments – although to a lesser degree than the three donors participating in this analysis.
- The time between investments and impact realisation.
  - Many of the investments made in HR4SCM, such as professionalising SC staff, take time to translate into measurable impact.
- Investments in HR4SCM elsewhere
  - It is unknown to what extent the outsourcing partners of governments have invested in HR4SCM across the four pathways.

Another consideration is that investments in technical assistance by donors contribute to building outsourcing capacity as well as in-house capacity. As governments shift to outsourcing, secondments (seconded staff paid by donors) will decrease. In parallel, outsourcing contracts will increase and these will also require donor funding. It is important that as this situation evolves, investments in HR4SCM are sustained.

#### **Qualitative data on impact and outcomes of investments in HR4SCM**

To more closely explore the relationship between supply chain performance and investments in HR4SCM, as well as the time between investments and impact, PtD collected qualitative data from countries by issuing a survey to supply chain professionals combined with key informant interviews from a selection of representative countries.

#### **Other research related to supply chain performance and investments in HR4SCM**

PtD interviewed VillageReach in Malawi on their impact assessment of the pharmacy assistant (PA) graduate programme to understand how this related to HR4SCM and supply chain performance.

PtD also investigated the outcomes of implementing the ToC in Ethiopia's pharmaceutical supply chain in 2019.

# Analysis of budget allocations for HR4SCM

## Introduction

PtD investigated the budget allocations made by three donor agencies – Gavi, the Vaccine Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund) and the United States Agency for International Development (USAID) – in human resources for supply chain management (HR4SCM). Allocations in this area fall within four pathways as defined by the PtD HR4SCM ToC.

## The Theory of Change pathways

### Staffing

Adequate staffing should allow for all critical supply chain positions to be filled. However a number of conditions are required for this to happen. Firstly, public sector recruitment and hiring policies should allow for the hiring of staff with adequate supply chain experience, recruitment policies must already exist, and equal employment opportunity policies must be in place.

Any investments should allow the organisation to recruit quality candidates from an adequate pool of workers to fill supply chain positions and for this there must be sufficient budget.

### Skills

For personnel to be appropriately skilled – which means there are personnel who are able to apply their skills at every level of the supply chain – they need access to training, education and professional development linked to core competencies.

There must also be opportunities to gain on-the-job experience and the steps and competencies required to undertake supply chain tasks must be known. With this in mind, any investments in skills should contribute to the technical and managerial competencies of personnel, provide them with leadership skills, and at the same time contribute to an environment in which supply chain workers understand their roles and responsibilities in the SC system.

## Working conditions

In an efficient health supply chain in which the workforce is empowered to reach its potential, working conditions should support performance. For example, policies related to harassment should be in place, as should equal opportunity and environmental and occupational safety policies. Investments should contribute to ensuring the physical environment is safe, clean and conducive to performance as well as ensuring that workers have up-to-date and relevant tools and the equipment necessary to fulfil their functions.

## Motivation

In an efficient health supply chain supply chain workers should be motivated to do their jobs. Performance management policies should be in place while supervisors should have the skills to give performance feedback to staff.

Investments in motivation should ensure that supply chain workers understand and care about their role in the healthcare system and support their good performance.

## Examples of investment categorised by pathway

Documents provided by USAID offer examples of investments made in each of the pathways. It is clear from the interviews conducted that investments in skills often refer to training; such an example of an activity description follows: “Train and assist staff from the Ministry of Health and Wellness (MOHW) to conduct forecasts and bi-annual reviews of lab commodities using the ForLab Tool.”

When it comes to staffing one project description reads: “Conduct a review of job descriptions, HR structure, policies, and procedures.”

A project to target motivation was described as: “Implement an excellence awards program for facilities in supply chain management.”

Meanwhile a project to improve working conditions was intended to, “Support the rehabilitation of existing storage facilities at central medical stores [in Nepal].”

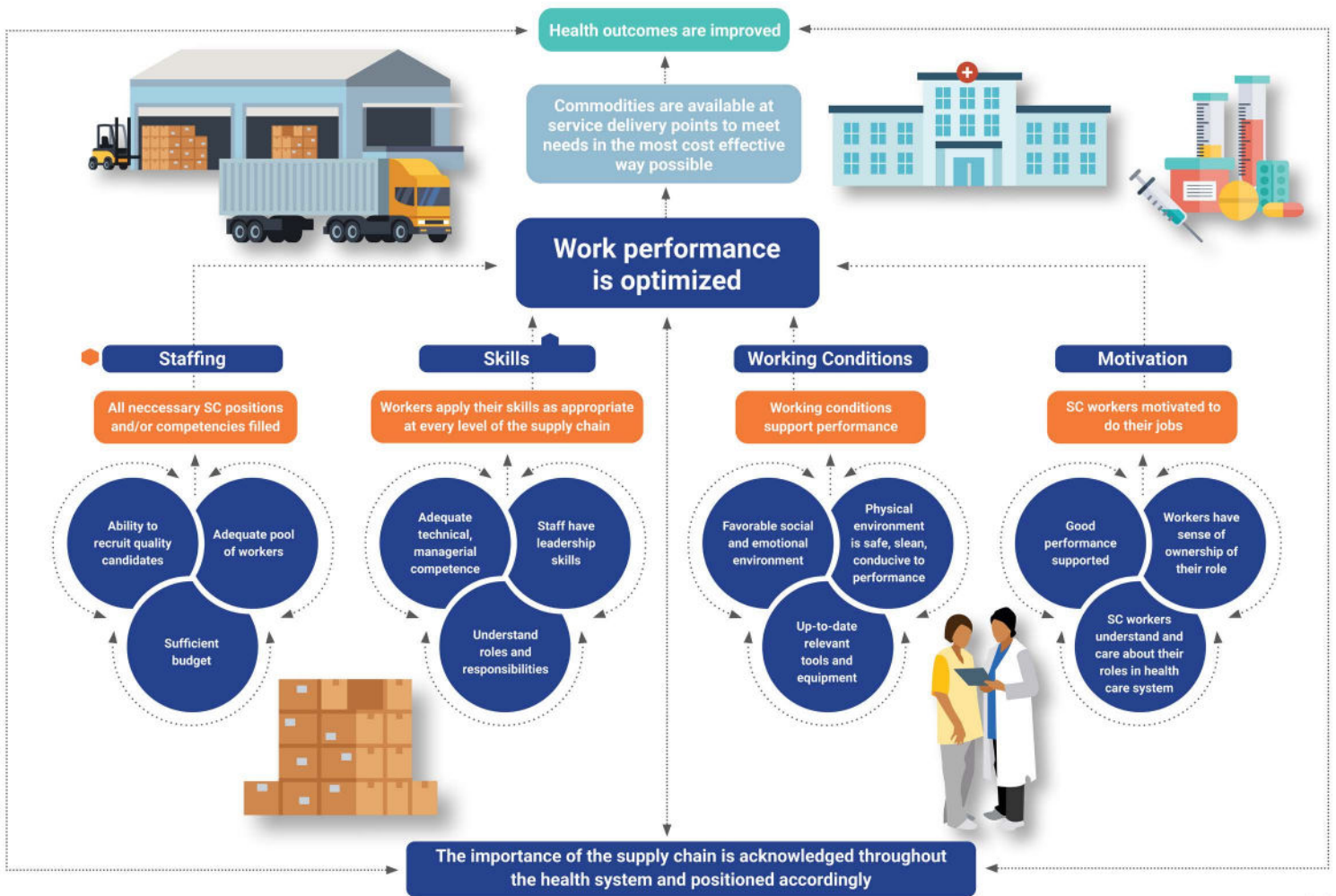


Figure 1:  
People that Deliver's Theory of Change

## Results by organisation

Between 2017-2020 the three donor agencies – Gavi, the Global Fund and USAID – allocated \$167 million to invest in human resources (HR). Allocations more than doubled from \$24 million in 2017 to \$55 million in 2019 driven by increases made by USAID and the Global Fund, and then declined to \$44 million in 2020.

Over the four-year period 71 countries received funding; skills is the pathway that received the greatest allocation with a 65 percent of the share, followed by staffing at 27 percent, motivation at 5 percent, and other (which accounts for performance gap root cause analysis) at 2 percent.

USAID allocated the largest budget to HR4SCM (accounting for 66 percent of all allocations), followed by the Global Fund (21 percent) and Gavi (13 percent). India only received investments from Gavi; there is an overall trend of one agency being the primary HR4SCM allocator at country level, which means that one donor agency accounts for most allocations in any one country. India is the country that receives the largest allocation of funds, followed by Zambia and Mozambique from USAID.

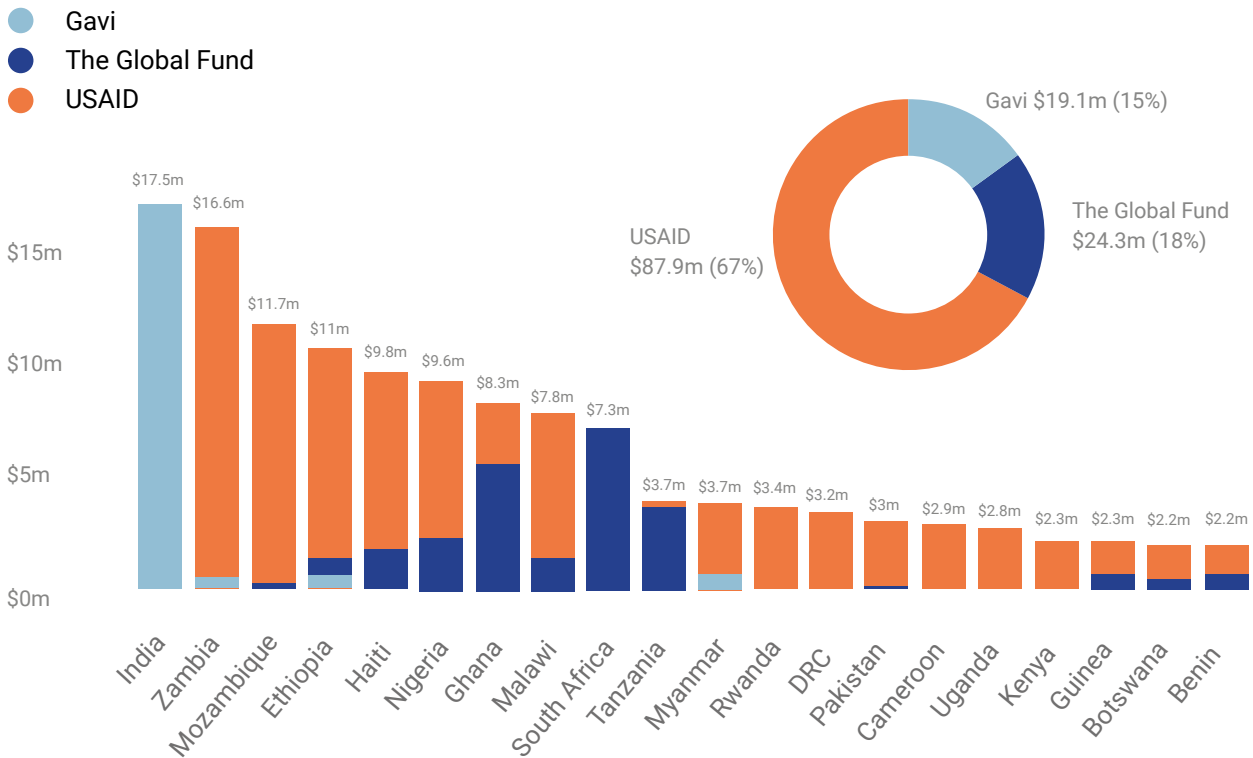


Figure 2: Gavi, the Global Fund and USAID investments in HR4SCM by country

## USAID

Over the four-year period between 2017 and 2020, a total of \$111 million was allocated to HR4SCM, \$101 million through the USAID GHSC-PSM project and \$10 million through the GHSC-TA Francophone Task Order (FTO).

This budget allocation spanned 43 countries with the top 20 countries representing 85 percent of the total budget.

USAID dedicated more allocations to skills than to any other pathway; this represented 80 percent of the budget allocation followed by staffing at 10 percent and motivation at 8 percent. The main drivers of this investment were training and the salaries of staff seconded to public sector supply chain organisations.

Lower-income countries (LICs) account for 49 percent of allocations followed by low- and middle-income countries (LMICs) with 45 percent.

## The USAID GHSC-PSM project

Over the four-year period between 2017 and 2020 the USAID GHSC-PSM project allocated \$101 million in 39 countries. Skills is the pathway that received most investment with 80 percent of the budget allocation, followed by staffing at 11 percent.

Lower-income countries received 48 percent of the budget allocation followed by LMICs at 47 percent.

## The USAID GHSC TA FTO

Over the four-year period between 2017 and 2020 the USAID GHSC-TA FTO allocated \$10 million to seven countries.

Skills is the pathway that received most investment with 81 percent of the budget allocation followed by motivation with 15 percent.

Lower-income countries represent 50 percent of the allocated budget, followed by LMICs at 21 percent.

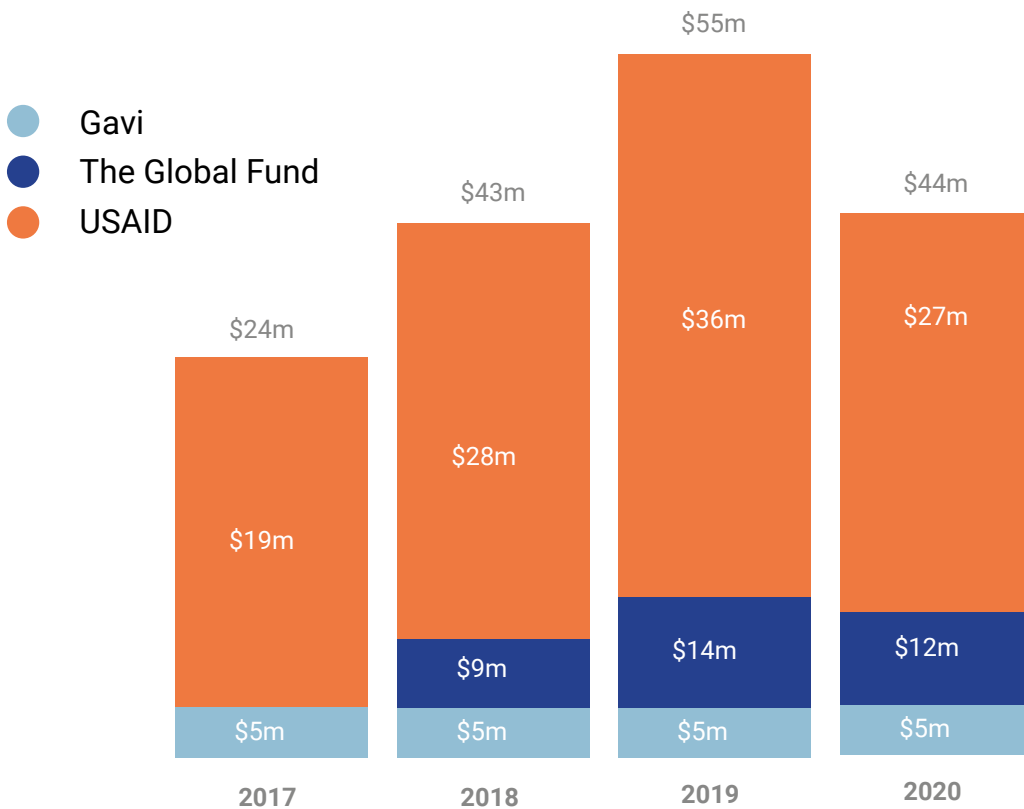


Figure 3: Gavi, the Global Fund and USAID investments in HR4SCM by year.

## The Global Fund to Fight AIDS, Tuberculosis and Malaria

Over the three-year period between 2018 and 2020 the Global Fund allocated \$35 million in 42 countries. A large increase in budget was seen from 2017 to 2019, while there was a slight decrease in 2020.

Twenty countries accounted for 93 percent of the allocated budget.

Skills is the pathway to receive the largest allocation of the budget at 50 percent followed by staffing at 43 percent and 'other' at 6 percent.

Low- and middle-income countries represent 41 percent of the budget allocation followed by LICs with 25 percent and upper middle-income countries (UMICs) with 24 percent.

## Gavi

Over the four-year period between 2017 and 2020 Gavi allocated \$21 million to 13 countries. India accounted for 83 percent of that allocation.

Staffing is the pathway that received the largest budget allocation with 85 percent, followed by skills at 15 percent, while LMICs accounted for 90 percent of the allocated budget followed by LICs with 10 percent.

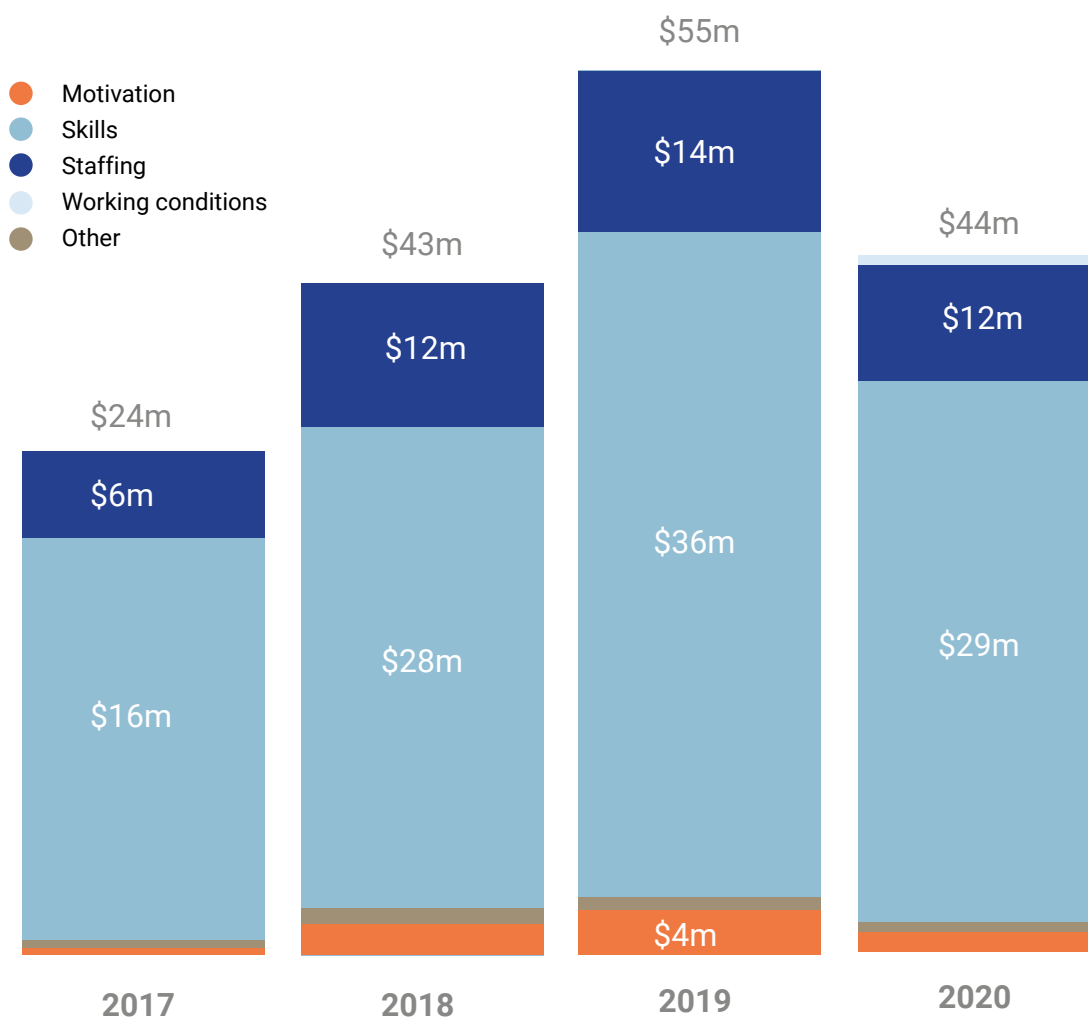


Figure 4: Yearly budget allocation by pathway

## Results by pathway

Overall, yearly increases in total budget allocations were seen between 2017 and 2019, although this dipped in 2020, decreasing from \$55 million in 2019 to \$44 million in 2020; this was mainly driven by a decrease in the budget allocated to skills by USAID.

Across the three agencies the majority of the HR4SCM budget was allocated to skills, which accounted for \$109 million (65 percent), followed by staffing, which received 27 percent of allotted funds, or \$45 million. Motivation received just 5 percent (\$9 million) of allocations while 2 percent – or \$4 million – was allocated to 'other'. Just \$0.7 million was allocated to working conditions, by USAID, mainly for Haiti.

Over the four-year period between 2017 and 2020, 64 percent of the HR4SCM budget allocations was allocated to skills, 29 percent to staffing and 6 percent to motivation.

The vast majority (90 percent) of India's allocations was dedicated to staffing – more than any other country, while Zambia and

Mozambique received the majority of the budget allocation for skills (71 percent and 88 percent respectively).

Over the four-year period USAID allocated 80 percent of its budget – \$88 million – to skills. Staffing received 10 percent of the budget allocation – \$11 million – while motivation was allotted 8 percent of the budget allocation – \$9 million and working conditions amounted to \$0.7 million.

The Global Fund has dedicated 93 percent of its allocations to either skills or staffing: skills has accounted for half of all allotted funds – \$18 million – while staffing received 43 percent – \$15 million – of allocations. Six percent of allocations – \$2 million – was set aside for 'other', which was related to a performance gap root cause analysis.

Over the four-year period from 2017 to 2020 Gavi allocated the vast majority (85 percent) of its HR4SCM budget to staffing, representing \$18 million. The remaining 15 percent - \$3 million – was allocated to skills.

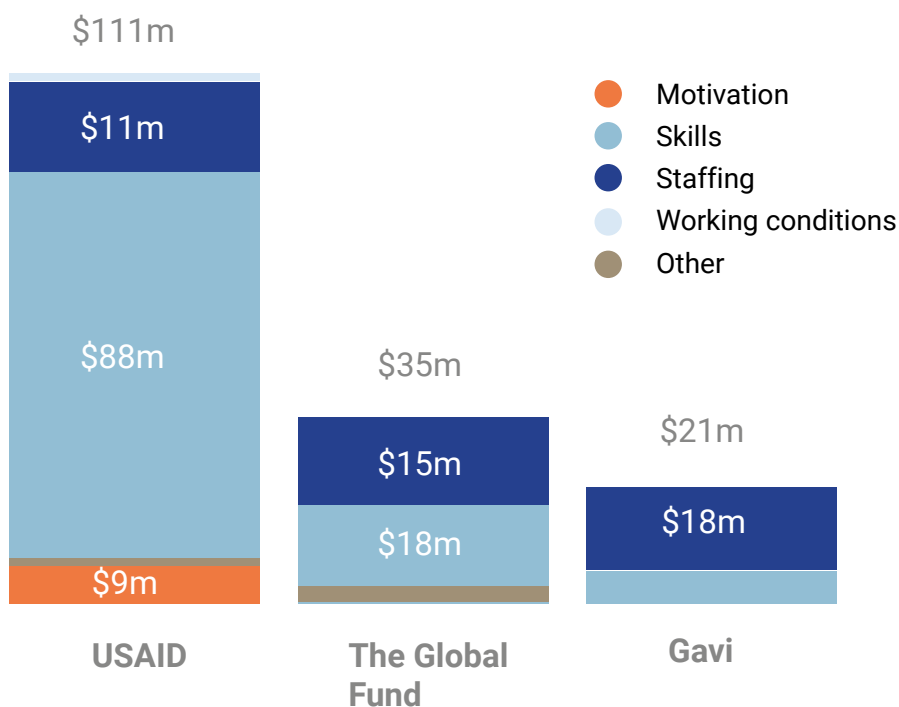


Figure 5: Budget allocations by pathway and organisation



## Results by region

Over the four-year period between 2017 and 2020, 78 percent of investments in HR4SCM were allocated to just 20 countries.

The AFRO region received 74 percent of all funding, driven by USAID 's investment allocations. SEARO received 15 percent of total budget allocations, owing mainly to Gavi.

Forty-five percent of AFRO allocations was dedicated to LICs and the same amount (46 percent) was committed to LMICs, with the remaining 10 percent allotted to UMICs.

Of the allocations dedicated to the SEARO region almost all were set aside for LMICs. The allocations budgeted for the AMRO region, on the other hand, were set aside almost exclusively for LICs.

Of the total allocations \$7 million was not attributed to one particular region but was intended for cross regional efforts and is therefore excluded from this overview.

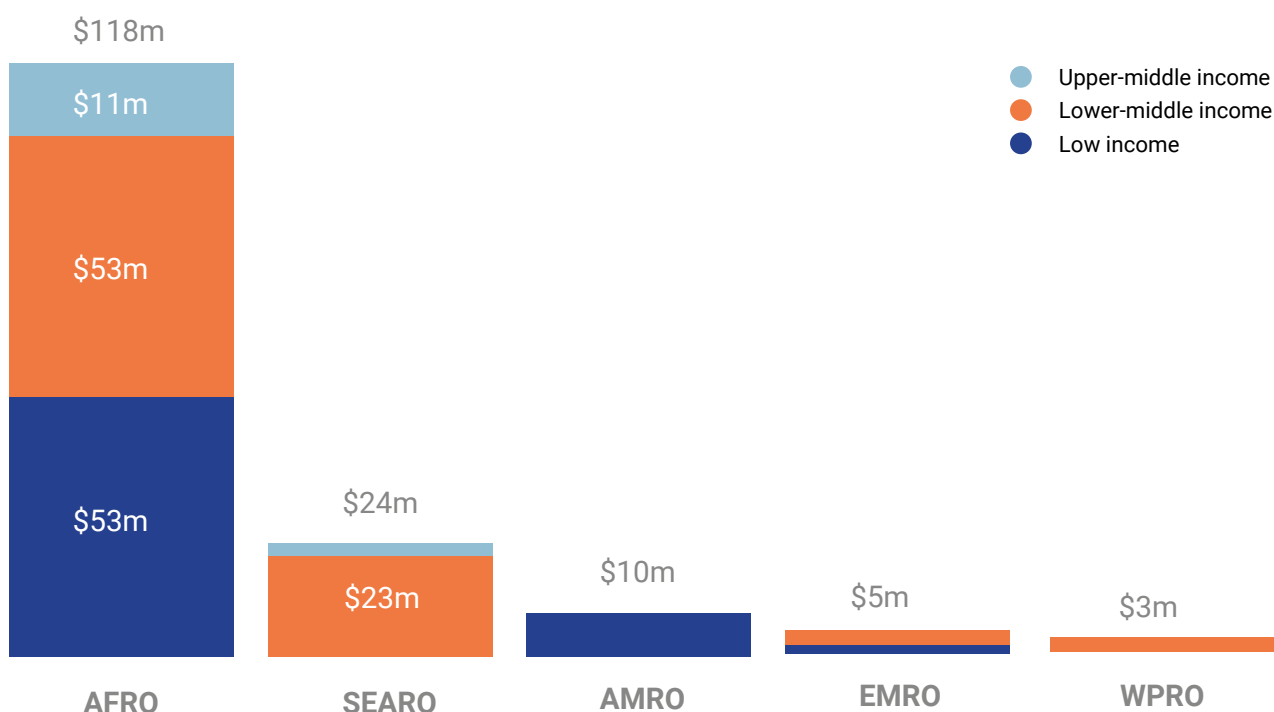


Figure 6: Budget allocations by WHO region and income group in 2020

## Analysis of outcomes of budget allocations for HR4SCM

### Survey

To determine the connection between investing in HR4SCM and the impact on supply chain performance PtD created a questionnaire and received input from personnel working in supply chain management. There were 62 responses from 20 countries and two thirds of the respondents were from country offices and 29 percent from regional offices; the remaining eight percent were from other sub-regional levels.

Non-governmental organisations (NGOs) are the largest group represented at 42 percent, followed by national supply chain organisations at 24 percent, United Nations (UN) agencies at 11 percent and governments at 10 percent.

Forty-five of the survey respondents worked in supply and distribution, seven in procurement and the remaining ten people were working in other parts of the supply chain.

Ninety percent of the survey respondents indicated that there was a direct correlation between investments in HR4SCM and health supply chain performance while 6 percent did not see a direct correlation.

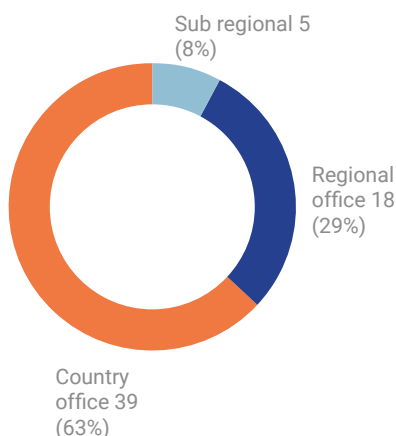
From the survey responses PtD was able to identify some common challenges and themes, most notably that HR4SCM is not prioritised by governments and partners and that HR recruitment, capacity development and motivation need to be improved.

There was a broad consensus that more investment in HR4SCM can significantly improve supply chain performance; thus far, respondents described, there has been little investment in many LMICs in health supply chain HR.

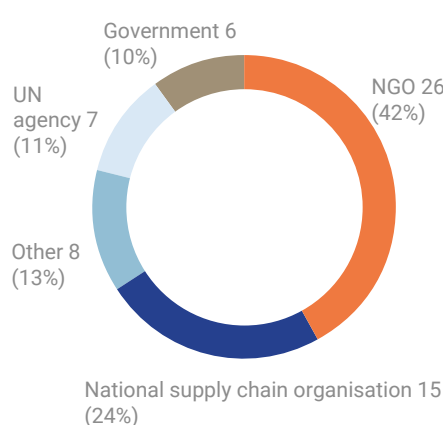
The survey reflected a need to demonstrate, with data, that investing in HR4SCM is vital to improving health indicators and achieving health outcomes. Feedback from one respondent, however, pointed out that no amount of evidence was going to convince decision makers – even massive COVID-19 disruptions haven't dented "supply chain denial". "Until there is a major political change," the respondent said, "only slow and little progress is likely."

The professionalisation of the supply chain profession was also mentioned: "There is a need to improve the organisational chart, making the role of supply chain staff formal and reinforcing motivation to retain them and reduce staff turnover."

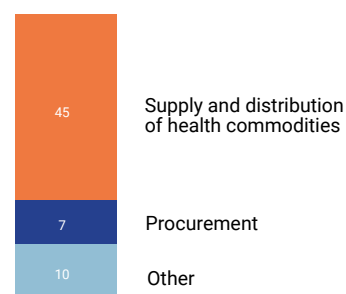
**How would you describe your location?**



**Which type of organisation do you work for?**



**In which area does your organisation work?**



**Number of respondents** 62  
**Number of countries** 20

Figure 7: Survey feedback: Who are the respondents?

## Deep-dive interviews

Ten interviews were conducted with representatives from six countries: DRC (2), Ghana (2), Malawi (2), Mozambique (1), Myanmar (1), Uganda (1) and Zambia (1).

In response to the question: “In your opinion did investments/activities in HR4SCM result in improved commodity availability and access?” six of the ten interviewees (in Ghana, Malawi (2), Mozambique, Myanmar and Zambia) were already seeing improved commodity availability and access after investing in HR4SCM. The remaining four interviewees acknowledged a direct link between investments in HR4SCM and improved commodity availability and access, however this was not yet measurable in these four countries owing to a lack of investments and/or additional time was needed to see a measurable impact.

A number of common threads were identified from the interviews. Assessments and recommendations are made for SCM improvements but without any follow up, it was suggested, while “the biggest challenge is that the government is not playing the role of leader in implementation.”

Supply chain education was highlighted as a possible solution and one respondent was delighted that Malawi SCM university had included SCM in its training curriculum for pharmacists.

The need to professionalise the health supply chain workforce was a common theme; one respondent noted the need to define roles for SCM and other staff, as “pharmacists are currently performing SCM roles.” Supply chain management, it was reiterated, is a function that cannot be managed by a health care professional. It was also pointed out that there is no motivation for students to study logistics and SCM, in part because it is not considered prestigious.

Advocacy was another key component as identified by respondents. There is a need, it was suggested, to convince donors of the importance of HR4SCM as the government “is not concerned with SC capacity building.” What’s more, it was highlighted, “there is no real incentive for the government to improve SCM as this will result in less funding from donors for training.”

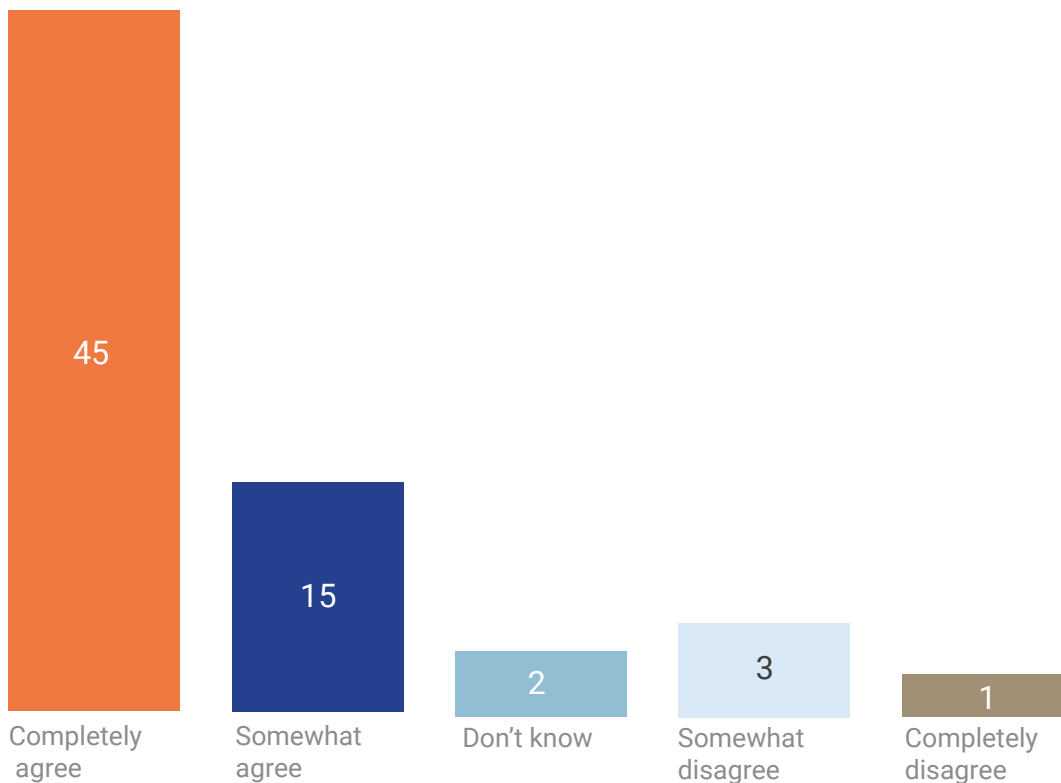


Figure 8: Survey feedback: There is a direct connection between investments in HR4SCM and the overall performance of the health supply chain

## **Case Study: Implementing PtD's HR4SCM Theory of Change** *Addressing the four pathways in Ethiopia's pharmaceutical supply chain*

PtD's Theory of Change (ToC) in building human resources for supply chain management (HR4SCM) analyses the conditions needed to ensure that workers at every level in a supply chain perform optimally. It centres on four pathways: staffing, skills, working conditions and motivation.

The BMGF-funded ADMAS programme implemented the ToC in Ethiopia's pharmaceutical supply chain in 2019 and in doing so addressed all four pathways. A training analysis was conducted, which identified human resources management and competency gaps and provided targeted solutions in each of the pathways. This led to the development of a competency framework and a training plan by the Ethiopian Pharmaceuticals Supply Service (EPSS).

### **Training assessment and culture diagnostic**

On top of a training needs assessment, which showed consistent and significant improvement in all 19 competency areas, the programme also supported EPSS as it moved to an automated and electronic performance management system, conducting over 130 of training of trainers (ToTs) sessions on how to operate the system. Some 2,900 staff records were added to the HR database and training was given to data officers.

Following a culture diagnostic in 2019, EPSS developed a culture transformation strategy with an implementation plan, inaugurating a culture ambassadors programme and developing a code of conduct. A gender audit was also carried out, which led to the development of a gender mainstreaming and women empowerment manual, and a five-year strategic plan for EPSS's women, youth, children and disabled. Also, EPSS went on to hold leadership and management training sessions.

Such systems and processes are foundational and transformative in ushering in improvements in motivation and working conditions, while the leadership and management training was designed to enhance supply chain performance by strengthening the problem solving and leadership capabilities of managers (skills).

In addition, temporary training resource centres (TRCs) were established at EPSS headquarters and at three cluster hubs. These are now being used by EPSS and partner organisations to train EPSS staff and to facilitate workforce capacity development. Part of PtD's work involved assisting in establishing a training plan, a pool of trainer and training trainers, all of which contribute to addressing the staffing pathway.

### **Results**

The comprehensive approach laid out by the ToC led to significant results, beginning with leadership awareness of the importance of HR4SCM and the widespread acceptance of the need for personnel to be skilled, adequately staffed, motivated and provided with an enabling environment.

In the months that followed the development and execution of the training plan, real supply chain efficiencies ensued: between 2018 and 2020 EPSS's procurement lead time decreased by 25 percent, contract signing lead time decreased by 35 percent and tender lead time decreased by 5.5 percent.

On-the-job training with over 1,000 participants had a positive impact: 90 percent found that this enabled them to work better and enhanced their capabilities.

## **Case study: the benefits of addressing the four pathways**

### *Impact assessment of pharmacy assistant graduates in Malawi health centres<sup>4</sup>*

Between November and December 2018, VillageReach conducted an evaluation of the Pharmacy Assistant (PA) Training Program. The Malawi Ministry of Health and Population (MOHP) led the activity, with funding from USAID's GHSC-PSM project.

The programme was aimed at addressing barriers to medicine availability, accountability, record-keeping, logistics management information system (LMIS) data quality and dispensing, by training and deploying pharmacy assistants (PAs) to health centres in Malawi.

Thirty-nine health centres in Malawi were assigned PAs while 39 health centres made no changes (the comparison group). A number of indicators was measured to evaluate the difference in performance between the two sets of health centres.

The programme is now offered in an increasing number of health facilities and government legislation has changed so that only qualified supply chain staff can work as pharmacy assistants in Malawi.

### **Results**

Overall, health facilities with PAs performed better than facilities without PAs in almost every process indicator measured (described below).

Interviews with a wide range of supply chain stakeholders indicated that PAs have professionalised medicine management, improved logistics management information system (LMIS) data quality, improved dispensing quality, freed up significant time for clinicians to focus on their patients, and more broadly, supported pharmacy work in district hospitals, neighbouring health centres and communities.

The introduction of trained pharmacy assistants addressed all four of the pathways in PtD's HR4SCM ToC:

- Overall, PAs are happy with their jobs, with 91 percent being either "satisfied" or "very satisfied." (Working conditions and motivation)
- All PAs (100 percent) had received some in-service training since graduation and most (80 percent) had received some sort of supervision in the last six months. (Skills)
- The introduction of the PAs saved clinicians six days per month on average, allowing them to spend more time with patients. (Staffing)

### **Stock management and availability**

Overall, health facilities with PAs were 50 percent more likely to get a perfect score on storeroom management, outperforming comparison facilities on all indicators—including properly labelling commodities, arranging them according to a definitive method, and practicing first to expire, first out (FEFO).

Stockouts improved at PA facilities for reproductive health (RH)/family planning (FP) commodities, and also for malaria and HIV tests, while they stayed the same or got worse at non-PA facilities.

### **Data and evidence-based decision-making**

A total of 77 percent of PAs and 94 percent of health centre in-charges (clinicians) reported that PAs promote evidence-based decision-making at health facilities by analysing trends in consumption and stock levels, documenting understocks/stockouts, lobbying with districts to get additional supplies and requesting redistribution of commodities between facilities when necessary.

<sup>4</sup> USAID Global Health Supply Chain Program, Impact Assessment of Pharmacy Assistant Graduates in Malawi Health Centres, 2019. [Cited July 2022]. [online] Available at: [https://www.villagereach.org/wp-content/uploads/2021/11/Malawi\\_PA-Impact-Assessment-2019\\_FINAL-redesigned-for-website.pdf](https://www.villagereach.org/wp-content/uploads/2021/11/Malawi_PA-Impact-Assessment-2019_FINAL-redesigned-for-website.pdf)

According to day-of-visit data, PA facilities had better-quality data on current stock cards, with a perfect match rate between physical counts and stock cards of 86 percent in PA facilities versus 72 percent in comparison facilities, and an average discrepancy percentage of 2.5 percent versus 16 percent across the tracer products assessed (a combination of essential medicines, malaria, RH/FP and HIV commodities).

### Dispensing quality

Quantitative and qualitative evidence shows that PAs are leading critical improvements in dispensing, particularly in ensuring that patients get the correct medication and understand how to take it properly.

The MOHP pharmacists who oversaw dispensing and the health centre in-charges noted that PAs frequently helped clinicians change incorrect prescriptions. The overall dispensing quality score was 85 percent for PA facilities versus 54 percent for comparison facilities.

### PA impact on the productivity and capacity of health workers

The introduction of PAs into the system increased efficiencies and benefitted patients. PAs increased the quality and professionalism of pharmaceutical work while allowing the in-charges and nurses to focus on their core clinical role.

Health centre in-charges at comparison sites spent 4.5 times longer on commodity management than in-charges (clinicians) at PA sites; the PA program saves these clinicians an average of six days per month.

### PA contributions to the health system

PAs contribute to a spill over effect of knowledge and skills within their own facilities, including routinely suggesting prescription changes to clinicians if they were not correct, sharing information on drug interactions, mentoring support staff on pill packing and dispensing best practices, and mentoring other nearby health centres.

### Addressing the four pathways

According to the ToC, the four pathways are interdependent. In the case of Malawi, we can see how improvements in one pathway led to enhancements in others.

The addition of the PAs, trained as part of the PA Training Program—a two-year certificate program at Malawi College of Health Sciences – addressed the skills pathway; all PAs (100 percent) had received some in-service training since graduation and most (80 percent) had received some sort of supervision in the last six months (this is part of performance management, one of the preconditions of motivation).

The addition of the PAs led to improved retention, a precondition of staffing, and we can see from the survey responses that by the introduction of the PAs certainly helped to boost motivation: there is “overwhelming evidence that the pharmacy assistants have greatly reduced the burden on clinicians.”<sup>5</sup> Similarly, the introduction of PAs improved working conditions in some pharmacies and also contributed to the spill over effect, described above: “I feel I have less pressure because of [the PA’s] presence... I can say I am very relieved and happy to have a PA,” said one respondent.

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5 USAID Global Health Supply Chain Program, Impact Assessment of Pharmacy Assistant Graduates in Malawi Health Centres, 2019. [Cited July 2022]. [online] Available at: [https://www.villagereach.org/wp-content/uploads/2021/11/Malawi\\_PA-Impact-Assessment-2019\\_FINAL-redesigned-for-website.pdf](https://www.villagereach.org/wp-content/uploads/2021/11/Malawi_PA-Impact-Assessment-2019_FINAL-redesigned-for-website.pdf)

## Recommendations

### Increase investments in HR4SCM

And as reiterated in the G20 Declaration<sup>6</sup> in 2020, the pandemic has highlighted the importance of investing in and protecting an adequate and well-trained health workforce.

Supply chain success is highly dependent on human talent; companies that invest more in the development of their SC employees achieve greater SC outcomes and organisational performance. If SC management were transformed into a recognised profession of the highest integrity, and if SC professionals in LMICs were better supported to develop their technical and managerial competencies, health commodities would be more readily available at service delivery points and we would see improvements in SC performance.

With this broad consensus that health outcomes in LMICs will only continue to improve if the capacity and skills of the health SC workforce are developed<sup>7</sup>, it is important that as the number of health commodities flowing through health supply chains increases, the value of investments in the health supply chain workforce also rises. The COVID-19 pandemic demonstrated stark vulnerabilities in the global supply chain as it was severely disrupted in the short term.<sup>8</sup> To avoid a repeat of this HR4SCM investments – in all four pathways – should be increased.

### Increase the budget allocations for motivation and working conditions

PtD's Building human resources for supply chain management Theory of Change (ToC) centres on four pathways: staffing, skills, working conditions and motivation. According to the ToC, addressing all four of the pathways is necessary if commodities are to be available in the most cost-effective way possible, and if health outcomes are to be improved.

Working conditions and motivation are the two areas that have received little investment in recent years. The cost of this neglect is difficult to quantify at this stage but is thought to have had a detrimental effect on supply chain performance.

Key informant interviews and questionnaire responses suggest that a lack of investment in working conditions and motivation is having a negative impact on the health supply chain. As highlighted in PtD's ToC, the application of the ToC in Ethiopia and the impact assessment of pharmacy assistant graduates in Malawi's health centres, investing in motivation and working conditions contributes to improved health supply chain performance; the impact assessment in Malawi in particular demonstrates this. As such donor organisations should look to increase investments in motivation and working conditions.

### Monitor the impact of investments in countries

There is a lack of data regarding the impact of investments in HR4SCM and this causes myriad problems. First, we cannot document with certainty how investments are having a positive impact on supply chain performance. What's more, without impact assessments in each pathway (staffing, skills, motivation and working conditions) we cannot determine the exact necessary budget allocations in each area.

Given the nature of investments and the long time it takes to yield results, it will be difficult to accurately quantify return on investments in HR4SCM. However, PtD's Indicators and interventions catalog can help to monitor progress made in each of the four pathways to achieve the long-term goals of ensuring commodities are available at service delivery points to meet needs in the most cost-effective way possible and ultimately, improving health outcomes. As such, the monitoring of these indicators should be made a requirement of donor-funded programmes.

6 G20 Rome leaders declaration, 2020. [Cited December 2022]. [online] Available at: [https://www.gpfi.org/sites/gpfi/files/7\\_G20%20Rome%20Leaders%27%20Declaration.pdf](https://www.gpfi.org/sites/gpfi/files/7_G20%20Rome%20Leaders%27%20Declaration.pdf)

7 Fernandes G, Hassan I, Sridhar D; Building resilient health-care supply chains to manage pandemics in low- and middle-income countries, 2022 [cited 2022 February]. [online] Available at: <http://dx.doi.org/10.2471/BLT.21.287177>

8 Choi T, Rogers D, Vakil B; Coronavirus Is a Wake-Up Call for Supply Chain Management; Harvard Business Review, 2020 [cited 2021 May]. [online] Available at: <https://hbr.org/2020/03/coronavirus-is-a-wake-up-call-for-supply-chain-management>

## For future research

### Impact assessment on HR4SCM investments in countries

Impact assessments attempt to quantify the effect of investments and in the context of PtD's ToC, understanding the impact of investments in each of the four pathways will help to understand which investments yield results and which areas require more investment. For investments in HR4SCM the ToC (specifically the Indicators and interventions catalog) details optimal outcomes and indicators to measure performance in each of the four pathways. Further research should measure investments in the four pathways and, using the indicators laid out in the ToC, determine the extent of the impact on, and the relation with, the outcomes.

### Research on the volume of medical commodities versus investments

PtD recommends considering the number/volume of medical commodities flowing through a supply chain and determining the relation with investments made in HR4SCM, and comparing these two factors with supply chain and health outcomes in countries. The purpose of this would be to determine if the value of investments in HR4SCM should rise in line with an increase in the number of medical commodities delivered by a health supply chain.

### Research into the perceived lack of skills

PtD recommends further study into training to consider why, despite high-value of investments in skills, there is still a perceived lack of skilled supply chain personnel in supply chains in countries. This should investigate both how to make training more effective and how to make sustainable investments in capacity development that have long-term impact.

### The impact of a lack of investments in working conditions and motivation

Given that working conditions and motivation receive fewer allocations than staffing and skills, future research should consider if this lack of investments has a negative impact on supply chain performance. Research conducted should explore how to determine the balance of investments between the four pathways and how donors and governments can adequately budget for these investments.



