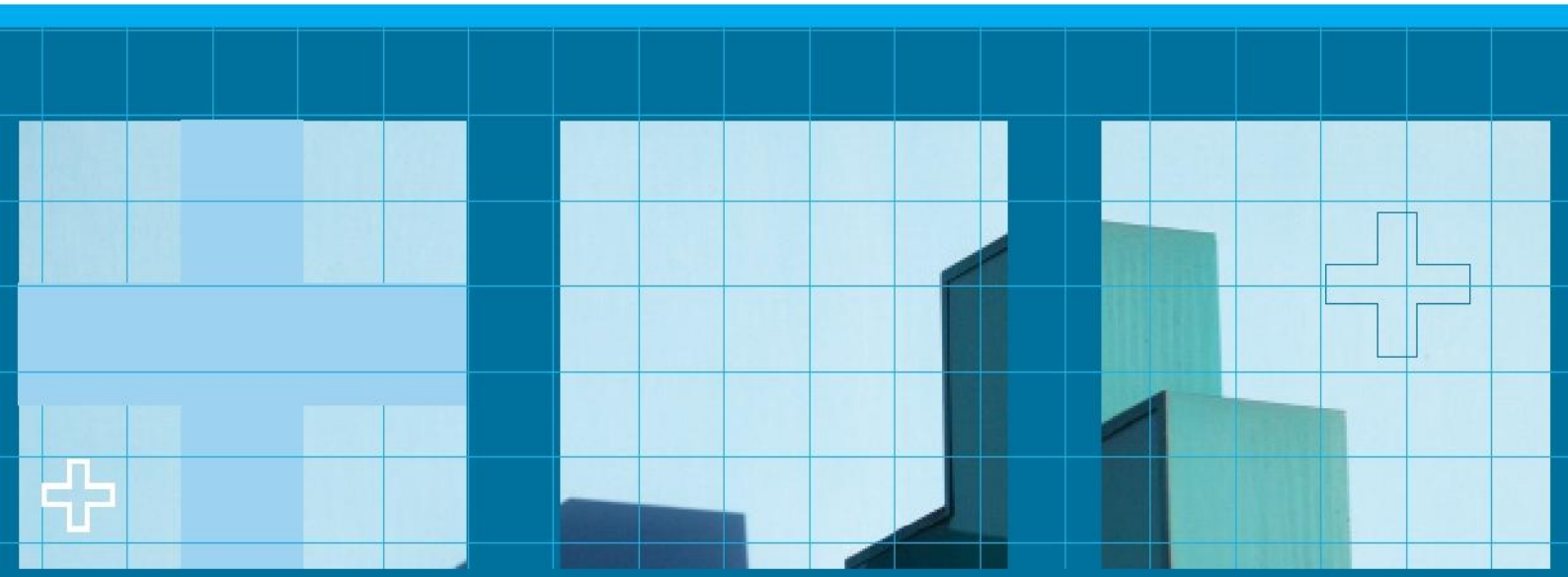
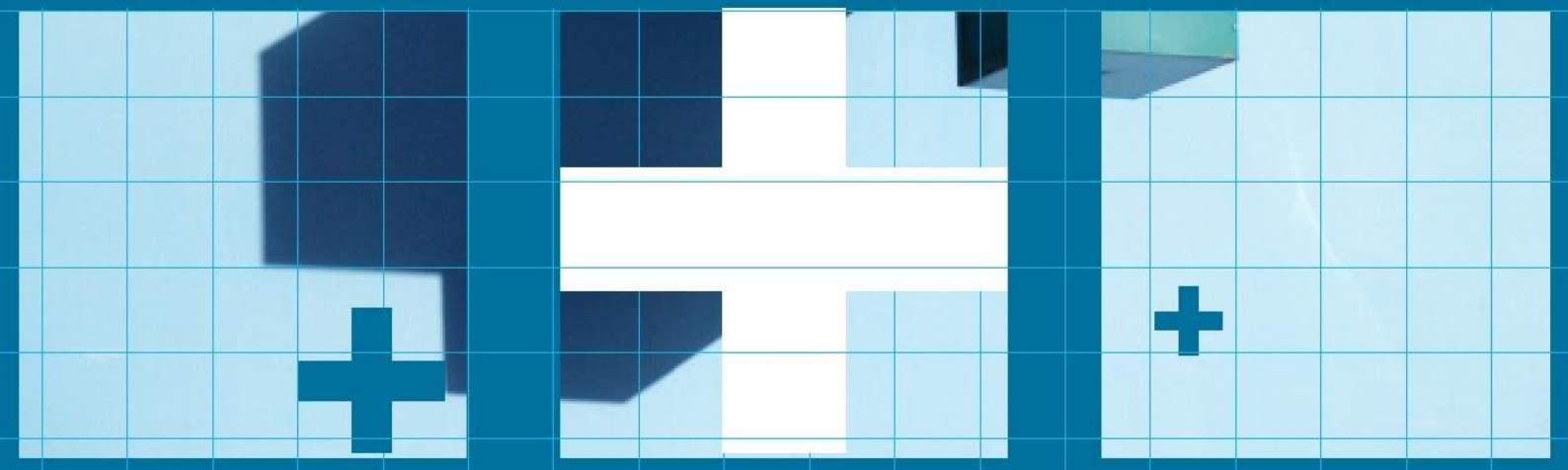
Republic of Namibia
Ministry of Health & Social Services



Namibia National WISN Report 2015



Namibia National WISN Report 2015:

A Study of Workforce Estimates for Public Health Facilities in Nambia

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Ministry of Health and Social Services

The Republic of Namibia

PREFACE

The Ministry of Health and Social Services (MoHSS) acknowledges that approximately half the population of the global south is located in rural areas and that these areas are only served by 38% of health workers. It is against this background that the Ministry conducted this study.

The report findings and recommendations will supplement restructuring efforts of the MoHSS to improve adequate staffing levels at public health facilities.

The nature of this study necessitated the collection of data from experts in all the cadres covered in the study from all levels of service delivery. The Ministry wishes to commend these experts and the Ministry's Research, Monitoring and Evaluation (RM&E) division for their commitment and excellent dedication to this study.

My sincere gratitude is also extended to the MoHSS, national level, and especially the Human Resource Development and Policy Planning Department and Human Resources Management Department, IntraHealth International–Namibia, and the Capacity*Plus* project for availing staff members to give technical support. My special appreciation goes to the United States Agency for International Development (USAID), the United States President's Emergency Plan for AIDS Relief (PEPFAR), and the World Health Organization (WHO) for funding the whole process of the study and report production. I would also like to commend the Regional Directors of the various regions who assisted in one way or another.

I believe that the findings and recommendations of this report will assist the Ministry to improve distribution and adequacy of the staffing levels at public health facilities and thus ensure better and more accessible health care in Namibia.

Dr. Andreas Mwoombola
Permanent Secretary
Ministry of Health and Social Services

PERMANENT SECRETARY
21 JUL 2016
REPUBLIC OF NAMIBIA
MINISTRY OF HEALTH AND SOCIAL SERVICES

ACKNOWLEDGEMENTS

The Namibia National Workload Indicators of Staffing Need (WISN) study was conducted with technical assistance from the World Health Organization (WHO) and funding from the United States Agency for International Development (USAID) through funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and led by IntraHealth International under awards AID-673-A-15-00002 and 674-A-00-09-00003-00. The views expressed in this publication do not necessarily reflect the views of USAID or the United States government.

We would like to thank the Ministry of Health and Social Services, especially the Ministry's Restructuring Task Force, the Directorate of Human Resources Development and Policy Planning, and the Directorate of Human Resources Management, in particular, Dr. Norbert Forster, Mrs. Bertha Katjivena, and Mrs. Celine Usiku. We would also like to thank Ministry staff, particularly the national WISN experts trained in the training-of-trainers held in June 2014 and the expert working groups from each cadre.

We appreciate the efforts of Ministry clinical and human resources staff in all fourteen regions involved through all phases of the study. We are grateful for your advice, support, and cooperation. We truly enjoyed working with you.

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Acronyms

ANC	Antenatal care
ART	Antiretroviral therapy
AWT	Available working time
CAF	Category allowance factor
DBS	Dried blood spot testing
DOTS	Directly observed therapy, short course
EDT	Electronic Dispensing Tool
ePMS	Electronic patient management system
FP	Family planning
GHI	Global Health Initiative
HCT	HIV counselling and testing
HIS	Health information system
HR	Human resources
IAF	Individual allowance factor
MoHSS	Ministry of Health and Social Services
NAWL	Namibian Automatic WISN Loader
OPM	Office of the Prime Minister
PEPFAR	United States President's Emergency Plan for AIDS Relief
PMIS	Pharmacy management information system
PSC	Public Services Commission
RM&E	Research, Monitoring & Evaluation division
RTF	Restructuring Task Force
USAID	United States Agency for International Development
WHO	World Health Organization
WISN	Workload Indicators of Staffing Need

EXECUTIVE SUMMARY

In the last four years, the Ministry of Health and Social Services (MoHSS) in Namibia has been restructuring the staffing norms of the Ministry. This effort has coincided with the absorption of PEPFAR-funded health workers, giving rise to the need for the Ministry to use data to make decisions regarding its staff establishment and staffing norms. The Deputy Permanent Secretary therefore requested that USAID/Namibia through IntraHealth International-Namibia provide technical assistance to conduct a Workload Indicators of Staffing Need (WISN) exercise to generate evidence to inform the Ministry's staffing decisions.

Staffing norms in Namibia have not been revised in over ten years. This fact, along with the general shortage of certain cadres, necessitated that the MoHSS review both the staffing norms and number of health workers. The WISN method was applied to all 13[1] regions in Namibia and focused on four particular cadres of health workers perceived by the MoHSS to be the most critical. These cadres were doctors, nurses, pharmacists, and pharmacist assistants.

The WISN tool, which was developed by the World Health Organisation, estimates the number of staff a health 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 any particular health facility in a country.

In Namibia, data were collected from six different national databases. Professional experts agreed on the activity standards and available working time for each cadre. The data required some customisation to be able to import the data into the WISN software.

The overarching findings of the WISN application related to inequalities in distribution and actual staff shortages. The highlighted inequalities pertained to number of staff allocated between different types of health facilities such as hospitals, health centres, and clinics, which are not sufficient to care for the number of patients in each type of facility. A related problem was the severe shortage of skilled professionals observed in some cadres, especially doctors, pharmacists, and pharmacist assistants.

Further analysis of the WISN results showed that the ratio of registered to enrolled nurses is one registered nurse to one enrolled nurse (1:1) for clinics, one to two (1:2) for health centres, one to three (1:3) at district hospitals, and one to two (1:2) at intermediate hospitals. The doctor-to-nurse ratio is one doctor to seven nurses (1:7) at district hospitals and one doctor to five nurses (1:5) at intermediate hospitals.

[1] The WISN project started prior to the addition of a fourteenth region in 2014.

Analysis of the pharmacy results identified a WISN ratio of one pharmacist to one pharmacist assistant (1:1) at both district and intermediate hospitals. The ratio of pharmacist assistants to nurses was found to be one to 16 (1:16) at clinics and one pharmacist assistant to nine nurses (1:9) at health centres.

The WISN results estimate the number of well-motivated health professionals required to practice according to national practice standards in Namibia. Although the results of the WISN application unsurprisingly raise grave concerns around the quality of health service provision, the results have been useful in guiding policy recommendations to the MoHSS, including increasing the number of positions for cadres with critical shortages, redistributing existing staff, reviewing health facility classifications, promoting appropriate task sharing, introducing a new cadre, focusing on competency training, reviewing health information systems indicators, and basing all policy on health service priorities. It is also interesting to note that the WISN results have been used by the MoHSS to advocate with the Ministry of Finance regarding the need for additional positions in the staff establishment.

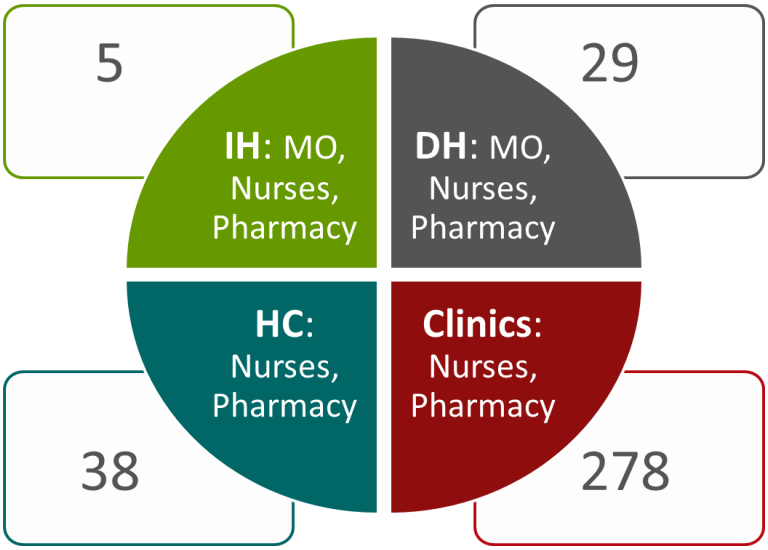
BACKGROUND

The United States government PEPFAR (U.S. President's Emergency Plan for AIDS Relief) team in Namibia supported the government of Namibia in absorbing PEPFAR-funded health workers between 2011 and 2014, while ensuring the continuation of quality HIV/AIDS services. The government of Namibia—conscious of the fact that HIV/AIDS service delivery previously had been heavily dependent on donor support by PEPFAR and Global Fund budgets—was committed to ensuring a managed, incremental transition of staff. Namibia's comprehensive approach to managing the transition process is articulated in the Namibia Global Health Initiative (GHI) Strategy 2011–2015/16 (U.S. Government n.d.).

The dialogue on the transition of PEPFAR-funded health workers coincided with a Ministry of Health and Social Services (MoHSS) restructuring effort prompted by existing imbalances in the number of health workers available at different service levels. In May 2012, the Prime Minister's Office/Public Services Commission (OPM/PSC) requested that the MoHSS define updated staffing norms for all operational health facilities as part of the restructuring effort. Without updated staffing norms, the OPM would be unable to assess proposed new staff establishments. The MoHSS wanted to base the new staffing norms on evidence to take into account changes made since the last norms were created in 2003, such as the HIV/AIDS-related positions not included in the 2003 staff establishment. The Ministry decided to explore the use of an evidenced-based workload method for this purpose and chose the Workload Indicators of Staffing Need (WISN) method developed by the World Health Organization (WHO).

The MoHSS's Restructuring Task Force (RTF), chaired by Dr. Norbert Forster, first requested that USAID/Namibia through Capacity*Plus*/IntraHealth International provide technical assistance to pilot the use of WISN in Kavango Region for doctors, nurses, pharmacists, and pharmacist assistants. (Appendix 10 reports the results of the Kavango pilot.) The pilot results were presented to the MoHSS, which found that they offered credible evidence-based results for restructuring and budgeting. The Ministry immediately requested that Capacity*Plus*/IntraHealth support the extension of the WISN application to the whole country. In the national application, the WISN method again was used to estimate the required number of doctors, nurses, pharmacists, and pharmacist assistants. The application covered all intermediate and district hospitals, health centres, and clinics in the then-13 regions of Namibia. (A 14th region was added in 2014.) The number of facilities (by type of facility) and the cadres (by facility type) included in the national WISN exercise are displayed in Figure 1.

Figure 1: Public facility types by number of facilities and cadres where WISN was applied



DH: District hospital; HC: Health centre; IH: Intermediate hospital; MO: Medical officer

The MoHSS, Deputy Permanent Secretary, Permanent Secretary, and President made several subsequent additional requests for WISN estimates. The first added request was to use the WISN method for doctors and nurses working in the obstetrics and gynaecology and internal medicine units at Windhoek Central Hospital and Katutura Intermediate Hospital in light of the responsibility that these professionals have in training student doctors, medical interns, and student nurses (see Appendix 11). The second request was to use WISN to assess the workload of a particularly busy clinic in northern Namibia, called Onamunama (see Appendix 12).

After an original draft national WISN report was submitted to the MoHSS Restructuring Committee in 2013/14, the committee made additional requests to use WISN to assess the number of dentists in the country and to disaggregate the workload for nurses to separately examine registered and enrolled nurses for all relevant health facilities in the country. The committee then suggested that all of these various WISN results be integrated into one national WISN report.

The main body of this report focuses on the national application of the WISN method. The report starts with a short overview of the WISN method, followed by a description of the steps of the national WISN application and the steps used to determine activity standards for routine nursing care using a time-motion study. The next section furnishes more details on the data sources that the WISN application used and how these data were entered and verified. Because initial versions of the WHO WISN software presented some challenges when used at the national level, the report also describes these challenges and the solutions found. We then present the findings from the national WISN application, and the report concludes by outlining the most important policy recommendations that follow from the national WISN application.

Appendices 2-6 show the activity standards for doctors, registered nurses, enrolled nurses, pharmacists, pharmacist assistants, and dentists. The results of the national WISN exercise are represented in Appendix 7, while Appendix 8 discusses the steps that were followed in uploading the data directly into the WISN software. Appendix 9 includes the most important tables from the analysis of WISN findings. Finally, Appendix 13 includes an example of the survey tool used in the time-motion study.

Overview of the WISN Method

The WISN method is an analytic human resources planning and management tool. It calculates how many health workers of a particular cadre are required in a given health facility, based on workload. The WISN method also provides a proxy measure, called the WISN ratio, to assess workload pressure on health workers. The WHO developed the WISN method initially in the 1990s and, in 2014, developed a revised WISN toolkit and made it available online (WHO 2015). The toolkit consists of a WISN user's manual, case studies, the software, and a software manual.

Applying the WISN method in practice requires three teams: a steering committee, a technical task force, and expert working group(s). The steering committee is made up of senior officials and policy-makers who can make policy decisions and use the WISN findings to make high-level training, funding, and staffing decisions on a national, regional, district, or facility level. The task force implements the actual application of the WISN method and reports to the steering committee. The task force works closely with the expert working group(s). The expert group(s) defines the workload components and sets activity standards that are acceptable to the professionals and appropriate for the country. (Table 1 presents the steps of the WISN method, also described further in the section following the table.)

The WISN method identifies the main workload components of a staff category (i.e., the health service activities this cadre performs in its daily work), and then defines the time it takes to perform this activity standard. Differences in the services provided and their complexity at different facility levels are, therefore, taken into account. Calculations of the required number of staff in a cadre in a particular health facility are based on the workload with which the staff has to cope.

The WISN method can be used to calculate the staff requirement for a single cadre (e.g., nurse) working in one type of health facility (e.g., health centre). It can be used equally well to estimate the required number of several different staff categories working in a range of facility types. The calculations use nationally available data on current workloads to minimize the need for primary data collection. The WISN method can also use estimates of future workload to calculate how many staff would be required. In the Namibian context, WISN could be used to estimate how many staff for a cadre not trained in Namibia currently (such as physiotherapists) would be required if Namibian institutions were to start training them to perform certain types of care delivery services. Similarly, the activity standards can be varied to examine the impact of improved professional standards on staff requirements.

Table 1: Steps of applying the WISN method in Namibia

Step	Activity	Definition	Responsible group
1	Determine priority cadres and facilities	Cadres, types of facilities, and administrative units (single facility, district, region or country) to which the WISN method will be applied.	Steering committee
2	Estimate available working time (AWT)	The time a health worker has available in one year to do his or her work, taking into account authorised and unauthorised absences.	Steering and technical committees
3	Define workload components	There are three types of workload components:	Expert working group
		Health service activities: Performed by all members of the staff category, and regular statistics are collected on them (e.g., admitting patients).	
		Support activities: Performed for all members of the staff category, but regular statistics are not collected (e.g., staff meetings)**.**	
		Additional activities: Performed by only certain staff (not all of them), and regular statistics are not collected (e.g., writing annual reports).	
4	Set activity standards	The time necessary for a well-trained, skilled, and motivated worker to perform an activity to professional standards in the local circumstances.	Expert working group
5	Establish standard workloads	The amount of work within a health service workload component that one health worker can do in a year.	Technical task force
6	Calculate allowance factors	**Category allowance factor (CAF)**: A multiplier used to calculate the total number of health workers required for health service and support activities.	Technical task force
		Individual allowance factor (IAF): The staff requirement to cover additional activities of certain cadre members.	
7	Determine required staff numbers	Total staff requirement = [staff requirement of all health service activities times category allowance factor] plus [individual allowance factor].	Technical task force
8	Analyze and interpret WISN results	WISN results analysed in two ways:	Technical task force and steering committee
		i. Difference between the current and required number of staff	
		ii. WISN ratio (ratio of current to recommended staff), which is a proxy for workload pressure. (The lower the WISN ratio, the higher the workload pressure.)	
9	Validate activity standards and results	Activity standards and electronic databases validated for correctness by expert group and steering committee. If necessary, steps 7, 8, and 9 are repeated.	Expert working group, technical task force, and steering committee

WISN Process in Namibia

The application of the WISN method in Namibia consisted of the steps listed below. (Table 1 indicates the team or teams with responsibility for each step.)

a. Establish a WISN steering committee
b. Conduct Kavango pilot
c. Hold national validation workshop to finalise activity standards
d. Carry out field verification of data (compare primary data to electronic data)
e. Collect data, upload, process, and analyse, including development of the Namibian Automatic WISN Loader (NAWL), in-house software developed to directly upload electronic service statistics and staffing data into WISN software
f. Provide feedback to MoHSS senior policy-makers and managers
g. Apply self-administered time-motion study to assess activity standards for routine nursing care for which there are no direct service statistics
h. Validate activity standards with expert groups and steering committee
i. Re-run data with revised activity standards.

A small WISN technical committee was composed of staff members of the MoHSS and IntraHealth. An external consultant (Dr. Riitta-Liisa Kolehmainen-Aitken) was recruited to support the technical committee when the WISN scope was expanded to cover all facility levels in the whole country. The WISN technical committee reported to the MoHSS RTF, which took on the steering committee role.

The WISN pilot took place in Kavango Region in mid-2012. (A full report of the Kavango pilot is included in Appendix 10.) Kavango Region was chosen for the WISN pilot because it contains all the targeted facility levels and is one of the most populated regions of Namibia. Furthermore, the Chief Medical Officer of Kavango Region was very supportive of the WISN application. In Kavango, the WISN technical committee customised the WHO WISN fields to the Namibian context. This included using correct names for administrative areas and staff types and entering into the software the appropriate salary levels for each cadre. The data to calculate the available working time (AWT), a key variable in the WISN method, was obtained from health facility records in two hospitals, six health centres, and two clinics. The workload components and activity standards were defined in two-day workshops, whose participants were experienced doctors, nurses, and pharmacy staff. Regional data on staffing and workloads for the period from April 1, 2011–March 31, 2012 were entered into the WHO WISN software, and the findings were shared with the MoHSS RTF.

A two-day national validation workshop was held in Windhoek in October 2012 to validate the main workload components and activity standards initially set in Kavango. The WISN technical committee organized the workshop with the support of the WISN consultant. National participants consisted of over 100 senior doctors, nurses, pharmacists, and pharmacy assistants.

Participants represented 12 of the 13 regions at the time, as well as key departments and divisions of the national MoHSS and other relevant partners. Participants were tasked with examining the activity and allowance standards set in Kavango and considering whether these were the appropriate activities and activity standards (time) for carrying out each activity to an acceptable professional standard in all of Namibia.

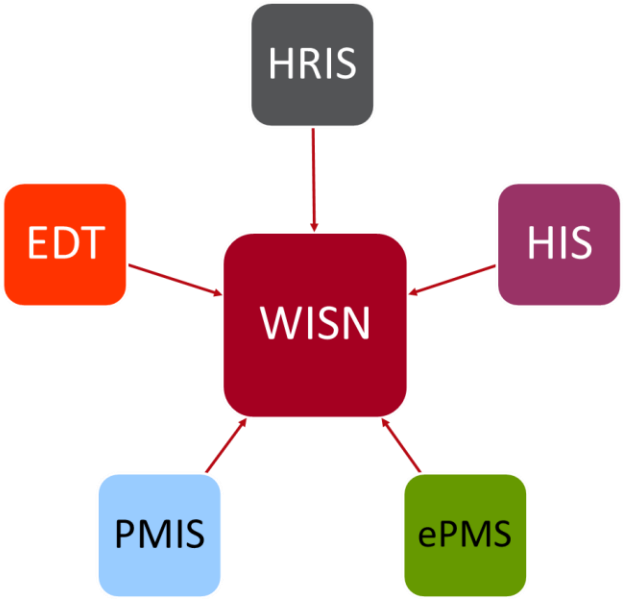
In defining the service activities, the workshop participants were asked to indicate which staff category should be responsible for performing the service to an acceptable quality standard in the Namibian health system, rather than which cadre was currently performing it. The participants were cautioned against setting ideal but unachievable activity standards. The output of the national validation workshop was an agreed list of the key activities and their associated activity standards for doctors, nurses, pharmacists, pharmacist assistants, and dentists, working in hospitals, health centres, and clinics in Namibia (see Appendices 2-6).

Data sources and entry

The national WISN application used the nationally available health and human resources (HR) information sources and six national databases for health service statistics. The six national databases were the health information system (HIS), electronic patient management system (ePMS) (a system developed in Filemaker to manage HIV/AIDS patients), HIV counselling and testing (HCT) database (included in the ePMS), two pharmaceutical management information systems (PMIS and EDT), and the HR database (see Figure 2). EDT (Electronic Dispensing Tool) is an Access-based database supported by Management Sciences for Health to track medications dispensed to HIV/AIDS patients. The ePMS provided the number of antiretroviral therapy (ART) first visits and revisits, while the HCT provided the data on the number of HIV/AIDS patients being counselled. Pharmacy-related service statistics were taken from the PMIS and the EDT. Data on current staffing and leave taken (needed to calculate the AWT) came from HR managers and databases at the national and regional levels. The HIS provided the bulk of the health service statistics.

Mapping WISN workload activities to the data elements was a crucial step. The lists of the main service activities and activity standards were developed before the WISN technical committee had full knowledge of what data were available in the HIS. A medical intern and an HIS information officer were members of the data quality team and provided the needed expertise to successfully match the WISN service activities to the HIS data elements. This exercise identified the activities for which no service statistics were available, which led to these activities being reclassified as support or additional activities instead of as health service activities. (As already shown in Table 1, the WISN method handles support and additional activities differently from service activities.) Important steps in data entry included verifying WISN facility names with various data sources, including spell checking, confirming that service statistics were imported correctly for different cadres for all health facilities, and checking data completeness. Because the facility codes and classifications used in the various databases did not match, it was decided to use the HIS facility codes, which provided the bulk of the service statistics. The monitoring and evaluation officer from IntraHealth oversaw the data capture and ensured data completeness and quality.

Figure 2: Data sources included in the Namibia WISN



Data verification

The WISN technical committee undertook a field exercise in four of the 13 regions to verify nationally available data against primary data sources. In each region, committee members visited selected hospitals, clinics, and health centres and collected data from primary records. Additional data were collected from the Regional Offices. Most primary data were found to be less complete than at the national level, often due to poor record-keeping. (For example, Table 2 on the next page compares national and primary data in the Otjinene health centre.) The comparison of primary source data with the nationally available data also identified certain data elements that were either unavailable nationally or not accurate. These included, for example, the number of major and minor operations and total inpatient days. Primary data were collected for operating theatre cases, and admissions were used as the statistics for inpatient days for health centres.

A number of techniques were used to verify that the WHO WISN software returned correct results. The first was to calculate the required staffing manually, applying the WISN method, and then compare the result with the one returned by the software. Initially, several discrepancies were found. Further analysis revealed that the WISN software had several programming errors. These were reported to WHO in Geneva and AFRO. Manual workarounds were developed to address the problem initially, and WHO later corrected the programming errors. The final WISN run was done with software that did not have the errors.

Second, the computerized WISN calculations for the Kavango facilities were compared with the calculations done in the Kavango pilot. Any discrepancies were investigated to ensure that a clear explanation existed for the differences.

Table 2: Comparison of national data (April 1, 2011–March 31, 2013) to primary data sources, Otjinene health centre (analysis done December 4, 2012)

		Facility	Central
Activities	**Data source**	**Work-load**	**Work-load**
Total admissions (or after-hours if no 24-hour services) - missing May, Aug., Nov., Dec.	HIS	122	N/A
Total discharges - same missing as above	HIS	122	N/A
Total deaths - missing May, Aug., Nov., Dec.	HIS	6	N/A
Total inpatient days - same missing as admissions	HIS	122	N/A
Total injections, other than immunisations & FP - missing May, Aug., Nov., Dec.	HIS	665	772
Total dressings - missing May, Aug., Nov., Dec.	HIS	342	376
Total DBS tests done	M&E	12	7
Total deliveries	HIS	N/A	66
Total emergency deliveries - missing May, Aug., Nov., Dec.	HIS	42	45
Total first outpatient visits - missing May	HIS	8,894	8,910
Revisits - missing May, Aug., Nov., Dec.	HIS	3,312	3,296
OPD procedures - missing May, Aug., Nov., Dec.	HIS	95	147
Total pap smears - missing May, Aug., Nov., Dec.	HIS	37	38
Total ANC first visits	HIS	220	217
Total ANC revisits	HIS	614	647
Total postnatal visits - missing April	HIS	129	133
Total children growth monitored - missing Dec. and Feb.	HIS	1,013	1,889
Total under-one immunisations (all vaccines, all doses) - missing Dec. and Feb.	HIS	1,838	1,765
Total tetanus toxoid immunisations for pregnant women - missing Dec. and Feb.	HIS	141	132
Total family planning first visits	HIS	84	83
Total family planning revisits	HIS	1,777	1,907
Total enrolled to ART care and treatment (includes 26 pre-ART)	ePMS	52	24
Total ART care and treatment follow-ups (based on 4 months of data, book started in January 2012)	ePMS	1,200	1,209
Total persons pre- & post-test counselled for HIV/AIDS	ePMS	572	40
Total PMTCT patients counselled and tested (equal to first ANC visits)	HIS/ePMS	217	217
Total visits of DOTS patients - missing May, Aug., Nov., Dec.	EDT	37	12
Total prescriptions (equal to total first OPD visits) - missed one month	PMIS	8,894	N/A

ANC: Antenatal care; ART: Antiretroviral therapy; DBS: Dried blood spot; DOTS: Directly observed treatment, short course; ePMS: Electronic patient management system; FP: Family planning; HIS: Health Information System; M&E: Monitoring and evaluation; OPD: Outpatient department; PMIS: Pharmacy management information system; PMTCT: Prevention of mother-to-child HIV transmission

The third data verification technique compared the two reports that the WISN software produces. The first type of report generated is a summary report that compares selected facilities. The second type is an individual report for a single health facility. These two reports should produce the same calculated requirement per cadre per health facility. However, this analysis identified another problem with the software. This, too, was reported to WHO, and a manual workaround was found. WHO corrected these errors in the software released in 2014.

Finally, initial WISN results from selected facilities were shared with senior staff in these facilities. These individuals verified the results using their extensive knowledge of the workload of their facilities. In a few cases, this resulted in having to review the service statistics used and either find alternative data sources or adjust the assumptions.

Further Steps

The WISN technical committee briefed the MoHSS RTF on the progress of the WISN application. At the RTF's request, the task force then made several high-level MoHSS presentations on the WISN findings. These included presentations at the MoHSS National Management Development Forum in February 2013 and the MoHSS Strategic Management Retreat in July 2013.

The pharmacy activity standards were validated in February 2014. Data runs and analyses were done in April and May 2014. After further validation of these results was done by the Chief Pharmacist, the MoHSS RTF made additional recommendations regarding the pharmacy activity standards. These recommendations were incorporated, and the data were re-run and analysed. The final WISN pharmacy data were completed in March 2015 (see results in Appendix 7).

The activity standard-setting process for dentists started in June 2014, and primary data collection and verification were done in June and July 2014. The WISN data runs for dentists were conducted from July to August 2014, and the analyses were completed in September of the same year (see results in Appendix 7).

At this juncture, the RTF requested that the activity standards for nurses be split into two sub-categories for registered and enrolled nurses. (This process is described in detail in the next section.) The WISN data runs for the disaggregation of registered and enrolled nurses commenced in August 2014, and feedback on these WISN results was given to the RTF. The committee recommended that the disaggregated nursing standards be validated with the MoHSS Quality Assurance department.

Additional concerns subsequently arose regarding how to define activities and capture time spent on routine nursing care. This led to the development of a facility-level self-administered time-motion study to determine the elements of routine nursing care and the time such activities take. (This process is further discussed in the next section.) Questionnaires were administered and data collected and analysed from July to September of 2014. Validation of the disaggregated nursing activity standards was done in January and February of 2015, and these activity standards were forwarded to the various training institutions to confirm their accuracy.

The data runs for the nursing cadres were completed in June and July 2015, and feedback was given at the MoHSS Restructuring Retreat on July 15, 2015. In August of the same year, the National WISN Report was completed.

Table 3 below summarizes the WISN activities and timeline. A more comprehensive report of these activities is available in Appendix 1.

Table 3: Overview of WISN activities

Activity	Timeline
WISN pilot	August 2012
First national WISN study	September-December 2012
Dissemination of results	July 2013
Pharmacy revisions	February-May 2014
National training-of-trainers	June 2014
Expansion of WISN to include dentists	July-September 2014
Disaggregation of activities for registered and enrolled nurses and time-motion study to validate routine nursing care	September 2014-February 2015
Final analysis and report	March 2015
Dissemination of results	July 2015

Determining Routine Nursing Care

During the activity standard-setting process to disaggregate nursing activities between registered and enrolled nurses in 2014, the expert working group received information from nurses about the inadequate representation of routine nursing activities in the existing activity standards. The nursing expert working group argued that routine nursing care forms a considerable portion of work, especially in hospitals, and that these activities were not adequately represented in prior versions of activity standards for nurses, in part, because there are no service statistics for routine nursing care. The nursing expert working group was able to distinguish between routine nursing care for self-care patients and for highly dependent patients and identified the sub-activities included in what was broadly labelled "routine nursing care" for each category. However, there was a lack of consensus on the time each activity takes. Moreover, the highly dependent patients were defined as patients in normal wards and not high care or intensive care wards.

In such situations, the WISN methodology makes provision for conducting time-motion studies to determine activity standards. The nursing expert working group agreed that this would be the most appropriate mechanism to determine the time each routine nursing activity takes. The technical task force determined that relevant HIS data, in the form of midnight census data, were available to relate to routine nursing care. The technical task force developed a self-administered time-motion study to determine the time taken for each activity included in

routine nursing care for high-dependent and self-care patients, admissions, discharges, and last office activities (activities and sub-activities listed in Table 4).

The technical task force with the assistance of the regional WISN experts trained in June 2014 and the Directorate of Human Resources and Policy Planning in MoHSS were able to collect this information using a questionnaire (see Appendix 13). The questionnaire was administered in seven regions (Karas, Kavango, Khomas, Omusati, Oshana, Oshikoto, and Otjozondjupa) to all district and intermediate hospitals. Responses were received from seven district hospitals and five intermediate hospitals. The data were collected from two wards and four patients per ward covering both day shift and night shift for self-care patients; and two wards and two patients per ward covering both day shift and night shift for high-dependent patients for each facility, whether district or intermediate hospital.

Table 4: Main and sub-activities for time-motion study

SELF-CARE PATIENTS
Bed making
Taking vital signs
Health education
Medication rounds (including IVs)
Recording (charting, etc.)
Daily assessment and evaluation
Conducting daily ward rounds (with doctors)
Routine blood tests (blood glucose, etc.)
Individual and group therapy
Shift handovers (between nurses)
TOTAL TIME SPENT PER 24 HRS – 2 HRS/INPATIENT DAY

HIGH-DEPENDENT PATIENTS
Full wash (nail care, mouth wash, shaving, general grooming/hygiene)
Bed pans/Incontinence
Feeding (spoon/tube feeding)
Turning and pressure point care
Mobilising/Ambulating
Range of motion
Suction (airway and oxygen management)
Catheterisation
Dressing (pressure sores, etc.)
Additional medications (sedation/pain, etc.)
Additional monitoring of vital signs
TOTAL TIME SPENT PER 24 HRS – 6 HRS/INPATIENT DAY

PATIENT ADMISSIONS
Baseline observations
Receive patient report and identification
Interview patient
Assemble admit chart/forms
Prepare the bed/room
Notify the on-call/duty doctor
Transfer the patient
Give orientation to the patient
Carry out specific instructions
Record keeping
Send prescription & collect medication
TOTAL TIME SPENT PER ADMISSION - 1 HR/ADMISSION

PATIENT DISCHARGES
Discharge observations
Health education
Dispense medications
Discharge notes
Arrange transport
TOTAL TIME SPENT PER DISCHARGE - 1 HR/DISCHARGE

DEATH: LAST OFFICE
Calling the doctor
Record keeping
Preparing body for mortuary
Contacting family
Psychosocial support
Handing over of clothes and valuables
Allowing family last visitation
Liaising between family, police, and mortuary
TOTAL TIME SPENT PER DEATH - 1.75 HRS/DEATH

Challenges and Solutions Related to Using the WHO WISN Software

Lack of Automatic Upload

The current version of the WHO WISN software is not designed for an automatic upload of data. This represented a challenge in a national WISN application. The systems developer at IntraHealth discovered, however, that the WISN (*.wat) files, which the software generates, can be renamed as *.xml files. He was able to write a linking programme, which made it possible to upload service statistics directly from national databases into the WISN software. The linking programme was called the NAWL (Namibian Automatic WISN Loader).

Lack of Access to Source Code

The WHO WISN software is proprietary. Therefore, it does not provide access to its source code nor does it allow users to verify how the software actually does the calculations. This led to a lot of time spent on troubleshooting. A number of possible explanations for any discrepancies had to be postulated, and each then needed to be proved or disproved before any recommendations could be implemented.

Programming Issues

Certain units of time measurement in calculating category and allowance standards resulted in the generation of different results in the summary report versus individual reports. This again resulted from an error in the WHO WISN software. Another major software issue was identified when the service statistics were imported. After the import, each cadre had to be manually selected in order to trigger the software to calculate the required number of staff. This, too, was reported to WHO, and a manual workaround was found. WHO corrected these errors in their software release in 2014 and, as a result, the current WISN software does not contain the errors identified during the Namibian exercise.

WISN Findings

The Namibian WISN findings can be summed up in two words: shortage and inequity. Overall, staff shortages are most profound for doctors and pharmacists. Inequity in staffing is greatest between health centres and clinics. Some clinics offer the same amount of care as large health centres, yet they may have only one or two nurses according to the staff establishment. Little or no correlation appears to exist between the workload of a health facility and its staffing. Therefore, health workers in facilities of the same type and staffing cope with widely different workloads.

Table 5 provides a high-level outline of the numbers of staff required for each facility type per cadre. Note that the WISN ratio is calculated by dividing the number of existing staff by the number of staff required.

Table 5: Required number of staff per facility type per cadre

Facility Type	Doctors		Registered and Enrolled Nurses			Pharmacists		Pharmacist Assistants	
	Actual	Calculated Requirement	Actual	Calculated Requirement RN	Calculated Requirement EN	Actual	Calculated Requirement	Actual	Calculated Requirement
Intermediate Hospital	174	514.49	1621	1410.22	879.93	16	51.78	27	56.45
District Hospital	108	304.04	1542	1426.24	684.3	5	117.24	46	130.65
Health Centre	-	-	363	364.39	211.06	-	-	7	64.53
Clinic	-	-	725	760.95	1229.41	-	-	3	123.56
TOTAL	**282**	**818.53**	**4251**	**3961.8**	**3004.7**	**21**	**169.02**	**83**	**375.19**

The main findings are outlined in the following section. The detailed WISN analysis data tables are in Appendices 7 and 9.

Doctors

Both the intermediate and district hospitals have only one-third of the doctors that they require based on workload (WISN ratio of 0.34 and 0.36, respectively). Rundu Intermediate Hospital, with a WISN ratio of only 0.18, is particularly short of doctors.

Windhoek Central Hospital is the best staffed of the intermediate hospitals. It has one half of the doctors its workload requires (WISN ratio of 0.49).

Karas and Ohangwena are the two regions where doctors in district hospitals are working under greatest pressure (WISN ratios of 0.28 and 0.29, respectively). The regions with the least pressure are Kavango and Kunene (both with a WISN ratio of 0.47). Numerically, the largest gaps in district hospital doctors are in Ohangwena (-36.1) and Omusati (- 35.2). Further analysis indicates a ratio of one doctor for seven nurses (1:7) at district hospitals and one doctor for five nurses (1:5) at intermediate hospitals.

Nurses

It was not possible to analyse the sub-categories for registered and enrolled nurses due to the unavailability of human resources data for these sub-categories. The analysis of overall nurse staffing shows that Namibia has a shortage of nurses (61% of the workload-based requirement). In addition, nurses are very inequitably distributed between the different types of facilities. The total nurse workforce is clearly skewed towards hospitals. Nonetheless, both intermediate and district hospitals are understaffed relative to their workloads with requirements of -669 and -568 nurses at intermediate and district hospitals, respectively. Oshakati Hospital is the best staffed intermediate hospital, with 93% of its required nurse staffing. The worst staffed is Onandjokwe intermediate hospital, which has only 59% of its requirement.

At the district hospital level, all district hospitals have fewer nurses than they require on the basis of their workload. Otjozondjupa region has the best nurse staffing at the district hospital

level (94% of requirement, with a shortage of 13 nurses), while Omaheke (50%) has the worst (a gap of 56 nurses). Inequity also exists within a single region. In Karas, for example, Lüderitz district hospital has only 30% of its required staffing, while another district hospital, Karasburg, has excess nursing staff (226%).

Health centres have only 63% of their required nursing staff, representing an overall gap of 212 nurses. It should be noted that the health centre shortage would appear greater if the facilities operated around the clock as intended. However, many—probably most—health centres operate only during the daytime due to insufficient staff. Ohangwena region had no nurses in its only health centre, but calculations showed that it required 21. Thus, nurses working in health centres in Ohangwena region are under the greatest workload stress (WISN ratio of 0), while those in Karas region experience the least (WISN ratio of 2.10). Expressing these WISN ratios another way, health centres in Karas have 210% of their nurse requirement. Inequity in nurse staffing within a region again can be seen. For example, in Otjozondjupa, Mangetti Dune health centre has 196% of its required staffing, while the Osire and Otavi health centres have only 35% and 33% of required staffing, respectively.

In clinics, nurse staffing is only 36% of what is required (WISN ratio of 0.36). This gap is almost six times larger (1265 nurses) than the gap for health centres. All clinics have shortages of nurses relative to their workloads. Khomas has the least workload pressure as compared to other regions, with a WISN ratio of 0.81 as compared to clinics in Kunene that only have 11% of their nursing requirements. The numerical shortage is largest in Ohangwena (-246), with the smallest in Khomas (-14).

The analysis of WISN findings demonstrates that nursing workloads vary widely within the same health facility type. Moreover, several clinics cope with workloads that are higher than some health centres. Given these variable workloads, the workload-based requirement for nurses in the 278 clinics ranges from less than one nurse per clinic to 24.

Further analysis of the results shows that the ratio of registered to enrolled nurses are one registered nurse to one enrolled nurse (1:1) for clinics, one to two (1:2) for health centres, one to three (1:3) at district hospitals, and one to two (1:2) at intermediate hospitals.

Pharmacists

The shortage of pharmacists is even more severe than it is for doctors. Intermediate hospitals employ 16 pharmacists; seven of them work in Windhoek Central Hospital. This represents 13.5% of the calculated pharmacist requirement at the intermediate hospital level.

Only five pharmacists work at the district hospital level. This is only 4% of the requirement. Omusati has the biggest numerical gap (18 pharmacists), followed by Ohangwena with 15. Hardap employs two of the five district hospital pharmacists. While all regions are short of pharmacists, transferring one of Hardap's two pharmacists to Ohangwena, which has none, would be of help.

No pharmacists work at the health centre or clinic levels. Analysis of the pharmacy results indicates a ratio of one pharmacist to one pharmacist assistant (1:1) at both district and intermediate hospitals.

Pharmacist Assistants

Intermediate hospitals employ 27 pharmacist assistants, which is 38.4% of their overall workload-based requirement. Windhoek Central and Oshakati have the highest workload pressure, with only 69% and 38% of the number of pharmacist assistants that they would require to cope with the workload, respectively.

The 29 district hospitals have 46 pharmacist assistants, representing 35% of their requirement. Erongo (53%) and Karas (52%) are the best staffed, while Hardap has only 20% of its requirement at the district hospital level.

Only seven pharmacist assistants were found to work in health centres. This is 11% of the workload-based requirement. Three of the seven work in Hardap and three in Khomas. The WISN analysis shows that Hardap has as many health centre pharmacist assistants as its workload requires (WISN ratio of 1.02). Khomas had 22% of its requirement.

Only four pharmacist assistants were working at the clinic level in all of Namibia. Two of them work in the same region, Khomas, which therefore has 23% of its requirement. Overall, Namibia has only 3% of the pharmacist assistants that it requires at the clinic level. The ratio of pharmacist assistants to nurses is one to 16 (1:16) at clinics and one to nine (1:9) at health centres.

Dentists

The RTF and the WISN steering committee requested that IntraHealth conduct an additional study to estimate workload for dentists in Namibia using the WISN tool. It was possible to collect the majority of the service statistics data from the national HIS database; additional data sources included human resources data that indicated staffing, AWT, and primary data from theatres for major operations. The dental HIS data cover a different time period (June–September 2014) than the data collected for the other cadres. The WISN data for dentists were run according to health district and not per facility and region as in the national WISN data analyses. This is because dentists are allocated to a health district and shared amongst the facilities within the health district.

Although the dental findings regarding staffing may seem to be more than adequate, the current workload considers only curative and not preventive care. Should preventive care be included in the workload, completely different outcomes should be expected. The total dental requirement for Namibia is 39 dentists; however, the public sector currently has 68 dentists. This represents a WISN ratio of 1.74. While some health districts have more than the required number of dentists, others have none. A redistribution of dentists is, therefore, recommended. Oshana Region is most favourably staffed, with a WISN ratio of 2.95, whereas Hardap region is

the most unfavourably staffed, with a WISN ratio of 0.83. Numerically, the largest gaps in regional requirements are in Oshana (7.93) and Khomas (4.49).

Recommended Norms

The most useful application of the WISN results would be to assist in determining recommended staffing norms for each cadre. For the purposes of this report, staffing norms were estimated using the following approach:

1. Copy data relating to facility type, facility name, cadre, and calculated requirement in an Excel spreadsheet.
2. Arrange data per cadre and separate each cadre.
3. Sort the data per cadre according to calculated requirement from smallest to largest number.
4. Classify the results into intervals and specify the lower and upper limits applied to each interval.
5. Assess each interval to ensure that the lower and upper limits are reasonable and adjust accordingly.
6. Calculate the median for each interval.
7. Adjust the medians for each interval to an integer by applying the rounding guidelines as described in the WISN User Manual (WHO 2015) as indicated below:
    - 1.0 – 1.1 is rounded down to 1 and >1.1 – 1.9 is rounded up to 2
    - 2.0 – 2.2 is rounded down to 2 and >2.2 – 2.9 is rounded up to 3
    - 3.0 – 3.3 is rounded down to 3 and >3.3 – 3.9 is rounded up to 4
    - 4.0 – 4.4 is rounded down to 4 and >4.4 – 4.9 is rounded up to 5
    - 5.0 – 5.5 is rounded down to 5 and >5.5 – 5.9 is rounded up to 6

The recommended norms for the cadres, doctors, registered nurses, enrolled nurses, pharmacists, and pharmacist assistants are shown in Tables 6-11, as applicable to each facility type. Note that Table 11 describes the *staffing requirements* for dentists per health district and not the *recommended norms* as described for other cadres.

The application of these norms is addressed in the next section.

Table 6: Recommended norms for doctors, based on calculated requirements by type of facility

Facility Type	Calculated Requirement for Doctors	# Facilities	Percentage	Recommended Requirement/ Norm
District Hospitals (n=29)	2.00 - 6.99	8	28%	5
	7.00 - 12.99	13	45%	10
	13.00 - 17.99	6	21%	15
	21.02	1	3%	21
	26.05	1	3%	26
Intermediate Hospitals (n=5)	69 (Onandjokwe)	1	20%	69
	78 (Rundu)	1	20%	78
	89 (Windhoek Central)	1	20%	89
	121 (Oshakati)	1	20%	121
	157 (Katutura)	1	20%	157

Table 7: Recommended norms for registered nurses, based on calculated requirements by type of facility

Facility Type	Calculated Requirement for Registered Nurses	# Facilities	Percentage	Recommended Requirement/ Norm
Clinics (n=278)	0.00 - 3.00	210	76%	2
	3.01 - 5.00	37	13%	4
	5.01 - 9.00	24	9%	7
	9.01 - 14.04	12	4%	11
Health Centres (n=34)	2.00 - 7.00	17	50%	4
	7.01 - 13.00	13	38%	9
	13.01 - 33.00	6	18%	19
	54 (Katutura Health Centre)*	1	3%	54*
District Hospitals (n=29)	9.00	1	3%	9
	9.01- 33.00	7	24%	25
	38.01 - 53.00	11	38%	44
	53.01 - 63.00	4	14%	59
	68.00 - 101.00	6	21%	87
Intermediate Hospitals (n=5)	135 (Rundu)	1	20%	135
	251 (Onandjokwe)	1	20%	251
	298 (Oshakati)	1	20%	298
	318 (Windhoek Central)	1	20%	318
	407 (Katutura)	1	20%	407

*This facility was an outlier, requiring more nurses than the recommended norms.

Table 8: Recommended norms for enrolled nurses, based on calculated requirements by type of facility

Facility Type	Calculated Requirement for Enrolled Nurses	# Facilities	Percentage	Recommended Requirement/ Norm
Clinics (n=278)	0.00 - 3.00	136	49%	2
	3.01 - 6.00	86	31%	4
	6.01 - 11.00	42	15%	8
	9.01 - 26.88	19	7%	16
Health Centres (n=34)	2.00 - 4.00	15	44%	2
	4.01 - 8.00	18	53%	5
	8.01 - 12.00	2	6%	10
	23 (Oshakati Health Centre)*	1	3%	23*
	26 (Katutura Health Centre)*	1	3%	26*
District Hospitals (n=29)	2 (Karasburg District Hospital)	1	3%	2
	2.00 - 13.00	6	21%	9
	13.01 - 22.00	7	24%	18
	22.00 - 30.00	9	31%	25
	30.01 - 60.05	6	21%	44
Intermediate Hospitals (n=5)	78 (Rundu)	1	20%	78
	146 (Onandjokwe)	1	20%	146
	191 (Oshakati)	1	20%	191
	205 (Windhoek Central)	1	20%	205
	260 (Katutura)	1	20%	260

*These facilities were outliers, requiring more nurses than the recommended norms.

Table 9: Recommended norms for pharmacists, based on calculated requirements by type of facility

Facility Type	Calculated Requirement for Pharmacists	# Facilities	Percentage	Recommended Requirement/ Norm
District Hospitals (n=29)	2.00 - 4.00	13	45%	3
	4.01 - 6.10	16	55%	4
Intermediate Hospitals (n=5)	7 (Rundu)	1	20%	7
	10 (Windhoek Central)	1	20%	10
	10 (Onandjokwe)	1	20%	10
	10 (Oshakati)	1	20%	10
	13 (Katutura)	1	20%	13

Table 10: Recommended norms for pharmacist assistants, based on calculated requirements by type of facility

Facility type	Calculated Requirement for Pharmacist Assistants	# Facilities	Percentage	Recommended Requirement/ Norm
Clinics (n=278)	0.00 - 1.00	260	94%	1
	1.01 - 2.64	23	8%	2
Health Centres (n=34)	1.00 - 2.00	27	79%	1
	2.01 - 4.00	9	27%	2
	12 (Katutura Health Centre)	1	3%	8
District Hospitals (n=29)	2.00 - 5.00	17	59%	3
	5.01 - 7.00	9	31%	5
	7.01 - 8.15	3	10%	7
Intermediate Hospitals (n=5)	9 (Rundu)	1	20%	9
	10 (Windhoek Central)	1	20%	10
	13 (Onandjokwe)	1	20%	13
	15 (Katutura)	1	20%	15
	19 (Oshakati)	1	20%	19

Table 11: Recommended staffing for dentists by health district (June–September 2014)

Region	Dental District	Existing Staff	Calculated Requirement	WISN Ratio
Caprivi	Katima Mulilo	3	1.16	2.59
Erongo	Usakos	0	0.78	0.00
Erongo	Omaruru	0	1.16	0.00
Erongo	Swakopmund	2	1.98	1.01
Erongo	Walvis Bay	3	1.06	2.83
Hardap	Mariental	3	2.08	1.44
Hardap	Rehoboth	0	0.76	0.00
Hardap	Aranos	0	0.78	0.00
Karas	Keetmanshoop	5	2.16	2.31
Karas	Luderitz	0	0.79	0.00
Kavango	Rundu	5	2.14	2.34
Khomas	Windhoek	8	3.51	2.28
Kunene	Khorixas	2	0.76	2.63
Kunene	Opuwo	3	1.14	2.63
Ohangwena	Eenhana	3	1.55	1.94
Ohangwena	Engela	2	1.6	1.25
Ohangwena	Okongo	0	0.9	0.00
Omaheke	Gobabis	2	1	2.00

Region	Dental District	Existing Staff	Calculated Requirement	WISN Ratio
Omusati	Okahao	0	0.8	0.00
Omusati	Oshikuku	0	0.79	0.00
Omusati	Outapi	3	1.15	2.61
Oshana	Oshakati	12	4.07	2.95
Oshikoto	Onandjokwe	3	2.23	1.35
Oshikoto	Tsumeb	3	1.35	2.22
Otjozondjupa	Grootfontein	0	0.8	0.00
Otjozondjupa	Okakarara	0	0.76	0.00
Otjozondjupa	Otjiwarongo	6	1.83	3.28

POLICY RECOMMENDATIONS

The findings of the WISN application in Namibia demonstrate both staff shortages and considerable inequity in staffing. The lack of staff is most profound for doctors and pharmacists at all relevant levels, whereas the greatest inequity in staffing is for nurses in clinics. Some clinics were found to offer the same amount of care as large health centres but with only one or two nurses in their staff establishment. Little or no correlation exists between the workload of a health facility and its staffing.

The degree of severity of the staff shortages and inequities in staff distribution in relation to workload raises serious questions about the quality of health services that overburdened health workers in poorly staffed facilities can provide. Namibia's vast distances and relatively low population densities create considerable challenges for MoHSS efforts to balance health care quality, equity, and efficiency. In this context, a range of policy responses is required to address the important human resources challenges.

Immediate Actions

1. **Redistribute existing staff**.
   Existing staff should be redistributed so that the staff numbers are better in line with workloads. Where this can be done, it will relieve workload pressure in understaffed facilities. Such reallocation of staff and posts, if carefully done, will not necessarily have a noticeable negative impact on health service provision in the relatively overstaffed facilities.

2. **Review health facility classifications**.
   Both the field visits done during WISN application and the WISN findings show that the distinction between different types of facilities is not always evident, especially for health centres and clinics. In theory, the difference between a health centre and a clinic has to do with the expected provision of inpatient care by health centres. In practice, however, most health centres have insufficient staff to provide overnight inpatient services. Instead, any patient requiring such services is transferred within the first 24 hours. The classification of facility types, therefore, should be reviewed, and consideration given to creating sub-categories within the "health centre" and "clinic" categories. This could, for example, include

two levels of health centres (one with and one without beds) and two levels of clinics. Following the reclassification, the services that these different facility levels would be expected to provide would need to be determined anew. The standards for staffing, equipment, and capital infrastructure also should be redefined accordingly. The WISN results suggest that it might be important to allocate a pharmacist assistant to clinics and at least one pharmacist assistant to health centres, for example.

3. **Introduce a competency-based training approach**.
   New demands are placed on both preservice and in-service training programmes when new staff categories are introduced or current scopes of work are changed. The introduction of competency-based training for new cadres or for existing training programmes that have not yet adopted a competency-based approach is an important policy change to consider.

4. **Base all policies on health service priorities and appropriate health teams**.
   Resolving all of the country's human resources for health challenges at the same time is impossible. Thus, all policy decisions should be based, first and foremost, on Namibia's health service priorities. The health service priorities must determine how and in which order policy-makers should tackle the various challenges of staff shortages and inequities. Human resources policies also should consider which *teams* of health workers are required to address the designated priorities rather than examining each staff category in isolation. Reducing maternal deaths, for example, is one of the most important health sector priorities, and increasing the availability of Caesarean section capability in key health facilities is among the most important policy responses. Ensuring such a capacity requires that a team of health workers with the necessary competence in surgery, anesthesia, and immediate postnatal care of both mother and baby is available 24 hours a day, seven days a week.

Mid-Term Actions

1. **Promote task sharing based on scope of practice and competency**.

   A review of the scopes of work and reallocation of tasks between different staff cadres is another important policy option. Scopes of work are frequently outdated and/or based on models that originate in other countries or health care settings. Taking a fresh look at the way key tasks are presently allocated to different staff categories should be based on the real challenges Namibia faces in staffing its health facilities currently and in the future. It should ignore old notions of what one staff category "should" or "should not" be allowed to do. Each important task should be allocated to the least trained staff category that can competently perform it. The following types of questions can help in such a review:

   - Are all workload components, as defined in WISN, essential for quality service provision?
   - Do they all require the level of training and experience that the current staff category performing them possesses?
   - If not, what is the staff category that could competently perform each workload component now or that could be trained to do so in the future?

After reallocating tasks, WISN calculations need to be rerun with the new activity standards for each relevant cadre so that a sufficient number of staff is assigned for the new tasks.

2. **Undertake a health information system review**.
   There is a need to review the national health information policy that defines the data to be collected and analysed at the national level. As mentioned, data on certain important workload components (e.g., major and minor operations) were found to be unavailable at the national level, even when they were collected at the facility level.
3. **Consider creating a new cadre of health worker or a specialized track within an existing cadre in certain key areas**.
   Many countries have long trained and employed a variety of midlevel cadres to relieve the work burden of doctors. Clinical Officers in East Africa, Clinical Associates in South Africa, Health Extension Officers in Papua New Guinea, and Physician's Assistants in the USA are just a few examples. Another option is to provide advanced training and qualification for existing cadres to fill staffing gaps and provide career paths. For example, training some nurses in anaesthesia and converting them into a new role as "nurse anaesthetists" and then posting them appropriately could provide much needed anaesthetic skills for operating theatres that lack them. This and other similar options obviously require decisions on how these staff will be compensated and what legal/regulatory provisions must be put in place to allow them to work in their new or expanded role.

Long-Term Actions

1. **Increase the number of staff posts**.
   While the first obvious policy consideration is often to increase posts of the cadres in shortest supply, this is generally neither quick nor easy to accomplish. Such an increase requires both adequate budgetary resources to pay for the additional posts and the availability of the required, trained cadres in the domestic or international labour market. This makes a rapid increase in staff numbers difficult to achieve, even when good justifications can be provided to relevant government entities, such as the ministries of Finance and Public Services. Filling the gap of too few doctors in Namibia, for example, by employing more would have to be done mainly by hiring from the international labour market or by entering into agreements with other countries, such as Cuba, because Namibia's own medical school is not yet producing graduates. The cost that such a policy option would place on the public purse and the challenges of ensuring that the expatriate doctors work well in the domestic setting are important policy concerns. Therefore, it is advisable also to carefully examine other policy options that go beyond increasing numbers.

Additional Uses for WISN Findings

The initial purpose of the WISN findings was to assist the MoHSS with workforce estimates to ensure optimal staffing at public health facilities. While the data primarily highlighted severe shortages of doctors and pharmacists, inflexible staffing norms, and inequitable staffing distributions, the WISN findings also can be used to guide additional HRH decisions. A comprehensive peer-reviewed article describes various policy options (Wesson et al. 2015).

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APPENDIX 1: STEPS OF THE NATIONAL WISN APPLICATION IN NAMIBIA

Activities conducted	Timeframe	Responsible group
Establishing the WISN Task Force	July 2012	Ms. Julia Nangombe; Mr. Angrey Tjipura; Dr. Pamela McQuide; Dr. Maina Wamgubu; Dr. Grace Namaganda; Lucille Van der Westhuizen; Raphael Muphure; Mutenda Barth; Lydia Nghilundilua
Pilot application of WISN	July – August 2012	Kavango region
National validation meeting	October 23-24, 2012	100 participants, including central level senior staff and Regional CMOs, PMOs, matrons, clinical medical officers, nurses, pharmacists, pharmacy assistants from 12/13 regions (all but Caprivi) in the Safari Hotel, Windhoek
Training workshop for data entry staff	22 November 2012	25 data entrants, Hilton Hotel, Windhoek
Field verification of centrally available data against primary data sources in 4 regions	November 28—30, 2012; December 2-6, 2012	Data validation team:
		MoHSS: Julia Nangombe, Angrey Tjipura and Anna Tobias
		IntraHealth: Dr. Pamela McQuide, Jennifer Mieze, and Dr. Riitta-Liisa Kolehmainen-Aitken
		Four regions: Erongo, Omusati, Omaheke and Karas
		The whole team in Erongo, then split into three teams to visit the other three regions.
Revision of activity standards to adjust for data availability	January to March 2013	WISN Task Force,
Responding for WISN software challenges		Interns at IntraHealth (IT students at a local university), supervised by IntraHealth's HRIS Advisor
WISN data runs	March 8, 13, 15, April 25, May 22, 2013	Interns at IntraHealth, supervised by IntraHealth's HRIS Advisor
Data analysis	April 25-28, 2013	Dr. Riitta-Liisa Kolehmainen-Aitken
Feedback to MoHSS senior staff	Regularly through the RTF. February 2013 in the MoHSS National Management Development Forum; July 2013; MoHSS Strategic Management Retreat;	Technical task force

Activities conducted	Timeframe	Responsible group
Validation of pharmacy activity standards	8 February 2014	Technical task force, expert working group
WISN data runs for pharmacy	April 2014	Systems Developer, IntraHealth, supervised by HRIS Advisor
Data analysis for pharmacy	6 May 2014	Technical task force
Pharmacy data validation with Chief Pharmacist	8 May 2014	Technical task force
Activity standard setting for dentists	19 June 2014	Technical task force, expert working group
Verification of available data and primary data collection on theatre data	June - July 2014	Technical task force
Activity standard setting for disaggregation of registered and enrolled nurses	June - July 2014	Technical task force, expert working group
Development of self-adminstered time-motion study to investigate components of routine nursing care	July 2014	Technical task force
Adminstration, data collection and analysis of time-motion study	July - September 2014	Technical task force, newly trained WISN ToT's
WISN data runs for dentists	July - August 2014	Systems Developer, IntraHealth, supervised by HRIS Advisor
Data analysis for dentists	August - September 2014	Technical task force

Activities conducted	Timeframe	Responsible group
WISN data runs for disaggregation of registered and enrolled nurses	October 2014	Systems Developer, IntraHealth, supervised by HRIS Advisor
Data analysis for disaggregation of registered and enrolled nurses	August - September 2014	Technical task force
Feedback to MoHSS senior staff on pharmacy, dental and nursing outcomes	Restructuring Committee Meeting on 24 October 2014 - received additional guidance on pharmacy and nursing activity standards	Technical task force
Data collection and analysis of how to handle specialty and high care wards	June - October 2014	Technical task force, newly trained WISN ToT's
Refinement and validation of pharmacy activity standards	December 2014	Technical task force, expert working group
Refinement and validation of activity standards of disaggregation of registered and enrolled nurses	January - February 2015	Technical task force, expert working group, representatives from training institutions
WISN data runs for pharmacy	January - February 2015	Systems Developer, IntraHealth, supervised by HRIS Advisor
Data analysis for pharmacy	February 2015	Technical task force
Feedback to MoHSS senior staff on pharmacy outcomes	March 2015	Technical task force

Activities conducted	Timeframe	Responsible group
WISN data runs for disaggregation of registered and enrolled nurses	April - June 2015	Systems Developer, IntraHealth, supervised by HRIS Advisor
Data analysis for disaggregation of registered and enrolled nurses	July 2015	Technical task force
Feedback to MoHSS senior staff	MoHSS Restructuring Retreat - 15 July 2015	Technical task force
Compiling of National Report	August 2015	Technical task force

APPENDIX 2: ACTIVITY STANDARDS FOR NURSING

Table 1: Activity standards for registered and enrolled nurses in intermediate hospitals in Namibia (June 2015)

NURSES ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR INTERMEDIATE HOSPITALS				
Activities	**Activity Standard EN**	**Workload data**	**Activity Standard RN**	**Workload data**
Admit a patient	1 hours / admission	30% of Total admissions	1 hours / admission	70% of Total admissions
Caesarean section	330 minutes / c-section	40% of Total caesarean sections	330 minutes / c-section	60% of Total caesarean sections
Death: Last office	105 minutes / death	50 % of Total deaths	105 minutes / death	50 % of Total deaths
Discharge a patient	1 hour / discharge	50% of Total discharges	1 hour/discharge	50% of Total discharges
Do a DBS blood test	15 minutes / DBS test	40% of Total DBS tests done	15 minutes / DBS test	60% of Total DBS tests done
Enroll in ART care and treatment	N / A	N / A	15 minutes / patient enrolled to ART	100% of Total enrolled to ART
Give injections	10 minutes / injection	40% of Total injections, other than immunisations and FP	10 minutes / injection	60% of Total injections, other than immunisations and FP
Immediate post-natal care of mother and baby	120 minutes / delivery	40% of Total normal deliveries + forceps + vacuum + born before arrival, excluding C/S	120 minutes / delivery	60% of Total normal deliveries + forceps + vacuum + born before arrival, excluding C/S
Immunisation of children under one year old	N / A	N / A	10 minutes / immunisation	100% of Total immunisations of under-one year olds – all vaccines, all doses
Immunisation of women of reproductive age	5 minutes / immunisation	40% of Total tetanus toxoid immunisations for women aged 15 – 49 years – all doses	5 minutes / immunisation	60% of Total tetanus toxoid immunisations for women aged 15 – 49 years – all doses
Major operation	535 minutes / operation	40% of Total major operations	535 minutes / operation	60% of Total major operations
Minor operation and male circumcisions	N / A	N / A	105 minutes / operation	100% of Total minor operations + male circumcisions

Monitor labour	N / A	N / A	180 minutes / delivery	100% of Total normal deliveries (normal +forceps +vacuum + C/S)
Normal delivery: assistant midwife	N / A	N / A	45 minutes/delivery	100% of Total normal deliveries (normal +forceps +vacuum - C/S)
Normal delivery: midwife	N / A	N / A	45 minutes/delivery	100% of Total normal deliveries (normal +forceps +vacuum - C/S)
OPD procedure	30 minutes / OPD procedure	40% of 70% of Total OPD procedures	30 minutes / OPD procedure	60% of 70% of Total OPD procedures
Post-test counselling of VCT clients	20 minutes / client	40% of 10% of Total VCT clients post-test counselled	20 minutes / client	60% of 10% of Total VCT clients post-test counselled
Pre-test counselling of VCT clients	15 minutes / patient	40% of 10% of Total VCT clients pre-test counselled	15 minutes / patient	60% of 10% of Total VCT clients pre-test counselled
Provide ART care and treatment	N / A	N / A	30 minutes / ART revisit	100% of Total ART revisits
Provide first ANC visit and PMTCT counselling and testing	45 minutes / client	40% of Total clients who received PMTCT	45 minutes / client	60% of Total clients who received PMTCT
Provide TB DOTS	20 minutes / DOTS visit	40% of 40% of Total DOTS visits	20 minutes / DOTS visit	60% of 40% of Total DOTS visits
Reproductive health screening (pap smear, breast exam, etc.)	N / A	N / A	20 minutes / pap smear	100% of Total pap smears
Routine nursing care (high dependent patients)	6 hours / inpatient day	40% of 25% of Total inpatient days*	6 hours / inpatient day	60% of 25% of Total inpatient days*
Routine nursing care (self care patients)	2 hours / inpatient day	40% of 75% of Total inpatient days*	2 hours / inpatient day	60% of 75% of Total inpatient days*
Screen and treat outpatients	30 minutes / OPD visit	40% of Total outpatients (OPD 1st visits and revisits)	30 minutes / OPD visit	60% of Total outpatients (OPD 1st visits and revisits)
Take lab specimens, including ART	N / A	N / A	10 minutes / lab specimen	100% of Total lab specimens taken, including ART

Category Allowance Standards for all nurses in Intermediate hospitals		
Activities	**Activity Standard EN**	**Activity Standard RN**
In-service training	2 hours / month	2 hours / month
Monthly staff meeting	2 hours / month	2 hours / month
Weekly ward / clinical meeting	30 minutes / week	30 minutes / week

Individual Allowance Standards for all nurses in Intermediate hospitals			
Activities	**# of staff in IH**	**Activity Standard EN**	**Activity Standard RN**
Annual report	12	N / A	5 days / year
Check and control schedule 3 & 4 drugs	12	N / A	60 minutes / week
Check emergency trolley	12	30 minutes / day	30 minutes / day
Collect and escort referred patients	2	N / A	6 hours / day
Compile monthly statistics	12	N / A	2 hours / month
Control duty roster	1	N / A	120 minutes / week
Develop a duty roster	13	N / A	3 hours / week
Dispense medicines at OPD after hours	2	N / A	15 hours / week
Duty delegation	12	N / A	10 minutes / day
Grand Ward Rounds	2	N / A	2 hours/week
Inventory taking	12	N / A	60 minutes / month
IPC & QA Meetings	12	48 minutes / month	72 minutes / month
Management meeting	12	N / A	2 hours / week
Maternal / perinatal death review	2	N / A	2 hours / week
Monthly auditing of patient files	12	N / A	4 hours / month
Mortality meeting	12	2 hours/month	2 hours/month
Order medicines and stock	12	N / A	120 minutes / week
Quarterly report	12	N / A	2 days / quarter
Regional mortality and morbidity meeting	12	N / A	4 hours / month
Statutory medical exams (pre-employment, kitchen staff)	1	N / A	4 hours / week
Supervise students	12	N / A	60 minutes / day
Supervise subordinates	12	N / A	60 minutes / day
Therapeutic meeting	12	N / A	2 hours / month

Table 2: Activity standards for registered and enrolled nurses in district hospitals in Namibia (June 2015)

NURSES ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR DISTRICT HOSPITALS				
Activities	**Activity Standard EN**	**Workload data EN**	**Activity Standard RN**	**Workload data RN**
Admit a patient	1 hour / admission	30% of Total admissions	1 hour / admission	70% of Total admissions
Caesarean section	330 minutes / c-section	40% of Total caesarean sections	330 minutes / c-section	60% of Total caesarean sections
Death: Last office	105 minutes / death	50 % of Total deaths	105 minutes / death	50 % of Total deaths
Discharge a patient	1 hour / discharge	50% of Total discharges	1 hour / discharge	50% of Total discharges
Do a DBS blood test	15 minutes / DBS test	40% of Total DBS tests done	15 minutes / DBS test	60% of Total DBS tests done
Enroll in ART care and treatment	N / A	N / A	15 minutes / patient enrolled to ART	20% of Total enrolled to ART
Give injections	10 minutes / injection	40% of Total injections, other than immunisations and FP	10 minutes / injection	60% of Total injections, other than immunisations and FP
Immediate post-natal care of mother and baby	120 minutes / delivery	40% of Total normal deliveries + forceps + vacuum + born before arrival, excluding C/S	120 minutes / delivery	60% of Total normal deliveries + forceps + vacuum + born before arrival, excluding C/S
Immunisation of children under one year old	N / A	N / A	10 minutes / immunisation	100% of Total immunisations of under-one year olds – all vaccines, all doses
Immunisation of women of reproductive age	5 minutes / immunisation	40% of Total tetanus toxoid immunisations for women aged 15 – 49 years – all doses	5 minutes / immunisation	60% of Total tetanus toxoid immunisations for women aged 15 – 49 years – all doses
Major operation	535 minutes / operation	40% of Total major operations	535 minutes / operation	60% of Total major operations
Minor operation and male circumcisions	N / A	N / A	105 minutes / operation	100% of Total minor operations + male circumcisions
Monitor labour	N / A	N / A	180 minutes / delivery	100% of Total normal deliveries (normal +forceps +vacuum + C/S)

Normal delivery: assistant midwife	N / A	N / A	45 minutes/delivery	100% of Total normal deliveries (normal +forceps +vacuum - C/S)
Normal delivery: midwife	N / A	N / A	45 minutes/delivery	100% of Total normal deliveries (normal +forceps +vacuum - C/S)
OPD procedure	30 minutes / OPD procedure	40% of 70% of Total OPD procedures	30 minutes / OPD procedure	60% of 70% of Total OPD procedures
Post-test counselling of VCT clients	20 minutes / client	40% of 10% of Total VCT clients post-test counselled	20 minutes / client	60% of 10% of Total VCT clients post-test counselled
Pre-test counselling of VCT clients	15 minutes / patient	40% of 10% of Total VCT clients pre-test counselled	15 minutes / patient	60% of 10% of Total VCT clients pre-test counselled
Provide ART care and treatment	N / A	N / A	30 minutes / ART revisit	100% of Total ART revisits
Provide first ANC visit and PMTCT counselling and testing	45 minutes / client	40% of Total clients who received PMTCT	45 minutes / client	60% of Total clients who received PMTCT
Provide TB DOTS	20 minutes / DOTS visit	40% of 40% of Total DOTS visits	20 minutes / DOTS visit	60% of 40% of Total DOTS visits
Routine nursing care (high dependent patients)	6 hours / inpatient day	40% of 20% of Total inpatient days*	6 hours / inpatient day	60% of 20% of Total inpatient days*
Routine nursing care (self care patients)	2 hours / inpatient day	40% of 80% of Total inpatient days*	2 hours / inpatient day	60% of 80% of Total inpatient days*
Screen and treat outpatients	30 minutes / OPD visit	40% of Total outpatients (OPD 1st visits and revisits)	30 minutes / OPD visit	60% of Total outpatients (OPD 1st visits and revisits)
Reproductive health screening (pap smear, breast exam, etc.)	N / A	N / A	20 minutes / pap smear	100% of Total pap smears
Take lab specimens, including ART	N / A	N / A	10 minutes / lab specimen	100% of Total lab specimens taken, including ART

Category Allowance Standards for all nurses in district hospitals		
Activities	**Activity Standard EN**	**Activity Standard RN**
In-service training	2 hours / month	2 hours / month
Monthly staff meeting	2 hours / month	2 hours / month
Weekly ward / clinical meeting	30 minutes / week	30 minutes / week

Individual Allowance Standards for all nurses in district hospitals			
Activities	**# of staff in DH**	**Individual Allowance Standard EN**	**Activity Standard RN**
Annual report	1	N / A	5 days / year
Check and control schedule 3 & 4 drugs	4	N / A	30 minutes / week
Check emergency trolley	4	30 minutes / day	30 minutes / day
Collect and escort referred patients	1	N / A	4 hours / day
Compile monthly statistics	4	N / A	2 hours / month
Control duty roster	1	N / A	120 minutes / week
Develop a duty roster	4	N / A	1 hour / week
Dispense medicines at OPD after hours	2	N / A	15 hours / week
Duty delegation	4	N / A	10 minutes / day
Grand ward rounds	2	N / A	2 hours/week
Inventory taking	4	N / A	60 minutes / month
IPC & QA Meetings	2	48 minutes / month	72 minutes / month
Management meeting	4	N / A	2 hours / week
Maternal / perinatal death review	1	N / A	2 hours / week
Monthly auditing of patient files	4	N / A	4 hours / month
Mortality meetings	2	2 hours/month	2 hours/month
Order medicines and stock	4	N / A	60 minutes / week
Quarterly report	1	N / A	2 days / quarter
Regional mortality and morbidity meeting	4	N / A	4 hours / month
Statutory medical exams	1	N / A	4 hours / week
Supervise students	2	N / A	60 minutes / day
Supervise subordinates	4	N / A	60 minutes / day
Therapeutic meeting	4	N / A	2 hours / month

Table 3: Activity standards for registered and enrolled nurses in health centres in Namibia (June 2015)

NURSES ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR HEALTH CENTRES				
Activities	**Activity Standard EN**	**Workload EN**	**Activity Standard RN**	**Workload RN**
Admit a patient	20 minutes / admission	40% of Total admissions	20 minutes / admission	60% of Total admissions
ANC 1st visit	30 minutes / ANC 1st visit	80% of Total ANC 1st visits	30 minutes / ANC 1st visit	20% of Total ANC 1st visits
ANC revisit	20 minutes / ANC revisit	80% of Total ANC revists	20 minutes / ANC revisit	20% of Total ANC revists
Conduct a daily ward round	10 minutes / inpatient	40% of Total admissions	10 minutes / inpatient	60% of Total admissions
Death: Last office	60 minutes / death	40% of Total deaths	60 minutes / death	60% of Total deaths
Discharge a patient	10 minutes / discharge	40% of Total discharges	10 minutes / discharge	60% of Total discharges
Do a DBS blood test	15 minutes / DBS test	40% of Total DBS tests	15 minutes / DBS test	60% of Total DBS tests
Dressing wounds	20 minutes / dressing	40% of Total dressings	20 minutes / dressing	60% of Total dressings
Family Planning 1st visit	20 minutes / FP 1st visit	40% of Total FP 1st visits	20 minutes / FP 1st visit	60% of Total FP 1st visits
Family Planning revisits	10 minutes / FP revisit	40% of Total FP revisits	10 minutes / FP revisit	60% of Total FP revisits
Give injections	10 minutes / injection	40% of Total injections, other than immunisations & FP	10 minutes / injection	60% of Total injections, other than immunisations & FP
Growth monitoring of children (including NACS programme)	30 minutes / child	40% of Total children growth monitored	30 minutes / child	60% of Total children growth monitored
Immediate post-natal care of mother and baby (immediately after delivery to discharge)	60 minutes / delivery	40% of Total normal + forceps + vacuum + emergency deliveries + born before arrival	60 minutes / delivery	60% of Total normal + forceps + vacuum + emergency deliveries + born before arrival
Immunisation of children under one year old	N/A	N/A	10 minutes / immunisation	Total immunisations of under-one year olds – all vaccines, all doses
Immunization of women of reproductive age	5 minutes / immunisation	40% of Total tetanus toxoid immunisations for women aged 15-49 years - all doses	5 minutes / immunisation	60% of Total tetanus toxoid immunisations for women aged 15-49 years - all doses
Intergrate management of adult illness (IMAI)	N/A	N/A	30 minutes / HIV/AIDS revisit	80% of Total HIV/AIDS revists + 80% of Enrolled in HIV/AIDS care and treatment

Monitor and manage emergency delivery	180 minutes / emergency delivery	40% of Total emergency deliveries	180 minutes / emergency delivery	60% of Total emergency deliveries
Monitor and manage normal delivery	240 minutes / normal delivery	40% of Total normal deliveries	240 minutes / normal delivery	60% of Total normal deliveries
OPD procedure	30 minutes / procedure	80% of Total OPD procedures	30 minutes / procedure	20% of Total OPD procedures
Post-natal visits (mother and baby)	40 minutes / post-natal visit	40% of Total post-natal visits	40 minutes / post-natal visit	60% of Total post-natal visits
Post-test counselling of VCT clients	20 minutes / VCT client	40% of 10% of Total VCT clients post-test counselled	20 minutes / VCT client	60% of 10% of Total VCT clients post-test counselled
Pre-test counselling of VCT clients	15 minutes / VCT client	40% of 10% of Total VCT clients pre-test counselled	15 minutes / VCT client	60% of 10% of Total VCT clients pre-test counselled
Provide ART care and treatment (urine test, FP, weight, pill count, ongoing-counselling for default patients, blood specimens, NACS, TB profilaxis)	N/A	N/A	30 minutes / ART revisit	20% of Total ART revisits + 20% of Enrolled in care and treatment
Provide PMTCT counselling and testing (pre and post for PMTCT programme including testing)	30 minutes / patient	40% of Total clients who received PMTCT	30 minutes / patient	60% of Total clients who received PMTCT
Provide TB DOTS	20 minutes / DOTS visit	40% of 40% of Total DOTS visits	20 minutes / DOTS visit	60% of 40% of Total DOTS visits
Referral of patients (escorting of patients)	2 hours / referral	40% of Total referrals	2 hours / referral	60% of Total referrals
Reproductive health screening (pap smear, breast exam, etc.)	10 minutes / pap smear	Total pap smears	20 minutes / pap smear	Total pap smears
Routine nursing care	30 minutes / inpatient	40% of Total admissions	30 minutes / inpatient	60% of Total admissions
Screen and treat outpatients	30 minutes / outpatient	40% of Total outpatients (OPD 1st visits and revisits)	30 minutes / outpatient	60% of Total outpatients (OPD 1st visits and revisits)
Take lab speciments, including ART	N/A	N/A	10 minutes / lab specimen	Total lab specimens taken, including ART

Category Allowance Standards for nurses in health centres		
Activities	**Activity Standard EN**	**Activity Standard RN**
African vaccination week	5 days / year	5 days / year
Auditing of patient records		2 hours / month
Handover of shift	30 minutes /day	30 minutes /day
Health education	30 minutes / day	30 minutes / day
In-service training	2 hours / month	2 hours / month
Maternal child health days	5 days / year	5 days / year
Morning briefings	15 minutes / day	15 minutes / day
Response to outbreaks (including awareness, vaccinations, etc)	5 days / year	5 days / year
Staff meeting	1 hour / month	1 hour / month
Tracing of patients	1.5 hours / week	1.5 hours / week

Individual Allowance Standards for nurses in health centres and clinics			
Activities	**# of staff in Health Centres**	**Activity Standard EN**	**Activity Standard RN**
Active surveillance of IDSR priority diseases	1	N/A	20 minutes/day
Annual report	1	N/A	4 days / year
Check emergency trolley	1	N/A	10 minutes/day
Check schedule 3 and 4 drugs	2	N/A	10 minutes / day
Collect and escort referred patients	1	N/A	10 minutes / day
Compile monthly statistics (includes all programmes)	1	N/A	3 hours / month
Controlling of overtime forms	1	N/A	1.2 hours / month
DCC Meeting	1	N/A	5 hours / month
Develop duty roster	1	N/A	20 minutes / week
Infection control and prevention meeting	1	2 hours / month	2 hours / month
Inventory management (fixed asset counts)	1	N/A	40 minutes / quarter
Maternal and death review meetings	1	N/A	2 hours / month
Order materials and stock	1	N/A	40 minutes / quarter
Pharmacy stock taking and ordering medicine	1	N/A	15 minutes / week
PMIS report	1	N/A	5 hours / quarter
Quarterly report	1	N/A	120 minutes / quarter
Supervise subordinates	1	N/A	2 hours / week
Supervision of student nurses	1	N/A	2 hours / week

Table 4: Activity standards for registered and enrolled nurses in clinics in Namibia (June 2015)

NURSES ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR CLINICS				
Activities	**Activity Standard EN**	**Workload EN**	**Activity Standard RN**	**Workload RN**
ANC 1st visit	30 minutes / ANC 1st visit	80% of Total ANC 1st visits	30 minutes / ANC 1st visit	20% of Total ANC 1st visits
ANC revisit	20 minutes / ANC revisit	80% of Total ANC revists	20 minutes / ANC revisit	20% of Total ANC revists
Do a DBS blood test	15 minutes / DBS test	40% of Total DBS tests	15 minutes / DBS test	60% of Total DBS tests
Dressing wounds	20 minutes / dressing	40% of Total dressings	20 minutes / dressing	60% of Total dressings
Family Planning 1st visit	20 minutes / FP 1st visit	40% of Total FP 1st visits	20 minutes / FP 1st visit	60% of Total FP 1st visits
Family planning revisit	10 minutes / FP revisit	40% of Total FP revists	10 minutes / FP revisit	60% of Total FP revists
Give injections	10 minutes / injection	40% of Total injections, other than immunisations & FP	10 minutes / injection	60% of Total injections, other than immunisations & FP
Growth monitoring of children (including NACS programme)	30 minutes / child	40% of Total children growth monitored	30 minutes / child	60% of Total children growth monitored
Immediate post-natal care of mother and baby (immediately after delivery to discharge)	60 minutes / delivery	40% of Total normal + forceps + vacuum + emergency deliveries + born before arrival	60 minutes / delivery	60% of Total normal + forceps + vacuum + emergency deliveries + born before arrival
Immunisation of children under one year old	N/A	N/A	10 minutes / immunisation	Total immunisations of under-one year olds – all vaccines, all doses
Immunization of women of reproductive age	5 minutes / immunisation	40% of Total tetanus toxoid immunisations for women aged 15-49 years - all doses	5 minutes / immunisation	60% of Total tetanus toxoid immunisations for women aged 15-49 years - all doses
Integrated management of adult illness (IMAI)	N/A	N/A	30 minutes / HIV/AIDS revisit	80% of Total HIV/AIDS revists + 80% of Enrolled in HIV/AIDS care and treatment
Monitor and manage emergency delivery	180 minutes / emergency delivery	40% of Total emergency deliveries	180 minutes / emergency delivery	60% of Total emergency deliveries
OPD procedure	30 minutes / procedure	80% of Total OPD procedures	30 minutes / procedure	20% of Total OPD procedures
Post-natal visits (mother and baby)	40 minutes / post-natal visit	40% of Total post-natal visits	40 minutes / post-natal visit	60% of Total post-natal visits

Post-test counselling of VCT clients	20 minutes / VCT client	40% of 10% of Total VCT clients post-test counselled	20 minutes / VCT client	60% of 10% of Total VCT clients post-test counselled
Pre-test counselling of VCT clients	15 minutes / VCT client	40% of 10% of Total VCT clients pre-test counselled	15 minutes / VCT client	60% of 10% of Total VCT clients pre-test counselled
Provide ART care and treatment (urine test, FP, weight, pill count, ongoing-counselling for default patients, blood specimens, NACS, TB prophylaxis)	N/A	N/A	30 minutes / ART revisit	20% of Total ART revists + 20% of Enrolled in care and treatment
Provide PMTCT counselling and testing (pre and post for PMTCT programme including testing)	30 minutes/patient	40% of Total clients who received PMTCT	30 minutes/patient	60% of Total clients who received PMTCT
Provide TB DOTS	20 minutes / DOTS visit	40% of 40% of the total DOTS visits	20 minutes / DOTS visit	60% of 40% of the total DOTS visits
Referral of patients (escorting of patients)	2 hours / referral	40% of Total referrals	2 hours / referral	60% of Total referrals
Reproductive health screening (pap smear, breast exam, etc.)	10 minutes / pap smear	Total pap smears	20 minutes / pap smear	Total pap smears
Screen and treat outpatients	30 minutes / outpatient	40% of Total outpatients (OPD 1st visits + revists)	30 minutes / outpatient	60% of Total outpatients (OPD 1st visits + revists)
Take lab speciments, including ART	N/A	N/A	10 minutes / lab specimen	Total lab specimens taken, including ART

Category Allowance Standards for nurses in clinics		
Activities	**Activity Standard EN**	**Activity Standard RN**
African vaccination week	5 days /year	5 days /year
Health education	30 minutes / day	30 minutes / day
In-service training	2 hours / month	2 hours / month
Maternal child health days	5 days /year	5 days /year
Morning briefings	15 minutes / day	15 minutes / day
Staff meeting	1 hour / month	1 hour / month
Tracing of patients	1.5 hours / week	1.5 hours / week

Individual Allowance Standards for nurses in clinics			
Activities	**# of staff in Clinics**	**Activity Standard EN**	**Activity Standard RN**
Active surveillance of IDSR priority diseases	1	N/A	30 minutes / week
Annual report	1	N/A	4 days / year
Check emergency trolley	1	N/A	10 minutes / day
Check schedule 3 and 4 drugs	2	N/A	10 minutes / week
Compile monthly statistics (includes all programmes)	1	N/A	2 hours / month
Controlling of overtime forms	1	N/A	1.2 hours / month
DCC Meeting	1	N/A	5 hours / month
Develop duty roster	1	N/A	10 minutes / month
Infection control and prevention meeting	1	2 hours / month	2 hours / month
Inventory management (fixed asset counts)	1	N/A	40 minutes / quarter
Maternal and death review meetings	1	N/A	2 hours / month
Order materials and stock	1	N/A	20 minutes / week
Pharmacy stock taking and ordering medicine	1	N/A	2 hours / month
Quarterly report	1	N/A	120 minutes / quarter
Supervise subordinates	1	N/A	2 hours / week
Supervision of student nurses	1	N/A	2 hours / week

APPENDIX 3: ACTIVITY STANDARDS FOR DOCTORS

Table 1: Activity standards for doctors in intermediate hospitals in Namibia (June 2015)

DOCTORS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR INTERMEDIATE HOSPITALS		
Activities	**Activity Standard**	**Workload data**
Admit a patient	30 minutes / admission	Total admissions
Discharge a patient	15 minutes / discharge	Total discharges
Confirm death and write the death certificate	15 minutes / death	Total deaths
Conduct a daily ward round	12 minutes / inpatient day	Total inpatient days
Caesarean section	240 minutes / C/S	Total caesarean sections
Major operation	405 minutes / operation	Total major operations
Minor operation and male circumcision	30 minutes / operation or circumcision	Total minor operations plus male circumcisions
OPD visits (OPD 1st visits and OPD revisits)	23 minutes / OPD visit	Total OPD visits (1st and revisits) seen by doctor
OPD procedure	30 minutes / OPD procedure	30% of the total OPD procedures
Take a pap smear	10 minutes / pap smear	Total pap smears
Enroll in ART care and treatment	30 minutes / patient enrolled to ART	Total enrolled to ART
Provide ART care and treatment	15 minutes / ART revisit	20% of total ART revisits

Category Allowance Standards for all doctors in intermediate hospitals	
Activities	**Activity Standard**
Grand ward round	2 hours / week
Minor bedside procedure	60 minutes / day
Outreach activity	n/a
Daily doctors' meeting	30 minutes / day
Weekly clinical meeting / Continuous professional development	1 hour / week
General staff meeting	2 hours / quarter
Tea break	30 minutes / day

Individual Allowance Standards for all doctors in intermediate hospitals		
Activities	**# of staff in IH**	**Activity Standard**
Dialysis of patients	1	12 hours / week
Support supervisory visits	1	5 days / quarter
Office duties (correspondence, visitors, and other administrative duties)	4	3 hours / day
Duty roster	4	3 hours / month
Annual plan and budgeting	4	5 days / quarter
Management meeting	4	8 hours / month
Economising meeting	4	12 hours / month
Therapeutic meeting	4	1 day / quarter
Maternal / perinatal death review	4	2 hours / month
Mortality meeting	4	4 hours / month
Miscellaneous meeting	4	4 hours / month
Annual report writing	4	5 days / year
Quarterly progress report writing	4	2 hours / quarter
Statutory medical exam	2	4 hours / week

Table 2: Activity standards for doctors in district hospitals in Namibia (June 2015)

DOCTORS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR DISTRICT HOSPITALS		
Activities	**Activity Standard**	**Workload data**
Admit a patient	15 minutes / admission	Total admissions
Discharge a patient	10 minutes / discharge	Total discharges
Confirm death and write the death certificate	15 minutes / death	Total deaths
Conduct a daily ward round	10 minutes / inpatient day	Total inpatient days
Caesarean section	210 minutes / C/S	Total caesarean sections
Major operation	225 minutes / operation	Total major operations
Minor operation and male circumcision	30 minutes / operation or circumcision	Total minor operations plus male circumcisions
OPD visits (OPD 1st visits and OPD revisits)	23 minutes / OPD visit	Total OPD visits (1st and revisits) seen by doctor
OPD procedure	30 minutes / OPD procedure	30% of the total OPD procedures
Take a pap smear	10 minutes / pap smear	Total pap smears
Enroll in ART care and treatment	20 minutes / patient enrolled to ART	Total enrolled to ART
Provide ART care and treatment	15 minutes / ART revisit	20% of total ART revisits

Category Allowance Standards for all doctors in district hospitals	
Activities	**Activity Standard**
Grand ward round	2 hours / week
Minor bedside procedure	30 minutes / day
Outreach activity	4 hours / week
Daily doctors' meeting	30 minutes / day
Weekly clinical meeting / Continuous professional development	1 hour / week
General staff meeting	2 hours / quarter
Tea break	30 minutes / day

Individual Allowance Standards for all doctors in district hospitals		
Activities	**# of staff in DH**	**Activity Standard**
Dialysis of patients	n/a	n/a
Support supervisory visits	1	10 days / quarter
Office duties (correspondence, visitors, and other administrative duties)	1	2 hours / day
Duty roster	1	1 hour / month
Annual plan and budgeting	1	4 days / quarter
Management meeting	1	2 hours / month
Economising meeting	1	4 hours / month
Therapeutic meeting	1	1 day / quarter
Maternal / perinatal death review	1	4 hours / month
Mortality meeting	1	4 hours / month
Miscellaneous meeting	1	4 hours / month
Annual report writing	1	10 days / year
Quarterly progress report writing	1	5 hours / quarter
Statutory medical exam	2	4 hour / week

APPENDIX 4: ACTIVITY STANDARDS FOR PHARMACISTS

Table 1: Activity standards for pharmacists in intermediate hospitals in Namibia (June 2015)

PHARMACISTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR INTERMEDIATE HOSPITALS		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	30% of all ART Prescriptions
Dispense to patients	7 min/patient	30% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions
Discharge patients	15 min/patient	100% of all Discharged

Category Allowance Standards for all pharmacists in intermediate hospitals	
Activities	**Activity Standard**
Annual stock taking	32 hours/year
Monthly meeting	2 hours/month
Tea break	30 mins/day
Ward inspection	4 hours/month
Grand ward round	4 hours/week

Individual Allowance Standards for all pharmacists in intermediate hospitals		
Activities	**# of staff in IH**	**Activity Standard**
ABC analysis	1	16 hours/year
Conduct entry test new intake of PA students	2	4 hours/year
Control scheduled medicines and ART	1	5 hours/week
Data management	1	2 hours/month
Disseminate health education and information	1	1 hours/week
Extemporaneous preparation	1	4 hours/week
Identification and management of poison (toxicology)	1	72hours/year
Manage expired and damaged medicines	1	4 hours/month
Manage emergency pharmacy	1	3.5 hours/week
Meetings	1	14 hours/month
Monitor and manage patient medication	1	14 hours/week
Operational research	2	10 days/year
Pharmacy forum	1	32 hours/year
Pharmacy week	1	5 days/year
Planning and budgeting	1	5 days/year
Prepare ward trolley	13	2 hours/week
Report writing (visits, PMI, annual, etc.)	1	8 hours/month
Shortlisting PA students new intake	2	4 hours/year
Stock management	1	5 days/month
Support and supervise HCs and clinics	1	8 hours/month
Therapeutic meeting	1	4 hours/month
Train and supervise students	2	3.5 hours/day

Table 2: Activity standards for pharmacists in district hospitals in Namibia (June 2015)

PHARMACISTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR DISTRICT HOSPITALS		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	30% of all ART Prescriptions
Dispense to patients	7 mins/patient	30% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions
Discharge a patient	15 mins/patient	100% of all Discharged

Category Allowance Standards for all pharmacists in district hospitals	
Activities	**Activity Standard**
Annual stock taking	24 hours/year*
Monthly meeting	24 hours/year
Tea break	30 mins/day
Ward inspection	48 hours/year
Grand ward round	4 hours/week

Individual Allowance Standards for all pharmacists in district hospitals		
Activities	**# of staff in DH**	**Activity Standard**
ABC analysis	1	8 hours/year
Control scheduled medicines and ART	1	2.5 hours/week
Data management	1	24 hours/year
Disseminate health education and information	1	1 hour/week
Extemporaneous preparation	1	1 hour/week
Identification and management of poison (toxicology)	1	12 hours/year
Manage expired and damaged medicines	1	48 hours/year
Issue stock to HCs and clinics	1	48 hours/year
Manage emergency pharmacy	1	20 mins/day
Meetings	1	156 hours/year
Monitor and manage patient medication	1	2 hours/day
Operational research	1	80 hours/year
Pharmacy forum	1	32 hours/year
Pharmacy week	1	40 hours/year
Planning and budgeting	1	40 hours/year
Prepare ward trolley	4	2 hours/week
Report writing (visits, PMIS, annual, etc.)	1	96 hours/year
Stock management	1	11 days/month
Support and supervise HCs and clinics	1	20 days/year*
Therapeutic meeting	1	4 hours/month
Train and supervise students	1	30 mins/day

APPENDIX 5: ACTIVITY STANDARDS FOR PHARMACIST ASSISTANTS

Table 1: Activity standards for pharmacist assistants in intermediate hospitals in Namibia (June 2015)

PHARMACIST ASSISTANTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR INTERMEDIATE HOSPITALS		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	70% of all ART Prescriptions
Dispense to patients	7 mins/patient	70% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions

Category Allowance Standards for all pharmacist assistants in intermediate hospitals	
Activities	**Activity Standard**
Annual stock taking	4 days/year
Monthly meeting	2 hours/month
Tea break	30 mins/day
Ward inspection	4 hours/month

Individual Allowance Standards for all pharmacist assistants in intermediate hospitals		
Activities	**# of staff in IH**	**Activity Standard**
Extemporaneous preparation	1	1 hour/week
Manage expired and damaged medicines	1	48 hours/year
Issue stock to wards	13	4 hours/week
Issue stock to HCs and clinics	1	4 hours/month
Manage emergency pharmacy	1	20 mins/day
Pharmacy week	1	40 hours/year
Prepare ward trolley	13	2 hours/week
Report writing (visits, PMIS, annual, etc.)	1	4 hours/month
Stock management	1	7 days/month

Table 2: Activity standards for pharmacist assistants in district hospitals in Namibia (June 2015)

PHARMACIST ASSISTANTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR DISTRICT HOSPITALS		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	70% of all ART Prescriptions
Dispense to patients	7 mins/patient	70% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions

Category Allowance Standards for all pharmacist assistants in district hospitals	
Activities	**Activity Standard**
Annual stock taking	3 days/year
Monthly meeting	3 hours/month
Tea break	30 mins/day
Ward inspection	2 hours/month

Individual Allowance Standards for all pharmacist assistants in district hospitals		
Activities	**# of staff in DH**	**Activity Standard**
Manage expired and damaged medicines	1	2 hours/month
Issue stock to wards	4	3 hours/week
Issue stock to HCs and clinics	1	4 hours/month
Manage emergency pharmacy	1	20 mins/day
Pharmacy week	1	40 hours/year
Prepare ward trolley	4	2 hours/week
Report writing (visits, PMIS, annual, etc.)	1	1 hours/month
Stock management	1	11 days/month

Table 3: Activity standards for pharmacist assistants in health centres in Namibia (June 2015)

PHARMACIST ASSISTANTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR HEALTH CENTRES		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	100% of all ART Prescriptions
Dispense to patients	7 mins/patient	100% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions
Discharge a patient	15 mins/patient	100% of all Discharged

Category Allowance Standards for all pharmacist assistants in health centres	
Activities	**Activity Standard**
Annual stock taking	3 days/year
Monthly meeting	4 hours/month
Tea break	30 mins/day
Ward inspection	1 hours/month

Individual Allowance Standards for all pharmacist assistants in health centres		
Activities	**# of staff in HC**	**Activity Standard**
Manage expired and damaged medicines	1	2 hours/month
Issue stock to wards	1	1 hours/week
Pharmacy week	1	16 hours/year
Report writing (visits, PMIS, annual, etc.)	1	2 hours/month

Table 4: Activity standards for pharmacist assistants in clinics in Namibia (June 2015)

PHARMACIST ASSISTANTS ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA FOR CLINICS		
Activities	**Activity Standard**	**Workload data**
ART dispensing, counselling, pill counts, and recording	10 mins/patient	100% of all ART Prescriptions
Dispense to patients	7 mins/patient	100% of all dispensing - PMIS(in-plus outpatients) less ART prescriptions

Category Allowance Standards for all pharmacist assistants in clinics	
Activities	**Activity Standard**
Annual stock taking	1.5 days/year
Tea break	30 mins/day

Individual Allowance Standards for all pharmacist assistants in clinics		
Activities	**# of staff in Clinic**	**Activity Standard**
Control scheduled medicines and ART	1	1 hour/month
Pharmacy week	1	2 days/year

APPENDIX 6: ACTIVITY STANDARDS FOR DENTISTS

Table 1: Activity standards for dentists in Namibia (June – September 2014)

DENTIST ACTIVITIES AND ACTIVITY STANDARDS IN NAMIBIA		
Activity	**Standard**	**Workload**
Complex Tooth Extractions	87 minutes / patient	Total Impactions
Denture Repair	20 minutes / patient	Total Dentures Repaired
Dentures	30 minutes / patient	Total Full & Total Partial Dentures
Dry Sockets	10 minutes / patient	Total Number of Dry Socket
Fillings	60 minutes / patient	Total Teeth Filled
Flouride Application	25 minutes / patient	Total Flouride Application
Major Surgery	240 minutes / patient	Data from hospital theatre registers
Minor Procedures	50 minutes / patient	Total Other + 50% of Inter Maxillary Fixations
Oral Cancer Biopsies	25 minutes / patient	Total Oral Cancer
Scaling and Polishing	60 minutes / patient	Total Scaling and Polishing
School Health Promotion (SMILE)	6 minutes / patient	Total School Visits Done
Screening & Referral & Atraumatic Resorative & Simple Extractions Treatment	6 minutes / patient	Total Outreach Visits Done & Total Referrals to
Simple Tooth Extractions	47 minutes / patient	Total Teeth Extractions
Tooth Abscesses	25 minutes / patient	Total Abscess Diagnoses

*Note: The number of major surgeries is not captured in the annual service statistics but is captured in the hospital theatre registers. Primary data collection was performed to extract this data.

Category allowance standards for dentists	
Activity	**Standard**
All Staff Meeting	6 hours / year
Awareness Programmes	30 minutes / day
Clinical Meeting	30 minutes / day
Major Ward Rounds	1.21 hours / week
Staff Meeting	1 hour / month
Tea Break	30 minutes / day
Therapeutic Meeting	3 hours / month

Individual allowance standards for dentists		
Activity	**# of Dentists**	**Standard**
Annual Report	1	1 week / year
District Coordination Meetings	1	3 hours / month
Health Education	1	1 days / week
HIS Monthly Report	1	1 hour / month
Ordering of Equipment, Materials, and Instruments	1	15 minutes / week
Preventative Maintenance	1	15 minutes / day
Quarterly Report	1	1 hour / quarter
Regional Meetings	1	18 hours / month
Ward Rounds	1	7 hours / week

APPENDIX 7: NATIONAL WISN RESULTS 2015

Table 1: Summary of National WISN Findings for Doctors, Registered Nurses, Enrolled Nurses, Pharmacists, and Pharmacist Assistants per Facility and Cadre (June 2015)

Region	District	Facility type	Cadre	Institution Name	Existing Staff	Calculated Requirement	WISN Ratio
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Batubaja Clinic	0	0.65	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Batubaja Clinic	0	0.07	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Batubaja Clinic	0	0.76	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Chetto Clinic	0	0.99	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Chetto Clinic	0	0.13	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Chetto Clinic	0	0.81	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Chinchimani Clinic	0	2.71	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Chinchimani Clinic	0	0.28	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Chinchimani Clinic	0	1.61	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Choi Clinic	0	3.36	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Choi Clinic	0	0.41	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Choi Clinic	0	1.92	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Ibbu Clinic	0	0.85	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Ibbu Clinic	0	0.11	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Ibbu Clinic	0	0.73	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Impalila Clinic	0	2.26	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Impalila Clinic	0	0.2	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Impalila Clinic	0	1.46	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Isize Clinic	0	1.98	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Isize Clinic	0	0.22	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Isize Clinic	0	1.29	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Itomba Clinic	0	1.15	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Itomba Clinic	0	0.14	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Itomba Clinic	0	0.91	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Kabbe Clinic	0	1.86	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Kabbe Clinic	0	0.21	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Kabbe Clinic	0	1.28	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Kanono Clinic	0	1.95	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Kanono Clinic	0	0.22	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Kanono Clinic	0	1.31	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Kasheshe Clinic	0	2.21	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Kasheshe Clinic	0	0.22	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Kasheshe Clinic	0	1.41	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Katima Mulilo Clinic	0	7.71	0

Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Katima Mulilo Clinic	0	0.75	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Katima Mulilo Clinic	0	4.64	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Linyanti Clinic	0	2.3	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Linyanti Clinic	0	0.28	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Linyanti Clinic	0	1.34	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Lisikili Clinic	0	1.83	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Lisikili Clinic	0	0.21	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Lisikili Clinic	0	1.22	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Lusese Clinic	0	2.43	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Lusese Clinic	0	0.21	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Lusese Clinic	0	1.56	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Mafuta Clinic	0	2.06	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Mafuta Clinic	0	0.14	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Mafuta Clinic	0	1.47	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Masokotwani Clinic	0	0.04	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Masokotwani Clinic	0	0.19	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Masokotwani Clinic	0	0.37	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Mavuluma Clinic	0	10.01	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Mavuluma Clinic	0	0.94	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Mavuluma Clinic	0	5.33	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Mbalasinte Clinic	0	1.53	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Mbalasinte Clinic	0	0.18	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Mbalasinte Clinic	0	1.13	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Muyako Clinic	0	1.35	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Muyako Clinic	0	0.17	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Muyako Clinic	0	1.01	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	NAPPA Clinic	0	0.7	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	NAPPA Clinic	0	0.03	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	NAPPA Clinic	0	1.04	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Ngoma Clinic	0	4	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Ngoma Clinic	0	0.33	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Ngoma Clinic	0	2.11	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Ngweze Clinic	0	8.63	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Ngweze Clinic	0	0.73	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Ngweze Clinic	0	4.41	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Sachona Clinic	0	1.86	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Sachona Clinic	0	0.22	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Sachona Clinic	0	1.22	0
Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Schuckmansburg Clinic	0	1.69	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Schuckmansburg Clinic	0	0.17	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Schuckmansburg Clinic	0	1.16	0

Caprivi	Katima Mulilo	Clinic	Enrolled nurse	Sesheke Clinic	0	3.24	0
Caprivi	Katima Mulilo	Clinic	Pharmacist assistant	Sesheke Clinic	0	0.33	0
Caprivi	Katima Mulilo	Clinic	Registered nurse	Sesheke Clinic	0	2.06	0
Caprivi	Katima Mulilo	District hospital	Doctors	Katima Mulilo District Hospital	9	21.02	0.43
Caprivi	Katima Mulilo	District hospital	Enrolled nurse	Katima Mulilo District Hospital	0	40.7	0
Caprivi	Katima Mulilo	District hospital	Pharmacist	Katima Mulilo District Hospital	0	6.1	0
Caprivi	Katima Mulilo	District hospital	Pharmacist assistant	Katima Mulilo District Hospital	2	7.99	0.25
Caprivi	Katima Mulilo	District hospital	Registered nurse	Katima Mulilo District Hospital	0	85.5	0
Caprivi	Katima Mulilo	Health Centre	Enrolled nurse	Bukalo Health Centre	0	2.7	0
Caprivi	Katima Mulilo	Health Centre	Pharmacist assistant	Bukalo Health Centre	0	0.9	0
Caprivi	Katima Mulilo	Health Centre	Registered nurse	Bukalo Health Centre	0	4.58	0
Caprivi	Katima Mulilo	Health Centre	Enrolled nurse	Sangwali Health Centre	0	1.63	0
Caprivi	Katima Mulilo	Health Centre	Pharmacist assistant	Sangwali Health Centre	0	0.63	0
Caprivi	Katima Mulilo	Health Centre	Registered nurse	Sangwali Health Centre	0	2.75	0
Caprivi	Katima Mulilo	Health Centre	Enrolled nurse	Sibbinda Health Centre	0	2.48	0
Caprivi	Katima Mulilo	Health Centre	Pharmacist assistant	Sibbinda Health Centre	0	0.86	0
Caprivi	Katima Mulilo	Health Centre	Registered nurse	Sibbinda Health Centre	0	4.03	0
Erongo	Omaruru	Clinic	Enrolled nurse	Okombahe Clinic	0	3.33	0
Erongo	Omaruru	Clinic	Pharmacist assistant	Okombahe Clinic	0	0.29	0
Erongo	Omaruru	Clinic	Registered nurse	Okombahe Clinic	0	1.94	0
Erongo	Omaruru	Clinic	Enrolled nurse	Okongue Clinic	0	1.51	0
Erongo	Omaruru	Clinic	Pharmacist assistant	Okongue Clinic	0	0.16	0
Erongo	Omaruru	Clinic	Registered nurse	Okongue Clinic	0	0.96	0
Erongo	Omaruru	Clinic	Enrolled nurse	Omaruru Clinic	0	9.05	0
Erongo	Omaruru	Clinic	Pharmacist assistant	Omaruru Clinic	0	0.73	0
Erongo	Omaruru	Clinic	Registered nurse	Omaruru Clinic	0	6.07	0
Erongo	Omaruru	Clinic	Enrolled nurse	Omatjette Clinic	0	3.73	0
Erongo	Omaruru	Clinic	Pharmacist assistant	Omatjette Clinic	0	0.28	0
Erongo	Omaruru	Clinic	Registered nurse	Omatjette Clinic	0	2.34	0
Erongo	Omaruru	Clinic	Enrolled nurse	Uis Clinic	0	5.5	0
Erongo	Omaruru	Clinic	Pharmacist assistant	Uis Clinic	0	0.48	0
Erongo	Omaruru	Clinic	Registered nurse	Uis Clinic	0	2.97	0
Erongo	Omaruru	District hospital	Doctors	Omaruru District Hospital	3	4.55	0.66

Erongo	Omaruru	District hospital	Enrolled nurse	Omaruru District Hospital	0	7.12	0
Erongo	Omaruru	District hospital	Pharmacist	Omaruru District Hospital	0	2.75	0
Erongo	Omaruru	District hospital	Pharmacist assistant	Omaruru District Hospital	1	2.45	0.41
Erongo	Omaruru	District hospital	Registered nurse	Omaruru District Hospital	0	18.68	0
Erongo	Swakopmund	Clinic	Enrolled nurse	Arandis Clinic	0	7.15	0
Erongo	Swakopmund	Clinic	Pharmacist assistant	Arandis Clinic	0	0.68	0
Erongo	Swakopmund	Clinic	Registered nurse	Arandis Clinic	0	3.96	0
Erongo	Swakopmund	Clinic	Enrolled nurse	Henties Bay Clinic	0	3.58	0
Erongo	Swakopmund	Clinic	Pharmacist assistant	Henties Bay Clinic	0	0.3	0
Erongo	Swakopmund	Clinic	Registered nurse	Henties Bay Clinic	0	2.48	0
Erongo	Swakopmund	Clinic	Enrolled nurse	Tamariskia Clinic	2	8.68	0.23
Erongo	Swakopmund	Clinic	Pharmacist assistant	Tamariskia Clinic	0	0.6	0
Erongo	Swakopmund	Clinic	Registered nurse	Tamariskia Clinic	6	6.23	0.96
Erongo	Swakopmund	District hospital	Doctors	Swakopmund District Hospital	5	14.14	0.35
Erongo	Swakopmund	District hospital	Enrolled nurse	Swakopmund District Hospital	25	23.92	1.05
Erongo	Swakopmund	District hospital	Pharmacist	Swakopmund District Hospital	0	4.32	0
Erongo	Swakopmund	District hospital	Pharmacist assistant	Swakopmund District Hospital	4	5.14	0.78
Erongo	Swakopmund	District hospital	Registered nurse	Swakopmund District Hospital	43	51.72	0.83
Erongo	Usakos	Clinic	Enrolled nurse	Hakhaseb Clinic	0	4.8	0
Erongo	Usakos	Clinic	Pharmacist assistant	Hakhaseb Clinic	0	0.4	0
Erongo	Usakos	Clinic	Registered nurse	Hakhaseb Clinic	0	3.86	0
Erongo	Usakos	Clinic	Enrolled nurse	Karibib Clinic	0	8.28	0
Erongo	Usakos	Clinic	Pharmacist assistant	Karibib Clinic	0	0.73	0
Erongo	Usakos	Clinic	Registered nurse	Karibib Clinic	0	4.83	0
Erongo	Usakos	Clinic	Enrolled nurse	Otjimbingwe Clinic	0	4.31	0
Erongo	Usakos	Clinic	Pharmacist assistant	Otjimbingwe Clinic	0	0.36	0
Erongo	Usakos	Clinic	Registered nurse	Otjimbingwe Clinic	0	2.47	0
Erongo	Usakos	Clinic	Enrolled nurse	Spitzkoppe Clinic	0	0.89	0
Erongo	Usakos	Clinic	Pharmacist assistant	Spitzkoppe Clinic	0	0.11	0
Erongo	Usakos	Clinic	Registered nurse	Spitzkoppe Clinic	0	0.83	0
Erongo	Usakos	Clinic	Enrolled nurse	Tubusis Clinic	0	1.39	0
Erongo	Usakos	Clinic	Pharmacist assistant	Tubusis Clinic	0	0.14	0
Erongo	Usakos	Clinic	Registered nurse	Tubusis Clinic	0	1.02	0
Erongo	Usakos	District hospital	Doctors	Usakos District Hospital	2	4.71	0.42
Erongo	Usakos	District hospital	Enrolled nurse	Usakos District Hospital	16	10.56	1.52
Erongo	Usakos	District	Pharmacist	Usakos District	0	2.75	0

		hospital		Hospital			
Erongo	Usakos	District hospital	Pharmacist assistant	Usakos District Hospital	1	2.44	0.41
Erongo	Usakos	District hospital	Registered nurse	Usakos District Hospital	24	23.09	1.04
Erongo	Walvis Bay	Clinic	Enrolled nurse	Coastal Clinic	1	14.04	0.07
Erongo	Walvis Bay	Clinic	Pharmacist assistant	Coastal Clinic	0	0.98	0
Erongo	Walvis Bay	Clinic	Registered nurse	Coastal Clinic	2	7.61	0.26
Erongo	Walvis Bay	Clinic	Enrolled nurse	Narraville Clinic	0	8.89	0
Erongo	Walvis Bay	Clinic	Pharmacist assistant	Narraville Clinic	0	0.72	0
Erongo	Walvis Bay	Clinic	Registered nurse	Narraville Clinic	0	4.28	0
Erongo	Walvis Bay	Clinic	Enrolled nurse	Utuseb Clinic	0	1.04	0
Erongo	Walvis Bay	Clinic	Pharmacist assistant	Utuseb Clinic	0	0.12	0
Erongo	Walvis Bay	Clinic	Registered nurse	Utuseb Clinic	0	0.86	0
Erongo	Walvis Bay	Clinic	Enrolled nurse	Walvis Bay Clinic	0	9.2	0
Erongo	Walvis Bay	Clinic	Pharmacist assistant	Walvis Bay Clinic	0	0.64	0
Erongo	Walvis Bay	Clinic	Registered nurse	Walvis Bay Clinic	0	4.82	0
Erongo	Walvis Bay	District hospital	Enrolled nurse	Walvis Bay District Hospital	0	28.13	0
Erongo	Walvis Bay	District hospital	Pharmacist	Walvis Bay District Hospital	0	4.49	0
Erongo	Walvis Bay	District hospital	Pharmacist assistant	Walvis Bay District Hospital	2	5.15	0.39
Erongo	Walvis Bay	District hospital	Registered nurse	Walvis Bay District Hospital	0	60.15	0
Erongo	Walvis Bay	District hospital	Doctors	Walvis bay District Hospital	4	13.89	0.29
Erongo	Walvis Bay	Health Centre	Enrolled nurse	Kuisebmund Health Centre	8	7.31	1.09
Erongo	Walvis Bay	Health Centre	Pharmacist assistant	Kuisebmund Health Centre	0	1.67	0
Erongo	Walvis Bay	Health Centre	Registered nurse	Kuisebmund Health Centre	10	11.33	0.88
Hardap	Aranos	Clinic	Enrolled nurse	Aranos Clinic	0	6.33	0
Hardap	Aranos	Clinic	Pharmacist assistant	Aranos Clinic	0	0.57	0
Hardap	Aranos	Clinic	Registered nurse	Aranos Clinic	0	3.79	0
Hardap	Aranos	Clinic	Enrolled nurse	Gochas Clinic	1	3.3	0.3
Hardap	Aranos	Clinic	Pharmacist assistant	Gochas Clinic	0	0.27	0
Hardap	Aranos	Clinic	Registered nurse	Gochas Clinic	1	1.97	0.51
Hardap	Aranos	Health Centre	Enrolled nurse	Aranos Health Centre	7	1	7
Hardap	Aranos	Health Centre	Pharmacist assistant	Aranos Health Centre	1	1.09	0.92
Hardap	Aranos	Health Centre	Registered nurse	Aranos Health Centre	14	3.11	4.5
Hardap	Mariental	Clinic	Enrolled nurse	Gibeon Clinic	0	5.59	0
Hardap	Mariental	Clinic	Pharmacist assistant	Gibeon Clinic	0	0.4	0
Hardap	Mariental	Clinic	Registered nurse	Gibeon Clinic	4	2.98	1.34

Hardap	Mariental	Clinic	Enrolled nurse	Hoachanas Clinic	1	2.85	0.35
Hardap	Mariental	Clinic	Pharmacist assistant	Hoachanas Clinic	0	0.24	0
Hardap	Mariental	Clinic	Registered nurse	Hoachanas Clinic	0	1.81	0
Hardap	Mariental	Clinic	Enrolled nurse	Kalkrand Clinic	0	1.69	0
Hardap	Mariental	Clinic	Pharmacist assistant	Kalkrand Clinic	0	0.16	0
Hardap	Mariental	Clinic	Registered nurse	Kalkrand Clinic	1	1.21	0.83
Hardap	Mariental	Clinic	Enrolled nurse	Klein Aub Clinic	0	1.54	0
Hardap	Mariental	Clinic	Pharmacist assistant	Klein Aub Clinic	0	0.15	0
Hardap	Mariental	Clinic	Registered nurse	Klein Aub Clinic	0	0.98	0
Hardap	Mariental	Clinic	Enrolled nurse	Maltahohe Clinic	0	2.69	0
Hardap	Mariental	Clinic	Pharmacist assistant	Maltahohe Clinic	0	0.25	0
Hardap	Mariental	Clinic	Registered nurse	Maltahohe Clinic	2	1.54	1.3
Hardap	Mariental	Clinic	Enrolled nurse	Mariental Clinic	2	12.35	0.16
Hardap	Mariental	Clinic	Pharmacist assistant	Mariental Clinic	0	1.05	0
Hardap	Mariental	Clinic	Registered nurse	Mariental Clinic	10	8.34	1.2
Hardap	Mariental	District hospital	Doctors	Mariental District Hospital	4	12.89	0.31
Hardap	Mariental	District hospital	Enrolled nurse	Mariental District Hospital	13	23.48	0.55
Hardap	Mariental	District hospital	Pharmacist	Mariental District Hospital	1	4.25	0.24
Hardap	Mariental	District hospital	Pharmacist assistant	Mariental District Hospital	2	4.89	0.41
Hardap	Mariental	District hospital	Registered nurse	Mariental District Hospital	31	46.86	0.66
Hardap	Mariental	Health Centre	Enrolled nurse	Maltahohe Health Centre	2	1.75	1.14
Hardap	Mariental	Health Centre	Pharmacist assistant	Maltahohe Health Centre	0	0.69	0
Hardap	Mariental	Health Centre	Registered nurse	Maltahohe Health Centre	4	2.9	1.38
Hardap	Rehoboth	Clinic	Enrolled nurse	Rehoboth Clinic	0	3.93	0
Hardap	Rehoboth	Clinic	Pharmacist assistant	Rehoboth Clinic	0	0.39	0
Hardap	Rehoboth	Clinic	Registered nurse	Rehoboth Clinic	0	2.31	0
Hardap	Rehoboth	Clinic	Enrolled nurse	Rietoog Clinic	0	1.91	0
Hardap	Rehoboth	Clinic	Pharmacist assistant	Rietoog Clinic	0	0.19	0
Hardap	Rehoboth	Clinic	Registered nurse	Rietoog Clinic	0	1.16	0
Hardap	Rehoboth	Clinic	Enrolled nurse	Schlip Clinic	1	2.1	0.48
Hardap	Rehoboth	Clinic	Pharmacist assistant	Schlip Clinic	0	0.18	0
Hardap	Rehoboth	Clinic	Registered nurse	Schlip Clinic	1	1.29	0.78
Hardap	Rehoboth	Clinic	Enrolled nurse	Stampriet Clinic	1	2.69	0.37
Hardap	Rehoboth	Clinic	Pharmacist assistant	Stampriet Clinic	0	0.26	0
Hardap	Rehoboth	Clinic	Registered nurse	Stampriet Clinic	1	1.77	0.56
Hardap	Rehoboth	District hospital	Doctors	Rehoboth District Hospital	4	9.49	0.42
Hardap	Rehoboth	District hospital	Enrolled nurse	Rehoboth District Hospital	0	24.18	0

Hardap	Rehoboth	District hospital	Pharmacist	Rehoboth District Hospital	1	4.71	0.21
Hardap	Rehoboth	District hospital	Pharmacist assistant	Rehoboth District Hospital	0	5.09	0
Hardap	Rehoboth	District hospital	Registered nurse	Rehoboth District Hospital	0	47.39	0
Hardap	Rehoboth	Health Centre	Enrolled nurse	Rehoboth Health Centre	8	7.04	1.14
Hardap	Rehoboth	Health Centre	Pharmacist assistant	Rehoboth Health Centre	2	1.17	1.71
Hardap	Rehoboth	Health Centre	Registered nurse	Rehoboth Health Centre	12	10.05	1.19
Karas	Karasburg	Clinic	Enrolled nurse	Ariamsvlei Clinic	0	1.49	0
Karas	Karasburg	Clinic	Pharmacist assistant	Ariamsvlei Clinic	0	0.1	0
Karas	Karasburg	Clinic	Registered nurse	Ariamsvlei Clinic	0	0.97	0
Karas	Karasburg	Clinic	Enrolled nurse	Aussenkher Clinic	0	3.46	0
Karas	Karasburg	Clinic	Pharmacist assistant	Aussenkher Clinic	0	0.39	0
Karas	Karasburg	Clinic	Registered nurse	Aussenkher Clinic	0	1.96	0
Karas	Karasburg	Clinic	Enrolled nurse	Karasburg Clinic	0	5.81	0
Karas	Karasburg	Clinic	Pharmacist assistant	Karasburg Clinic	0	0.42	0
Karas	Karasburg	Clinic	Registered nurse	Karasburg Clinic	0	2.84	0
Karas	Karasburg	Clinic	Enrolled nurse	Noordoewer Clinic	0	3.34	0
Karas	Karasburg	Clinic	Pharmacist assistant	Noordoewer Clinic	0	0.34	0
Karas	Karasburg	Clinic	Registered nurse	Noordoewer Clinic	0	2.42	0
Karas	Karasburg	Clinic	Enrolled nurse	Warmbad Clinic	0	0.78	0
Karas	Karasburg	Clinic	Pharmacist assistant	Warmbad Clinic	0	0.08	0
Karas	Karasburg	Clinic	Registered nurse	Warmbad Clinic	0	0.67	0
Karas	Karasburg	District hospital	Doctors	Karasburg District Hospital	1	1.5	0.67
Karas	Karasburg	District hospital	Enrolled nurse	Karasburg District Hospital	0	1.12	0
Karas	Karasburg	District hospital	Pharmacist	Karasburg District Hospital	0	2.72	0
Karas	Karasburg	District hospital	Pharmacist assistant	Karasburg District Hospital	1	2.45	0.41
Karas	Karasburg	District hospital	Registered nurse	Karasburg District Hospital	0	9.04	0
Karas	Keetmanshoop	Clinic	Enrolled nurse	Berseba Clinic	0	3.03	0
Karas	Keetmanshoop	Clinic	Pharmacist assistant	Berseba Clinic	0	0.28	0
Karas	Keetmanshoop	Clinic	Registered nurse	Berseba Clinic	0	1.97	0
Karas	Keetmanshoop	Clinic	Enrolled nurse	Daan Viljoen Clinic	0	7.48	0
Karas	Keetmanshoop	Clinic	Pharmacist assistant	Daan Viljoen Clinic	0	0.62	0
Karas	Keetmanshoop	Clinic	Registered nurse	Daan Viljoen Clinic	0	7.27	0
Karas	Keetmanshoop	Clinic	Enrolled nurse	Keetmanshoop Clinic	0	10.8	0
Karas	Keetmanshoop	Clinic	Pharmacist assistant	Keetmanshoop Clinic	0	0.88	0
Karas	Keetmanshoop	Clinic	Registered nurse	Keetmanshoop Clinic	0	7.18	0
Karas	Keetmanshoop	Clinic	Enrolled nurse	Koes Clinic	0	2.55	0

Karas	Keetmanshoop	Clinic	Pharmacist assistant	Koes Clinic	0	0.25	0
Karas	Keetmanshoop	Clinic	Registered nurse	Koes Clinic	0	1.57	0
Karas	Keetmanshoop	Clinic	Enrolled nurse	Tses Clinic	0	3.09	0
Karas	Keetmanshoop	Clinic	Pharmacist assistant	Tses Clinic	0	0.3	0
Karas	Keetmanshoop	Clinic	Registered nurse	Tses Clinic	0	1.77	0
Karas	Keetmanshoop	District hospital	Doctors	Keetmanshoop District Hospital	4	11.33	0.35
Karas	Keetmanshoop	District hospital	Enrolled nurse	Keetmanshoop District Hospital	0	29	0
Karas	Keetmanshoop	District hospital	Pharmacist	Keetmanshoop District Hospital	0	3.63	0
Karas	Keetmanshoop	District hospital	Pharmacist assistant	Keetmanshoop District Hospital	2	3.42	0.58
Karas	Keetmanshoop	District hospital	Registered nurse	Keetmanshoop District Hospital	0	53.69	0
Karas	Keetmanshoop	Health Centre	Enrolled nurse	Aroab Health Centre	0	1.61	0
Karas	Keetmanshoop	Health Centre	Pharmacist assistant	Aroab Health Centre	0	0.6	0
Karas	Keetmanshoop	Health Centre	Registered nurse	Aroab Health Centre	0	2.73	0
Karas	Keetmanshoop	Health Centre	Enrolled nurse	Bethanie Health Centre	0	2.14	0
Karas	Keetmanshoop	Health Centre	Pharmacist assistant	Bethanie Health Centre	0	0.62	0
Karas	Keetmanshoop	Health Centre	Registered nurse	Bethanie Health Centre	0	3.51	0
Karas	Luderitz	Clinic	Enrolled nurse	Aus Clinic	0	2.01	0
Karas	Luderitz	Clinic	Pharmacist assistant	Aus Clinic	0	0.19	0
Karas	Luderitz	Clinic	Registered nurse	Aus Clinic	0	1.27	0
Karas	Luderitz	Clinic	Enrolled nurse	Luderitz Clinic	0	11.18	0
Karas	Luderitz	Clinic	Pharmacist assistant	Luderitz Clinic	0	0.76	0
Karas	Luderitz	Clinic	Registered nurse	Luderitz Clinic	0	5.42	0
Karas	Luderitz	Clinic	Enrolled nurse	Oranjemund Clinic	0	5.09	0
Karas	Luderitz	Clinic	Pharmacist assistant	Oranjemund Clinic	0	0.44	0
Karas	Luderitz	Clinic	Registered nurse	Oranjemund Clinic	0	3.36	0
Karas	Luderitz	Clinic	Enrolled nurse	Rosh Pinah Clinic	0	5.19	0
Karas	Luderitz	Clinic	Pharmacist assistant	Rosh Pinah Clinic	0	0.58	0
Karas	Luderitz	Clinic	Registered nurse	Rosh Pinah Clinic	0	3.54	0
Karas	Luderitz	District hospital	Doctors	Luderitz District Hospital	2	11.92	0.17
Karas	Luderitz	District hospital	Enrolled nurse	Luderitz District Hospital	0	17.55	0
Karas	Luderitz	District hospital	Pharmacist	Luderitz District Hospital	0	4.26	0
Karas	Luderitz	District hospital	Pharmacist assistant	Luderitz District Hospital	2	3.79	0.53
Karas	Luderitz	District hospital	Registered nurse	Luderitz District Hospital	0	69.93	0

Kavango	Andara	Clinic	Enrolled nurse	Andara PHC Clinic	0	0.01	0
Kavango	Andara	Clinic	Pharmacist assistant	Andara PHC Clinic	1	0.02	50
Kavango	Andara	Clinic	Registered nurse	Andara PHC Clinic	0	0.32	0
Kavango	Andara	Clinic	Enrolled nurse	Bagani Clinic	0	4.78	0
Kavango	Andara	Clinic	Pharmacist assistant	Bagani Clinic	0	0.56	0
Kavango	Andara	Clinic	Registered nurse	Bagani Clinic	0	2.53	0
Kavango	Andara	Clinic	Enrolled nurse	Biro Clinic	0	1.95	0
Kavango	Andara	Clinic	Pharmacist assistant	Biro Clinic	0	0.24	0
Kavango	Andara	Clinic	Registered nurse	Biro Clinic	0	1.27	0
Kavango	Andara	Clinic	Enrolled nurse	Divundu Clinic	0	2.63	0
Kavango	Andara	Clinic	Pharmacist assistant	Divundu Clinic	0	0.3	0
Kavango	Andara	Clinic	Registered nurse	Divundu Clinic	0	1.52	0
Kavango	Andara	Clinic	Enrolled nurse	Kangongo Clinic	0	1.98	0
Kavango	Andara	Clinic	Pharmacist assistant	Kangongo Clinic	0	0.22	0
Kavango	Andara	Clinic	Registered nurse	Kangongo Clinic	0	1.37	0
Kavango	Andara	Clinic	Enrolled nurse	Mayara Clinic	0	1.78	0
Kavango	Andara	Clinic	Pharmacist assistant	Mayara Clinic	0	0.21	0
Kavango	Andara	Clinic	Registered nurse	Mayara Clinic	0	1.13	0
Kavango	Andara	Clinic	Enrolled nurse	Mutjiku Clinic	0	1.45	0
Kavango	Andara	Clinic	Pharmacist assistant	Mutjiku Clinic	0	0.18	0
Kavango	Andara	Clinic	Registered nurse	Mutjiku Clinic	0	1.04	0
Kavango	Andara	Clinic	Enrolled nurse	Omega Clinic	0	2.46	0
Kavango	Andara	Clinic	Pharmacist assistant	Omega Clinic	0	0.26	0
Kavango	Andara	Clinic	Registered nurse	Omega Clinic	0	1.72	0
Kavango	Andara	Clinic	Enrolled nurse	Shadikongoro Clinic	0	1.29	0
Kavango	Andara	Clinic	Pharmacist assistant	Shadikongoro Clinic	0	0.12	0
Kavango	Andara	Clinic	Registered nurse	Shadikongoro Clinic	0	1.12	0
Kavango	Andara	Clinic	Enrolled nurse	Shamaturu Clinic	0	0.73	0
Kavango	Andara	Clinic	Pharmacist assistant	Shamaturu Clinic	0	0.11	0
Kavango	Andara	Clinic	Registered nurse	Shamaturu Clinic	0	0.66	0
Kavango	Andara	District hospital	Doctors	Andara District Hospital	5	7.36	0.68
Kavango	Andara	District hospital	Enrolled nurse	Andara District Hospital	0	19.88	0
Kavango	Andara	District hospital	Pharmacist	Andara District Hospital	0	3.15	0
Kavango	Andara	District hospital	Pharmacist assistant	Andara District Hospital	1	2.89	0.35
Kavango	Andara	District hospital	Registered nurse	Andara District Hospital	0	41.33	0
Kavango	Nankudu	Clinic	Enrolled nurse	Gcaruhwa Clinic	0	0.48	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Gcaruhwa Clinic	0	0.07	0
Kavango	Nankudu	Clinic	Registered nurse	Gcaruhwa Clinic	0	0.53	0
Kavango	Nankudu	Clinic	Enrolled nurse	Mbambi Clinic (Nankudu)	0	2.18	0

Kavango	Nankudu	Clinic	Pharmacist assistant	Mbambi Clinic (Nankudu)	0	0.24	0
Kavango	Nankudu	Clinic	Registered nurse	Mbambi Clinic (Nankudu)	0	1.38	0
Kavango	Nankudu	Clinic	Enrolled nurse	Mburuuru Clinic	0	0.49	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Mburuuru Clinic	0	0.07	0
Kavango	Nankudu	Clinic	Registered nurse	Mburuuru Clinic	0	0.56	0
Kavango	Nankudu	Clinic	Enrolled nurse	Muparara Clinic	0	1.19	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Muparara Clinic	0	0.15	0
Kavango	Nankudu	Clinic	Registered nurse	Muparara Clinic	0	0.84	0
Kavango	Nankudu	Clinic	Enrolled nurse	Nankudu Clinic	0	4.1	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Nankudu Clinic	0	0.45	0
Kavango	Nankudu	Clinic	Registered nurse	Nankudu Clinic	0	2.97	0
Kavango	Nankudu	Clinic	Enrolled nurse	Nepara Clinic	0	1.35	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Nepara Clinic	0	0.14	0
Kavango	Nankudu	Clinic	Registered nurse	Nepara Clinic	0	0.92	0
Kavango	Nankudu	Clinic	Enrolled nurse	Nzinze Clinic	0	3.28	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Nzinze Clinic	0	0.32	0
Kavango	Nankudu	Clinic	Registered nurse	Nzinze Clinic	0	1.97	0
Kavango	Nankudu	Clinic	Enrolled nurse	Sikarosompo Clinic	0	2.2	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Sikarosompo Clinic	0	0.26	0
Kavango	Nankudu	Clinic	Registered nurse	Sikarosompo Clinic	0	1.42	0
Kavango	Nankudu	Clinic	Enrolled nurse	Yinsu Clinic	0	1.36	0
Kavango	Nankudu	Clinic	Pharmacist assistant	Yinsu Clinic	0	0.18	0
Kavango	Nankudu	Clinic	Registered nurse	Yinsu Clinic	0	0.92	0
Kavango	Nankudu	District hospital	Doctors	Nankudu District Hospital	2	8.61	0.23
Kavango	Nankudu	District hospital	Enrolled nurse	Nankudu District Hospital	0	21.52	0
Kavango	Nankudu	District hospital	Pharmacist	Nankudu District Hospital	0	4.18	0
Kavango	Nankudu	District hospital	Pharmacist assistant	Nankudu District Hospital	2	5.38	0.37
Kavango	Nankudu	District hospital	Registered nurse	Nankudu District Hospital	0	42.39	0
Kavango	Nankudu	Health Centre	Enrolled nurse	Mpungu Health Centre	0	2.94	0
Kavango	Nankudu	Health Centre	Pharmacist assistant	Mpungu Health Centre	0	1.07	0
Kavango	Nankudu	Health Centre	Registered nurse	Mpungu Health Centre	0	4.7	0
Kavango	Nankudu	Health Centre	Enrolled nurse	Nkurenkuru Health Centre	0	6.94	0
Kavango	Nankudu	Health Centre	Pharmacist assistant	Nkurenkuru Health Centre	0	2.09	0
Kavango	Nankudu	Health Centre	Registered nurse	Nkurenkuru Health Centre	0	12.37	0
Kavango	Nankudu	Health	Enrolled nurse	Rupara Health	0	3.23	0

		Centre		Centre			
Kavango	Nankudu	Health Centre	Pharmacist assistant	Rupara Health Centre	0	1.03	0
Kavango	Nankudu	Health Centre	Registered nurse	Rupara Health Centre	0	5.2	0
Kavango	Nankudu	Health Centre	Enrolled nurse	Tondoro Health Centre	0	3.8	0
Kavango	Nankudu	Health Centre	Pharmacist assistant	Tondoro Health Centre	0	1.05	0
Kavango	Nankudu	Health Centre	Registered nurse	Tondoro Health Centre	0	5.81	0
Kavango	Nyangana	Clinic	Enrolled nurse	Kandjara Clinic	0	1.24	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Kandjara Clinic	0	0.15	0
Kavango	Nyangana	Clinic	Registered nurse	Kandjara Clinic	0	1.03	0
Kavango	Nyangana	Clinic	Enrolled nurse	Kapupahedi Clinic	0	1.35	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Kapupahedi Clinic	0	0.16	0
Kavango	Nyangana	Clinic	Registered nurse	Kapupahedi Clinic	0	1.01	0
Kavango	Nyangana	Clinic	Enrolled nurse	Karukuta Clinic	0	3.24	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Karukuta Clinic	0	0.35	0
Kavango	Nyangana	Clinic	Registered nurse	Karukuta Clinic	0	1.88	0
Kavango	Nyangana	Clinic	Enrolled nurse	Katere Clinic	0	3.58	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Katere Clinic	0	0.36	0
Kavango	Nyangana	Clinic	Registered nurse	Katere Clinic	0	2.14	0
Kavango	Nyangana	Clinic	Enrolled nurse	Mabushe Clinic	0	1.68	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Mabushe Clinic	0	0.17	0
Kavango	Nyangana	Clinic	Registered nurse	Mabushe Clinic	0	1.27	0
Kavango	Nyangana	Clinic	Enrolled nurse	Mbambi Clinic (Nyangana)	0	3.51	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Mbambi Clinic (Nyangana)	0	0.4	0
Kavango	Nyangana	Clinic	Registered nurse	Mbambi Clinic (Nyangana)	0	2.14	0
Kavango	Nyangana	Clinic	Enrolled nurse	Ndonga Clinic	0	5.96	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Ndonga Clinic	0	0.53	0
Kavango	Nyangana	Clinic	Registered nurse	Ndonga Clinic	0	3.29	0
Kavango	Nyangana	Clinic	Enrolled nurse	Nyangana PHC Clinic	0	0.01	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Nyangana PHC Clinic	0	0.02	0
Kavango	Nyangana	Clinic	Registered nurse	Nyangana PHC Clinic	0	0.32	0
Kavango	Nyangana	Clinic	Enrolled nurse	Shinyungwe Clinic	0	1.7	0
Kavango	Nyangana	Clinic	Pharmacist assistant	Shinyungwe Clinic	0	0.17	0
Kavango	Nyangana	Clinic	Registered nurse	Shinyungwe Clinic	0	1.42	0
Kavango	Nyangana	District hospital	Doctors	Nyangana District Hospital	4	7.5	0.53
Kavango	Nyangana	District hospital	Enrolled nurse	Nyangana District Hospital	0	24.02	0
Kavango	Nyangana	District hospital	Pharmacist	Nyangana District Hospital	0	3.56	0

Kavango	Nyangana	District hospital	Pharmacist assistant	Nyangana District Hospital	1	3.57	0.28
Kavango	Nyangana	District hospital	Registered nurse	Nyangana District Hospital	0	47.21	0
Kavango	Rundu	Clinic	Enrolled nurse	Baramasoni Clinic	0	1.13	0
Kavango	Rundu	Clinic	Pharmacist assistant	Baramasoni Clinic	0	0.12	0
Kavango	Rundu	Clinic	Registered nurse	Baramasoni Clinic	0	0.88	0
Kavango	Rundu	Clinic	Enrolled nurse	Erago Clinic	0	0.95	0
Kavango	Rundu	Clinic	Pharmacist assistant	Erago Clinic	0	0.12	0
Kavango	Rundu	Clinic	Registered nurse	Erago Clinic	0	0.81	0
Kavango	Rundu	Clinic	Enrolled nurse	Gcwatjinga Clinic	0	1.01	0
Kavango	Rundu	Clinic	Pharmacist assistant	Gcwatjinga Clinic	0	0.12	0
Kavango	Rundu	Clinic	Registered nurse	Gcwatjinga Clinic	0	0.84	0
Kavango	Rundu	Clinic	Enrolled nurse	Kaisosi Clinic	0	8.05	0
Kavango	Rundu	Clinic	Pharmacist assistant	Kaisosi Clinic	0	0.85	0
Kavango	Rundu	Clinic	Registered nurse	Kaisosi Clinic	0	5.26	0
Kavango	Rundu	Clinic	Enrolled nurse	Kapako Clinic	0	1.51	0
Kavango	Rundu	Clinic	Pharmacist assistant	Kapako Clinic	0	0.2	0
Kavango	Rundu	Clinic	Registered nurse	Kapako Clinic	0	1.06	0
Kavango	Rundu	Clinic	Enrolled nurse	Katjinakatji Clinic	0	2.51	0
Kavango	Rundu	Clinic	Pharmacist assistant	Katjinakatji Clinic	0	0.22	0
Kavango	Rundu	Clinic	Registered nurse	Katjinakatji Clinic	0	1.79	0
Kavango	Rundu	Clinic	Enrolled nurse	Kayengona Clinic	0	6.38	0
Kavango	Rundu	Clinic	Pharmacist assistant	Kayengona Clinic	0	0.71	0
Kavango	Rundu	Clinic	Registered nurse	Kayengona Clinic	0	3.71	0
Kavango	Rundu	Clinic	Enrolled nurse	Mangetti Clinic	0	1.44	0
Kavango	Rundu	Clinic	Pharmacist assistant	Mangetti Clinic	0	0.18	0
Kavango	Rundu	Clinic	Registered nurse	Mangetti Clinic	0	1.07	0
Kavango	Rundu	Clinic	Enrolled nurse	Mashare Clinic	0	0.7	0
Kavango	Rundu	Clinic	Pharmacist assistant	Mashare Clinic	0	0.08	0
Kavango	Rundu	Clinic	Registered nurse	Mashare Clinic	0	0.67	0
Kavango	Rundu	Clinic	Enrolled nurse	Mile 10 Clinic	0	2.66	0
Kavango	Rundu	Clinic	Pharmacist assistant	Mile 10 Clinic	0	0.3	0
Kavango	Rundu	Clinic	Registered nurse	Mile 10 Clinic	0	1.68	0
Kavango	Rundu	Clinic	Enrolled nurse	Mile 30 Clinic	0	3.85	0
Kavango	Rundu	Clinic	Pharmacist assistant	Mile 30 Clinic	0	0.41	0
Kavango	Rundu	Clinic	Registered nurse	Mile 30 Clinic	0	2.29	0
Kavango	Rundu	Clinic	Enrolled nurse	Mpora Clinic	0	1.78	0
Kavango	Rundu	Clinic	Pharmacist assistant	Mpora Clinic	0	0.2	0
Kavango	Rundu	Clinic	Registered nurse	Mpora Clinic	0	1.21	0
Kavango	Rundu	Clinic	Enrolled nurse	Muveve Clinic	0	3.24	0
Kavango	Rundu	Clinic	Pharmacist assistant	Muveve Clinic	0	0.35	0
Kavango	Rundu	Clinic	Registered nurse	Muveve Clinic	0	2.16	0
Kavango	Rundu	Clinic	Enrolled nurse	Ncaute Clinic	0	1.45	0

Kavango	Rundu	Clinic	Pharmacist assistant	Ncaute Clinic	0	0.18	0
Kavango	Rundu	Clinic	Registered nurse	Ncaute Clinic	0	1.03	0
Kavango	Rundu	Clinic	Enrolled nurse	Ncuncuni Clinic	0	1.31	0
Kavango	Rundu	Clinic	Pharmacist assistant	Ncuncuni Clinic	0	0.15	0
Kavango	Rundu	Clinic	Registered nurse	Ncuncuni Clinic	0	0.97	0
Kavango	Rundu	Clinic	Enrolled nurse	Ndama Clinic	0	14.44	0
Kavango	Rundu	Clinic	Pharmacist assistant	Ndama Clinic	0	1.43	0
Kavango	Rundu	Clinic	Registered nurse	Ndama Clinic	0	9.29	0
Kavango	Rundu	Clinic	Enrolled nurse	Nkarapamwe Clinic	0	23.49	0
Kavango	Rundu	Clinic	Pharmacist assistant	Nkarapamwe Clinic	0	2.64	0
Kavango	Rundu	Clinic	Registered nurse	Nkarapamwe Clinic	0	12.68	0
Kavango	Rundu	Clinic	Enrolled nurse	Rundu Clinic	0	14.56	0
Kavango	Rundu	Clinic	Pharmacist assistant	Rundu Clinic	0	1.49	0
Kavango	Rundu	Clinic	Registered nurse	Rundu Clinic	0	10.54	0
Kavango	Rundu	Clinic	Enrolled nurse	Sauyemwa Clinic	0	19.9	0
Kavango	Rundu	Clinic	Pharmacist assistant	Sauyemwa Clinic	0	2.21	0
Kavango	Rundu	Clinic	Registered nurse	Sauyemwa Clinic	0	10.68	0
Kavango	Rundu	Clinic	Enrolled nurse	Sharukwe Clinic	0	1.25	0
Kavango	Rundu	Clinic	Pharmacist assistant	Sharukwe Clinic	0	0.16	0
Kavango	Rundu	Clinic	Registered nurse	Sharukwe Clinic	0	0.91	0
Kavango	Rundu	Clinic	Enrolled nurse	Takawasa Clinic	0	3.08	0
Kavango	Rundu	Clinic	Pharmacist assistant	Takawasa Clinic	0	0.31	0
Kavango	Rundu	Clinic	Registered nurse	Takawasa Clinic	0	1.91	0
Kavango	Rundu	Health Centre	Enrolled nurse	Bunya Health Centre	0	4.34	0
Kavango	Rundu	Health Centre	Pharmacist assistant	Bunya Health Centre	0	1.13	0
Kavango	Rundu	Health Centre	Registered nurse	Bunya Health Centre	0	6.58	0
Kavango	Rundu	Health Centre	Enrolled nurse	Mangetti Dune Health Centre	5	1.06	4.72
Kavango	Rundu	Health Centre	Registered nurse	Mangetti Dune Health Centre	1	2	0.5
Kavango	Rundu	Health Centre	Enrolled nurse	Mupini Health Centre	0	5.1	0
Kavango	Rundu	Health Centre	Pharmacist assistant	Mupini Health Centre	0	1.36	0
Kavango	Rundu	Health Centre	Registered nurse	Mupini Health Centre	0	7.78	0
Kavango	Rundu	Health Centre	Enrolled nurse	Shambyu Health Centre	0	4.2	0
Kavango	Rundu	Health Centre	Pharmacist assistant	Shambyu Health Centre	0	1.22	0
Kavango	Rundu	Health Centre	Registered nurse	Shambyu Health Centre	0	7.37	0
Kavango	Rundu	Intermediate Hospital	Doctors	Rundu Intermediate Hospital	14	77.59	0.18

Kavango	Rundu	Intermediate Hospital	Enrolled nurse	Rundu Intermediate Hospital	0	77.99	0
Kavango	Rundu	Intermediate Hospital	Pharmacist	Rundu Intermediate Hospital	1	7.45	0.13
Kavango	Rundu	Intermediate Hospital	Pharmacist assistant	Rundu Intermediate Hospital	4	8.95	0.45
Kavango	Rundu	Intermediate Hospital	Registered nurse	Rundu Intermediate Hospital	0	135.06	0
Khomas	Windhoek	Clinic	Enrolled nurse	Baumgartsbrunn Clinic	1	1.01	0.99
Khomas	Windhoek	Clinic	Pharmacist assistant	Baumgartsbrunn Clinic	0	0.13	0
Khomas	Windhoek	Clinic	Registered nurse	Baumgartsbrunn Clinic	1	0.86	1.16
Khomas	Windhoek	Clinic	Enrolled nurse	Donkerhoek Clinic	0	10.35	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Donkerhoek Clinic	0	1.12	0
Khomas	Windhoek	Clinic	Registered nurse	Donkerhoek Clinic	0	6.49	0
Khomas	Windhoek	Clinic	Enrolled nurse	Dordabis Clinic	1	2.34	0.43
Khomas	Windhoek	Clinic	Pharmacist assistant	Dordabis Clinic	0	0.28	0
Khomas	Windhoek	Clinic	Registered nurse	Dordabis Clinic	1	1.71	0.58
Khomas	Windhoek	Clinic	Enrolled nurse	Groot-Aub Clinic	0	4.34	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Groot-Aub Clinic	0	0.02	0
Khomas	Windhoek	Clinic	Registered nurse	Groot-Aub Clinic	0	2.46	0
Khomas	Windhoek	Clinic	Enrolled nurse	Hakahana Clinic	0	9.31	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Hakahana Clinic	0	0.87	0
Khomas	Windhoek	Clinic	Registered nurse	Hakahana Clinic	0	6.07	0
Khomas	Windhoek	Clinic	Enrolled nurse	Okuryangava Clinic	0	0.49	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Okuryangava Clinic	2	2.2	0.91
Khomas	Windhoek	Clinic	Registered nurse	Okuryangava Clinic	0	1.06	0
Khomas	Windhoek	Clinic	Enrolled nurse	Otjomuise Clinic	0	0.53	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Otjomuise Clinic	0	1.32	0
Khomas	Windhoek	Clinic	Registered nurse	Otjomuise Clinic	4	1.11	3.6
Khomas	Windhoek	Clinic	Enrolled nurse	Polytechnikon Clinic	0	0.86	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Polytechnikon Clinic	0	0.02	0
Khomas	Windhoek	Clinic	Registered nurse	Polytechnikon Clinic	0	0.73	0
Khomas	Windhoek	Clinic	Enrolled nurse	Robert Mugabe Clinic	0	0.38	0
Khomas	Windhoek	Clinic	Pharmacist assistant	Robert Mugabe Clinic	0	1.85	0
Khomas	Windhoek	Clinic	Registered nurse	Robert Mugabe Clinic	0	0.92	0
Khomas	Windhoek	Clinic	Enrolled nurse	University of Namibia Clinic	0	2.13	0
Khomas	Windhoek	Clinic	Pharmacist assistant	University of Namibia Clinic	0	0.02	0
Khomas	Windhoek	Clinic	Registered nurse	University of Namibia Clinic	0	1.39	0
Khomas	Windhoek	Clinic	Enrolled nurse	Van Eck Power	0	0.46	0

				Station Clinic			
Khomas	Windhoek	Clinic	Pharmacist assistant	Van Eck Power Station Clinic	0	0.02	0
Khomas	Windhoek	Clinic	Registered nurse	Van Eck Power Station Clinic	0	0.57	0
Khomas	Windhoek	Clinic	Enrolled nurse	Wanaheda Clinic	6	10.44	0.57
Khomas	Windhoek	Clinic	Pharmacist assistant	Wanaheda Clinic	0	1.02	0
Khomas	Windhoek	Clinic	Registered nurse	Wanaheda Clinic	3	8.16	0.37
Khomas	Windhoek	Health Centre	Enrolled nurse	Katutura Health Centre	0	25.61	0
Khomas	Windhoek	Health Centre	Pharmacist assistant	Katutura Health Centre	3	11.71	0.26
Khomas	Windhoek	Health Centre	Registered nurse	Katutura Health Centre	0	53.73	0
Khomas	Windhoek	Health Centre	Enrolled nurse	Khomasdal Health Centre	5	7.45	0.67
Khomas	Windhoek	Health Centre	Pharmacist assistant	Khomasdal Health Centre	0	2.15	0
Khomas	Windhoek	Health Centre	Registered nurse	Khomasdal Health Centre	5	11.48	0.44
Khomas	Windhoek	Intermediate Hospital	Doctors	Katutura Intermediate Hospital	48	157.1	0.31
Khomas	Windhoek	Intermediate Hospital	Enrolled nurse	Katutura Intermediate Hospital	0	260.34	0
Khomas	Windhoek	Intermediate Hospital	Pharmacist	Katutura Intermediate Hospital	2	13.11	0.15
Khomas	Windhoek	Intermediate Hospital	Pharmacist assistant	Katutura Intermediate Hospital	6	14.83	0.4
Khomas	Windhoek	Intermediate Hospital	Registered nurse	Katutura Intermediate Hospital	0	407.31	0
Khomas	Windhoek	Intermediate Hospital	Doctors	Windhoek Central Hospital	44	89.4	0.49
Khomas	Windhoek	Intermediate Hospital	Enrolled nurse	Windhoek Central Intermediate	0	205.03	0
Khomas	Windhoek	Intermediate Hospital	Registered nurse	Windhoek Central Intermediate	0	318.51	0
Khomas	Windhoek	Intermediate Hospital	Pharmacist	Windhoek Central Intermediate Hospital	7	10.18	0.69
Khomas	Windhoek	Intermediate Hospital	Pharmacist assistant	Windhoek Central Intermediate Hospital	6	10.15	0.59
Kunene	Khorixas	Clinic	Enrolled nurse	Anichab Clinic	0	0.9	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Anichab Clinic	0	0.1	0
Kunene	Khorixas	Clinic	Registered nurse	Anichab Clinic	0	0.72	0
Kunene	Khorixas	Clinic	Enrolled nurse	Anker Clinic	0	1.16	0

Kunene	Khorixas	Clinic	Pharmacist assistant	Anker Clinic	0	0.11	0
Kunene	Khorixas	Clinic	Registered nurse	Anker Clinic	0	0.86	0
Kunene	Khorixas	Clinic	Enrolled nurse	Bergsig Clinic	0	1.03	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Bergsig Clinic	0	0.12	0
Kunene	Khorixas	Clinic	Registered nurse	Bergsig Clinic	0	0.78	0
Kunene	Khorixas	Clinic	Enrolled nurse	Erwee Clinic	0	1.15	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Erwee Clinic	0	0.12	0
Kunene	Khorixas	Clinic	Registered nurse	Erwee Clinic	0	0.86	0
Kunene	Khorixas	Clinic	Enrolled nurse	Fransfontein Clinic	0	2.55	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Fransfontein Clinic	0	0.19	0
Kunene	Khorixas	Clinic	Registered nurse	Fransfontein Clinic	0	1.46	0
Kunene	Khorixas	Clinic	Enrolled nurse	Khorixas Clinic	0	12.19	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Khorixas Clinic	0	0.89	0
Kunene	Khorixas	Clinic	Registered nurse	Khorixas Clinic	0	10.42	0
Kunene	Khorixas	Clinic	Enrolled nurse	Terrace Bay Clinic	0	0.21	0
Kunene	Khorixas	Clinic	Pharmacist assistant	Terrace Bay Clinic	0	0.04	0
Kunene	Khorixas	Clinic	Registered nurse	Terrace Bay Clinic	0	0.41	0
Kunene	Khorixas	District hospital	Doctors	Khorixas District Hospital	3	3.75	0.8
Kunene	Khorixas	District hospital	Enrolled nurse	Khorixas District Hospital	39	5.37	7.26
Kunene	Khorixas	District hospital	Pharmacist	Khorixas District Hospital	0	2.92	0
Kunene	Khorixas	District hospital	Pharmacist assistant	Khorixas District Hospital	1	2.67	0.37
Kunene	Khorixas	District hospital	Registered nurse	Khorixas District Hospital	21	16.27	1.29
Kunene	Opuwo	Clinic	Enrolled nurse	Epupa Clinic	0	0.89	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Epupa Clinic	0	0.12	0
Kunene	Opuwo	Clinic	Registered nurse	Epupa Clinic	0	0.72	0
Kunene	Opuwo	Clinic	Enrolled nurse	Etanga Clinic	0	0.76	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Etanga Clinic	0	0.1	0
Kunene	Opuwo	Clinic	Registered nurse	Etanga Clinic	0	0.83	0
Kunene	Opuwo	Clinic	Enrolled nurse	Etoto Clinic	0	1.09	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Etoto Clinic	0	0.13	0
Kunene	Opuwo	Clinic	Registered nurse	Etoto Clinic	0	0.93	0
Kunene	Opuwo	Clinic	Enrolled nurse	Ohandungu Clinic	0	1.3	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Ohandungu Clinic	0	0.17	0
Kunene	Opuwo	Clinic	Registered nurse	Ohandungu Clinic	0	0.93	0
Kunene	Opuwo	Clinic	Enrolled nurse	Okangwati Clinic	0	4.29	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Okangwati Clinic	0	0.46	0
Kunene	Opuwo	Clinic	Registered nurse	Okangwati Clinic	0	2.18	0
Kunene	Opuwo	Clinic	Enrolled nurse	Opuwo Clinic	4	15.78	0.25
Kunene	Opuwo	Clinic	Pharmacist assistant	Opuwo Clinic	0	1.6	0
Kunene	Opuwo	Clinic	Registered nurse	Opuwo Clinic	1	8.08	0.12

Kunene	Opuwo	Clinic	Enrolled nurse	Orumana Clinic	0	1.23	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Orumana Clinic	0	0.16	0
Kunene	Opuwo	Clinic	Registered nurse	Orumana Clinic	0	0.91	0
Kunene	Opuwo	Clinic	Enrolled nurse	Oruvandjei Clinic	0	1.08	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Oruvandjei Clinic	0	0.11	0
Kunene	Opuwo	Clinic	Registered nurse	Oruvandjei Clinic	0	0.87	0
Kunene	Opuwo	Clinic	Enrolled nurse	Otjimuhaka Clinic	0	2.13	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Otjimuhaka Clinic	0	0.25	0
Kunene	Opuwo	Clinic	Registered nurse	Otjimuhaka Clinic	0	1.34	0
Kunene	Opuwo	Clinic	Enrolled nurse	Otjiu Clinic	0	0.56	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Otjiu Clinic	0	0.08	0
Kunene	Opuwo	Clinic	Registered nurse	Otjiu Clinic	0	0.57	0
Kunene	Opuwo	Clinic	Enrolled nurse	Otjondeka Clinic	0	1.76	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Otjondeka Clinic	0	0.18	0
Kunene	Opuwo	Clinic	Registered nurse	Otjondeka Clinic	0	1.18	0
Kunene	Opuwo	Clinic	Enrolled nurse	Otuani Clinic	0	1	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Otuani Clinic	0	0.13	0
Kunene	Opuwo	Clinic	Registered nurse	Otuani Clinic	0	0.76	0
Kunene	Opuwo	Clinic	Enrolled nurse	Sesfontein Clinic	0	2.44	0
Kunene	Opuwo	Clinic	Pharmacist assistant	Sesfontein Clinic	0	0.28	0
Kunene	Opuwo	Clinic	Registered nurse	Sesfontein Clinic	0	1.49	0
Kunene	Opuwo	District hospital	Doctors	Opuwo District Hospital	3	7.52	0.4
Kunene	Opuwo	District hospital	Enrolled nurse	Opuwo District Hospital	53	22.86	2.32
Kunene	Opuwo	District hospital	Pharmacist	Opuwo District Hospital	0	3.3	0
Kunene	Opuwo	District hospital	Pharmacist assistant	Opuwo District Hospital	1	3.22	0.31
Kunene	Opuwo	District hospital	Registered nurse	Opuwo District Hospital	31	44.95	0.69
Kunene	Outjo	Clinic	Enrolled nurse	Kamanjab Clinic	0	5.03	0
Kunene	Outjo	Clinic	Pharmacist assistant	Kamanjab Clinic	0	0.39	0
Kunene	Outjo	Clinic	Registered nurse	Kamanjab Clinic	0	4.16	0
Kunene	Outjo	Clinic	Enrolled nurse	Ongongo Clinic	0	0.53	0
Kunene	Outjo	Clinic	Pharmacist assistant	Ongongo Clinic	0	0.07	0
Kunene	Outjo	Clinic	Registered nurse	Ongongo Clinic	0	0.57	0
Kunene	Outjo	Clinic	Enrolled nurse	Otjokavare Clinic	0	1.49	0
Kunene	Outjo	Clinic	Pharmacist assistant	Otjokavare Clinic	0	0.18	0
Kunene	Outjo	Clinic	Registered nurse	Otjokavare Clinic	0	0.96	0
Kunene	Outjo	Clinic	Enrolled nurse	Outjo Clinic	0	10.83	0
Kunene	Outjo	Clinic	Pharmacist assistant	Outjo Clinic	0	0.86	0
Kunene	Outjo	Clinic	Registered nurse	Outjo Clinic	0	7.11	0
Kunene	Outjo	District hospital	Doctors	Outjo District Hospital	2	5.63	0.36

Kunene	Outjo	District hospital	Enrolled nurse	Outjo District Hospital	32	11.47	2.79
Kunene	Outjo	District hospital	Pharmacist	Outjo District Hospital	0	3.1	0
Kunene	Outjo	District hospital	Pharmacist assistant	Outjo District Hospital	1	2.8	0.36
Kunene	Outjo	District hospital	Registered nurse	Outjo District Hospital	21	25.65	0.82
Ohangwena	Eenhana	Clinic	Enrolled nurse	Eenhana Clinic	3	20.13	0.15
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Eenhana Clinic	0	2.03	0
Ohangwena	Eenhana	Clinic	Registered nurse	Eenhana Clinic	5	14.01	0.36
Ohangwena	Eenhana	Clinic	Enrolled nurse	Epembe Clinic	1	4.55	0.22
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Epembe Clinic	0	0.44	0
Ohangwena	Eenhana	Clinic	Registered nurse	Epembe Clinic	1	2.46	0.41
Ohangwena	Eenhana	Clinic	Enrolled nurse	Epinga Clinic	1	2.95	0.34
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Epinga Clinic	0	0.29	0
Ohangwena	Eenhana	Clinic	Registered nurse	Epinga Clinic	1	1.89	0.53
Ohangwena	Eenhana	Clinic	Enrolled nurse	Omboloka Clinic	0	3.45	0
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Omboloka Clinic	0	0.4	0
Ohangwena	Eenhana	Clinic	Registered nurse	Omboloka Clinic	0	2.22	0
Ohangwena	Eenhana	Clinic	Enrolled nurse	Omundaungilo Clinic	1	4.86	0.21
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Omundaungilo Clinic	0	0.51	0
Ohangwena	Eenhana	Clinic	Registered nurse	Omundaungilo Clinic	1	3.34	0.3
Ohangwena	Eenhana	Clinic	Enrolled nurse	Onambutu Clinic	1	3.64	0.27
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Onambutu Clinic	0	0.35	0
Ohangwena	Eenhana	Clinic	Registered nurse	Onambutu Clinic	1	2.37	0.42
Ohangwena	Eenhana	Clinic	Enrolled nurse	Onangolo Clinic	0	3.19	0
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Onangolo Clinic	0	0.32	0
Ohangwena	Eenhana	Clinic	Registered nurse	Onangolo Clinic	1	1.71	0.58
Ohangwena	Eenhana	Clinic	Enrolled nurse	Ongulayanetanga Clinic	0	3.69	0
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Ongulayanetanga Clinic	0	0.38	0
Ohangwena	Eenhana	Clinic	Registered nurse	Ongulayanetanga Clinic	0	2.11	0
Ohangwena	Eenhana	Clinic	Enrolled nurse	Oshaango Clinic	1	5.53	0.18
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Oshaango Clinic	0	0.53	0
Ohangwena	Eenhana	Clinic	Registered nurse	Oshaango Clinic	2	3.12	0.64
Ohangwena	Eenhana	Clinic	Enrolled nurse	Oshandi Clinic	1	4.88	0.2
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Oshandi Clinic	0	0.47	0
Ohangwena	Eenhana	Clinic	Registered nurse	Oshandi Clinic	1	2.72	0.37
Ohangwena	Eenhana	Clinic	Enrolled nurse	Oshikunde Clinic	1	6.24	0.16
Ohangwena	Eenhana	Clinic	Pharmacist assistant	Oshikunde Clinic	0	0.62	0
Ohangwena	Eenhana	Clinic	Registered nurse	Oshikunde Clinic	1	3.26	0.31
Ohangwena	Eenhana	District hospital	Doctors	Eenhana District Hospital	4	15.97	0.25

Ohangwena	Eenhana	District hospital	Enrolled nurse	Eenhana District Hospital	35	37.02	0.95
Ohangwena	Eenhana	District hospital	Pharmacist	Eenhana District Hospital	0	4.81	0
Ohangwena	Eenhana	District hospital	Pharmacist assistant	Eenhana District Hospital	1	5.42	0.18
Ohangwena	Eenhana	District hospital	Registered nurse	Eenhana District Hospital	44	77.93	0.56
Ohangwena	Engela	Clinic	Enrolled nurse	Edundja Clinic	0	7.1	0
Ohangwena	Engela	Clinic	Pharmacist assistant	Edundja Clinic	0	0.7	0
Ohangwena	Engela	Clinic	Registered nurse	Edundja Clinic	0	3.36	0
Ohangwena	Engela	Clinic	Enrolled nurse	Endola Clinic	0	10.21	0
Ohangwena	Engela	Clinic	Pharmacist assistant	Endola Clinic	0	0.86	0
Ohangwena	Engela	Clinic	Registered nurse	Endola Clinic	1	4.86	0.21
Ohangwena	Engela	Clinic	Enrolled nurse	Engela Clinic	3	20.84	0.14
Ohangwena	Engela	Clinic	Pharmacist assistant	Engela Clinic	0	2.02	0
Ohangwena	Engela	Clinic	Registered nurse	Engela Clinic	6	12.82	0.47
Ohangwena	Engela	Clinic	Enrolled nurse	Eudafano Clinic	1	8.75	0.11
Ohangwena	Engela	Clinic	Pharmacist assistant	Eudafano Clinic	0	0.71	0
Ohangwena	Engela	Clinic	Registered nurse	Eudafano Clinic	2	4.26	0.47
Ohangwena	Engela	Clinic	Enrolled nurse	Hamukoto Wakapa Clinic	0	1.35	0
Ohangwena	Engela	Clinic	Pharmacist assistant	Hamukoto Wakapa Clinic	0	0.14	0
Ohangwena	Engela	Clinic	Registered nurse	Hamukoto Wakapa Clinic	0	0.97	0
Ohangwena	Engela	Clinic	Enrolled nurse	Ohalushu Clinic	1	5.26	0.19
Ohangwena	Engela	Clinic	Pharmacist assistant	Ohalushu Clinic	0	0.44	0
Ohangwena	Engela	Clinic	Registered nurse	Ohalushu Clinic	1	2.72	0.37
Ohangwena	Engela	Clinic	Enrolled nurse	Ohangwena Clinic	3	7.29	0.41
Ohangwena	Engela	Clinic	Pharmacist assistant	Ohangwena Clinic	0	0.67	0
Ohangwena	Engela	Clinic	Registered nurse	Ohangwena Clinic	2	3.67	0.54
Ohangwena	Engela	Clinic	Enrolled nurse	Ohaukelo Clinic	0	4.71	0
Ohangwena	Engela	Clinic	Pharmacist assistant	Ohaukelo Clinic	0	0.48	0
Ohangwena	Engela	Clinic	Registered nurse	Ohaukelo Clinic	1	2.62	0.38
Ohangwena	Engela	Clinic	Enrolled nurse	Okambebe Clinic	1	6.14	0.16
Ohangwena	Engela	Clinic	Pharmacist assistant	Okambebe Clinic	0	0.54	0
Ohangwena	Engela	Clinic	Registered nurse	Okambebe Clinic	2	3.38	0.59
Ohangwena	Engela	Clinic	Enrolled nurse	Okatope Clinic	1	6.83	0.15
Ohangwena	Engela	Clinic	Pharmacist assistant	Okatope Clinic	0	0.61	0
Ohangwena	Engela	Clinic	Registered nurse	Okatope Clinic	2	3.44	0.58
Ohangwena	Engela	Clinic	Enrolled nurse	Omungwelume Clinic	3	9.68	0.31
Ohangwena	Engela	Clinic	Pharmacist assistant	Omungwelume Clinic	0	0.93	0
Ohangwena	Engela	Clinic	Registered nurse	Omungwelume Clinic	2	5.16	0.39

Ohangwena	Engela	Clinic	Enrolled nurse	Onamukulo Clinic	1	5.26	0.19
Ohangwena	Engela	Clinic	Pharmacist assistant	Onamukulo Clinic	0	0.49	0
Ohangwena	Engela	Clinic	Registered nurse	Onamukulo Clinic	1	2.74	0.36
Ohangwena	Engela	Clinic	Enrolled nurse	Ondobe Clinic	2	7.74	0.26
Ohangwena	Engela	Clinic	Pharmacist assistant	Ondobe Clinic	0	0.73	0
Ohangwena	Engela	Clinic	Registered nurse	Ondobe Clinic	3	4.06	0.74
Ohangwena	Engela	Clinic	Enrolled nurse	Onekwaya Clinic	1	5.85	0.17
Ohangwena	Engela	Clinic	Pharmacist assistant	Onekwaya Clinic	0	0.47	0
Ohangwena	Engela	Clinic	Registered nurse	Onekwaya Clinic	2	3.08	0.65
Ohangwena	Engela	Clinic	Enrolled nurse	Ongenga Clinic	1	18.38	0.05
Ohangwena	Engela	Clinic	Pharmacist assistant	Ongenga Clinic	0	1.47	0
Ohangwena	Engela	Clinic	Registered nurse	Ongenga Clinic	2	9.66	0.21
Ohangwena	Engela	Clinic	Enrolled nurse	Ongha Clinic	9	15.94	0.56
Ohangwena	Engela	Clinic	Pharmacist assistant	Ongha Clinic	1	2.58	0.39
Ohangwena	Engela	Clinic	Registered nurse	Ongha Clinic	12	11.13	1.08
Ohangwena	Engela	District hospital	Doctors	Engela District Hospital	8	26.05	0.31
Ohangwena	Engela	District hospital	Enrolled nurse	Engela District Hospital	0	60.05	0
Ohangwena	Engela	District hospital	Pharmacist	Engela District Hospital	0	5.95	0
Ohangwena	Engela	District hospital	Pharmacist assistant	Engela District Hospital	3	7.49	0.4
Ohangwena	Engela	District hospital	Registered nurse	Engela District Hospital	0	113.89	0
Ohangwena	Engela	Health Centre	Enrolled nurse	Odibo Health Centre	0	7	0
Ohangwena	Engela	Health Centre	Pharmacist assistant	Odibo Health Centre	0	2.44	0
Ohangwena	Engela	Health Centre	Registered nurse	Odibo Health Centre	0	20.71	0
Ohangwena	Okongo	Clinic	Enrolled nurse	Ekoka Clinic	1	2.28	0.44
Ohangwena	Okongo	Clinic	Pharmacist assistant	Ekoka Clinic	0	0.24	0
Ohangwena	Okongo	Clinic	Registered nurse	Ekoka Clinic	1	1.61	0.62
Ohangwena	Okongo	Clinic	Enrolled nurse	Okongo Clinic	2	14.06	0.14
Ohangwena	Okongo	Clinic	Pharmacist assistant	Okongo Clinic	0	1.58	0
Ohangwena	Okongo	Clinic	Registered nurse	Okongo Clinic	3	8.27	0.36
Ohangwena	Okongo	Clinic	Enrolled nurse	Olukula Clinic	0	1.68	0
Ohangwena	Okongo	Clinic	Pharmacist assistant	Olukula Clinic	0	0.21	0
Ohangwena	Okongo	Clinic	Registered nurse	Olukula Clinic	1	1.11	0.9
Ohangwena	Okongo	District hospital	Doctors	Okongo District Hospital	3	9.07	0.33
Ohangwena	Okongo	District hospital	Enrolled nurse	Okongo District Hospital	0	15.03	0
Ohangwena	Okongo	District hospital	Pharmacist	Okongo District Hospital	0	3.9	0
Ohangwena	Okongo	District	Pharmacist assistant	Okongo District	1	4.62	0.22

		hospital		Hospital			
Ohangwena	Okongo	District hospital	Registered nurse	Okongo District Hospital	0	35.6	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Aminuis Clinic	0	3.8	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Aminuis Clinic	0	0.34	0
Omaheke	Gobabis	Clinic	Registered nurse	Aminuis Clinic	0	2.18	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Corridor Clinic	0	4.43	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Corridor Clinic	0	0.42	0
Omaheke	Gobabis	Clinic	Registered nurse	Corridor Clinic	0	2.34	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Eiseb Block Clinic	0	1.14	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Eiseb Block Clinic	0	0.13	0
Omaheke	Gobabis	Clinic	Registered nurse	Eiseb Block Clinic	0	0.82	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Epako Clinic	0	17.33	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Epako Clinic	0	1.46	0
Omaheke	Gobabis	Clinic	Registered nurse	Epako Clinic	0	8.54	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Epikuro Post 3 Clinic	0	5.24	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Epikuro Post 3 Clinic	0	0.47	0
Omaheke	Gobabis	Clinic	Registered nurse	Epikuro Post 3 Clinic	0	2.87	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Leonardville Clinic	0	3.19	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Leonardville Clinic	0	0.32	0
Omaheke	Gobabis	Clinic	Registered nurse	Leonardville Clinic	0	1.86	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Omitara Clinic	0	1.76	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Omitara Clinic	0	0.16	0
Omaheke	Gobabis	Clinic	Registered nurse	Omitara Clinic	0	1.27	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Onderombapa Clinic	0	3.24	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Onderombapa Clinic	0	0.28	0
Omaheke	Gobabis	Clinic	Registered nurse	Onderombapa Clinic	0	1.86	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Otjimanangombe Clinic	0	1.46	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Otjimanangombe Clinic	0	0.15	0
Omaheke	Gobabis	Clinic	Registered nurse	Otjimanangombe Clinic	0	1.09	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Sendingplaas Clinic	0	3.38	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Sendingplaas Clinic	0	0.32	0
Omaheke	Gobabis	Clinic	Registered nurse	Sendingplaas Clinic	0	1.97	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Tallismanus Clinic	0	4.51	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Tallismanus Clinic	0	0.44	0
Omaheke	Gobabis	Clinic	Registered nurse	Tallismanus Clinic	0	2.48	0
Omaheke	Gobabis	Clinic	Enrolled nurse	Witvlei Clinic	0	3.84	0
Omaheke	Gobabis	Clinic	Pharmacist assistant	Witvlei Clinic	0	0.36	0
Omaheke	Gobabis	Clinic	Registered nurse	Witvlei Clinic	0	2.24	0
Omaheke	Gobabis	District hospital	Doctors	Gobabis District Hospital	5	11.69	0.43
Omaheke	Gobabis	District	Enrolled nurse	Gobabis District	0	39.98	0

		hospital		Hospital			
Omaheke	Gobabis	District hospital	Pharmacist	Gobabis District Hospital	1	4.14	0.24
Omaheke	Gobabis	District hospital	Pharmacist assistant	Gobabis District Hospital	2	4.61	0.43
Omaheke	Gobabis	District hospital	Registered nurse	Gobabis District Hospital	0	73.17	0
Omaheke	Gobabis	Health Centre	Enrolled nurse	Otjinene Health Centre	0	2.93	0
Omaheke	Gobabis	Health Centre	Pharmacist assistant	Otjinene Health Centre	0	0.96	0
Omaheke	Gobabis	Health Centre	Registered nurse	Otjinene Health Centre	0	5.08	0
Omusati	Okahao	Clinic	Enrolled nurse	Amarika Clinic	1	0.34	2.94
Omusati	Okahao	Clinic	Pharmacist assistant	Amarika Clinic	0	0.05	0
Omusati	Okahao	Clinic	Registered nurse	Amarika Clinic	1	0.46	2.17
Omusati	Okahao	Clinic	Enrolled nurse	Eendombe Clinic	1	2.01	0.5
Omusati	Okahao	Clinic	Pharmacist assistant	Eendombe Clinic	0	0.16	0
Omusati	Okahao	Clinic	Registered nurse	Eendombe Clinic	1	1.39	0.72
Omusati	Okahao	Clinic	Enrolled nurse	Etilyasa Clinic	1	5	0.2
Omusati	Okahao	Clinic	Pharmacist assistant	Etilyasa Clinic	0	0.44	0
Omusati	Okahao	Clinic	Registered nurse	Etilyasa Clinic	1	2.91	0.34
Omusati	Okahao	Clinic	Enrolled nurse	Nujoma-Eya Clinic	1	2.15	0.47
Omusati	Okahao	Clinic	Pharmacist assistant	Nujoma-Eya Clinic	0	0.43	0
Omusati	Okahao	Clinic	Registered nurse	Nujoma-Eya Clinic	1	1.5	0.67
Omusati	Okahao	Clinic	Enrolled nurse	Okahao Clinic	6	16.64	0.36
Omusati	Okahao	Clinic	Pharmacist assistant	Okahao Clinic	0	1.49	0
Omusati	Okahao	Clinic	Registered nurse	Okahao Clinic	2	10.19	0.2
Omusati	Okahao	Clinic	Enrolled nurse	Oluteyi Clinic	1	3.16	0.32
Omusati	Okahao	Clinic	Pharmacist assistant	Oluteyi Clinic	0	0.27	0
Omusati	Okahao	Clinic	Registered nurse	Oluteyi Clinic	1	1.97	0.51
Omusati	Okahao	Clinic	Enrolled nurse	Onamatanga Clinic	1	0.83	1.2
Omusati	Okahao	Clinic	Pharmacist assistant	Onamatanga Clinic	0	0.11	0
Omusati	Okahao	Clinic	Registered nurse	Onamatanga Clinic	1	0.64	1.56
Omusati	Okahao	Clinic	Enrolled nurse	Otamanzi Clinic	1	4.69	0.21
Omusati	Okahao	Clinic	Pharmacist assistant	Otamanzi Clinic	0	0.48	0
Omusati	Okahao	Clinic	Registered nurse	Otamanzi Clinic	1	2.58	0.39
Omusati	Okahao	Clinic	Enrolled nurse	Uutsathima Clinic	1	1.63	0.61
Omusati	Okahao	Clinic	Pharmacist assistant	Uutsathima Clinic	0	0.19	0
Omusati	Okahao	Clinic	Registered nurse	Uutsathima Clinic	1	0.98	1.02
Omusati	Okahao	District hospital	Doctors	Okahao District Hospital	2	13.11	0.15
Omusati	Okahao	District hospital	Enrolled nurse	Okahao District Hospital	31	21.21	1.46
Omusati	Okahao	District hospital	Pharmacist	Okahao District Hospital	0	4.34	0

Omusati	Okahao	District hospital	Pharmacist assistant	Okahao District Hospital	0	5.56	0
Omusati	Okahao	District hospital	Registered nurse	Okahao District Hospital	19	43.26	0.44
Omusati	Okahao	Health Centre	Enrolled nurse	Indira Gandhi Health Centre	6	4.45	1.35
Omusati	Okahao	Health Centre	Pharmacist assistant	Indira Gandhi Health Centre	1	1.35	0.74
Omusati	Okahao	Health Centre	Registered nurse	Indira Gandhi Health Centre	4	7.04	0.57
Omusati	Oshikuku	Clinic	Enrolled nurse	Epoko Clinic	1	4.18	0.24
Omusati	Oshikuku	Clinic	Pharmacist assistant	Epoko Clinic	0	0.45	0
Omusati	Oshikuku	Clinic	Registered nurse	Epoko Clinic	1	2.44	0.41
Omusati	Oshikuku	Clinic	Enrolled nurse	Iipanda-Yaamiti Clinic	0	2.43	0
Omusati	Oshikuku	Clinic	Pharmacist assistant	Iipanda-Yaamiti Clinic	0	0.17	0
Omusati	Oshikuku	Clinic	Registered nurse	Iipanda-Yaamiti Clinic	1	1.59	0.63
Omusati	Oshikuku	Clinic	Enrolled nurse	Odimbwa Clinic	1	4.55	0.22
Omusati	Oshikuku	Clinic	Pharmacist assistant	Odimbwa Clinic	0	0.42	0
Omusati	Oshikuku	Clinic	Registered nurse	Odimbwa Clinic	0	2.57	0
Omusati	Oshikuku	Clinic	Enrolled nurse	Ogongo Clinic	1	2.04	0.49
Omusati	Oshikuku	Clinic	Pharmacist assistant	Ogongo Clinic	0	0.21	0
Omusati	Oshikuku	Clinic	Registered nurse	Ogongo Clinic	1	1.32	0.76
Omusati	Oshikuku	Clinic	Enrolled nurse	Okando Clinic	1	3.76	0.27
Omusati	Oshikuku	Clinic	Pharmacist assistant	Okando Clinic	0	0.32	0
Omusati	Oshikuku	Clinic	Registered nurse	Okando Clinic	1	2.36	0.42
Omusati	Oshikuku	Clinic	Enrolled nurse	Okathitu Clinic	1	2.46	0.41
Omusati	Oshikuku	Clinic	Pharmacist assistant	Okathitu Clinic	0	0.25	0
Omusati	Oshikuku	Clinic	Registered nurse	Okathitu Clinic	1	1.46	0.68
Omusati	Oshikuku	Clinic	Enrolled nurse	Olupandu Clinic	2	2.53	0.79
Omusati	Oshikuku	Clinic	Pharmacist assistant	Olupandu Clinic	0	0.22	0
Omusati	Oshikuku	Clinic	Registered nurse	Olupandu Clinic	1	1.89	0.53
Omusati	Oshikuku	Clinic	Enrolled nurse	Olutsiidhi Clinic	1	3.4	0.29
Omusati	Oshikuku	Clinic	Pharmacist assistant	Olutsiidhi Clinic	0	0.27	0
Omusati	Oshikuku	Clinic	Registered nurse	Olutsiidhi Clinic	1	1.96	0.51
Omusati	Oshikuku	Clinic	Enrolled nurse	Omagalanga Clinic	1	1.65	0.61
Omusati	Oshikuku	Clinic	Pharmacist assistant	Omagalanga Clinic	0	0.17	0
Omusati	Oshikuku	Clinic	Registered nurse	Omagalanga Clinic	1	1.12	0.89
Omusati	Oshikuku	Clinic	Enrolled nurse	Omuthitugwonyama Clinic	1	4.05	0.25
Omusati	Oshikuku	Clinic	Pharmacist assistant	Omuthitugwonyama Clinic	0	0.42	0
Omusati	Oshikuku	Clinic	Registered nurse	Omuthitugwonyama Clinic	1	2.27	0.44
Omusati	Oshikuku	Clinic	Enrolled nurse	Omutundungu Clinic	1	2.66	0.38

Omusati	Oshikuku	Clinic	Pharmacist assistant	Omutundungu Clinic	0	0.27	0
Omusati	Oshikuku	Clinic	Registered nurse	Omutundungu Clinic	0	1.56	0
Omusati	Oshikuku	Clinic	Enrolled nurse	Onaanda Clinic	1	6.56	0.15
Omusati	Oshikuku	Clinic	Pharmacist assistant	Onaanda Clinic	0	0.58	0
Omusati	Oshikuku	Clinic	Registered nurse	Onaanda Clinic	0	4.11	0
Omusati	Oshikuku	Clinic	Enrolled nurse	Onheleiwa Clinic	1	5.74	0.17
Omusati	Oshikuku	Clinic	Pharmacist assistant	Onheleiwa Clinic	0	0.57	0
Omusati	Oshikuku	Clinic	Registered nurse	Onheleiwa Clinic	1	3.12	0.32
Omusati	Oshikuku	Clinic	Enrolled nurse	Onkani Clinic	1	2.75	0.36
Omusati	Oshikuku	Clinic	Pharmacist assistant	Onkani Clinic	0	0.26	0
Omusati	Oshikuku	Clinic	Registered nurse	Onkani Clinic	1	1.81	0.55
Omusati	Oshikuku	Clinic	Enrolled nurse	Othika Clinic	1	1.13	0.88
Omusati	Oshikuku	Clinic	Pharmacist assistant	Othika Clinic	0	0.13	0
Omusati	Oshikuku	Clinic	Registered nurse	Othika Clinic	1	0.98	1.02
Omusati	Oshikuku	Clinic	Enrolled nurse	Sheetekela Clinic	0	2.23	0
Omusati	Oshikuku	Clinic	Pharmacist assistant	Sheetekela Clinic	0	0.2	0
Omusati	Oshikuku	Clinic	Registered nurse	Sheetekela Clinic	0	1.48	0
Omusati	Oshikuku	Clinic	Enrolled nurse	St Benedictus Clinic	0	3.36	0
Omusati	Oshikuku	Clinic	Pharmacist assistant	St Benedictus Clinic	0	0.25	0
Omusati	Oshikuku	Clinic	Registered nurse	St Benedictus Clinic	0	2.47	0
Omusati	Oshikuku	District hospital	Doctors	Oshikuku District Hospital	8	17.92	0.45
Omusati	Oshikuku	District hospital	Enrolled nurse	Oshikuku District Hospital	69	50.44	1.37
Omusati	Oshikuku	District hospital	Pharmacist	Oshikuku District Hospital	1	4.39	0.23
Omusati	Oshikuku	District hospital	Pharmacist assistant	Oshikuku District Hospital	4	5.18	0.77
Omusati	Oshikuku	District hospital	Registered nurse	Oshikuku District Hospital	33	93.17	0.35
Omusati	Oshikuku	Health Centre	Enrolled nurse	Elim Health Centre	2	2.17	0.92
Omusati	Oshikuku	Health Centre	Pharmacist assistant	Elim Health Centre	0	0.62	0
Omusati	Oshikuku	Health Centre	Registered nurse	Elim Health Centre	3	3.61	0.83
Omusati	Oshikuku	Health Centre	Enrolled nurse	Okalongo Health Centre	4	6.39	0.63
Omusati	Oshikuku	Health Centre	Pharmacist assistant	Okalongo Health Centre	0	3.21	0
Omusati	Oshikuku	Health Centre	Registered nurse	Okalongo Health Centre	4	13.68	0.29
Omusati	Outapi	Clinic	Enrolled nurse	Anamulenge Clinic	0	3.6	0
Omusati	Outapi	Clinic	Pharmacist assistant	Anamulenge Clinic	0	0.35	0
Omusati	Outapi	Clinic	Registered nurse	Anamulenge Clinic	0	2.27	0
Omusati	Outapi	Clinic	Enrolled nurse	Eengolo Clinic	1	3.56	0.28
Omusati	Outapi	Clinic	Pharmacist assistant	Eengolo Clinic	0	0.34	0

Omusati	Outapi	Clinic	Registered nurse	Eengolo Clinic	1	2.29	0.44
Omusati	Outapi	Clinic	Enrolled nurse	Eunda Clinic	1	5.09	0.2
Omusati	Outapi	Clinic	Pharmacist assistant	Eunda Clinic	0	0.58	0
Omusati	Outapi	Clinic	Registered nurse	Eunda Clinic	1	2.59	0.39
Omusati	Outapi	Clinic	Enrolled nurse	Onawa Clinic	1	10.38	0.1
Omusati	Outapi	Clinic	Pharmacist assistant	Onawa Clinic	0	1.02	0
Omusati	Outapi	Clinic	Registered nurse	Onawa Clinic	1	5.53	0.18
Omusati	Outapi	Clinic	Enrolled nurse	Oshaala Clinic	1	3.53	0.28
Omusati	Outapi	Clinic	Pharmacist assistant	Oshaala Clinic	0	0.39	0
Omusati	Outapi	Clinic	Registered nurse	Oshaala Clinic	1	1.98	0.51
Omusati	Outapi	Clinic	Enrolled nurse	Outapi Clinic	6	21.46	0.28
Omusati	Outapi	Clinic	Pharmacist assistant	Outapi Clinic	0	2.18	0
Omusati	Outapi	Clinic	Registered nurse	Outapi Clinic	1	14.04	0.07
Omusati	Outapi	Clinic	Enrolled nurse	Ruacana Clinic	1	5.19	0.19
Omusati	Outapi	Clinic	Pharmacist assistant	Ruacana Clinic	0	0.56	0
Omusati	Outapi	Clinic	Registered nurse	Ruacana Clinic	1	3.37	0.3
Omusati	Outapi	District hospital	Doctors	Outapi District Hospital	5	15.31	0.33
Omusati	Outapi	District hospital	Enrolled nurse	Outapi District Hospital	43	38.49	1.12
Omusati	Outapi	District hospital	Pharmacist	Outapi District Hospital	0	6.09	0
Omusati	Outapi	District hospital	Pharmacist assistant	Outapi District Hospital	2	8.15	0.25
Omusati	Outapi	District hospital	Registered nurse	Outapi District Hospital	30	78.7	0.38
Omusati	Outapi	Health Centre	Enrolled nurse	Mahenene Health Centre	5	3.63	1.38
Omusati	Outapi	Health Centre	Pharmacist assistant	Mahenene Health Centre	0	0.96	0
Omusati	Outapi	Health Centre	Registered nurse	Mahenene Health Centre	3	5.45	0.55
Omusati	Outapi	Health Centre	Enrolled nurse	Omona Wa Tjihozu Health Centre	4	4.85	0.82
Omusati	Outapi	Health Centre	Pharmacist assistant	Omona Wa Tjihozu Health Centre	0	1.55	0
Omusati	Outapi	Health Centre	Registered nurse	Omona Wa Tjihozu Health Centre	4	8.08	0.5
Omusati	Tsandi	Clinic	Enrolled nurse	Iilyateko Clinic	0	3.01	0
Omusati	Tsandi	Clinic	Pharmacist assistant	Iilyateko Clinic	0	0.31	0
Omusati	Tsandi	Clinic	Registered nurse	Iilyateko Clinic	0	1.79	0
Omusati	Tsandi	Clinic	Enrolled nurse	Okatseidhi Clinic	0	0.49	0
Omusati	Tsandi	Clinic	Pharmacist assistant	Okatseidhi Clinic	0	0.07	0
Omusati	Tsandi	Clinic	Registered nurse	Okatseidhi Clinic	1	0.62	1.61
Omusati	Tsandi	Clinic	Enrolled nurse	Omakange Clinic	1	0.34	2.94
Omusati	Tsandi	Clinic	Pharmacist assistant	Omakange Clinic	0	0.05	0
Omusati	Tsandi	Clinic	Registered nurse	Omakange Clinic	0	0.48	0

Omusati	Tsandi	Clinic	Enrolled nurse	Onamandongo Clinic	1	4.91	0.2
Omusati	Tsandi	Clinic	Pharmacist assistant	Onamandongo Clinic	0	0.46	0
Omusati	Tsandi	Clinic	Registered nurse	Onamandongo Clinic	1	2.66	0.38
Omusati	Tsandi	Clinic	Enrolled nurse	Ongulumbashe Clinic	1	2.49	0.4
Omusati	Tsandi	Clinic	Pharmacist assistant	Ongulumbashe Clinic	0	0.27	0
Omusati	Tsandi	Clinic	Registered nurse	Ongulumbashe Clinic	1	1.66	0.6
Omusati	Tsandi	Clinic	Enrolled nurse	Oshitudha Clinic	1	0.98	1.02
Omusati	Tsandi	Clinic	Pharmacist assistant	Oshitudha Clinic	0	0.13	0
Omusati	Tsandi	Clinic	Registered nurse	Oshitudha Clinic	1	0.73	1.37
Omusati	Tsandi	Clinic	Enrolled nurse	Tsandi Clinic	5	12.93	0.39
Omusati	Tsandi	Clinic	Pharmacist assistant	Tsandi Clinic	0	1.25	0
Omusati	Tsandi	Clinic	Registered nurse	Tsandi Clinic	0	7.43	0
Omusati	Tsandi	District hospital	Doctors	Tsandi District Hospital	2	5.85	0.34
Omusati	Tsandi	District hospital	Enrolled nurse	Tsandi District Hospital	31	13.58	2.28
Omusati	Tsandi	District hospital	Pharmacist	Tsandi District Hospital	0	4.52	0
Omusati	Tsandi	District hospital	Pharmacist assistant	Tsandi District Hospital	1	6.09	0.16
Omusati	Tsandi	District hospital	Registered nurse	Tsandi District Hospital	15	32.11	0.47
Omusati	Tsandi	Health Centre	Enrolled nurse	Onesi Health Centre	7	5.32	1.32
Omusati	Tsandi	Health Centre	Pharmacist assistant	Onesi Health Centre	0	2.13	0
Omusati	Tsandi	Health Centre	Registered nurse	Onesi Health Centre	3	10.5	0.29
Oshana	Oshakati	Clinic	Enrolled nurse	Ehafo Clinic	1	2.06	0.49
Oshana	Oshakati	Clinic	Pharmacist assistant	Ehafo Clinic	0	0.22	0
Oshana	Oshakati	Clinic	Registered nurse	Ehafo Clinic	1	1.24	0.81
Oshana	Oshakati	Clinic	Enrolled nurse	Eheke Clinic	0	5.7	0
Oshana	Oshakati	Clinic	Pharmacist assistant	Eheke Clinic	0	0.47	0
Oshana	Oshakati	Clinic	Registered nurse	Eheke Clinic	0	3.36	0
Oshana	Oshakati	Clinic	Enrolled nurse	Ekamba Clinic	1	2.46	0.41
Oshana	Oshakati	Clinic	Pharmacist assistant	Ekamba Clinic	0	0.26	0
Oshana	Oshakati	Clinic	Registered nurse	Ekamba Clinic	1	2.11	0.47
Oshana	Oshakati	Clinic	Enrolled nurse	Eluwa Clinic	2	6.54	0.31
Oshana	Oshakati	Clinic	Pharmacist assistant	Eluwa Clinic	0	0.71	0
Oshana	Oshakati	Clinic	Registered nurse	Eluwa Clinic	1	4.84	0.21
Oshana	Oshakati	Clinic	Enrolled nurse	Enkono Clinic	1	4.1	0.24
Oshana	Oshakati	Clinic	Pharmacist assistant	Enkono Clinic	0	0.36	0

Oshana	Oshakati	Clinic	Registered nurse	Enkono Clinic	1	2.81	0.36
Oshana	Oshakati	Clinic	Enrolled nurse	Okaku Clinic	0	8.15	0
Oshana	Oshakati	Clinic	Pharmacist assistant	Okaku Clinic	0	0.57	0
Oshana	Oshakati	Clinic	Registered nurse	Okaku Clinic	0	4.48	0
Oshana	Oshakati	Clinic	Enrolled nurse	Okaukamasheshe Clinic	1	2.84	0.35
Oshana	Oshakati	Clinic	Pharmacist assistant	Okaukamasheshe Clinic	0	0.31	0
Oshana	Oshakati	Clinic	Registered nurse	Okaukamasheshe Clinic	1	1.82	0.55
Oshana	Oshakati	Clinic	Enrolled nurse	Okaukwejo Clinic	1	2.19	0.46
Oshana	Oshakati	Clinic	Pharmacist assistant	Okaukwejo Clinic	0	0.21	0
Oshana	Oshakati	Clinic	Registered nurse	Okaukwejo Clinic	1	1.37	0.73
Oshana	Oshakati	Clinic	Enrolled nurse	Ompundja Clinic	0	3.19	0
Oshana	Oshakati	Clinic	Pharmacist assistant	Ompundja Clinic	0	0.32	0
Oshana	Oshakati	Clinic	Registered nurse	Ompundja Clinic	0	1.89	0
Oshana	Oshakati	Clinic	Enrolled nurse	Onamutayi Clinic	1	8.86	0.11
Oshana	Oshakati	Clinic	Pharmacist assistant	Onamutayi Clinic	0	0.94	0
Oshana	Oshakati	Clinic	Registered nurse	Onamutayi Clinic	1	5.28	0.19
Oshana	Oshakati	Clinic	Enrolled nurse	Uukwiyuushona Clinic	1	4.49	0.22
Oshana	Oshakati	Clinic	Pharmacist assistant	Uukwiyuushona Clinic	0	0.44	0
Oshana	Oshakati	Clinic	Registered nurse	Uukwiyuushona Clinic	1	2.69	0.37
Oshana	Oshakati	Health Centre	Enrolled nurse	Okatana Health Centre	0	4.9	0
Oshana	Oshakati	Health Centre	Pharmacist assistant	Okatana Health Centre	0	1.3	0
Oshana	Oshakati	Health Centre	Registered nurse	Okatana Health Centre	0	8.78	0
Oshana	Oshakati	Health Centre	Enrolled nurse	Ondangwa Health Centre	4	10	0.4
Oshana	Oshakati	Health Centre	Pharmacist assistant	Ondangwa Health Centre	0	2.36	0
Oshana	Oshakati	Health Centre	Registered nurse	Ondangwa Health Centre	5	16.8	0.3
Oshana	Oshakati	Health Centre	Enrolled nurse	Ongwediva Health Centre	5	7.99	0.63
Oshana	Oshakati	Health Centre	Pharmacist assistant	Ongwediva Health Centre	0	3.38	0
Oshana	Oshakati	Health Centre	Registered nurse	Ongwediva Health Centre	3	17.17	0.17
Oshana	Oshakati	Health Centre	Enrolled nurse	Oshakati Health Centre	17	23.07	0.74
Oshana	Oshakati	Health Centre	Pharmacist assistant	Oshakati Health Centre	0	3.27	0
Oshana	Oshakati	Health Centre	Registered nurse	Oshakati Health Centre	19	32.15	0.59

Oshana	Oshakati	Health Centre	Enrolled nurse	Ou Nick Health Centre	5	11.56	0.43
Oshana	Oshakati	Health Centre	Pharmacist assistant	Ou Nick Health Centre	0	2.6	0
Oshana	Oshakati	Health Centre	Registered nurse	Ou Nick Health Centre	2	16.33	0.12
Oshana	Oshakati	Intermediate Hospital	Doctors	Oshakati Intermediate Hospital	44	121.03	0.36
Oshana	Oshakati	Intermediate Hospital	Enrolled nurse	Oshakati Intermediate Hospital	4	190.98	0.02
Oshana	Oshakati	Intermediate Hospital	Pharmacist	Oshakati Intermediate Hospital	4	10.63	0.38
Oshana	Oshakati	Intermediate Hospital	Pharmacist assistant	Oshakati Intermediate Hospital	3	18.64	0.16
Oshana	Oshakati	Intermediate Hospital	Registered nurse	Oshakati Intermediate Hospital	224	297.89	0.75
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Amilema Clinic	0	4.74	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Amilema Clinic	0	0.48	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Amilema Clinic	0	2.57	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Elombe Clinic	0	3.46	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Elombe Clinic	0	0.38	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Elombe Clinic	0	2.08	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Ndamono Clinic	0	8.88	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Ndamono Clinic	0	0.61	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Ndamono Clinic	0	4.32	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Olukonda Clinic	0	5.54	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Olukonda Clinic	0	0.38	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Olukonda Clinic	0	3.29	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Omuntele Clinic	3	6.7	0.45
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Omuntele Clinic	0	0.64	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Omuntele Clinic	1	3.87	0.26
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Omuthiya Clinic	0	8.59	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Omuthiya Clinic	0	0.71	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Omuthiya Clinic	0	6.22	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Onakazizi Clinic	0	4.66	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Onakazizi Clinic	0	0.39	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Onakazizi Clinic	0	2.66	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Onamishu Clinic	0	3.59	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Onamishu Clinic	0	0.38	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Onamishu Clinic	0	2.02	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Onanke Clinic	0	1.63	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Onanke Clinic	0	0.17	0

Oshikoto	Onandjokwe	Clinic	Registered nurse	Onanke Clinic	0	1.19	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Onkumbula Clinic	0	4.86	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Onkumbula Clinic	0	0.49	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Onkumbula Clinic	0	2.81	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Ontananga Clinic	0	5.15	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Ontananga Clinic	0	0.36	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Ontananga Clinic	0	2.86	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Ontunda Clinic	0	1.83	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Ontunda Clinic	0	0.21	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Ontunda Clinic	0	1.21	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Onyuulaye Clinic	0	4.85	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Onyuulaye Clinic	0	0.53	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Onyuulaye Clinic	0	2.61	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Oshalongo Clinic	0	2.09	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Oshalongo Clinic	0	0.25	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Oshalongo Clinic	0	1.28	0
Oshikoto	Onandjokwe	Clinic	Enrolled nurse	Oshigambo Clinic	0	7.93	0
Oshikoto	Onandjokwe	Clinic	Pharmacist assistant	Oshigambo Clinic	0	0.76	0
Oshikoto	Onandjokwe	Clinic	Registered nurse	Oshigambo Clinic	0	4.27	0
Oshikoto	Onandjokwe	Health Centre	Enrolled nurse	Okankolo Health Centre	0	4.45	0
Oshikoto	Onandjokwe	Health Centre	Pharmacist assistant	Okankolo Health Centre	0	1.4	0
Oshikoto	Onandjokwe	Health Centre	Registered nurse	Okankolo Health Centre	0	6.7	0
Oshikoto	Onandjokwe	Health Centre	Enrolled nurse	Onayena Health Centre	0	3.41	0
Oshikoto	Onandjokwe	Health Centre	Pharmacist assistant	Onayena Health Centre	0	1.08	0
Oshikoto	Onandjokwe	Health Centre	Registered nurse	Onayena Health Centre	0	5.37	0
Oshikoto	Onandjokwe	Health Centre	Enrolled nurse	Onyaanya Health Centre	0	4.83	0
Oshikoto	Onandjokwe	Health Centre	Pharmacist assistant	Onyaanya Health Centre	0	1.37	0
Oshikoto	Onandjokwe	Health Centre	Registered nurse	Onyaanya Health Centre	0	7.14	0
Oshikoto	Onandjokwe	Intermediate Hospital	Doctors	Onandjokwe Intermediate Hospital	24	69.37	0.35
Oshikoto	Onandjokwe	Intermediate Hospital	Enrolled nurse	Onandjokwe Intermediate Hospital	144	145.59	0.99
Oshikoto	Onandjokwe	Intermediate Hospital	Pharmacist	Onandjokwe Intermediate Hospital	2	10.41	0.19
Oshikoto	Onandjokwe	Intermediate Hospital	Pharmacist assistant	Onandjokwe Intermediate	8	12.83	0.62

				Hospital			
Oshikoto	Onandjokwe	Intermediate Hospital	Registered nurse	Onandjokwe Intermediate Hospital	105	251.45	0.42
Oshikoto	Tsumeb	Clinic	Enrolled nurse	Hedimbi Clinic	0	0.6	0
Oshikoto	Tsumeb	Clinic	Pharmacist assistant	Hedimbi Clinic	0	0.08	0
Oshikoto	Tsumeb	Clinic	Registered nurse	Hedimbi Clinic	0	0.58	0
Oshikoto	Tsumeb	Clinic	Enrolled nurse	Lombard Clinic	0	8.96	0
Oshikoto	Tsumeb	Clinic	Pharmacist assistant	Lombard Clinic	0	0.93	0
Oshikoto	Tsumeb	Clinic	Registered nurse	Lombard Clinic	0	5.44	0
Oshikoto	Tsumeb	Clinic	Enrolled nurse	Oshivelo Clinic	0	7.18	0
Oshikoto	Tsumeb	Clinic	Pharmacist assistant	Oshivelo Clinic	0	1.16	0
Oshikoto	Tsumeb	Clinic	Registered nurse	Oshivelo Clinic	0	4.82	0
Oshikoto	Tsumeb	Clinic	Enrolled nurse	Tsintsabis Clinic	0	3.85	0
Oshikoto	Tsumeb	Clinic	Pharmacist assistant	Tsintsabis Clinic	0	0.42	0
Oshikoto	Tsumeb	Clinic	Registered nurse	Tsintsabis Clinic	0	2.49	0
Oshikoto	Tsumeb	Clinic	Enrolled nurse	Tsumeb Clinic	0	3.15	0
Oshikoto	Tsumeb	Clinic	Pharmacist assistant	Tsumeb Clinic	0	0.33	0
Oshikoto	Tsumeb	Clinic	Registered nurse	Tsumeb Clinic	0	2.02	0
Oshikoto	Tsumeb	District hospital	Doctors	Tsumeb District Hospital	4	9.72	0.41
Oshikoto	Tsumeb	District hospital	Enrolled nurse	Tsumeb District Hospital	0	20.99	0
Oshikoto	Tsumeb	District hospital	Pharmacist	Tsumeb District Hospital	0	3.74	0
Oshikoto	Tsumeb	District hospital	Pharmacist assistant	Tsumeb District Hospital	1	3.75	0.27
Oshikoto	Tsumeb	District hospital	Registered nurse	Tsumeb District Hospital	0	40.07	0
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Gam Clinic	4	3.03	1.32
Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Gam Clinic	0	0.32	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Gam Clinic	2	1.93	1.04
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Grootfontein Clinic	4	8.54	0.47
Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Grootfontein Clinic	0	0.72	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Grootfontein Clinic	2	5.64	0.35
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Kombat Clinic	0	2.24	0
Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Kombat Clinic	0	0.19	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Kombat Clinic	1	1.42	0.7
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Omatako Clinic	1	1.45	0.69
Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Omatako Clinic	0	0.16	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Omatako Clinic	1	0.97	1.03
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Otjituuo Clinic	1	2.75	0.36
Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Otjituuo Clinic	0	0.24	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Otjituuo Clinic	1	1.79	0.56
Otjozondjupa	Grootfontein	Clinic	Enrolled nurse	Tsumkwe Clinic	1	2.21	0.45

Otjozondjupa	Grootfontein	Clinic	Pharmacist assistant	Tsumkwe Clinic	0	0.21	0
Otjozondjupa	Grootfontein	Clinic	Registered nurse	Tsumkwe Clinic	1	1.87	0.53
Otjozondjupa	Grootfontein	District hospital	Doctors	Grootfontein District Hospital	3	9.49	0.32
Otjozondjupa	Grootfontein	District hospital	Enrolled nurse	Grootfontein District Hospital	23	23.24	0.99
Otjozondjupa	Grootfontein	District hospital	Pharmacist	Grootfontein District Hospital	0	4.06	0
Otjozondjupa	Grootfontein	District hospital	Pharmacist assistant	Grootfontein District Hospital	2	4.33	0.46
Otjozondjupa	Grootfontein	District hospital	Registered nurse	Grootfontein District Hospital	19	43.49	0.44
Otjozondjupa	Grootfontein	Health Centre	Pharmacist assistant	Mangetti Dune Health Centre	0	0.57	0
Otjozondjupa	Okahandja	Clinic	Enrolled nurse	Nau-Aib Clinic	0	9.98	0
Otjozondjupa	Okahandja	Clinic	Pharmacist assistant	Nau-Aib Clinic	0	0.85	0
Otjozondjupa	Okahandja	Clinic	Registered nurse	Nau-Aib Clinic	0	5.96	0
Otjozondjupa	Okahandja	Clinic	Enrolled nurse	Ovitoto Clinic	1	2.44	0.41
Otjozondjupa	Okahandja	Clinic	Pharmacist assistant	Ovitoto Clinic	0	0.22	0
Otjozondjupa	Okahandja	Clinic	Registered nurse	Ovitoto Clinic	0	1.42	0
Otjozondjupa	Okahandja	District hospital	Doctors	Okahandja District Hospital	3	5.42	0.55
Otjozondjupa	Okahandja	District hospital	Enrolled nurse	Okahandja District Hospital	17	12.33	1.38
Otjozondjupa	Okahandja	District hospital	Pharmacist	Okahandja District Hospital	0	3.59	0
Otjozondjupa	Okahandja	District hospital	Pharmacist assistant	Okahandja District Hospital	1	3.97	0.25
Otjozondjupa	Okahandja	District hospital	Registered nurse	Okahandja District Hospital	11	28.42	0.39
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Coblenz Clinic	0	3.45	0
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Coblenz Clinic	0	0.31	0
Otjozondjupa	Okakarara	Clinic	Registered nurse	Coblenz Clinic	0	1.92	0
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Okakarara Clinic	2	13.29	0.15
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Okakarara Clinic	0	1.04	0
Otjozondjupa	Okakarara	Clinic	Registered nurse	Okakarara Clinic	0	9.23	0
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Okamatapati Clinic	1	3.38	0.3
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Okamatapati Clinic	0	0.31	0
Otjozondjupa	Okakarara	Clinic	Registered nurse	Okamatapati Clinic	1	2.06	0.49
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Okarondu Clinic	0	0.94	0
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Okarondu Clinic	0	0.1	0
Otjozondjupa	Okakarara	Clinic	Registered nurse	Okarondu Clinic	1	0.74	1.35
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Okondjatu Clinic	1	6.45	0.16
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Okondjatu Clinic	0	0.62	0
Otjozondjupa	Okakarara	Clinic	Registered nurse	Okondjatu Clinic	1	3.18	0.31
Otjozondjupa	Okakarara	Clinic	Enrolled nurse	Uitkoms Clinic	1	1.99	0.5
Otjozondjupa	Okakarara	Clinic	Pharmacist assistant	Uitkoms Clinic	0	0.26	0

Otjozondjupa	Okakarara	Clinic	Registered nurse	Uitkoms Clinic	0	1.16	0
Otjozondjupa	Okakarara	District hospital	Doctors	Okakarara District Hospital	1	6.52	0.15
Otjozondjupa	Okakarara	District hospital	Enrolled nurse	Okakarara District Hospital	22	12.81	1.72
Otjozondjupa	Okakarara	District hospital	Pharmacist	Okakarara District Hospital	0	3.02	0
Otjozondjupa	Okakarara	District hospital	Pharmacist assistant	Okakarara District Hospital	1	2.89	0.35
Otjozondjupa	Okakarara	District hospital	Registered nurse	Okakarara District Hospital	9	27.39	0.33
Otjozondjupa	Otjiwarongo	Clinic	Enrolled nurse	Kalkveld Clinic	1	1.69	0.59
Otjozondjupa	Otjiwarongo	Clinic	Pharmacist assistant	Kalkveld Clinic	0	0.16	0
Otjozondjupa	Otjiwarongo	Clinic	Registered nurse	Kalkveld Clinic	1	1.14	0.88
Otjozondjupa	Otjiwarongo	Clinic	Enrolled nurse	Orwetoveni Clinic	6	7.43	0.81
Otjozondjupa	Otjiwarongo	Clinic	Pharmacist assistant	Orwetoveni Clinic	0	0.48	0
Otjozondjupa	Otjiwarongo	Clinic	Registered nurse	Orwetoveni Clinic	2	4.59	0.44
Otjozondjupa	Otjiwarongo	District hospital	Doctors	Otjiwarongo District Hospital	3	12.11	0.25
Otjozondjupa	Otjiwarongo	District hospital	Enrolled nurse	Otjiwarongo District Hospital	44	28.25	1.56
Otjozondjupa	Otjiwarongo	District hospital	Pharmacist	Otjiwarongo District Hospital	0	4.5	0
Otjozondjupa	Otjiwarongo	District hospital	Pharmacist assistant	Otjiwarongo District Hospital	2	5.25	0.38
Otjozondjupa	Otjiwarongo	District hospital	Registered nurse	Otjiwarongo District Hospital	26	55.19	0.47
Otjozondjupa	Otjiwarongo	Health Centre	Enrolled nurse	Osire Health Centre	3	4.55	0.66
Otjozondjupa	Otjiwarongo	Health Centre	Pharmacist assistant	Osire Health Centre	0	1.44	0
Otjozondjupa	Otjiwarongo	Health Centre	Registered nurse	Osire Health Centre	2	7.04	0.28
Otjozondjupa	Otjiwarongo	Health Centre	Enrolled nurse	Otavi Health Centre	0	7.23	0
Otjozondjupa	Otjiwarongo	Health Centre	Pharmacist assistant	Otavi Health Centre	0	1.5	0
Otjozondjupa	Otjiwarongo	Health Centre	Registered nurse	Otavi Health Centre	0	10.75	0

Table 2: Summary of National WISN Findings for Dentists per Health District (June – September 2014)

Region	Cadre	Dental District	Existing Staff	Calculated Requirement	WISN Ratio
Caprivi	Dentist	Katima Mulilo District	3	1.16	2.59
Erongo	Dentist	Usakos District	0	0.78	0.00
Erongo	Dentist	Omaruru District	0	1.16	0.00
Erongo	Dentist	Swakopmund District	2	1.98	1.01
Erongo	Dentist	Walvis Bay District	3	1.06	2.83
Hardap	Dentist	Mariental District	3	2.08	1.44
Hardap	Dentist	Rehoboth District	0	0.76	0.00
Hardap	Dentist	Aranos District	0	0.78	0.00
Karas	Dentist	Keetmanshoop District	5	2.16	2.31
Karas	Dentist	Luderitz District	0	0.79	0.00
Kavango	Dentist	Rundu District	5	2.14	2.34
Khomas	Dentist	Windhoek District	8	3.51	2.28
Kunene	Dentist	Khorixas District	2	0.76	2.63
Kunene	Dentist	Opuwo District	3	1.14	2.63
Ohangwena	Dentist	Eenhana District	3	1.55	1.94
Ohangwena	Dentist	Engela District	2	1.6	1.25
Ohangwena	Dentist	Okongo District	0	0.9	0.00
Omaheke	Dentist	Gobabis District	2	1	2.00
Omusati	Dentist	Okahao District	0	0.8	0.00
Omusati	Dentist	Oshikuku District	0	0.79	0.00
Omusati	Dentist	Outapi District	3	1.15	2.61
Oshana	Dentist	Oshakati District	12	4.07	2.95
Oshikoto	Dentist	Onandjokwe District	3	2.23	1.35
Oshikoto	Dentist	Tsumeb District	3	1.35	2.22
Otjozondjupa	Dentist	Grootfontein District	0	0.8	0.00
Otjozondjupa	Dentist	Okakarara District	0	0.76	0.00
Otjozondjupa	Dentist	Otjiwarongo District	6	1.83	3.28

* Dental data are presented per health district

** HIS and other data collected covered the period June – September 2014

APPENDIX 8: STEPS FOLLOWED TO UPLOAD DATA DIRECTLY INTO THE WISN SOFTWARE

- Set up template files per facility type, containing the WISN activities, activity standards, category allowances and individual allowances per cadre. The NAWL uses these files to generate the WISN file per facility.
- Develop a file of all health facilities, classifying each as intermediate hospital, district hospital, health centre or clinic. Link these classifications to the classifications in the WISN software. For example, Intermediate hospital was linked to Central/Regional (tertiary) hospital in the software, district hospital to Provincial (general) hospital, health centre to Primary health centre with beds and clinic to Primary health centre without beds. Allocate a unique code to each facility to identify the region where it is located and the type of facility. This became the master facility file against which we checked the WISN files were checked. (The software requires each facility to have its own WISN file.)
- Map each WISN activity to a data element and the data source. Where required, conversions had to be made because of the limitation of units of measurements available in the WISN software. This became the master service standards mapped file. The software requires an exact match between the WISN activity in the template and the master service standard. Therefore, whenever changes were made to the activities or service standards in the Master Service Standards, the same changes had to be applied in the templates.
- Generate a consolidated file containing all the service statistics per facility and per cadre, using the master files. Import this file using the NAWL and generate a WISN file per facility using the software.

APPENDIX 9: WISN ANALYSIS DATA TABLES

Comparison of intermediate hospital staffing by doctors and nurses in Namibia									
WISN analysis August 2015									
Intermediate hospital	**Doctors**				**Nurses**				
	Current #	**Required #**	**Gap/excess**	**WISN ratio**	**Current #**	**Registered Required #**	**Enrolled Required #**	**Gap/excess**	**WISN ratio**
Katutura	48	157.1	-109.1	0.31	459	407.31	260.34	-208.65	0.69
Onandjokwe	24	69.37	-45.37	0.35	236	251.45	145.59	-161.04	0.59
Oshakati	44	121.03	-77.03	0.36	455	297.89	190.98	-33.87	0.93
Rundu	14	77.59	-63.59	0.18	152	135.06	77.99	-61.05	0.71
Windhoek Central	44	89.4	-45.4	0.49	319	318.51	205.03	-204.54	0.61
Total	**174**	**514.49**	**-340.49**	**0.34**	**1621**	**1410.22**	**879.93**	**-669.15**	**0.71**

Comparison of intermediate hospital staffing by pharmacists and pharmacist assistants in Namibia								
WISN analysis August 2015								
Intermediate hospital	**Pharmacists**				**Pharmacist assistants**			
	Current #	**Required #**	**Gap/excess**	**WISN ratio**	**Current #**	**Required #**	**Gap/excess**	**WISN ratio**
Katutura	2	13.11	-11.11	0.15	6	14.83	-8.83	0.40
Onandjokwe	2	10.41	-8.41	0.19	8	12.83	-4.83	0.62
Oshakati	4	10.63	-6.63	0.38	3	18.64	-15.64	0.16
Rundu	1	7.45	-6.45	0.13	4	8.95	-4.95	0.45
Windhoek Central	7	10.18	-3.18	0.69	6	10.15	-4.15	0.59
Total	**16**	**51.78**	**-35.78**	**0.31**	**27**	**65.4**	**-38.4**	**0.41**

Comparison by region of district hospital staffing by doctors and nurses in Namibia										
WISN analysis August 2015										
Region	**# of DHs**	**Doctors**				**Nurses**				
		Current #	**Required #**	**Gap/excess**	**WISN ratio**	**Current #**	**Registered** / **Required #**	**Enrolled** / **Required #**	**Gap/excess**	**WISN ratio**
Caprivi	1	9	21.02	-12.02	0.43	90	85.5	40.70	-36.20	0.71
Erongo	4	14	37.29	-23.29	0.38	195	153.64	69.73	-28.37	0.87
Hardap	2	8	22.38	-14.38	0.36	92	94.25	47.66	-49.91	0.65
Karas	3	7	24.75	-17.75	0.28	112	132.66	47.67	-68.33	0.62
Kavango	3	11	23.47	-12.47	0.47	121	130.93	65.42	-75.35	0.62
Kunene	3	8	16.9	-8.9	0.47	115	86.87	39.70	-11.57	0.91
Ohangwena	3	15	51.09	-36.09	0.29	215	227.42	112.10	-124.52	0.63
Omaheke	1	5	11.69	-6.69	0.43	57	73.17	39.98	-56.15	0.50
Omusati	4	17	52.19	-35.19	0.33	276	247.24	123.72	-94.96	0.74
Oshikoto	1	4	9.72	-5.72	0.41	51	40.07	20.99	-10.06	0.84
Otjozondjupa	4	10	33.54	-23.54	0.30	218	154.49	76.63	-13.12	0.94
Total	**29**	**108**	**304.04**	**-196.04**	**0.36**	**1542.00**	**1426.24**	**684.30**	**-568.54**	**0.73**

Comparison by region of district hospital staffing by pharmacists and pharmacist assistants in Namibia									
WISN analysis August 2015									
Region	**# of DHs**	**Pharmacists**				**Pharmacy assistants**			
		Current #	**Required #**	**Gap/excess**	**WISN ratio**	**Current #**	**Required #**	**Gap/excess**	**WISN ratio**
Caprivi	1	0	6.1	-6.1	0.00	2	7.99	-5.99	0.25
Erongo	4	0	14.31	-14.31	0.00	8	15.18	-7.18	0.53
Hardap	2	2	8.96	-6.96	0.22	2	9.98	-7.98	0.20
Karas	3	0	10.61	-10.61	0.00	5	9.66	-4.66	0.52
Kavango	3	1	10.89	-9.89	0.09	5	11.84	-6.84	0.42
Kunene	3	0	9.32	-9.32	0.00	3	8.69	-5.69	0.35
Ohangwena	3	0	14.66	-14.66	0.00	5	17.53	-12.53	0.29
Omaheke	1	1	4.14	-3.14	0.24	2	4.61	-2.61	0.43
Omusati	4	1	19.34	-18.34	0.05	7	24.98	-17.98	0.28
Oshikoto	1	0	3.74	-3.74	0.00	1	3.75	-2.75	0.27
Otjozondjupa	4	0	15.17	-15.17	0.00	6	16.44	-10.44	0.36
Total	**29**	**5**	**117.24**	**-112.24**	**0.04**	**46**	**130.65**	**-84.65**	**0.35**

Comparison by region of health centre staffing by nurses and pharmacist assistants in Namibia										
WISN analysis August 2015										
Region	**# of HCs**	**Nurses**					**Pharmacist assistants**			
		Current #	**Registered** / **Required #**	**Enrolled** / **Required #**	**Gap/ excess**	**WISN ratio**	**Current #**	**Required #**	**Gap/excess**	**WISN ratio**
Caprivi	3	11	11.36	6.81	-7.17	0.61	0	2.39	-2.39	0.00
Erongo	1	18	11.33	7.31	-0.64	0.97	0	1.67	-1.67	0.00
Hardap	3	47	16.06	9.79	21.15	1.82	3	2.95	0.05	1.02
Karas	2	21	6.24	3.75	11.01	2.10	0	1.22	-1.22	0.00
Kavango	7	78	51.81	31.61	-5.42	0.94	0	8.95	-8.95	0.00
Khomas	2	51	65.21	33.06	-47.27	0.52	3	13.86	-10.86	0.22
Ohangwena	1	0	20.71	7.00	-27.71	0.00	0	2.44	-2.44	0.00
Omaheke	1	6	5.08	2.93	-2.01	0.75	0	0.96	-0.96	0.00
Omusati	7	8	48.36	26.81	-67.17	0.11	1	9.82	-8.82	0.10
Oshana	5	73	91.23	57.52	-75.75	0.49	0	12.91	-12.91	0.00
Oshikoto	3	34	19.21	12.69	2.10	1.07	0	3.85	-3.85	0.00
Otjozondjupa	3	16	17.79	11.78	-13.57	0.54	0	3.51	-3.51	0.00
Total	**38**	**363**	**364.39**	**211.06**	**-212.45**	**0.63**	**7**	**64.53**	**-57.53**	**0.11**

Comparison by region of clinic staffing by nurses and pharmacist assistants in Namibia										
WISN analysis August 2015										
Region	**# of Clinics**	**Nurses**					**Pharmacist assistants**			
		Current #	**Registered** / **Required #**	**Enrolled** / **Required #**	**Gap/ excess**	**WISN ratio**	**Current #**	**Required #**	**Gap/ excess**	**WISN ratio**
Caprivi	26	73	43.56	69.35	-39.91	0.65	0	7.09	-7.09	0.00
Erongo	17	57	57.53	95.37	-95.9	0.37	0	7.72	-7.72	0.00
Hardap	12	30	29.15	46.97	-46.12	0.39	0	4.11	-4.11	0.00
Karas	14	47	42.21	65.3	-60.51	0.44	0	5.63	-5.63	0.00
Kavango	44	79	110.13	172.65	-203.78	0.28	1	18.84	-17.84	0.05
Khomas	9	60	31.53	42.64	-14.17	0.81	2	8.87	-6.87	0.23
Kunene	24	13	49.1	71.38	-107.48	0.11	0	6.84	-6.84	0.00
Ohangwena	30	105	128.13	222.46	-245.59	0.30	1	22.21	-21.21	0.05
Omaheke	12	24	29.52	53.32	-58.84	0.29	0	4.85	-4.85	0.00
Omusati	40	86	104.57	169.89	-188.46	0.31	0	16.74	-16.74	0.00
Oshana	11	23	31.89	50.58	-59.47	0.28	0	4.81	-4.81	0.00
Oshikoto	23	86	58.61	98.24	-70.85	0.55	0	9.66	-9.66	0.00
Otjozondjupa	16	42	45.02	71.26	-74.28	0.36	0	6.19	-6.19	0.00
Total	**278**	**725**	**760.95**	**1229.41**	**-1265.36**	**0.36**	**4**	**123.56**	**-119.56**	**0.03**

Comparison of doctor and nurse staffing in Namibian district hospitals								
WISN analysis August 2015								
Region	**Institution Name**	**DOCTORS**			**Existing Staff**	**REGISTERED NURSES**	**ENROLLED NURSES**	**WISN Ratio**
		Existing Staff	**Calculated Requirement**	**WISN Ratio**		**Calculated Requirement**	**Calculated Requirement**	
Caprivi	Katima Mulilo District Hospital	9	21.02	0.43	90	85.5	40.7	0.71
Erongo	Omaruru District Hospital	3	4.55	0.66	32	18.68	7.12	1.24
	Swakopmund District Hospital	5	14.14	0.35	86	51.72	23.92	1.14
	Usakos District Hospital	2	4.71	0.42	40	23.09	10.56	1.19
	Walvis bay District Hospital	4	13.89	0.29	37	60.15	28.13	0.42
	Sub Total	**14**	**37.29**	**0.38**	**195**	**153.64**	**69.73**	**0.87**
Hardap	Mariental District Hospital	4	12.89	0.31	44	46.86	23.48	0.63
	Rehoboth District Hospital	4	9.49	0.42	48	47.39	24.18	0.67
	Sub Total	**8**	**22.38**	**0.36**	**92**	**94.25**	**47.66**	**0.65**
Karas	Karasburg District Hospital	1	1.5	0.67	23	9.04	1.12	2.26
	Keetmanshoop District Hospital	4	11.33	0.35	63	53.69	29	0.76
	Luderitz District Hospital	2	11.92	0.17	26	69.93	17.55	0.30
	Sub Total	**7**	**24.75**	**0.28**	**112**	**132.66**	**47.67**	**0.62**
Kavango	Andara District Hospital	5	7.36	0.68	33	41.33	19.88	0.54
	Nankudu District Hospital	2	8.61	0.23	46	42.39	21.52	0.72
	Nyangana District Hospital	4	7.5	0.53	42	47.21	24.02	0.59
	Sub Total	**11**	**23.47**	**0.47**	**121**	**130.93**	**65.42**	**0.62**
Kunene	Khorixas District Hospital	3	3.75	0.80	68	16.27	5.37	3.14
	Opuwo District Hospital	3	7.52	0.40	26	44.95	22.86	0.38
	Outjo District Hospital	2	5.63	0.36	21	25.65	11.47	0.57
	Sub Total	**8**	**16.9**	**0.47**	**115**	**86.87**	**39.7**	**0.91**
Ohangwena	Eenhana District Hospital	4	15.97	0.25	79	77.93	37.02	0.69

	Engela District Hospital	8	26.05	0.31	88	113.89	60.05	0.51
	Okongo District Hospital	3	9.07	0.33	48	35.6	15.03	0.95
	Sub Total	**15**	**51.09**	**0.29**	**215**	**227.42**	**112.1**	**0.63**
Omaheke	Gobabis District Hospital	5	11.69	0.43	57	73.17	39.98	0.50
Omusati	Okahao District Hospital	2	13.11	0.15	52	43.26	21.21	0.81
	Oshikuku District Hospital	8	17.92	0.45	104	93.17	50.44	0.72
	Outapi District Hospital	5	15.31	0.33	76	78.7	38.49	0.65
	Tsandi District Hospital	2	5.85	0.34	44	32.11	13.58	0.96
	Sub Total	**17**	**52.19**	**0.33**	**276**	**247.24**	**123.72**	**0.74**
Oshikoto	Tsumeb District Hospital	4	9.72	0.41	51	40.07	20.99	0.84
Otjozondjupa	Grootfontein District Hospital	3	9.49	0.32	63	43.49	23.24	0.94
	Okahandja District Hospital	3	5.42	0.55	41	28.42	12.33	1.01
	Okakarara District Hospital	1	6.52	0.15	41	27.39	12.81	1.02
	Otjiwarongo District Hospital	3	12.11	0.25	73	55.19	28.25	0.87
	Sub Total	**10**	**33.54**	**0.30**	**218**	**154.49**	**76.63**	**0.94**

Comparison of pharmacists and pharmacist assistants staffing in Namibian district hospitals							
WISN analysis August 2015							
		PHARMACISTS			PHARMACIST ASSISTANTS		
Region	Institution Name	Existing Staff	Calculated Requirement	WISN Ratio	Existing Staff	Calculated Requirement	WISN Ratio
Caprivi	Katima Mulilo District Hospital	0	6.1	0.00	2	7.99	0.25
Erongo	Omaruru District Hospital	0	2.75	0.00	1	2.45	0.41
	Swakopmund District Hospital	0	4.32	0.00	4	5.14	0.78
	Usakos District Hospital	0	2.75	0.00	1	2.44	0.41
	Walvis bay District Hospital	0	4.49	0.00	2	5.15	0.39
	Sub Total	**0**	**14.31**	**0.00**	**8**	**15.18**	**0.53**
Hardap	Mariental District Hospital	1	4.25	0.24	2	4.89	0.41
	Rehoboth District Hospital	1	4.71	0.21	0	5.09	0.00
	Sub Total	**2**	**8.96**	**0.22**	**2**	**9.98**	**0.20**
Karas	Karasburg District Hospital	0	2.72	0.00	1	2.45	0.41
	Keetmanshoop District Hospital	0	3.63	0.00	2	3.42	0.58
	Luderitz District Hospital	0	4.26	0.00	2	3.79	0.53
	Sub Total	**0**	**10.61**	**0.00**	**5**	**9.66**	**0.52**
Kavango	Andara District Hospital	0	3.15	0.00	1	2.89	0.35
	Nankudu District Hospital	0	4.18	0.00	2	5.38	0.37
	Nyangana District Hospital	0	3.56	0.00	1	3.57	0.28
	Sub Total	**0**	**10.89**	**0.00**	**4**	**11.84**	**0.34**
Kunene	Khorixas District Hospital	0	2.92	0.00	1	2.67	0.37
	Opuwo District Hospital	0	3.3	0.00	1	3.22	0.31
	Outjo District Hospital	0	3.1	0.00	1	2.8	0.36
	Sub Total	**0**	**9.32**	**0.00**	**3**	**8.69**	**0.35**
Ohangwena	Eenhana District Hospital	0	4.81	0.00	1	5.42	0.18
	Engela District Hospital	0	5.95	0.00	3	7.49	0.40
	Okongo District Hospital	0	3.9	0.00	1	4.62	0.22
	Sub Total	**0**	**14.66**	**0.00**	**5**	**17.53**	**0.29**
Omaheke	Gobabis District Hospital	1	4.14	0.24	2	4.61	0.43
Omusati	Okahao District Hospital	0	4.34	0.00	0	5.56	0.00
	Oshikuku District Hospital	1	4.39	0.23	4	5.18	0.77
	Outapi District Hospital	0	6.09	0.00	2	8.15	0.25
	Tsandi District Hospital	0	4.52	0.00	1	6.09	0.16
	Sub Total	**1**	**19.34**	**0.05**	**7**	**24.98**	**0.28**
Oshikoto	Tsumeb District Hospital	0	3.74	0.00	1	3.75	0.27
Otjozondjupa	Grootfontein District Hospital	0	4.06	0.00	2	4.33	0.46

	Okahandja District Hospital	0	3.59	0.00	1	3.97	0.25
	Okakarara District Hospital	0	3.02	0.00	1	2.89	0.35
	Otjiwarongo District Hospital	0	4.5	0.00	2	5.25	0.38
	Sub Total	**0**	**15.17**	**0.00**	**6**	**16.44**	**0.36**

Comparison of nurse and pharmacist assistant staffing in Namibian health centres								
WISN analysis August 2015								
Region	Institution Name	Existing Staff	REGISTERED NURSES	ENROLLED NURSES	WISN Ratio	PHARMACIST ASSISTANTS		
			Calculated Requirement	Calculated Requirement		Existing Staff	Calculated Requirement	WISN Ratio
Caprivi	Bukalo Health Centre	3	4.58	2.7	0.41	0	0.9	0
	Sangwali Health Centre	4	2.75	1.63	0.91	0	0.63	0
	Sibbinda Health Centre	4	4.03	2.48	0.61	0	0.86	0
	Sub Total	**11**	**11.36**	**6.81**	**0.61**	**0**	**2.39**	**0**
Erongo	Kuisebmund Health Centre	18	11.33	7.31	0.97	0	1.67	0
Hardap	Aranos Health Centre	21	3.11	1	5.11	1	1.09	0.92
	Maltahohe Health Centre	6	2.9	1.75	1.29	0	0.69	0
	Rehoboth Health Centre	20	10.05	7.04	1.17	2	1.17	1.71
	Sub Total	**47**	**16.06**	**9.79**	**1.82**	**3**	**2.95**	**1.02**
Karas	Aroab Health Centre	13	2.73	1.61	3.00	0	0.6	0
	Bethanie Health Centre	8	3.51	2.14	1.42	0	0.62	0
	Sub Total	**21**	**6.24**	**3.75**	**2.10**	**0**	**1.22**	**0**
Kavango	Bunya Health Centre	21	6.58	4.34	1.92	0	1.13	0
	Mpungu Health Centre	7	4.7	2.94	0.92	0	1.07	0
	Mupini Health Centre	8	7.78	5.1	0.62	0	1.36	0
	Nkurenkuru Health Centre	16	12.37	6.94	0.83	0	2.09	0
	Rupara Health Centre	6	5.2	3.23	0.71	0	1.03	0
	Shambyu Health Centre	10	7.37	4.2	0.86	0	1.22	0
	Tondoro Health Centre	10	5.81	3.8	1.04	0	1.05	0
	Sub Total	**78**	**51.81**	**31.61**	**0.94**	**0**	**8.95**	**0**
Khomas	Katutura Health Centre	41	53.73	25.61	0.52	3	11.71	0.26
	Khomasdal Health Centre	10	11.48	7.45	0.53	0	2.15	0

	Sub Total	**51**	**65.21**	**33.06**	**0.52**	**3**	**13.86**	**0.22**
Ohangwena	Odibo Health Centre	0	20.71	7	0.00	0	2.44	0
Omaheke	Otjinene Health Centre	6	5.08	2.93	0.75	0	0.96	0
Omusati	Elim Health Centre	1	3.61	2.17	0.17	0	0.62	0
	Indira Gandhi Health Centre	1	7.04	4.45	0.09	1	1.35	0.74
	Mahenene Health Centre	1	5.45	3.63	0.11	0	0.96	0
	Okalongo Health Centre	1	13.68	6.39	0.05	0	3.21	0
	Omona Wa Tjihozu Health Centre	1	8.08	4.85	0.08	0	1.55	0
	Onesi Health Centre	1	10.5	5.32	0.06	0	2.13	0
	Sub Total	**6**	**48.36**	**26.81**	**0.08**	**1**	**9.82**	**0.1**
Oshana	Okatana Health Centre	13	8.78	4.9	0.95	0	1.3	0
	Ondangwa Health Centre	9	16.8	10	0.34	0	2.36	0
	Ongwediva Health Centre	8	17.17	7.99	0.32	0	3.38	0
	Oshakati Health Centre	36	32.15	23.07	0.65	0	3.27	0
	Ou Nick Health Centre	7	16.33	11.56	0.25	0	2.6	0
	Sub Total	**73**	**91.23**	**57.52**	**0.49**	**0**	**12.91**	**0**
Oshikoto	Okankolo Health Centre	9	6.7	4.45	0.81	0	1.4	0
	Onayena Health Centre	15	5.37	3.41	1.71	0	1.08	0
	Onyaanya Health Centre	10	7.14	4.83	0.84	0	1.37	0
	Sub Total	**34**	**19.21**	**12.69**	**1.07**	**0**	**3.85**	**0**
Otjozondjupa	Mangetti Dune Health Centre	6	2	1.06	1.96	0	0.57	0
	Osire Health Centre	4	7.04	4.55	0.35	0	1.44	0
	Otavi Health Centre	6	10.75	7.23	0.33	0	1.5	0
	Sub Total	**10**	**17.79**	**11.78**	**0.34**	**0**	**3.51**	**0**

Comparison of regional staffing by dentists in Namibia					
WISN analysis September 2014					
Region	**# of Dental Districts**	**Dentists**			
		Current #	**Required #**	**Gap/excess**	**WISN ratio**
Caprivi	1	3	1.16	1.84	2.59
Erongo	4	5	4.98	0.02	1.00
Hardap	3	3	3.62	-0.62	0.83
Karas	2	5	2.95	2.05	1.69
Kavango	1	5	2.14	2.86	2.34
Khomas	1	8	3.51	4.49	2.28
Kunene	2	5	1.9	3.10	2.63
Ohangwena	3	5	4.05	0.95	1.23
Omaheke	1	2	1.00	1.00	2.00
Omusati	3	3	2.74	0.26	1.09
Oshana	1	12	4.07	7.93	2.95
Oshikoto	2	6	3.58	2.42	1.68
Otjozondjupa	3	6	3.39	2.61	1.77
Total	**27**	**68**	**39.09**	**28.91**	**1.74**

Comparison of district staffing by dentists in Namibia					
WISN analysis September 2014					
Region	**Dental District**	**Dentists**			
		Current #	**Required #**	**Gap/excess**	**WISN ratio**
Caprivi	***Katima Mulilo District***	***3***	***1.16***	***1.84***	***2.59***
Erongo	Usakos District	0	0.78	-0.78	0.00
	Omaruru District	0	1.16	-1.16	0.00
	Swakopmund District	2	1.98	0.02	1.01
	Walvis Bay District	3	1.06	1.94	2.83
	Subtotal	***5***	***4.98***	***0.02***	***1.00***
Hardap	Mariental District	3	2.08	0.92	1.44
	Rehoboth District	0	0.76	-0.76	0.00
	Aranos District	0	0.78	-0.78	0.00
	Subtotal	***3***	***3.62***	***-0.62***	***0.83***
Karas	Keetmanshoop District	5	2.16	2.84	2.31
	Luderitz District	0	0.79	-0.79	0.00
	Subtotal	***5***	***2.95***	***2.05***	***1.69***
Kavango	***Rundu District***	***5***	***2.14***	***2.86***	***2.34***
Khomas	***Windhoek District***	***8***	***3.51***	***4.49***	***2.28***
Kunene	Khorixas District	2	0.76	1.24	2.63
	Opuwo District	3	1.14	1.86	2.63
	Subtotal	***5***	***1.90***	***3.10***	***2.63***
Ohangwena	Eenhana District	3	1.55	1.45	1.94
	Engela District	2	1.60	0.40	1.25
	Okongo District	0	0.90	-0.90	0.00
	Subtotal	***5***	***4.05***	***0.95***	***1.23***
Omaheke	***Gobabis District***	***2***	***1.00***	***1.00***	***2.00***
Omusati	Okahao District	0	0.80	-0.80	0.00
	Oshikuku District	0	0.79	-0.79	0.00
	Outapi District	3	1.15	1.85	2.61
	Subtotal	***3***	***2.74***	***0.26***	***1.09***
Oshana	***Oshakati District***	***12***	***4.07***	***7.93***	***2.95***
Oshikoto	Onandjokwe District	3	2.23	0.77	1.35
	Tsumeb District	3	1.35	1.65	2.22
	Subtotal	***6***	***3.58***	***2.42***	***1.68***
Otjozondjupa	Grootfontein District	0	0.80	-0.80	0.00
	Okakarara District	0	0.76	-0.76	0.00
	Otjiwarongo District	6	1.83	4.17	3.28
	Subtotal	***6***	***3.39***	***2.61***	***1.77***
Total	**27**	**68**	**39.09**	**28.91**	**1.74**

APPENDIX 10: PILOT STUDY IN KAVANGO REGION, OCTOBER 2012

The Namibian staffing norms had not been revised for over thirteen years although multiple positions had been added to the establishment to meet workload requirements. The MoHSS is in the process of a restructuring effort to revise the staffing norms to meet the actual workload requirements. The Kavango Region requested technical support from IntraHealth International-Namibia to estimate their staff requirements using workload as part of a regional restructuring effort. The Workload Indicators of Staffing Need (WISN) methodology was selected as the methodology of choice for determining workload-based staffing requirements. IntraHealth carried out a workload assessment pilot using the WHO WISN tool, which considered available working time, activities related with clinical service statistics, and activities not related with clinical service statistics. The workload data were taken from the HMIS, ePMS, and HCT data. For the Kavango region, the pilot set activity and allowance standards for doctors, pharmacists, and pharmacist assistants and used the set standards to determine the staffing need for these cadres using the WISN methodology.

The pilot worked together with a Namibian WISN technical team and set activity and allowance standards for doctors, nurses, pharmacists, and pharmacist assistants in the intermediate hospital, district hospitals, health centres, and clinics. These were set using expert teams composed of senior and experienced doctors, nurses, pharmacists, and pharmacist assistants. The expert teams were guided on how to set the activity standards for their respective cadres at each of the health facility levels. The expert team members were selected by the restructuring steering committee. The expert working group provided expert knowledge in setting activity and allowance standards for the WISN pilot. Activity standards were set for health services activities that are reported in annual service statistics, for example, outpatient visits, admissions, major operations, etc. On the other hand, allowance standards were set for support and additional activities that are not reported in annual service statistics, for example, meetings, washing instruments, duty rosters, etc.

The WHO WISN tool was customised to the Namibian context and later used to make WISN calculations for nursing care. The areas customised included:

1. Geographical features like regions and districts
2. Staff types at each of the facility levels
3. Available working time for the selected staff types
4. Salary levels for the staff types studied
5. Activity and allowance standards for the studied staff types.

The technical team determined the available working time (AWT) for doctors, nurses, and pharmacist and pharmacy assistants after taking into consideration the time lost due to

authorized absences. The authorized absences included: annual, compassionate, maternity and sick leaves and days spent on both long training as wells as short trainings/workshops.

The WISN Assessment

The WISN assessment was done using the WISN tool customised for the Namibian context. The requirement for nurses, doctors, pharmacists, and pharmacist assistants in intermediate hospitals, district hospitals, health centres, clinics, and the multiregional medical depot were determined.

Facilities Studied

Level	Number
Intermediate hospitals	1
District hospitals	3
Health centres	7
Clinics	47
Multi regional medical deport	1
Total	**59**

The technical team collected data on staffing levels i.e. determined the staff in post by category. All doctors were included in the current staffing levels for doctors. Nurses, pharmacists and pharmacy assistants supported by projects however were not included in the current staffing. Workload data was obtained from the HIS, ePMS, PMIS, EDT, HCT file maker and validated against patient records in the studied health units. Data used for the study was for the period of 1st April 2011 to 31st March 2012.

Results

The results of the assessment are presented starting with a summary overview of the findings level by level, followed by detailed results by cadre with the detailed results for all the facilities studied being presented in Tables 1-4.

Table 1: Staffing in Rundu intermediate hospital

Minimum staffing			
Cadre	**Current staff**	**WISN Requirement**	**Difference**
Doctors	14	**47**	-33
Nurses	152	**186**	-34
Pharmacists	1	**4**	-3
Pharmacy assistants	4	**10**	-6

The intermediate hospital was grossly understaffed for all cadres of staff but mostly doctors and nurses. There is need to increase staffing of the hospital with at least 47 doctors, 186 nurses, 4 pharmacists and 10 pharmacy assistants. The specific cadres e.g. enrolled or a registered nurse is a management decision, based on the unique responsibilities of each specific cadre.

Table 2: Staffing in district hospitals in Kavango

Cadre	Current average	Min	Max	Average
Doctors	3	9	11	**10**
Nurses	39	38	54	**44**
Pharmacists	0	2	3	**2**
Pharmacy assistants	1	4	8	**6**

The need for doctors in the district hospitals ranged from a minimum of 9 doctors to a maximum of 11 with an average of 10 doctors. Basing on the averages the need for doctors for general hospitals was estimated at 10 doctors while that of nurses was estimated at 44, 2 pharmacists and 6 pharmacy assistants for each district hospital.

Table 3: Staffing in health centres and clinics in Kavango

Health centres

Cadre	Current average	Min	Max	Average
Nurses	10	9	20	**12**
Pharmacy assistants	-	1	3	**2**

Clinics

Cadre	Current average	Min	Max	Average
Nurses	2	1	21	**4**

According to the WISN, health centres would require an average of 12 nurses and 3 pharmacy assistants each while the clinics would require on average of 4 nurses each.

Table 4: Staffing summary for doctors in the region

Institution Name	Existing Staff	Calculated Requirement	Difference	WISN Ratio	Work pressure
Nankudu	2	11	-9	0.18	82%
Rundu	14	47	-33	0.30	70%
Andara	4	10	-6	0.40	60%
Nyangana	4	9	-5	0.44	56%
Total	**24**	**77**	**-53**	**0.31**	**69%**

The region requires at least 77 doctors for the workload that the region experiences but there only 24 leaving a deficit of 53 doctors. Currently the few doctors in the region are working under pressure with the highest pressure experienced by those in Nankudu and least in Nyankudu.

Data access and quality

The key challenge experienced was in regard to data access and fragmented data sources. Whereas Namibia has detailed data collection forms, the reporting systems are numerous including the HMIS/DHIS, file maker, PMIS etc. Some of these data are reported through the region while other data are reported directly to the MoHSS. This makes it difficult to obtain all the data from one source. Also the capacity to manage the system especially to generate customised reports is limited at the regional level and was a major challenge in accessing the data.

Lack of surgeons

Lack of or limited number of surgeons and doctors affects the level of functionality of hospitals as well as the coverage of clinical services to the population. In hospitals for example with non-functional theaters, the workload for nurses is reduced. Therefore if only workload is used to determine the need for nurses or doctors, it will underestimate the actual need to meet the functional needs of the hospital. In using the WISN results therefore the desired functionality level of each of the facility types need to be taken into account.

Staffing data

At the regional level only staffing data for public health facilities was available. Data for the Faith Based Organizations has to be collected directly from the FBOs. There is need at regional level to have comprehensive information on all staff in the region.

Task shifting

A number of tasks are being carried out by nurses some of which are meant for doctors or other cadres. For example to improve the efficient use of the scarce skilled nurses, some tasks like taking registering patients and receiving payments from patients could be shifted to records officers and cashier respectively.

Paper work

During the activity setting standards workshop, the key component of the nurse's work was reported to be paper work. The number of forms to fill per patient and the length of the forms to be filled seemed long and were taking a lot of nurse's time. Due to this it will be realized that the activity standards set for most of the activities in Namibia were slightly higher than the time set for similar activities in other countries.

Recommendations and Suggested Way Forward

1. The WISN technical task team should make a presentation to the restructuring committee to determine a way forward in the use of WISN.

WISN could be customised as a management tool at hospital level to guide staffing between wards for all staff cadres. This will particularly be useful to the nurse in charge in determining how many staff to allocate to each of the wards.

Conclusions

1. The staffing as determined by WISN is the barest minimum for quality improvement.
2. Workload and hence staffing needs are likely to increase if the theatres in the district hospitals become functional.
3. The brunt of the current understaffing is being born by the nurses to whom most of the work is task shifted.
4. There is need, therefore, to either officially accept this whereby appropriate training and staffing for nursing with be mandatory.

Activity Standards for Doctors, Nurses, Pharmacists, and Pharmacist Assistants in Kavango Pilot (July 2012)

Activity standards for nurses in district and intermediate hospitals: Kavango				
Workload	**Activities**	**Intermediate Hospital in minutes/Patient**	**District Hospital in minutes/Patient**	**Workload**
ACTIVITIES DONE BY BOTH ENROLLED AND REGISTERED NURESES				
Admissions	Admitting Patients	40	40	Total # of admissions
Deliveries (CS + normal)	Monitoring labor	120	120	Total deliveries (CS +normal)
Discharges	Discharging of patients	15	15	Total patients discharged
Normal deliveries	Deliver mothers	45	45	Total normal deliveries
	Immediate post-natal care – mothers	30	30	
		75	**75**	
Cesareans Sections	Receiving baby from theatre and care	30	30	Total caesarian sections
	Floor Nursing CS Op)	60	60	
		90	90	
DBS tests	DBS blood	10	10	Total number of DBS done
Deaths (OPD,IPD, still & neonatal)	Last office	60	60	Total deaths (OPD & IPD , still and neonatal)
Dressings	Dressing of minor wounds	20	20	Total Dressings
Immunizations – all doses	Immunization for babies	10	10	Total immunizations all vaccines
Injections	Giving of injections	10	10	Total injections
Live births	Immediate post-natal care – babies	30	30	Total live babies
Major & minor operations	Post-operative care	20	20	Total major and caesarian sections
Major operations	Floor Nursing (Major Op)	120	120	Total # of major operations
Minor operations	Floor Nursing (Minor Op)	30	30	Total # of minor operations
OPD 1st and re visit	Screening patients	20	20	Total OPD 1st visit and re visit
Patients counseled -	HIV counseling – pre test	30	30	Total clients pre & post test counseled
	HIV counseling – post test	15	15	
		45	**45**	
Pediatric patients disclosed to	Pediatric disclosure	30	30	Pediatric patients disclosed to

Workload	Activities	Intermediate Hospital in minutes/Patient	District Hospital in minutes/Patient	Workload
ACTIVITIES DONE BY REGISTERED NURESES				
In patient days	Daily ward rounds	15	10	Total inpatient days
Caesarian Sections	Scrub Nursing CS Op)	60	60	Total # of CS operations
	Anesthetic Nursing CS Op)	60	60	
		120	**120**	
Emergency cases	Attending to emergency cases	40	40	Total emergency cases
Lab specimens drawn	Draw lab specimens	10	10	Total lab samples taken
Major & CS operations	Post operation observation – Recovery	30	30	Total # of major & CS operations
Major & CS operations	Pre-operative care	30	30	Total major and caesarian sections
	Sluicing of instruments	5	5	
		35	**35**	
Major operations	Scrub Nursing (Major Op)	120	120	Total # of major operations
	Anesthetic Nursing (Major Op)	120	120	
		240	**240**	
Minor operations	Scrub Nursing (Minor Op)	30	30	Total # of minor operations
Minor procedures	OPD minor procedures (stitches and incisions)	25	25	Total OPD procedures (stitches and incisions)
Pap smears	Pap smears	30	30	Total number pap smear
ART visits	Patient consultation ART clinic -	15	15	Total ART visits -
	Lab specimens drawn -	5	5	
		20	**20**	
Vacuum and assisted extractions	Assist in vacuum extraction	45	45	Total vacuum and assisted extractions

Category and Individual Allowance Standards for nurses in hospitals: Kavango				
In Direct Patient Care				
Category Allowances	**Intermediate Hospital**		**District Hospital**	
Monthly staff meetings	2 hours/month		2 hours/month	
Damp Dusting	30 minutes per day		30 minutes per day	
Tea breaks	30 minutes per day		30 minutes per day	
Handover of shifts	45 minutes per day		45 minutes per day	
In service training	60 minutes per week		60 minutes per week	
Weekly ward meetings	30 minutes/week		30 minutes/week	
Individual allowances	**Intermediate Hospital**		**District Hospital**	
Activity	**# of staff**	**Set standard**	**# of staff**	
Medicine rounds	11	3 hours/day	5	2 hours/day
Nursing for high dependent patients	6 x 10 wards	120 minutes / day	4 x 5	120 minutes / day
Compiling of monthly statistics	11	2 hours/ month	5	2 hours/ month
Controlling of drugs (schedule 3 & 4)	11	30 minutes/week	5	30 minutes/week
Preparing for operations	1	45 minutes / day	1	45 minutes / day
Collecting and escorting referred patients	1	6 hours / day	1	4 hours / day
Dialysis, ventilation & central lines)	2	15hours / week		
High care ward	11, 4:3:3	8 hours / day		
Blood transfusion	2	30minutes/day	2	30minutes/day
Administration and Management for ward I/C				
	Intermediate Hospital			**District Hospital**
	# of staff	**Set standard**	**# of staff**	
Duty Roster	12	1 hour/week	8	1 hour/week
Ordering of medicines	12	120 minutes/week	8	60 minutes/week
Supervision of subordinates	12	60 minutes/day	8	60 minutes/day
Duty delegation	12	10 minutes/day	8	10 minutes/day
Inventory taking	12	60 minutes/month	8	60 minutes/month
Controlling of duty roster	1	120 minutes/week	1	120 minutes/week
Monthly auditing	10	4 hours/month	5	4 hours/month
Quarterly report	12	120 minutes/quarterly	8	120 minutes/quarterly
Annual report	12	1 day/per annum	8	1 day/per annum
Supervision of students	12	60 minutes/day		

Activity standards for nurses in health facilities and clinics: Kavango				
Workload Component	**Activities**	**Health centre in minutes/Patient**	**Clinic in minutes/Patient**	**Workload**
SET STANDARDS FOR BOTH REGISTERED ENROLLED NURSES				
Admissions	Admission of Patient	20		Total Admitted
ANC 1st visits	ANC 1st Visit (PMTCT)	30	30	Total ANC 1st visit patients
ANC revisits	ANC Revisit	20	20	Total ANC revisit
Deaths	Last office	60		Deaths
Deliveries	Labor management	120		
	Immediate post-natal care for mother	30		Total Deliveries
DOTS patients	DOTS	10	10	Total DOTS patients
Dressings	Dressings	10	10	Total dressings
FP 1st visit	Family planning 1st visit	15	15	Total Method started at first visit
FP revisit	Family planning revisit	10	10	FP revisit
Growth monitoring for children	Growth Monitoring Programme	10	10	Total children growth monitored
Immunizations of children	Immunizations	10	10	Total Immunizations all doses
Injections	Injections other than immunizations & FP	10	10	Total injections other than immunizations & FP
Inpatients	Bed making	6		Total Inpatients
Live births	Immediate post-natal care for baby	30		Live births
Out Patients	Screening & treating Patients	25	25	Total out patients
Post-natal visits	Post-natal visit	30	30	Total Post-natal visits
VCT Client counseled	VCT	45	45	Total Client counseled
SET STANDARDS FOR REGISTERED NURSES				
Emergency Deliveries	Emergency Deliveries		60	Total emergency Deliveries
Deliveries	Deliveries	60		Total Deliveries
IMAI	IMAI	30	0	HIV/AIDs re visits EPMs
Inpatients	Ward Round	5		Total Inpatients
Minor procedures	Minor procedures	25	25	Total procedures
Referrals	Referrals	10	10	Total Referrals

Category and Individual Allowance Standards for nurses in health facilities and clinics				
In Direct Patient Care	**Health Centre**	**Clinic**		
Category Allowances	**Set Standards**			
Staff Meetings	2 hours/month	1 hour/month		
Handover at end of shift	45 minutes/day			
Dump Dusting	30 minutes/day	30 minutes/day		
Break tea	30 minutes/day	30 minutes/day		
	Health Centre		**Clinic**	
Individual allowances	**# of staff**	**Set standard**	**# of staff**	**Set standard**
Duty Roster	1	1 hour/week		
Pharmacy stock taking and ordering medicine	1	3 hours/month	1	2 hours/month
District Staff Meetings	1	1 day/month	1	1 day/month
Compiling statistics	2	4hours/month	1	2 hours/month
Checking of emergency trolley	1	15 minutes/day	1	5 minutes/day
Checking of schedule 3 and 4 drugs	2	15 minutes/month	2	10 minutes/month
Health Education	1	60 minutes/day	1	60 minutes/day
	Health Centre		**Clinic**	
Administration and Management for ward I/C	**# of staff**	**Set standard**	**# of staff**	**Set standard**
Management Staff Meetings	4	45 minutes/ month		0
Inspection of health facility	1	60 minutes/month		0
Writing quarterly reports	1	1 hours/quarter		0
Annual reporting	1	2 hours/year		0
Progressive report for new staff	1	60minutes/quarter		0
PMIS reports	1	60 minutes/quarter	1 hours/quarter	

Activity standards for doctors in district and intermediate hospitals: Kavango			
Activity	**Intermediate Hospital in minutes/Patient**	**District Hospital in min/Patient**	**Workload**
Patient consultation (new)	20 min/patient	20 min/patient	OPD seen by Doctor
Minor Procedures – (Incisions, stitches etc.)	30 min/patient	30 min/patient	Procedure (incision_stitches_etc)
Admissions	15 min/patient	15 min/patient	Total Admissions
Cervical Smear	10 min/patient	10 min/patient	No Of Cervical Smear
ART 1st Visit	20 min/patient	20 min/patient	ART visits
Conducting ward round	15 min/patient	15 min/patient	Inpatient Days
Discharging patients General	5 min/patient	5 min/patient	No of Discharges
Discharging patients Maternal	10 min/patient	10 min/patient	No of live Births
Confirmation of death and writing certificate	10 min/patient	10 min/patient	Total number of deaths
Patient referrals	20 min/patient	20 min/patient	Referrals to other Facility
Minor operations	30 min/patient	30 min/patient	No of Minor Operations plus Male Circumcisions (From EPMS)
Major operations	120 min/patient	120 min/patient	
writing notes	10 min/patient	10 min/patient	
	130 min/patient	130 min/patient	No of Major Operations
Caesarean section	60 min/patient	60 min/patient	No of Caesarean sections
Post mortem examination and report writing	45 min/patient	45 min/patient	No of Postmortems

Category and individual allowance standards for doctors in district and intermediate hospitals				
In Direct Patient Care			**Intermediate Hospital**	**District Hospital**
Category Allowances			**Set Standards**	**Set Standards**
Daily Doctors' Meetings			30 min/day	30 min/day
Weekly Clinical Meetings/ CPD			1 hr/week	1 hr/week
Grand Ward Round			2 hrs/week	2 hrs/week
Tea Break			30 min/day	30 min/day
Therapeutic Meeting			2 hrs/month	2 hrs/month
Maternal/peri natal death review			1 hrs/month	1 hrs/month
Activity	**Intermediate Hospital**		**District Hospital**	
Individual Allowances	**# of staff**	**Set standard**	**# of staff**	**Set standard**
Examination of Rape Cases	1	4 hrs/month	1	4 hrs/month
Dialysis patients	1	1.5 hrs/week		
Minor bedside procedures	1	30 min/day	1	30 min/day
Activity	**Intermediate Hospital**		**District Hospital**	
Administration and Management	**# of staff**	**Set standard**	**# of staff**	**Set standard**
Management Meetings at the Hospital	4	2 hrs/month	1	2 hrs/week
Economizing Meetings	4	1 hr/week	1	1 hr/week
Support supervisory visits	1	5 days/quarter	1	5 days/quarter
Therapeutic Meeting –Regional	4	1 day/quarter	1	1 day/quarter
Report Writing	4	2 hrs/quarter	1	2 hrs/quarter
Annual Plan	4	5 days/quarter	1	5 days/quarter
Duty Roster	4	15 min/month	1	15 min/month
Office Duties (correspondence, visitors, and other administrative duties)	4	30 min/day	1	120 min/day

Activity standards for pharmacists in district and intermediate hospitals: Kavango			
Activity	**Standard Hospital in minutes**	**% pharmacist/pharassist**	**Workload**
SET STANDARDS FOR Pharmacists			
Dispensing to patients	7 mins/patient	40%	number of prescriptions
ART Dispensing, counseling, pill counts and recording	10mins/patient	50%	number of prescriptions dispensed per day
Ward Rounds	15 min/patient	60%	Patient days
Issuing of stock to clinics, HC, wards	24 hours/clinics/yr	50%	# clinics
Issuing of stock to wards	52 hours/ward/yr	50%	#wards

Individual and category allowance standards for pharmacists in district and intermediate hospitals			
In Direct Patient Care	**Hospital**		
Category Allowances	**Set Standards intermediate**	**district**	
Grand Ward Rounds	2 hours/week	2 hours/week	
CPD	1 hr/week	1 hr/week	
Monthly meeting	2 hrs/month	2 hrs/month	
Tea Break	30 min/day	30 min/day	
Therapeutic Meeting	2 hours/month	2 hrs/month	
Annual stock taking	4 days/year	3 days/year	
ward inspections	4 hours/month	4 hours/month	
Pharmacy Forum	4 days/year	4 days/year	
Individual Allowances	**# of staff**	**Set standard**	**Set standard**
Stock management	1	**12 days/month**	**10days/month**
stock taking	1	4 days/month	2 days/month
Ordering (interim & routine)	1	2 days/month	2 days/month
Receiving stock	1	2 days/month	2 days/month
Warehouse	1	3 days/month	3 days/month
Returning excess stock	1	1 day/month	1 days/month
incinerating of expired and damaged meds	1	2 hours/month	2 hours/month

Setting max/min stock levels	1	4 days/year	4 days/year
Extemporaneous Preparation	1	1 hours/week	1 hours/week
Control of scheduled medicines & ART	1	30 minutes/day	30 minutes/day
Management of emergency pharmacy	1	20min/day	20min/day
Administration and Management	**# of staff**	**intermediate hospital**	**district hospital**
Support/Supervision of Clinics & HCs	1	none	1 week/quarter
Report Writing (visits, PMIS, annual etc.)	1	3 hours/month	3 hours/month
PMIS, quarterly, annual, TB, malaria, generic			
Data Management	1	2 hours/month	2 hours/month
clinics and ward			
Meetings	1	**13 hours/month**	**13 hours/month**
economizing	1	4 hours/moth	4 hours/moth
therapeutic	1	2 hrs/month	2 hrs/month
DCC	1	2 hours/month	2 hours/month
art	1	2 hours/month	2 hours/month
Pharmacy staff	1	1 hours/month	1 hours/month
mat and perinatal	1	2 hours/month	2 hours/month
ABC analysis	1	8 hours/year	8 hours/year
Pharmacy week	1	1 week/year	1 week/year
Planning and budgeting	1	1 week/year	1 week/year

Activity standards for pharmacy assistants in district and intermediate hospitals: Kavango					
Activity	**Intermediate Hospital in minutes**	**District Hospital**	**Health centres**	**% pharmacist/ pharmacy assist**	**Workload**
Dispensing to patients	7 mins/patient	7 min/patient	7 min/patient	60%/100% HC	number of prescriptions
ART Dispensing, counseling, pill counts and recording	10mins/patient	10 min/pt	10 min/pt	50%/100% HC	number of prescriptions dispensed per day
Issuing of stock to clinics, HC		24 hour/clinic		50%	# clinics
Issuing of stock to wards	52 hours/ward/yr	52 hours/ward	52 hours/ward/yr	50%/100% HC	#wards

Individual and category allowance standards for pharmacy assistants in district and intermediate hospitals				
Category Allowances	**Intermediate hospitals**	**District Hospitals**	**Health centres**	
Grand Ward Rounds	2 hours/week	2 hours/week	NA	
CPD	1 hr/week	1 hr/week	1 hr/week	
Monthly meeting	2 hrs/month	2 hrs/month	1 hrs/month	
Tea Break	30 min/day	30 min/day	30 min/day	
Therapeutic Meeting	2 hours/month	2 hrs/month	2 hours/month	
Annual stock taking	4 days/year	3 days/year	1 day/year	
ward inspections	4 hours/month	4 hours/month	2 hours/month	
Individual allowances	**# of staff**	**Intermediate hospital**	**District Hospital**	**Health centres**
Stock management	1	**12 days/month**	**10days/month**	**7days/month**
stock taking	1	4 days/month	3 days/month	2 days/month
Ordering (interim & routine & buyouts)	1	2 days/month	2 days/month	1 day/month
Receiving stock	1	2 days/month	2 days/month	1 day/month
Warehouse	1	3 days/month	3 days/month	2 days/month
Returning excess stock	1	1 day/month	1 days/month	1 day/month
incinerating of expired and damaged meds	1	2 hours/month	2 hours/month	n/a
Setting max/min stock levels	1	4 days/year	4 days/year	2 days/year
Extemporaneous Preparation	1	1 hours/week	1 hours/week	n/a
Control of scheduled medicines & ART	1	30 minutes/day	30 minutes/day	15 minutes/day
Management of emergency pharmacy	1	20min/day	20min/day	n/a
Administration and Management	**# of staff**	**intermediate**	**district**	hc
Report Writing (visits, PMIS, annual etc.)	1	n/a	na/	2 hours/month

therapeutic	1	n/a	na/	2 hours/month
ABC analysis	1	n/a	na/	4 hours/year
Pharmacy week	1	1 week/year	1 week/year	1 week/year

Activity Standards for pharmacists at the multi- regional medical depot: Kavango				
Activity Standards	**Set Standard**			
Activities			**Phar%**	**PA%**
Processing Purchase order	4 hours / purchase order	# of purchase orders	20	80
Issuing Client Order	90 minutes/ order	# of client orders issued	20	80
Updating Syspro Master Inventory File	60 minutes/ update	# of updates	100	
Category Allowances	**Set Standards**			
Storing of stocks in warehouses (Put away Process)	5 days/2months			
Staff Meetings	60 minutes/month			
Annual Stock Taking	14 days / year			
CPD	1 hr/week			
Tea Break	30 min/day			

Individual allowances	# of staff	Standards	Who
Physical Stock Count	2	240 hours/6 weeks	both
Receiving stock from CMS	2	5 days/2months	both
Setting Minimum and Maximum Stock Levels	2	5 days	both
Compile the order to CMS	1	120 minutes every 6 weeks	pharmacist
Receiving Purchase Order into Syspro	1	120 minutes every 8 weeks	pharmacist
Conduct Pharmacy week activities	1	5 days	both
Attend Management Meeting	1	3 hours/month	pharmacist
Attend Economizing Meeting	1	4 hours /month	pharmacist
Attend Regional Therapeutics Committee Meeting	1	4 days/year	pharmacist
Support supervision	1	35 hours/quarter	pharmacist
Compile Monthly ART Report	1	30 minutes/month	pharmacist
Compile Quarterly PMIS Report	1	2 hours/quarter	pharmacist
Attend National Pharmacist Forum	1	4 days/year	pharmacist
Conduct ABC analysis	1	5 days/year	pharmacist
Compile Annual Plan	1	2 hours/Year	pharmacist
Compile Quarterly Report	1	60 Minutes/Quarter	pharmacist
Compile Annual Report	1	5 days/year	pharmacist
Removal and Disposal of expired/damaged stock	2	60 minutes/month	both

Activity standards for pharmacy assistants at medial depot				
Activity Standards	**Standard RMS**	**Workload**		
Activities			**Phar%**	**PA%**
Processing Purchase order	4 hours	# of purchase orders	20	80
Dispatching Client Order	3 hours per order	# sales orders		100
Issuing Client Order	90 minutes	# of client orders issued	20	80
Receiving and sorting returned stock from HFs	30 minutes	# adjustment reports		100
Category Allowances	**Set Standards**			
Storing of stocks in warehouses (Put away Process)	5 days/2months			
Staff Meetings	60 minutes/month			
Annual Stock Taking	14 days / year			
CPD	1 hr/week			
Tea Break	30 min/day			
Individual allowances	**# of staff**	**Standards**	**Who**	
Physical Stock Count	8	240 hours/6 weeks	both	
Receiving stock from CMS	8	5 days/2months	both	
Setting Minimum and Maximum Stock Levels	8	5 days	both	
Capturing Client Order into Syspro	1	70 hours/month	pa	
Conduct Pharmacy week activities	1	5 days	both	
Checking of Printed Order Checklists	1	35 hours/month	pa	
Compile Monthly TB Report	1	1 hours/month	pa	
Compile Quarterly Malaria Report	1	2 hours/quarter	pa	
Removal and Disposal of expired/damaged stock	8	60 minutes/month	both	

APPENDIX 11: RESULTS OF WORKLOAD INDICATORS OF STAFFING NEED (WISN) FOR KATUTURA INTERMEDIATE HOSPITAL (KIH) AND WINDHOEK CENTRAL HOSPITAL (WCH), JANUARY 2013

The Namibian staffing norms had not been revised for over thirteen years although multiple positions had been added to the establishment to meet workload requirements. The MoHSS is in the process of a restructuring effort to revise the staffing norms to meet the actual workload requirements. The MoHSS requested technical support from IntraHealth International Namibia to carry out a pilot estimation of the staff requirements in the Kavango Region assessing workload as part of a regional restructuring effort. The WHO Workload Indicator of Staffing Needs (WISN) methodology was selected for determining workload based staffing requirements. The WISN tool considered available working time, activities related with clinical service statistics and activities not related with clinical service statistics. The workload data was taken from the HMIS, ePMS and HCT data. For the Kavango region the pilot set activity and allowance standards for doctors, pharmacists and pharmacy assistants and used the set standards to determine the staffing need for these cadres using the WISN methodology. The result of the pilot was that IntraHealth was able to provide quantified data on workload per cadre.

As a result of the findings and recommendations from the Kavango pilot study the Restructuring and Presidential Inquiry Committees requested MoHSS (HRM and HRD) in collaboration with IntraHealth to estimate workload for WHC and KIH OB/GYN and Internal Medicine nurses and doctors using the WISN tool. The objective of the assessment of WHC and KIH were to identify and validate workload activity and allowance standards to estimate workload for KIH and WCH:

1. Internal medicine: doctors and nurses
2. Obstetrics & gynaecology services: doctors and nurses
3. Estimate additional workload requirements for training of student doctors, nurses and interns.

The data source for KIH:

- Internal medicine doctors and nurses – Medical Ward 5a, b, 6a, b Acute Care and TB ward, Medical OPD, ARV and the TB Clinic.
- OB/GYN doctors – Antenatal, Postnatal, Prem/neonatal, Gynecology ward 3A and Maternity and General Theatre, Antenatal Clinic, GYN Clinic
- OB/GYN nurses – Antenatal, Postnatal, Prem/neonatal, Gynecology ward 3A, Maternity Theatre, Antenatal Clinic, GYN Clinic

The data source for WHC:

- Internal medicine doctors – Medical Ward 4 West, Medical OPD, ARV Clinic

- Internal medicine nurses – Medical Ward 4 East, 4 West, 8 East, ARV, Medical OPD
- OB/GYN doctors – Antenatal, Postnatal, Prem/neonatal, Gynecology ward 2 West and Maternity and General Theatre, Antenatal Clinic, GYN Clinic.
- OB/GYN nurses – Antenatal, Postnatal, Prem/neonatal, Gynecology ward 2 West, Maternity Theatre

Additional data sources included human resources data which indicated staffing and available working time and primary data from wards for service statistics.

A technical working group was formed and included experts from WCH, KIH, UNAM School of Medicine and Nursing to develop specifics to adapt WISN to the Namibian context. Using activity standards developed in the Kavango region pilot study the technical working group adapted and refined workload components, category and individual allowance standards. Primary data was collected from the specified wards for a period of one year from April 1, 2011 to March 31, 2012 and the results were compared with national workload components and refined where necessary.

The staff categories included medical officers working in Internal Medicine and OB/GYN as well as nurses working in Internal Medicine and OB/GYN. Neither specialists nor interns were included in the assessment. It is important to note that this study includes results for nurses a whole and does not consider the separation of duties between registered and enrolled nurses.

Table 1: WISN Results for WCH and Katutura Intermediate Hospital Medical Officers and Nurses

Hospital	Unit	Cadre	Existing Staff	Required Staff	WISN Ratio
WCH	Internal Medicine	Medical Officer	5	9.22	0.54
KIH	Internal Medicine	Medical Officer	11	45.28	.24
WCH	Internal Medicine	Nurses	60	50.45	1.19
KIH	Internal Medicine	Nurses	89	113.31	.79
WCH	OB/GYN	Medical Officer	7	19.92	.35
KIH	OB/GYN	Medical Officer	7	29.39	.24
WCH	OB/GYN	Nurses	90	97.28	.93
KIH	OB/GYN	Nurses	96	115.01	.83

Findings: OB/GYN Medical Officers and Nurses

The student oversight was accounted for in the following ways:

- Most of the service standards for workload components have additional time to accommodate students and interns
- Bedside teaching
- Case studies
- Supervision of students
- Mentoring of students and interns
- Grand rounds.

Conclusions

The estimates demonstrate the number of professional staff required if the staff actually performed the tasks for the expected time. Although it appears that the doctors are working under extreme pressure, most likely task shifting to interns exist, e.g. sonar (OPD/OB), HCT, EKGs, OPD consultations etc.

The conclusions also demonstrate that high level policy discussions regarding the restructuring of the health work force in Namibia should move forward based on WISN evidence. The MoHSS should also consider adapting the WISN tool in Namibia as an institutional mechanism to evaluate health workforce demands, roles and responsibilities. The findings and lessons of the WISN exercise should also be disseminated domestically and internationally.

Table 2: Activity Standards for Internal Medicine and OB/GYN Doctors and Nurses

Windhoek Central Hospital Doctors: Internal medicine

Workload components	Service standard
Admission - General	30 min. / general admission
Discharge	15 min. / discharge
Death (resuscitation, confirmation of death, writing certificate)	60 min. / death
Ward round - general	12 min. / inpatient day
OPD consultation	20 min. / patient
TB visit	20 min. / patient
ART visit	20 min. / patient
Echo test	10 min. / echo
ECG	10 min. / ECG

Workload components	Category allowance std.
Major medical procedure	60 min. / week
Minor medical procedure	30 min. / day
Interdepartmental referral	30 min. / day
X-ray meeting	1 hour / month
Academic/clinical meeting	1 hour / week
Bedside teaching	30 min. / day
Daily meeting	30 min. / day
Staff meeting	2 hours / month
In-service training	1 hour / week
Academic round / grand round	1 hours / week
Tea break	30 min. / day
Mortality meeting	3 hours / month

Workload components	No of staff	Indiv. allowance standard
Management meeting	3	2 hours / month
Economizing meeting	1	1 hour / week
Support supervisory visits	1	4 hours / day
Therapeutic meeting - regional	1	1 day / quarter
Therapeutic meeting - hospital	2	2 hours / month
Report writing	2	2 hours / quarter
Planning and annual report	2	5 days / year
Duty roster	2	1 hour / month
Office duties (correspondence, visitors etc.)	2	30 min. / day
Emergency in ward	4	1 hour / day
Travel time (between hosp) for on-call	5	10 min. / day
Prisoner ward round	1	60 min. / day
Dialysis ward round	1	1 hour/day
Filling medico-legal/insurance/disability form	2	30 min. / day
Mentoring interns and medical students	2	4 hour / week

Katutura Intermediate Hospital Doctors: Internal medicine

Workload components	Service standard
Admission - Acute care	50 min. / ICU admission
Admission - General	30 min. / general admission
Discharge	15 min. / discharge
Death (resuscitation, confirmation of death, writing certificate)	60 min. / death
Ward round: Acute care	35 min. / inpatient day
Ward round - General	12 min. / inpatient day

Workload components	Category allowance std.
Major medical procedure	60 min. / week
Minor medical procedure	30 min. / day
Interdepartmental referral	30 min. / day
X-ray meeting	1 hour / month
Academic/clinical meeting	1 hour / week
Bedside teaching	30 min. / day
Daily meeting	30 min. / day
Staff meeting	2 hours / month
In-service training	1 hour / week
Academic round / grand round	1 hours / week
Tea break	30 min. / day
Mortality meeting	3 hours / month

Workload components	No of staff	Indiv. allowance standard
Management meeting	3	2 hours / month
Economising meeting	1	1 hour / week
Support supervisory visits	1	4 hours / day
Therapeutic meeting - regional	1	1 day / quarter
Therapeutic meeting - hospital	2	2 hours / month
Report writing	2	2 hours / quarter
Planning and annual report	2	5 days / year
Duty roster	2	1 hour / month
Office duties (correspondence, visitors etc.)	2	30 min. / day
Emergency in ward	4	1 hour / day
Travel time (between hosp) for on-call	5	10 min. / day
Prisoner ward round	1	60 min. / day
Filling medico-legal/insurance/disability forms	2	30 min. / day
Mentoring interns and medical students	2	2 hour / week

Windhoek Central Hospital Doctors: Obstetrics and gynaecology

Workload component	Service standard
Admission - gynaecology	30 min. / admission
Admission - labour	30 min. / admission
Monitoring labour	30 min. / patient
Discharge - mother or gynae patient	15 min. / patient
Discharge - baby	15 min. / patient
Death	60 min. / death
Ward round	20 min. / inpatient day
Caesarean - surgeon	60 min. / patient
Caesarean - assistant surgeon	60 min. / patient
Major operation - surgeon	120 min. / major operation
Major operation - assistant surgeon	120 min. / major operation
Minor operation - surgeon	30 min. / minor surgery

Katutura Intermediate Hospital doctors: Obstetrics and gynaecology

Workload component	Service standard
Admission - gynaecology	30 min. / admission
Admission - labour	30 min. / admission
Monitoring labour	30 min. / patient
Discharge - mother or gynae patient	15 min. / patient
Discharge – baby	15 min. / patient
Death	60 min. / death
Ward round	20 min. / inpatient day
Caesarean – surgeon	60 min. / patient
Caesarean - assistant surgeon	60 min. / patient
Major operation - surgeon	120 min. / major operation
Major operation - assistant surgeon	120 min. / major operation
Minor operation - surgeon	30 min. / minor operation
OPD consultation	35 min. / patient
Sonar (all ANC 1st and F/U visits)	20 min. / patient
Doing a pap smear	20 min. / patient
Examining a rape case	60 min. / patient
Evaluation of 1st ANC visit	30 min. / patient
Follow-up ANC visit	15 min. / patient
Workload components	**Category allowance std.**
Daily meeting	30 min. / day
Staff meeting	3 hours / month
Hand-over round	15 min. / day
Academic round / grand round	1 hour / week
Tea break	30 min. / day
Maternal/perinatal death review	3 hours / month
Bedside teaching	30 min. / day
In-service training	1 hour/month
Weekly meeting	1 hour / week

Workload components	No of staff	Indiv. allowance standard
Specialist teaching	4	45 min. / week
Management meeting	4	2 hours / month
Economising meeting	1	1 hour / week
Support supervisory visits	4	5 days / quarter
Therapeutic meeting - regional	1	1 day / quarter
Therapeutic meeting - hospital	2	2 hours / month
Report writing	4	2 hours / month
Planning and annual report	2	1 hours / week
Duty roster	2	1 hour / month
Office duties (correspondence, visitors etc.)	2	30 min. / day
Minor bedside procedure	2	30 min. / day
Emergency (in ward)	2	1 hour / day
Filling medico-legal/insurance/disability form	2	30 min. / day
Travel time (between hosp) for on-call	5	10 min. / day
Mentoring interns and students	2	2 hours / week

Windhoek Central Hospital nurses: Internal medicine

Workload components	Service standard
Admission - General	45 minutes / admission
Discharge	30 minutes / discharge
Death	60 minutes / death
Ward round – general	20 minutes / inpatient day
Routine nursing care	30 minutes / inpatient day
OPD consultation	30 min. / patient
ECG	30 min. / patient
Providing HIV counseling and testing	45 min. / patient
Providing TB DOTS	20 min. / patient
Adherence counselling	35 min. / patient
Give IPT	20 min. / patient
Nutritional assessment	30 min. / patient
Adolescent/paed. disclosure	35 min. / patient
Conduct sonar exams	20 min. / patient

Workload components	Category allowance std.
Monthly staff meeting	2 hours / month
Damp dusting	30 min. / day
Tea breaks	30 min. / day
Handover of shifts	25 min. / day
In-service training	60 min. / month
Case study (training of student nurses)	1 hour /week
Weekly ward meetings	90 min. / week
Grand ward round	1 hours / week
Checking emergency trolley	30 min. / day

Workload components	No of staff	Indiv. allowance standard
Compile monthly stats	4	2 hr / month
Control drugs	4	30 min / week
Duty roster	4	60 min / week
Ordering medicine	4	60 min / week
Supervision of subordinates	4	60 min / day
Duty delegation	4	20 min / day
Supervision of students	3	4 hr /day
Monthly auditing	4	1 hr / month
Quarterly report	4	5 hrs / quarter
Emergency in ward	4	1 hr / day
Care for high dependent patients	8	6 hrs / day
Medicine round	4	8 hrs / day
Death review meeting	4	3 hrs / month
Blood transfusion monitoring	2	45 min / day
Therapeutic meeting	4	3 hours/month
Annual report	4	2 days / year
Escorting patients	2	2 hrs / day

Katutura Intermediate Hospital nurses: Internal medicine

Workload components	Service standard
Admission	45 minutes / admission
Discharge	30 minutes / discharge
Death	60 minutes / death
Ward round	20 minutes / inpatient day
Routine nursing care	30 minutes / inpatient day
OPD consultation	30 min. / patient
ECG	30 min. / ECG
Providing HIV counseling and testing	45 min. / patient
Providing TB DOTS	20 min. / patient
Adherence counselling	35 min. / patient
Give IPT	20 min. / patient
Nutritional assessment	30 min. / patient
Adolescent/paed. disclosure	35 min. / patient
Conduct sonar exams	20 min. / patient

Workload components	Category allowance std.
Monthly staff meeting	2 hours / month
Damp dusting	30 min. / day
Tea breaks	30 min. / day
Handover of shifts	25 min. / day
In-service training	60 min. / month
Case study (training of student nurses)	1 hour /week
Weekly ward meetings	90 min. / week
Grand ward round	1 hours / week
Checking emergency trolley	30 min. / day

Workload components	No of staff	Indiv. allowance standard
Compile monthly stats	4	2 hr / month
Control drugs	4	30 min / week
Duty roster	4	60 min / week
Ordering medicine	4	60 min / week
Supervision of subordinates	4	60 min / day
Duty delegation	4	20 min / day
Supervision of students	3	4 hr /day
Monthly auditing	4	1 hr / month
Quarterly report	4	5 hrs / quarter
Emergency in ward	4	1 hr / day
Care for high dependent patients	8	6 hrs / day
Medicine round	4	8 hrs / day
Death review meeting	4	3 hrs / month
Therapeutic meeting - hospital	4	3 hrs / month
Blood transfusion monitoring	2	45 min / day
Annual report	4	2 days / year
Escorting patients	2	2 hrs / day
Acute care / high care nursing	2.7	24 hours / day

WCH nurses: Obstetrics and gynaecology

Workload component	Service standard
Admission - mother to labour	50 min. / patient
Admission - mother to postnatal ward	50 min. / patient
Admission - gynae ward	35 min. / patient
Admission – baby	30 min. / patient
Discharge - mother or gynae patient	30 min. / patient
Discharge - baby	30 min. / patient
Death	60 min. / patient
Ward round	20 minutes / inpatient day
Monitoring 1st stage of labour (normal and abnormal)	220 min. / patient
Conduct normal delivery - midwife	60 min. / delivery
Conduct normal delivery - assistant midwife	60 min. / delivery
Caesarian Section: Total	
Pre-op care	30 min. / patient
Anaesthetic nursing	90 min. / patient
Scrub nursing	60 min. / patient
Floor nursing	60 min. / patient
Receiving baby from theatre and care	30 min. / patient
Decontaminating instruments	10 min. / patient
Record writing after operation	20 min. / patient
Recovery room observation	30 min. / patient
Minor OB/GYN surgery: Total	
Pre-op care	20 min. / patient
Scrub nursing	30 min. / patient
Floor nursing	30 min. / patient
Post-op care	20 min. / patient
CSSD	25 min. / patient
Immediate PNC care - mother	60 min. / patient
Immediate PNC care - baby	60 min. / patient
Routine nursing care	30 min/ inpatient day
BCG vaccination of newborns	10 min. / patient
ANC 1st visit	45 min. / patient

ANC F/U visit	30 min. / patient
Postnatal visit	30 min. / patient
Perform DBS	30 min. / patient
Perform pap smear on pregnant woman	30 min. / patient
Family planning visit	30 min. / patient
PMTCT prophylaxis	10 min. / patient
HIV counselling and testing	45 min. / patient
Tetanus toxoid vaccination of pregnant women	10 min. / patient
Gyne consultation	20 min. / patient

Workload components	Category allowance std.
Monthly staff meeting	2 hours / month
Damp dusting	30 min. / day
Tea break	30 min. / day
Handover of shifts	25 min. / day
In-service training	1 hour / month
Case study (training student nurses)	1 hour / week
Mortality meeting	2 hours / month
Grand ward round	1 hour / week
Weekly ward meeting	1 hour / week

Workload components	No of staff	Indiv. allowance standard
Compile monthly stats	4	2 hr / month
Control drugs	4	30 min. / week
Duty roster	4	60 min. / week
Ordering medicine	4	60 min. / week
Supervision of subordinates	4	60 min. / day
Duty delegation	4	20 min. / day
Supervision of students	3	4 hrs / day
Monthly auditing	4	1 hr/ month
Quarterly report	4	5 hrs / quarter
Emergency in ward	4	1 hr / day

Dressing changes for C-section and gynae patients	2	1 hr / day
Care for high dependent patients	6	6 hrs / day
Medicine round	4	8 hrs / day
Death review meeting	4	3 hrs / month
Therapeutic meeting - hospital	4	3 hours / month
Blood exchange	2	1 hr / day
Blood transfusion monitoring	2	45 min. / day
Annual report	4	2 days / year
Escorting patients	2	2 hrs / day
Feeding neonates	2	4 hrs / day
Prem unit nursing	6	24 hrs / day

Katutura Intermediate Hospital nurses: Obstetrics and gynaecology

Workload component	Service standard
Admission - mother to labour	50 min. / patient
Admission - mother to postnatal ward	50 min. / patient
Admission - gynae ward	35 min. / patient
Admission - baby	30 min. / patient
Discharge - mother or gynae patient	30 min. / patient
Discharge - baby	30 min. / patient
Death	60 min. / patient
Ward round	20 minutes / inpatient day
Monitoring 1st stage of labour (normal and abnormal)	220 min. / patient
Conduct normal delivery - midwife	60 min. / delivery
Conduct normal delivery - assistant midwife	60 min. / delivery
Caesarian section: Total	
Pre-op care	30
Anaesthetic nursing	90
Scrub nursing	60
Floor nursing	60
Receiving baby from theatre and care	30
Decontaminating instruments	10

Record writing after operation	20
Recovery room observation	30
Minor OB/GYN surgery: Total	
Pre-op care	20
Scrub nursing	30
Floor nursing	30
Post-op care	20
CSSD	25
Immediate PNC care - mother	60 min. / patient
Immediate PNC care - baby	60 min. / patient
Routine nursing care	30 min/inpatient day
BCG vaccination of newborns	10 min. / patient
ANC 1st visit	45 min. / patient
ANC F/U visit	30 min. / patient
Postnatal visit	30 min. / patient
Perform pap smear on pregnant woman	30 min. / patient
Family planning visit	30 min. / patient
PMTCT prophylaxis	10 min. / patient
HIV counseling and testing	45 min. / patient
Tetanus toxoid vaccination of pregnant women	10 min/patient
Gyne consultation	20 min. / patient

Workload components	Category allowance std.
Monthly staff meeting	2 hrs / month
Damp dusting	30 min / day
Tea break	30 min / day
Handover of shifts	25 min / day
In-service training	1 hour / month
Case study (training student nurses)	1 hour /week
Mortality meeting	2 hours/month
Grand ward round	1 hour / week
Weekly ward meeting	1 hour / week

Workload components	No of staff	Indiv. allowance standard
Compile monthly stats	4	2 hr / month
Control drugs	4	30 min. / week
Duty roster	4	60 min. / week
Ordering medicine	4	60 min. / week
Supervision of subordinates	4	60 min. / day
Duty delegation	4	20 min. / day
Supervision of students	3	4 hrs / day
Monthly auditing	4	1 hr/ month
Quarterly report	4	5 hrs / quarter
Emergency in ward	4	1 hr / day
Dressing changes for C-section and gynae patients	2	1 hr / day
Care for high dependent patients	6	6 hrs / day
Medicine round	4	8 hrs / day
Death review meeting	4	3 hrs / month
Therapeutic meeting - hospital	4	3 hours / month
Blood exchange	2	1 hr / day
Blood transfusion monitoring	2	45 min. / day
Annual report	4	2 days / year
Feeding neonates	2	4 hrs / day
Prem unit nursing	6	24 hrs / day

APPENDIX 12: NURSE REQUIREMENT IN ONAMUNAMA (HAMUKOTO WAKAPA) CLINIC, NAMIBIA, BASED ON WISN, 31 OCTOBER 2012

In May 2012 due to a high nursing workload in the Onamunama (Hamukoto waKapa) clinic the Regional Director of the Ohangwena region requested the MoHSS for a revision of the clinic's staff establishment. The Permanent Secretary of the MoHSS asked IntraHealth to apply the WISN methodology to estimate how many nurses the clinic needed based on workload. The WISN Onamunama (Hamukoto waKapa) clinical nursing WISN assessment considered available working time, activities related with clinical service statistics and activities not related with clinical service statistics. The workload data was taken from the HMIS, ePMS and HCT data.

Based on WISN, the Onamunama (Hamukoto waKapa) clinic requires six nurses to cope with its current workload. (The WISN calculation gives 5.6 nurses, which is rounded to 6). The clinic is now staffed by only two nurses (one registered and one enrolled), leaving a gap of four nurses. This means that the two nurses presently on staff work under considerable workload pressure. (The WISN ratio measuring workload pressure is 0.36).

The available workload data do not distinguish between activities of registered and enrolled nurses. Therefore, the WISN-based staff requirement is also calculated for the combined category of "nurse". The list of clinic activities and their associated activity standards, used in the WISN calculation, were those recommended by the participants in the National WISN Validation workshop of 23-24 October 2012. The workload data were received directly from the clinic. The data was for February 2012 to July 2012, doubled to estimate the annual workload. The estimate of a nurse's available working time in a year came from the Kavango WISN pilot.

The following nursing workload components are the responsibilities of nursing staff but were excluded from the WISN calculation for lack of readily available workload data: Outreach, VCT clients counseled and PMTCT health education. The staffing levels as determined by the WISN assessment should be considered the absolute minimum for quality improvement. Another important consideration on nursing workload is that throughout the Namibian health care system the current health workforce shortage is being taken up by nurses. Also the redistribution of clinical responsibilities through task sharing will impact nurses to whom most of the clinical workload will be shifted to.

APPENDIX 13: SELF-ADMINISTERED TIME-MOTION SURVEY

National Workload Indicators of Staffing Need (WISN) Study

Facility Name

Region

Facility Type

We kindly request the assistance of the head matron in your facility in providing the information requested below on routine nursing care activities. This information will assist us in validating the information we have previously received from nurse focus groups.

We are attempting to understand the amount of time spent performing what we are referring to as "routing nursing activities."

1. Please select two wards in your hospital. Please do not select a specialty ward.

Ward 1 name _____

Ward 2 name _____

2. In each of these wards, please randomly select 2 dependent care patients and 4 self-care patients.

3. For each patient, over a 24 hour period (2 shifts), please place a tick mark next to the activity name to indicate the number of times each routine nursing activity is performed during each shift. Then please indicate the amount of time spent each time the activity is performed.

A form for each patient is attached.

If you have any questions related to the survey, please contact your regional representatives Ms. L. Mbeeli (lmbeeli@mhss.gov.na, 081.128.2992) and Ms. N. T. Mungoba (ntmungoba@gmail.com, 081.273.8977).

Ward 1, Dependent Care Patient #1

1st Shift (07h00 – 19h00)

Activity Name	# of times (indicate with tick marks)	Amount of time
Example	*llll*	*30 mins, 27 mins, 29 mins, 32 mins*
Full Wash (nail care, mouth wash, shaving, general grooming/hygiene)		
Bed Pans/Incontinent		
Feeding (spoon/tube feeding)		
Turning and Pressure Point Care		
Mobilising/Ambulating		
Range of Motion		
Suction (airway management and oxygen management)		
Catheterization		
Dressing (pressure sores, etc.)		
Additional medications (sedation, Pain medicine, more frequent medications etc.)		
Additional monitoring of vital signs		

2nd Shift (19h00 – 07h00)

Activity Name	# of times (indicate with tick marks)	Amount of time
Example	*llll*	*30 mins, 27 mins, 29 mins, 32 mins*
Full Wash (nail care, mouth wash, shaving, general grooming/hygiene)		
Bed Pans/Incontinent		
Feeding (spoon/tube feeding)		
Turning and Pressure Point Care		
Mobilising/Ambulating		
Range of Motion		
Suction (airway management and oxygen management)		
Catheterization		
Dressing (pressure sores, etc.)		
Additional medications (sedation, Pain medicine, more frequent medications etc.)		
Additional monitoring of vital signs		

Ward 1, Self-Care Patient #1

1st Shift (07h00 – 19h00)

Activity Name	# of times (indicate with tick marks)	Amount of time
Example	*llll*	*30 mins, 27 mins, 29 mins, 32 mins*
Bed making		
Vital signs		
Health education		
Medication rounds (including IVs)		
Recording (charting, I&Os, SOAP)		
Daily assessment and evaluation		
Conduct a daily ward round (with doctors)		
Routine blood (HGT, etc.)		
Individual and group therapy		
Shift handover (between nurses)		

2nd Shift (19h00 – 07h00)

Activity Name	# of times (indicate with tick marks)	Amount of time
Example	*llll*	*30 mins, 27 mins, 29 mins, 32 mins*
Bed making		
Vital signs		

Health education		
Medication rounds (including IVs)		
Recording (charting, I&Os, SOAP)		
Daily assessment and evaluation		
Conduct a daily ward round (with doctors)		
Routine blood (HGT, etc.)		
Individual and group therapy		
Shift handover (between nurses)		