Strengthening the Supply Chain Management Workforce in Namibia:

Applying the WISN Method to Estimate Staffing Needs

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Acronyms

ARV	Antiretroviral
CMS	Central medical store
MOHSS	Ministry of Health and Social Services
PEPFAR	President's Emergency Plan for AIDS Relief
PtD	People that Deliver
RMD	Regional medical depot
SCM	Supply chain management
SCMS	Supply Chain Management System
WHO	World Health Organization
WISN	Workload Indicators of Staffing Need

EXECUTIVE SUMMARY

Globally, health systems are under pressure to deliver quality services with limited resources. Well-functioning health supply chains are necessary to ensure that medicines and other health commodities for HIV/AIDS, family planning, and other long-term chronic diseases reach the people who need them. In the past, Namibia has experienced staff shortages for both clinical as well as management and support workers. The health workforce shortage, combined with other internal and external factors, has resulted in some inefficiencies in the country's ability to source and distribute medicines and other important health commodities in the public sector.

People that Deliver (PtD) is a global initiative that aims to address human resources inefficiencies in the public health supply chain. With the challenges faced in Namibia, the Ministry of Health and Social Services (MOHSS) requested that PtD pilot an integrated set of interventions to strengthen the supply chain management workforce. One of these interventions was to estimate the types and numbers of supply chain workers needed at central and regional medical stores based on the estimated workload.

The World Health Organization's Workload Indicators of Staffing Needs (WISN) tool was used to estimate the required number of pharmacists, pharmacist assistants, and clerks (now known as administrative officers) required at the national and regional levels of the supply chain. The facilities under review were the central medical store (CMS) and the two regional medical depots (RMDs) based in Oshakati, Oshana Region, and Rundu, Kavango Region. This study supplements a national WISN study conducted at the hospital and health center levels, which took into consideration staffing needs for supply chain management tasks at those levels of the system. The results of that study are available in a separate report.

The results indicate that there were indeed shortages in all three categories of staff at the CMS, and shortages of two categories of staff—pharmacist assistants and administrative officers—at the RMDs. Based on projected workload, the CMS required an estimated one additional pharmacist, 23 additional pharmacist assistants, and two additional administrative officers. The Oshakati RMD required four additional pharmacist assistants, while the Rundu RMD required four additional pharmacist assistants and three additional administrative officers. The study found no shortages of pharmacists, in relation to the estimated workload, at the RMD level. In fact, the findings indicated a surplus of one pharmacist at the Oshakati RMD.

The results also indicated a need to better align the distribution of staff across the three facilities in accordance with actual workload pressures, and to consider expanding the scope of practice of the administrative officers to reduce workload pressures on pharmacist assistants. The study found an oversupply of administrative officers and pharmacists at the Oshakati RMD in relation to estimated workload need, while at the same time the CMS and Rundu RMD were experiencing shortages of these cadres. A review of the administrative officers' scope of practice showed that their role is limited to nonpharmaceutical products, which represent just 30% of the

total volume of supplies that pass through the medical store facilities. In light of the relatively narrow scope of practice for administrative officers, the study found a need for 32 additional pharmacist assistants at the three facilities, compared with a shortage of only five administrative officers at the CMS and Rundu RMD, and a surplus of four administrative officers at Oshakati RMD. Given the country's limited capacity to educate and train pharmacist assistants, a broader scope of practice among the administrative officer category would allow human resources managers to shift some of the workload from pharmacist assistants to administrative officers and thereby reduce the number of pharmacist assistants needed.

The recommendations to address staff shortages, improve the distribution of staff across the three facilities, and optimize the allocation of tasks among staff include creating additional pharmacist assistant positions at the CMS and RMDs; considering task sharing or shifting based on scope of practice and competency in order to alleviate some of the worklaod pressures on specific cadres, particularly pharmacist assistants; introducing streamlined educational pathways with career ladders for supply chain management cadres; developing additional recruitment strategies for workers within the CMS and RMDs; and introducing packages of salaries and benefits to attract and retain workers in supply chain management positions.

BACKGROUND

Health systems globally are under pressure to improve service delivery to growing populations with limited resources. Health commodities are essential in providing services for HIV/AIDS, family planning, and treatment of long-term chronic illness, and well-functioning supply chain management systems are required to ensure that medicines actually reach the people who need them. Health supply chains depend on successful financial, technical, infrastructure, and human resources inputs.The World Health Organization's (WHO's) World Health Report of 2006 highlighted an urgent need for a competent, recognized, and empowered health supply chain workforce to ensure on-time service delivery of medicines to targeted groups (WHO 2006). One of the goals of the US President's Emergency Plan for AIDS Relief (PEPFAR) is to support well-functioning health supply chains composed of pharmacists and pharmacist assistants, logisticians, and warehouse and transport personnel, among other categories of personnel.

Annual spending on procurement of health products designated for low-income countries reached $10 billion in 2011 (Lu et al. 2011). However, the WHO has indicated that only two-thirds of these health products reach patients, leaving a substantial number of people without access to essential health products (WHO 2004). WHO highlighted one of the challenges contributing to these inefficiencies as lack of suitable health personnel, including an adequate supply chain management workforce (2004).

In an effort to address these inefficiencies, a global consensus meeting, hosted by WHO, launched the People that Deliver (PtD) Initiative in 2011 (PtD 2014a). PtD raises awareness of the human resources challenges of supply chain management (SCM) and works with countries to improve SCM capacity. PtD utilizes a holistic and systematic approach for developing workforce excellence in supply chain management using five building blocks, which include engaging stakeholders, optimizing policies and plans, developing workforces, increasing performance, and professionalizing SCM. To ensure the success of PtD efforts, the basic strategy is to implement a set of activities in a country that is already actively engaged in various health workforce efforts. These efforts should include addressing SCM workforce needs within overarching human resources for health efforts (Hasselberg et al. 2014).

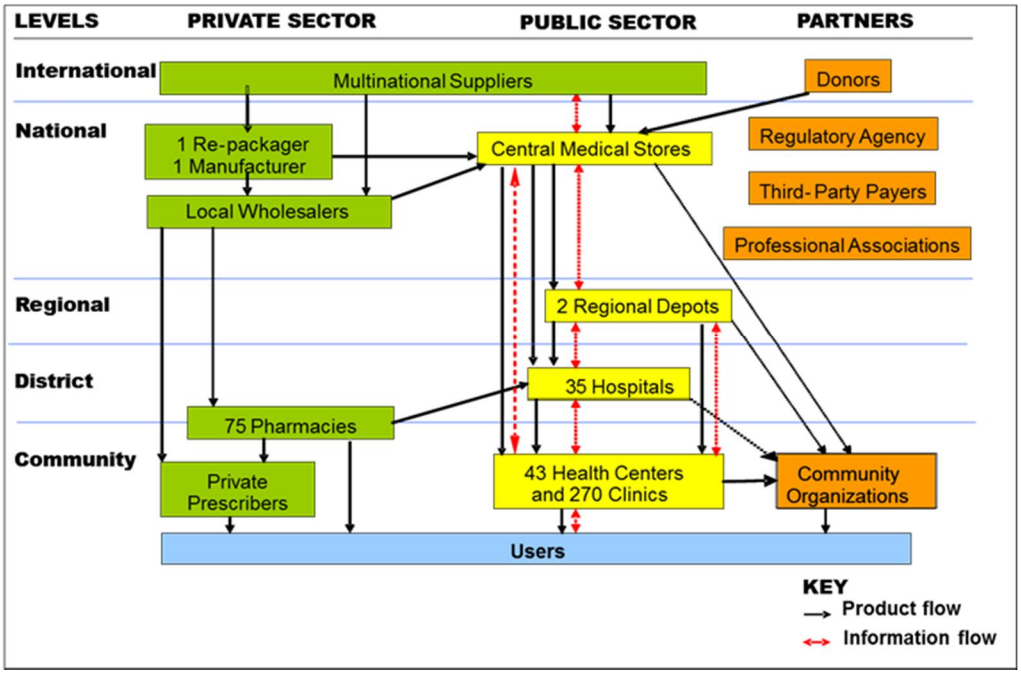
The government of Namibia approached PtD to assist with the assessment of the national supply chain and undertake other activities that can contribute to strengthening its SCM workforce. Namibia is classified as an upper-middle-income country but is also faced with some of the most severe health workforce shortages in the world, notably with urban/rural and private/public sector health worker disparities. In the pharmaceutical sector, Namibia relies to a considerable extent on expatriate professionals.

Namibia operates an integrated health supply chain for the public sector whereby the central medical store (CMS) oversees the procurement, storage, and distribution of pharmaceutical products (600 medicines in 2006) and clinical medical supplies (800 items in 2006) for use in public facilities. The CMS is one of three subdivisions of the Pharmaceutical Services Division,

which is under the Directorate of Tertiary Health Care and Clinical Support Services within the Ministry of Health and Social Services (MOHSS). The range of product categories handled by the CMS includes essential medicines (such as antiretrovirals, medicines for malaria and tuberculosis, contraceptives, and other reproductive health supplies); vaccines; HIV test kits; clinical supplies (such as gloves, needles, and syringes); surgical equipment; and radiology supplies.

The CMS distributes directly to about 45 health facilities on a six-weekly cycle, including 26 of the 34 district hospitals, and also distributes to regional medical depots (RMDs) that in turn serve from 32 to 87 facilities in their respective regions. Figure 1 provides a comprehensive overview of the Namibian supply chain system. Although the system also includes private sector actors as well as other partners, the PtD focus was solely on the public sector.

Figure 1: Overview of Namibia's Supply Chain System



A recent assessment of the Namibian health workforce in general, and the SCM workforce in particular, affirmed the health workforce shortages, imbalanced geographical distribution of health workers, and poor skills mix and distribution of tasks (IntraHealth International *in progress*). Two USAID-funded projects, Capacity*Plus* (led by IntraHealth International) and Supply Chain Management System (SCMS), collaborated with the Namibian government to address challenges within the supply chain workforce. These challenges included lack of data-driven estimates for the number and types of staff required in the CMS and RMDs; poor alignment of required responsibilities with job descriptions and standard operating practices; inadequate performance indicators and capacity among SCM leaders; and limited information on how to attract and retain relevant staff in public SCM positions.

To assist in understanding these challenges, it was necessary to not only consider functions and responsibilities at the CMS level, but also to identify challenges at RMDs, hospitals, health centers, and clinics. The MOHSS proposed an initial focus on the CMS and RMDs to address issues at these two critical levels. Using an integrated health workforce planning approach, an SCMS-led effort involved working with stakeholders and SCM project partners to conduct a competency mapping of SCM cadres at the CMS. The competency mapping contributed to the development of the activity standards necessary to generate workforce staffing estimates at the central and regional levels using the WHO's Workforce Indicators of Staffing Need (WISN) method. The WISN tool was used to estimate the required number of pharmacists, pharmacist assistants, and data clerks (now known as administrative officers) required at the national and regional levels of the supply chain. According to responsibilities and scopes of practice, pharmacists are by Law responsible for handling of Schedule IV medicines or controlled substances, that is, medicines that must be handled and dispensed by authorized persons in accordance with the Medicines and Related Substances Control Act (Act No. 13 of 2003); additionally, the practice at CMS and RMDs has been to have pharmacists take responsibility for antiretroviral (ARVs) medicines and cold chain products such as vaccines. Pharmacist assistants are responsible for all other pharmaceuticals. Administrative officers (formerly clerks) are responsible for all nonpharmaceuticals.

The WISN-derived staffing estimates subsequently were useful in the application of a rapid retention survey approach, which aimed to define and cost evidence-based options for preferred job incentives. The objective was to provide MOHSS decision-makers with information that could help in developing strategic plans and strengthening the Namibian supply chain workforce as well as eventually the public health system. The Namibian experience offers lessons and serves as an example of how other countries could undertake a similar effort to assess and strengthen the supply chain workforce.

Overview of the WISN Method

The WISN approach estimates the number of different types or cadres of staff a facility requires based on the actual workload for that facility. Workload components, activity standards, available working time, and available workload statistics are used to calculate the number of health workers required for a facility (McQuide et al. 2013). The method uses the time each health worker has available to deliver services and offsets it against the number of activities for each cadre and the time taken to perform each activity at the facility per year (Shipp 1998).

In addition to a core WISN study team, the method requires three groups for implementation: a steering committee with senior officials and policy-makers to drive the process forward; a technical task force with the necessary technical resources and experience to implement the process; and expert working groups consisting of professionals from each cadre to define, refine, and validate the various activities and activity standards for each cadre at each facility type (WHO 2010; McQuide et al. 2013). The method is conducted in seven steps, which include determining the WISN priorities, estimating available working time, defining components of

daily work, setting activity standards, establishing standard workloads, calculating allowance factors, and, finally, determining the required staff (WHO 2010). These steps are described in greater detail below and are represented in Figure 2.

Figure 2: Overview of WISN Process

Step 1. Determine WISN Priorities

During this step, senior officials and policy-makers identify which *cadres* to review and the *workforce requirements* to be estimated for the identified cadres.

Step 2. Estimate Available Working Time

The WISN technical task force determines the number of days that a worker in a specific cadre has available to perform work. The number of *available working days* is then also converted to *available working hours*.

Step 3. Define Components of Daily Work

For each cadre, an expert working group of professionals identifies the components of work (or *activities*) that are done on a daily basis and for which service statistics are collected regularly.

Step 4. Set Activity Standards

Activity standards define the time it takes for a trained, well-motivated worker to perform activities to a satisfactory professional standard within the environment of a particular country (McQuide et al. 2013). *Primary* activities are those activities performed by a worker and for which annual data or statistics for frequencies are being collected. *Category* activities are those activities performed by workers but for which no annual data or statistics are being collected.

Individual activities are those activities performed by a few workers at each facility for which annual data or statistics are not collected (Shipp 1998).

Step 5. Establish Standard Workloads

After the activity standards are set, the technical task force calculates the *standard workload*. Standard workload is the number of times a specific activity can be done by one health worker in a year, if they are doing only that activity (Shipp 1998).

Step 6. Calculate Allowance Factors

The category activities (described in Step 4) are calculated to reflect the category allowance factor, and the individual activities (also described in Step 4) are calculated to reflect the individual allowance factor (Shipp, 1998).

Step 7: Determine Required Staff

The staffing requirement is calculated using the WISN formula shown below (Ahmad 2014).

$$\square\square = \square\square\square \times \sum_{\square}^{\square} \square\frac{\square\square\ \square\square}{\square\square\ \square}\square + \square\square\square$$

Using the WISN software, the WISN technical task force determines the required number of staff based on the working time available per staff member and the projected workload. The task force then compares the staffing requirement to the existing number of staff to determine whether health facilities are overstaffed or understaffed. A WISN ratio is calculated to measure the workload pressure: a ratio less than one indicates that the existing number of staff is inadequate to deal with the workload, and a ratio of greater than one indicates the opposite, that the number of staff is more than needed to respond to the workload. A WISN ratio of exactly one demonstrates a balance of workload pressure with existing staff (Ahmad 2014).

Data Sources and Verification

Three key data sources were used to apply the WISN method in Namibia: the SYSPRO© enterprise resource planning database; primary data sources pertaining to health supply tenders; and human resources data on current staffing and leave provided by facility managers at the CMS and RMDs. Data were collected by the ERP system at the CMS for the period of April 2013 to March 2014.

The SYSPRO© database provided information on the total number of orders from facilities, total number of deliveries, and total number of stock items classified into different categories, namely, pharmaceuticals and nonpharmaceuticals. Data were collected for primary activities pertaining to tenders and sourcing, which included the number of tenders per annum, the number of suppliers, and the number of samples. In addition, the technical task force collected relevant human resources data on the current staffing head count and various types of leave taken by the three categories of staff (pharmacists, pharmacist assistants, and administrative

officers). The team further verified the data using primary data sources and manual calculations. They also compared the WISN ratio generated by the software to the manually calculated ratio.

WISN Findings

The WISN study estimated the actual workload at one CMS and two RMDs, and compared the number of staff required to respond to the workload at each facility with the number of staff actually available. In doing so, the study found absolute shortages of SCM staff across both the central and regional levels. It also revealed some challenges that the country is facing in employing an appropriate mix of different types or cadres of workers to respond to workload demand at each facility, and in optimizing the distribution of tasks or activities among the different types of workers.

Table 1 summarizes the workforce estimates for the three facilities under review, namely the central medical store, the Oshakati multiregional medical depot and the Kavango medical depot. The most significant finding was the shortage of pharmacist assistants at both the CMS and RMD levels, with an estimated deficit of 32 pharmacist assistants across the three study facilities. The uneven spread of staffing deficits across the three cadres of workers—with a larger shortage of pharmacist assistants as compared to pharmacists and administrative officers—points to challenges of skills mix and distribution of tasks at both the CMS and RMD levels.

Considering the CMS level only, the study found shortages among all three categories of staff, with an estimated deficit of one pharmacist, 23 pharmacist assistants, and two administrative officers (a total deficit of 26 staff). From these findings, it is evident that the overall number of staff allocated to the CMS is not sufficient given the workload for that facility.

At the two RMDs, the findings were more mixed. The Kavango RMD had an adequate number of pharmacists but a shortage of approximately (rounding to the integer) four pharmacist assistants and two administrative officers (a total deficit of six staff). The Oshakati RMD, on the other hand, had a surplus of one pharmacist and four administrative officers but was short approximately four pharmacist assistants, resulting in a net surplus of two staff, albeit staff with a different skills mix.

Table 1: WISN Results for the CMS and RMDs

Region	Cadre	Existing Staff	Required Staff	WISN Ratio	Staff Deficit/ Surplus
CENTRAL MEDICAL STORE			**2013-2014 Data**		
Khomas	Distribution pharmacist	8	8.25	0.97	0
Khomas	Distribution pharmacist assistant	6	28.14	0.21	-22
Khomas	Distribution clerk/Administrative officer	14	15.74	0.89	-2
Khomas	Procurement pharmacist	2	2.21	0.90	0

Region	Cadre	Existing Staff	Required Staff	WISN Ratio	Staff Deficit/ Surplus
Khomas	Procurement pharmacist assistant	1	2.59	0.39	-2
Khomas	Procurement clerk/Administrative officer	2	2.30	0.87	0
OSHAKATI MULTIREGIONAL MEDICAL DEPOT			**2013-2014 Data**		
Oshana	Pharmacist	2	0.93	2.15	+1
Oshana	Pharmacist assistant	2	5.87	0.34	-4
Oshana	Clerk/Administrative officer	7	2.80	2.50	+4
RUNDU REGIONAL MEDICAL DEPOT			**2013-2014 Data**		
Kavango	Pharmacist	1	0.82	1.22	0
Kavango	Pharmacist assistant	1	4.96	0.20	-4
Kavango	Clerk/Administrative officer	0	2.40	0.00	-2

To more fully understand the WISN findings, it is necessary to review the various activity standards and the allocation of activities or tasks to different cadres. The activity standards for pharmaceutical tasks—which is 70% of the total workload— were done by pharmacists and pharmacist assistants, as they require clinical knowledge and skills. Of this 70%, pharmacists were allocated 5% of the overall workload (including Schedule IV and ARV drugs) as well as many supervisory and management functions. The pharmacist assistants were allocated the remaining 65% of the workload. Nonpharmaceuticals account for the remaining 30% of total workload at the CMS and RMDs, and all of this nonpharmaceutical workload was allocated to administrative officers. The narrow (nonpharmaceutical) scope of work assigned to administrative officers limits their role in the overall operations of the medical stores, therefore, to approximately 30% of the total volume of supplies that pass through the facilities. If the scope of work for administrative officers was expanded, it could reduce some of the workload pressure on pharmacist assistants, thereby decreasing the number of pharmacist assistants needed while increasing the need for administrative officers, who are more abundant and quicker to train.

Challenges and Solutions

The study team encountered three key challenges when adapting and applying the WISN approach to the supply chain management workforce. These challanges included:

1. Defining activity standards based on the PtD competency framework and competency mapping exercise conducted in Namibia in 2014
2. Reaching consensus on the types of activity standards to include in the workload estimates and the amount of time required for each activity
3. Reorganizing data from the SYSPRO® database to make it compatible with the WISN software.

Defining Activity Standards

To define the activity standards needed for the WISN method, the technical task force drew from the behavioral competencies outlined in the PtD Competency Compendium for Health Supply Chain Management (PtD 2014b). The behavioral competencies had been developed and validated through a competency mapping process conducted by SCMS in Namibia in early 2014. The process of defining the WISN activity standards from these behavioural competencies however required a fair amount of adaptation to fit the purpose since the behavioural competencies had been distilled to very precise detail; it required grouping some of the competencies into larger activities to ensure that the time allocation could be done.

Agreeing on Activity Standards

The process of setting WISN activity standards is intensive and requires inputs from the various levels of staff involved. In this instance, the process called on the involvement of pharmacists, pharmacist assistants, and administrative officers. Agreeing on activity standards also required multiple validation sessions to ensure that the expert working groups reached consensus on the time required to complete each activity. In addition to the challenge of achieving consensus, it was not easy to secure dates to meet with the various expert groups since their time was limited, and participants were responsible for important functions that sometimes required their immediate response.

Database

The third challenge was that the information from the SYSPRO® database was not readily available in a format useful for the WISN method. The information in the database had to be reorganized into workable workload standards to be used in the WISN software.

RECOMMENDATIONS

Overall, the results of the WISN application raise concerns about the quality of supply chain management in Namibia. It is difficult to ensure equitable and sustainable access to medicines and other commodities where there are staff shortages, poor distribution of supply chain staff in relation to estimated workload, and a suboptimal distribution of tasks among different cadres of workers at the central and regional medical stores. Based on the WISN findings, a range of policy recommendations can be made.

Add additional positions to the existing staffing establishment.

The MOHSS should consider adding additional positions for pharmacist assistants to the existing staffing establishment. Senior officials and policy-makers should advocate for the creation of these additional positions, which can be justified on the basis of the high workload levels experienced at the facilities.

Consider task sharing or shifting based on scope of practice and competency.

The MOHSS should review the scopes of practice for supply chain management cadres to ensure that responsibilities and tasks are optimally distributed among pharmacists, pharmacist

assistants, and administrative officers to make the best use of each cadre's capabilities and training. The responsibilities and tasks of each cadre should be defined and assigned based on the existing needs, challenges, and volume of work faced at the CMS and RMDs. For example, some of the activities for pharmacists could be allocated to pharmacist assistants, and some of the activities for pharmacist assistants in turn could be allocated to administrative officers (McQuide et al. 2013).

Introduce streamlined education and training pathways with career ladders to produce more supply chain workers, provide career tracks for existing workers, and help fill staffing gaps.

Streamlined educational pathways such as clinical career ladder programs have been used to develop an expanded array of competencies for health workers in underserved areas and to promote advancement of practicing professionals (WHO 2013). These programs provide progressive, unified, and continuous development of competencies with exits into service followed by reentry into study programs to upgrade knowledge and skills. Service leaves between steps in the education ladder are important components of such programs, providing opportunities for graduates from lower-level programs to serve and learn before reentering a program at a higher level. Different academic credentials can be awarded at each step of the ladder, starting, for example, with a certificate, followed by a diploma, degree, and postgraduate awards.

With this type of framework in mind, and considering the context of Namibia, we recommend developing or strengthening advanced training, qualification, and career tracks for existing cadres (such as administrative officers) to fill employment gaps. For example, administrative officers could complete additional trainng to become logistics officers. Similarly, pharmacist assistants could complete additional education and training to become pharmacist technicians, allowing them to remain within the profession but with the prospect of career advancement through the career ladder approach. With improved qualifications, pharmacist assistants could take on more of the activities and responsibilities traditionally allocated to pharmacists and, thereby, decrease the workload for pharmacists as well as the number of pharmacists needed.

Develop recruitment strategies for supply chain cadres.

The MOHSS should consider developing recruitment strategies to attract workers to supply chain positions, including aggressive marketing and career day opportunities to advocate for these career tracks. Additional focus could be given to mobilizing grade 12 learners to pursue careers in supply chain management since pharmacists, pharmacist assistants, and administrative officers are all trained locally within Namibia.

Introduce incentives to attract and retain different cadres of workers to supply chain positions.

The MOHSS should consider introducing specific salary and benefit packages to help attract and retain workers to supply chain positions. The Capacity*Plus* Rapid Retention Survey approach (Jaskiewicz et al. 2014) could be applied to determine the right incentives for attracting and retaining workers to supply chain management positions

REFERENCES

Ahmad, A. 2014. Overview of WISN methodology. Presentation delivered at the Third Global Symposium on Health Systems Research, Cape Town, South Africa, September 29, 2014.

Hasselberg, E., A. Van Buuren, B. Ongeri, and B. McHenry. 2014. Public health supply chain competency mapping in Namibia: Results and recommendations from the People that Deliver Initiative collaboration between the Ministry of Health and Social Services, SCMS, and Capacity*Plus*. Submitted to the US Agency for International Development by the Supply Chain Management System (SCMS).

IntraHealth International. *In progress.* National WISN report in Namibia.

Jaskiewicz, W., R. Deussom, L. Wurts, and G. Mgomella. 2014. Rapid Retention Survey toolkit: Designing evidence-based incentives for health workers. Washington, DC: Capacity*Plus*/IntraHealth International.

Lu, Ye, Patricia Hernandez, Dele Abegunde, and Tessa Edejer. 2011. The world medicines situation 2011: Medicine expenditures. Geneva, Switzerland: World Health Organization. http://apps.who.int/medicinedocs/documents/s18767en/s18767en.pdf (accessed 3 May 2015).

McQuide, P.A., R.-L. Kolehmainen-Aitken, and N. Forster. 2013. "Applying the Workload Indicators of Staffing Need (WISN) method in Namibia: Challenges and implications for human resources for health policy." *Human Resources for Health* 11: 64.

People that Deliver. 2014a. Health supply chains [Webpage]. http://www.peoplethatdeliver.org/content/health-supply-chain-assessments-developing-countries (accessed 13 March 2014).

People that Deliver. 2014b. PtD competency compendium for health supply chain management: A reference for health supply chains (first edition). People that Deliver Technical Working Group. http://www.peoplethatdeliver.org/sites/peoplethatdeliver.org/files/Feb%2014th%20FINAL%20PtD%20Public%20Health%20SCM%20Competency%20Compendium%20with%20ISBN%20and%20CC%20and%20publisher.pdf (accessed 5 July 2015).

Shipp, P. 1998. Workload Indicators of Staffing Need: a manual for implementation. Geneva, Switzerland: WHO.

World Health Organization. 2013. Transforming and scaling up health professionals' education and training: World Health Organization guidelines 2013. Geneva, Switzerland: WHO. http://whoeducationguidelines.org/content/guidelines-order-and-download (accessed 5 July 2015).

World Health Organization. 2010. Workload Indicators of Staffing Need: User's manual. Geneva, Switzerland: WHO. http://whqlibdoc.who.int/publications/2010/9789241500197_users_eng.pdf (accessed 30 April 2014).

World Health Organization. 2006. The world health report 2006: Working together for health. Geneva, Switzerland: WHO. http://www.who.int/whr/2006/whr06_en.pdf (accessed 13 June 2014).

World Health Organization. 2004a. The world medicines situation. Geneva, Switzerland: WHO. http://apps.who.int/medicinedocs/pdf/s6160e/s6160e.pdf (accessed 3 May 2015).

APPENDIX 1: ACTIVITY STANDARDS FOR PROCUREMENT PHARMACISTS AT THE CMS

Activity Standards for Procurement Pharmacists at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Preparing specifications and forecasting requirements - pharmaceuticals	10	minutes/item	# items procured
Preparing specifications and forecasting requirements - clinical supplies	30	minutes/item	# items procured
Preparing documents for bid process	40	hours/tender	# tenders
Adjudication, evaluation and tender committee meetings	80	hour/tender	# tenders
Evaluating and awarding RFQ's	20	minutes/item	# buy-out total line items
Placing orders	5	minutes/item	# items ordered
Expediting orders	60	minutes/item	10% of 50% of # total pharmaceutical items
Penalty charges against defaulting suppliers	20	minutes/item	10% of 30% of # total pharmaceutical items
Meetings with suppliers	60	minutes/meeting	70 % of # of suppliers/ 1 per month
Manage queries on purchase orders (expiry, pack size, etc.)	10	minutes/item	70% of 50% of # total items

Category Allowance Standards for Procurement Pharmacists at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Tea breaks	30	mins/day
Quarterly staff meetings	4	hours/quarter
Program coordination meetings	1	day/quarter
Workshops	4	weeks/year
Reporting (quarterly, annual, budget, costs, etc.)	8	hours/quarter
Procurement section staff meetings	30	minutes/week

Individual Allowance Standards for Procurement Pharmacists at CMS			
Activity	**Number**	**Standard**	**Unit**
Staff supervision and management	1	4	hours/week
Acting duties for chief pharmacist	1	4	weeks/year
Manage procurement costs and budgets – reporting	1	8	hours/quarter

APPENDIX 2: ACTIVITY STANDARDS FOR PROCUREMENT PHARMACIST ASSISTANTS AT THE CMS

Activity Standards for Procurement Pharmacy Assistants at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Adjudication, evaluation and tender committee meetings	8	hours/tender	# tenders
Manage tender samples (registering, sorting, prepare on shelves, presenting samples)	3	minutes/sample	66% of # samples
Prepare RFQ	30	minutes/item	40% of # items
Evaluating and awarding RFQ's	10	minutes/item	100% of # of buy-out order lines
Placing orders	5	minutes/item	# items
Expediting orders	60	minutes/item	90% of 50% of # total pharmaceutical items
Penalty charges against defaulting suppliers	20	minutes/item	90% of 30% of # total pharmaceutical items
Meetings with suppliers	60	minutes/meeting	15% of # of suppliers/ 1 per month

Category Allowance Standards for Procurement Pharmacy Assistants at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Tea breaks	30	mins/day
Quarterly staff meetings	4	hours/quarter
Reporting	1	hours/month
Workshops	4	weeks/year
Procurement section staff meetings	30	minutes/week

Individual Allowance Standards for Procurement Pharmacy Assistants at CMS			
Activity	**Number**	**Standard**	**Unit**
Manage donations of products	1	3	hours/year

APPENDIX 3: ACTIVITY STANDARDS FOR PROCUREMENT ADMINISTRATIVE OFFICERS/CLERKS AT THE CMS

Activity Standards for Procurement Administrative Officers/Clerks at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Adjudication, evaluation and tender committee meetings	8	hours/tender	# tenders
Manage tender samples (registering, sorting, prepare on shelves, presenting samples)	3	minutes/sample	34% of # samples
Printing and compiling	2	hours/tender	# tenders
Prepare RFQ	30	minutes/item	60% of # items
Placing orders	10	minutes/item	# items
Sending out orders	5	minutes/item	# orders
Expediting orders	60	minutes/item	100% of 50% of # total non-pharmaceutical items
Penalty charges against defaulting suppliers	20	minutes/item	30% of # total non-pharmaceutical items
Meetings with suppliers	60	minutes/meeting	15% of # of suppliers/ 1 per month
Manage queries on purchase orders (expiry, pack size, etc.)	10	minutes/item	30% of 50% of # total items

Category Allowance Standards for Procurement Admin. Officers/Clerks at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Tea breaks	30	mins/day
Quarterly staff meetings	4	hours/quarter
Reporting	1	hours/month
Workshops	4	weeks/year
Procurement section staff meetings	30	minutes/week

Individual Allowance Standards for Procurement Admin. Officers/Clerks at CMS			
Activity	**Number**	**Standard**	**Unit**
Record management and maintenance	1	2	hours/week

APPENDIX 4: ACTIVITY STANDARDS FOR DISTRIBUTION PHARMACISTS AT THE CMS

Activity Standards for Distribution Pharmacists at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Picking and packing main customer order items	7.5	mins/item ordered	10% # of pharmaceutical main item order
Amending main customer orders	30	mins/order/warehouse	10% of # of total main order
Checking main customer orders	1.5	hours/order/warehouse	10% of # of total main order
Process emergency customer orders	10	mins/item ordered	10% # of emergency pharmaceutical item orders
Follow-up on supplier/delivery discrepancy	20	mins/item delivered	# items delivers for 10% of total items delivered
Visual quality inspection	10	mins/item delivered	100% of pharmaceutical items delivered
Sampling	60	mins/item delivered	100% of # of all pharmaceutical order lines
Receiving Schedule III & IV pharmaceuticals & ARV's (physical inspection, enter into Syspro, prepare transfer doc, prepare for payment)	40	mins/item delivered	10% of total items delivered
Warehousing - put away process	15	mins/item delivered	10% # of pharmaceutical items delivered
Stock management	120	mins/warehouse/day	# warehouses/cadre*AWT

Category Allowance Standards for Distribution Pharmacists at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Distribution staff meetings	1	hour/week
Tea breaks	30	mins/day
Quarterly staff meetings - all CMS	4	hours/quarter
Coordination meetings with key public health programs	1	day/quarter
Reporting	3	hours/month
Workshops	4	weeks/year
Customer care issues	2	hour/day
Checking unusable stock for disposal	60	mins/month

Individual Allowance Standards for Distribution Pharmacists at CMS			
Activity	**Number**	**Standard**	**Unit**
Develop purchase requisition and supply plans	1	2	days/month
Develop annual delivery schedule to customers	1	1	day/year
Approve the return of products	1	20	mins/day
Disposal of unusable stock at land fill site	1	3	hours/quarter
Briefing meetings	1	30	mins/day
Staff supervision and management	1	8	hour/week
Oversight of all pharmaceutical warehouses	1	3	hours/week
Commodity transport weekly meetings	1	30	mins/day
Ad-hoc meetings/management meetings	1	10	hours/week
Acting duties for chief pharmacist	1	4	weeks/year

APPENDIX 5: ACTIVITY STANDARDS FOR DISTRIBUTION PHARMACIST ASSISTANTS AT THE CMS

Activity Standards for Distribution Pharmacist Assistants at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Picking and packing main customer order items	7.5	mins/item ordered	90% # of pharmaceutical main item orders
Amending main customer orders	30	mins/order/warehouse	60% of # of total main orders
Checking main customer orders	1.5	hours/order/warehouse	60% of # of total main orders
Process emergency customer orders	10	mins/item ordered	90% # of emergency pharmaceutical item orders
Receive products (physical inspection, enter into Syspro, prepare transfer doc, prepare for payment)	40	mins/item delivered	60% of total items delivered
Follow-up on supply discrepancy	10	mins/item delivered	for 10% of items delivered
Warehousing - put away process	15	mins/item delivered	90% # of pharmaceutical items delivered
Stock management	120	mins/warehouse	(# warehouses/cadre*AWT)

Category Allowance Standards for Distribution Pharmacist Assistants at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Checking stock for disposal	30	mins/month
Distribution staff meetings	1	hour/week
Tea breaks	30	mins/day
Quarterly staff meetings - all CMS	4	hours/quarter
Reporting	1	hours/month
Workshops	4	weeks/year

Individual Allowance Standards for Distribution Pharmacist Assistants at CMS			
Activity	**Number**	**Standard**	**Unit**
Commodity transport weekly meetings	1	30	mins/week

APPENDIX 6: ACTIVITY STANDARDS FOR DISTRIBUTION ADMINISTRATIVE OFFICERS/CLERKS AT THE CMS

Activity Standards for Distribution Administrative Officers/Clerks at CMS			
Activity	**Standard**	**Unit**	**Workload Data Description**
Picking and packing main customer order items	7.5	mins/item ordered	# of non-pharmaceutical main item order
Amending main customer orders	30	mins/order/warehouse	30% of # of total main order
Checking main customer orders	1.5	hours/order/warehouse	30% # of main orders * # warehouses
Loading stock for delivery	240	min/main order	# total main orders
Process emergency customer orders	10	mins/item ordered	# of emergency non-pharmaceutical item orders
Receive products (physical inspection, enter into Syspro, prepare transfer doc, prepare for payment)	40	mins/item delivered	30% of total items delivered
Follow-up on supply discrepancy	10	mins/item delivered	for 10% of items delivered
Warehousing - put away process	15	mins/item delivered	# of non-pharmaceutical items delivered
Stock management	120	mins/warehouse	# warehouses/cadre*AWT
Capture main customer orders	90	min/order	# total non-pharmaceutical main order items

Category Allowance Standards for Distribution Admin. Officers/Clerks at CMS		
Activity	**Standard**	**Unit**
Annual stock taking	80	hours/year
Checking stock for disposal	30	mins/month
Distribution staff meetings	1	hour/week
Tea breaks	30	mins/day
Quarterly staff meetings	4	hours/quarter
Reporting	1	hours/month
Workshops	4	weeks/year

Individual Allowance Standards for Distribution Administrative Officers/Clerks at CMS			
Activity	**Number**	**Standard**	**Unit**
Preparing trip authorizations for vehicles	1	30	mins/day
Managing commodity transport vehicles - vehicles tracking	1	2	hour/day
Manage the return of products	1	10	mins/day
Dispose at dump site	1	2	hours/quarter
Commodity transport weekly meetings	1	30	mins/week
Arrange for vehicle maintenance, licenses, mass distance charges	1	4	hours/week
Record keeping and fuel slip management	1	3	hours/week
Process customer invoices and delivery notes	1	8	hours/day
Preparing courier documents for emergency orders	1	2	hours/day
Processing S&T payments for drivers	1	3	hours/week

APPENDIX 7: ACTIVITY STANDARDS FOR PHARMACISTS AT THE RMDS

Activity Standards for Pharmacists at RMDs			
Activity	**Standard**	**Unit**	**Workload Data Description**
Processing Purchase order to CMS	4	hours/order	5% # of purchase orders
Issuing Client Order	90	minutes/order	5% # of client orders issued
Updating Syspro Master Inventory File	60	minutes/update	100% # of updates
Stock Management	40	hours/week	# warehouses/cadre

Category Allowance Standards for Pharmacists at RMDs		
Activity	**Standard**	**Unit**
Storing of stocks in warehouses (Put away Process)	2.5	days/month
Staff Meetings	1	hour/month
Annual Stock Taking	14	days/year
CPD	60	mins/week
Tea breaks	30	mins/day

Individual Allowance Standards for Pharmacists at RMDs			
Activity	**Number**	**Standard**	**Unit**
Receiving stock from CMS	2	2.5	days/month
Setting Minimum and Maximum Stock Levels	2	5	days/year
Compile the order to CMS	1	20	minutes/week
Receiving Purchase Order into Syspro	1	20	minutes/week
Conduct Pharmacy week activities	1	5	days/year
Attend Management Meeting	1	3	hours/month
Attend Economizing Meeting	1	4	hours/month
Attend Regional Therapeutics Committee Meeting	1	4	days/year
Support supervision	1	140	hours/year
Compile Monthly ART Report	1	30	minutes/month
Compile Quarterly PMIS Report	1	8	hours/year
Attend National Pharmacist Forum	1	4	days/year
Conduct ABC analysis	1	5	days/year
Compile Annual Plan	1	2	hours/year
Compile Quarterly Report	1	4	hours/year
Compile Annual Report	1	5	days/year
Removal and Disposal of expired/damaged stock	2	1	hours/month

APPENDIX 8: ACTIVITY STANDARDS FOR PHARMACIST ASSISTANTS AT THE RMDS

Activity Standards for Pharmacists Assistants at RMDs			
Activity	**Standard**	**Unit**	**Workload Data Description**
Processing Purchase order	4	hours	65% # of purchase orders
Dispatching Client Order	3	hours/order	60% # of client orders dispatched
Issuing Client Order (picking and moving to dispatch)	90	minutes/order	65% # of client orders issued
Receiving and sorting returned stock from HFs	30	minutes/update	60% # of adjustment reports
Stock Management	40	hours/week	# warehouses/cadre

Category Allowance Standards for Pharmacists Assistants at RMDs		
Activity	**Standard**	**Unit**
Storing of stocks in warehouses (Put away Process)	2	days/month
Staff Meetings	1	hour/month
Annual Stock Taking	14	days/year
CPD	60	mins/week
Tea breaks	30	mins/day

Individual Allowance Standards for Pharmacists Assistants at RMDs			
Activity	**Number**	**Standard**	**Unit**
Receiving stock from CMS	8	10	days/year
Setting Minimum and Maximum Stock Levels	8	5	days/year
Capturing client order into Syspro	1	70	hours/month
Conduct Pharmacy week activities	1	5	days/year
Checking Printed Order Checklists	1	35	hours/month
Compile monthly TB report	1	1	hours/month
Compile Quarterly Malaria report	1	8	hours/year
Removal and Disposal of expired/damaged stock	8	1	hour/month

APPENDIX 9: ACTIVITY STANDARDS FOR ADMINISTRATIVE OFFICERS/CLERKS AT THE RMDS

Activity Standards for Administrative Officers/Clerks at RMDs			
Activity	**Standard**	**Unit**	**Workload Data Description**
Processing Purchase order	4	hours	30% # of purchase orders
Dispatching Client Order	3	hours/order	40% # of client orders dispatched
Issuing Client Order	90	minutes/order	30% # of client orders issued
Receiving and sorting returned stock from HFs	30	minutes/update	40% # of adjustment reports
Stock Management	40	hours/week	# warehouses/cadre

Category Allowance Standards for Administrative Officers/Clerks at RMDs		
Activity	**Standard**	**Unit**
Storing of stocks in warehouses (Put away Process)	2.5	days/month
Staff Meetings	1	hour/month
Annual Stock Taking	14	days/year
Tea breaks	30	mins/day

Individual Allowance Standards for Administrative Officers/Clerks at RMDs			
Activity	**Number**	**Standard**	**Unit**
Mini stock taking	2	2.5	days/month
Removal and Disposal of expired/damaged stock	2	1	hours/month

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