



RESEARCH REPORT

HEALTH CARE PROVIDERS' WORKLOAD AFTER REMOVAL OF STAFF WITH FAKE CERTIFICATES FROM THE PUBLIC SERVICE

Consultant

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CONTENTS

ABBREVIATIONS	4
DEFINITION OF TERMS	5
EXECUTIVE SUMMARY	6
1.0 BACKGROUND	9
2.0 RESEARCH QUESTIONS, BROAD AND SPECIFIC OBJECTIVES	11
2.1 Research questions.....	11
2.2 Overall Objective.....	12 11
2.3 Objectives	12 11
3.0 METHODOLOGY	12
3.1 Study Areas.....	12
3.2 Study Design	13
3.3 Sampling Design and Size	13
3.4 Data Sources and Data Collection Tools.....	14 13
3.5 Workload Indicators.....	15 14
3.6 Ethics and Permission	15
3.7 Data Management and Analysis.....	16 15
4.0 RESULTS	17 16
4.1 Available Working Time.....	17 16
4.2 The Workload indicators in 2016	17 16
4.3 The inflow and outflow pattern of health care providers in 2017	20 18
4.4 Quality of data in studied health facilities	Error! Bookmark not defined. 20
5.0 DISCUSSION.....	23 21
5.1 The Workload Pressure in Primary Health Facilities	23 21
5.2 Implication of Low WISN Ratio	23 22
5.3 Geographical Distribution of Health Care Providers	24 23
5.4 The Impact of Removing Health Care Providers From the Public Service.....	25 23
5.5 Limitations of the study.....	25 24

6.0 CONCLUSIONS	2624
7.0 RECOMMENDATIONS.....	2625
8.0 ACKNOWLEDGEMENTS	2726
9.0 REFERENCES.....	2927
10.0 APPENDICES: INSTRUMENTS	3129
Instrument 1: Total Annual Days Absent.....	3129
Instrument 3: Clinical Assistants' Data Collection Form: Dispensary	3331
Instrument 4: Clinical Officers' Data Collection Forma: Dispensary	3533
Instrument 5: Data Collection Form For Enrolled Nurses: Dispensary	3735
Instrument 6: Data Collection Form For Assistant Nursing Officers: Dispensary	3937
Instrument 7: Data Collection Form For Clinical Assistants: Health Centre.....	4139
Instrument 8: Data Collection Form For Clinical Officers: Health Centre	4341
Instrument 9: Data Collection Form For Assistant Medical Officers: Health Centre.	4543
Instrument 10: Data Collection Form For Medical Officers: Health Centre	4846
Instrument 11: Data Collection Form For Enrolled Nurse: Health Centre	5048
Instrument 12: Data Collection Form For Assistant Nursing Officers: Health Centre..	5351
Instrument 13: Data Collection Form For Nursing Officers: Health Centre	5655

ABBREVIATIONS

AMO	Assistant Medical Officer
ANO	Assistant Nursing Officer
AWT	Available Working Time
BEmONC	Basic Emergency Obstetric and Neonatal Care
CA	Clinical Assistant
CEmONC	Comprehensive Emergency Obstetric and Neonatal Care
CO	Clinical Officer
DBS	Dried Blood spot
EN	Enrolled Nurse
GDP	Gross Domestic Product
HC	Health Centre
HMIS	Health Management Information System
HRH	Human Resources for Health
MO	Medical Officer
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
NO	Nursing Officer
PO-RALG	President's Office for Regional Administration and Local Governments
WHO	World Health Organization
WISN	Workload Indicators of Staffing Need

DEFINITION OF TERMS

Definition of key terms based on the World Health Organization[1]

Activity Standard (Service Standard): the time necessary for a well-trained, skilled and motivated worker to perform an activity to professional standards in local circumstances.

Available Working Time: the time a health worker has available in one year to do his or her work, taking into account authorized and unauthorized absences.

Staffing Requirement: the number of health workers required to handle the workload in the facility. This is calculated via the annual service statistics / standard workload for one staff member.

Standard Workload: the amount of work within a health service workload component that one health worker can do in a year.

Standard Workload for an Activity: Available time in the year/ unit time for the activity (Activity standard)

Unit Time: also called service standards, this is the average time that a health worker needs to perform an entire activity.

Workload Indicators of Staffing Need (WISN) method: a human resource management and planning tool that 1) determines how many health workers of a particular type are required to cope with the workload of a given health facility and 2) assesses the workload pressure of the health workers in that facility. Calculation of staff requirements is based on a health worker's workload and an activity (time) standard applied for each workload component.

WISN Ratio: actual (available) staff / required staff. The WISN ratio is an indicator for assessing workload pressure on the current staff of the health facility.

Workload components: The activities that take up most of a health worker's daily working time.

EXECUTIVE SUMMARY

Background

The purpose of this study was to determine the number of healthcare providers with fake certificates who were removed from the public service in 2017; the impact in terms of workload pressure and staffing requirements; and ultimately to recommend appropriate remedial measures to inform policymakers, decision makers, trade associations and stakeholders to fill the gaps and retain the quality of healthcare in the country.

Methodology

A cross-sectional descriptive study was carried out in 10 health facilities in the Kilwa district and Temeke municipal councils, each represented by three dispensaries and two health centres. Workload Indicators of Staffing Need (WISN) software was used to analyse and estimate the workload pressure, WISN ratio and staffing requirements for clinical assistants, clinical officers, assistant medical officers, enrolled nurses and assistant nursing officers. The scope of this study was restricted to these five categories of healthcare providers for reasons of availability of activity standards in Tanzania.

Results

The available working time (AWT) per year ranged from 1,600 hours to 1,736 hours for clinicians, and from 1,480 hours to as high as 1,672 hours for nurses. There were remarkable variations of health care providers' skill levels between the Kilwa district and Temeke municipal councils and between health facilities within the same district/municipal council. For instance, there was only one assistant medical officer and four assistant nursing officers in one of the two health centres in the Kilwa district council compared to eight assistant medical officers (AMOs) and seventeen assistant nursing officers (ANOs) in two health centres in Temeke.

The results showed a mixed picture of the availability of health care providers. There were remarkable variations in terms of the institutional shortage of clinical officers ranging from 11% at Buza dispensary to 79% at Tingi health centre with an average of 43%. One health centre (Tingi) in Kilwa district council never had even a single assistant medical officer. In the other three health centres the shortage of AMOs ranged from 44% at Yombo Vituka to as high as 61% at Kilwa Masoko health centre.

Only one nursing officer was found at the Yombo Vituka health centre. The shortage of enrolled nurses ranged from 28% at Kilwa Masoko to 80% at Mzinga dispensary in Temeke. The average shortage of enrolled nurses was 47%. Assistant nursing officers were available in all four health centres and in only two dispensaries located in Temeke,

Dar es Salaam. The shortage of assistant nursing officers ranged from 40% at Majimatitu to 60% at Buza dispensary in Temeke municipal council.

In both councils, a total of 17 nurses and clinicians left the health facilities in 2017, while the intake was only 8, making a net loss of 9 staff. Out of 17 health care providers who left the health facilities, 8 (47%) were removed from work due to a lack of genuine certificates. Generally, the shortage of care providers increased remarkably in 2017 in the four health facilities which were affected by this exercise. For instance, the shortage increased from 52% to as high as 69% for clinical officers at Mbagala Round Table health centre and from 34% to 50% for enrolled nurses at Tingi health centre.

Conclusions and recommendations

This study revealed a serious shortage of clinicians and nurses even before the removal of health care providers with fake certificates, the situation worsening in 2017 after the exercise. It is equally important to note that the study has also revealed a state of inequality in the skill level distribution between rural and urban councils. These findings strongly suggest the need for urgent interventions at a primary level as well as other levels of decision making. In view of these results and assuming that the same picture of workload indicators for health care providers cuts across the country, we recommend the following measures to the managers, decision makers and all stakeholders:

Dar es Salaam and Lindi: Council Level Recommendations

1. Councils should urgently trigger recruitment of new staff for primary health care facilities and distribution in the health facilities should be based on the workload and needs of the specific staff category.
2. Council Health Management Teams should review and adjust the staffing levels in health facilities based on the workload and needs i.e. redistribute staff and tasks where necessary.

Countrywide Recommendations

3. The Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) in collaboration with the President's Office for Regional Administration and Local Governments (PORALG) should promote documentation and record keeping for essential information for WISN ratio estimation in all health facilities in the country, enhancing data accuracy for national workforce planning and contributing to the more workload-based distribution of healthcare providers.
4. The Department responsible for Human Resources Development in the Health Sector should implement WISN estimation at a national level, determine the workforce

requirements of individual facilities and respond to the results for a workload-based distribution of health care providers.

5. The WISN tool determines staffing needs more precisely as it considers the existing workload and its relationship with available staff. Therefore, during the recruitment and posting, the Government should consider using the tool to back up the existing health worker staffing level for the distribution and redistribution of the health workers. This is increasingly beneficial for balancing staff distribution within the districts and helping to address equity and quality of service issues facing health facilities with high work pressure.
6. Further studies are needed to assess the impact in terms of the patient-care outcomes (i.e. mortality and morbidity), and staff performance and productivity attributed to the exercise of removing healthcare providers with fake certificates from public services.

1.0 BACKGROUND

Tanzania has one of the lowest densities of healthcare providers, an element which is critical to meeting the health-related needs of the population. Healthcare providers fill only 44% of the minimal requirement in Tanzania [2]. The density of physicians is as low as 3 in 100,000 citizens and there are serious health inequities across the country [3]. Further, the urban – rural health care providers' inequity is at a worrisome state. Healthcare providers found in urban populations are five times more available than those found in rural areas where 70% of the population live [4]. Records also indicate that only 55% of births in rural areas are assisted by skilled personnel compared to 87% in urban areas. The coverage for Basic Emergency Obstetric and Neonatal Care (BEmONC) is still low at 20% for dispensaries and at 39% for health centres [4]. Acute shortage of healthcare providers is a major concern needing specialized, national attention and commitments to realize the provision of quality healthcare services in the country.

Human resources for health are critical for provision of quality healthcare services. A shortage of health care providers is associated with high workload pressure in turn leading to situations such as staff spending much less time on each activity than is set by the activity standards, workflow inefficiencies, delays in delivering patient care, and dissatisfaction among patients and staff. All have significant negative effects on the quality of care and patient safety [1, 5]. The shortage of essential healthcare providers in public health institutions has contributed to the poor quality of healthcare services and outcomes, and consequently the failure of the country to realize health-related Millennium Development Goals which were set for 2015 [6-9].

Factors contributing to the shortage of healthcare providers in most parts of sub-Saharan Africa are many, including the ill-financing of human resources resulting in low recruitment, substandard management (including absence of succession plans, uneven distribution), internal and international migration, career changes among healthcare

providers, morbidity and premature mortality, dismissals, resignations (e.g. to migrate or change career) and retirement [10, 11].

The efforts to address the shortage of staff in Tanzania can be traced far back soon after independence, when the government adopted the policy of task shifting. In recent times, the government has strengthened this policy by establishing a technical education system with a set of qualification standards for the awards in almost all professions which are consistent and comparable to related awards at national and international levels. This has led to the country having two educational systems: technical qualifications and secondary / university qualifications. In the health sector, the graduates of technical qualifications include clinical assistants (CA), clinical officers (CO), assistant medical officers (AMO), pharmaceutical assistants, nurses and midwives, and laboratory, radiology and pharmaceutical technicians. All these are certificate and diploma holders. It has been reported that these cadres form the backbone of the Tanzanian health sector.

In 1996 the government developed the first Human Resources for Health Strategic Plan (HRHSP). Since then, this strategic plan has undergone several reviews and the current is for 2014-2019, providing a framework and path towards the attainment of an adequate and competent health workforce, equitably distributed to all parts of the country [1]. As one of the strategies, the government is expected to introduce new financing mechanisms that will raise the level of available finances for health personnel from 62% in 2014 to 66% in 2019. With the projected average annual change of Gross Domestic Product (GDP) of 6%, this would give an average increase in personnel expenditure of 8.2%, which would allow for an increase in number of staff, staff pay and benefits and retention of staff in rural areas through rural incentive schemes.

During the process of strengthening the health sector's human resources, in early 2017 the President's Office Public Service Management and Good Governance launched a national-wide audit to identify and remove civil servants with fake qualifications (i.e. without genuine secondary school and professional certificates) and ghost employees from the public service payroll. This exercise was performed as one of the measures for internal control and management of personnel costs and safeguarding public funds. As a result, this exercise removed around 12,000 civil servants from public service, including over 7,304 healthcare providers [12]. Some districts had as high as 330 civil servants with fake certificates consequently removed from public service. The exercise paralyzed health services delivery in some primary health facilities in the country. Although the

government released a statement saying that; "...their vacant positions should immediately be filled" [12], these positions have not been fully filled until now.

The exercise of removing civil servants with unqualified qualifications coupled with the government's decision to freeze recruitment of new workers since July 2015 and the existing fast population growth rate has exacerbated the staffing levels problem. Estimates indicate that with the population growth rate of 3.2% the minimum required workforce growth per annum is 16.4% [13]. Common sense also tells us that the combination of all these decisions could have further downsized the staff: population ratio in public services. Decreased staff levels leads to increased workload pressure for the staff who are left behind, and this is associated with poor quality of care. Although the government has reported a remarkable reduction of extensive loss of expenditures on personnel following this exercise, the impact of removing civil servants from public services and failure to replace them has not been mathematically estimated.

The purpose of this study was therefore to assess the stock of healthcare providers and compare their workload in 2016 and 2017, i.e. the periods before and after the removal of civil servants with fake qualifications from public services. This study focused primarily on the occupational cadres which constitute the large majority of the Tanzanian public sector health workforce and play key primary care roles, including medical officers, associate clinicians (clinical assistants, clinical officers and assistant medical officers) and nurse-midwives (enrolled nurses, assistant nursing officers, nursing officers). This study assessed the impact of removing healthcare providers (with unqualified certificates) from public services, in order to inform policymakers on systematic issues, and encourage decision makers, trade associations and stakeholders to advocate for improved availability and equitable distribution of healthcare providers in the country. The problem being studied is staff workload in relation to the attrition and removal of unqualified staff members in primary health facilities.

2.0 RESEARCH QUESTIONS, BROAD AND SPECIFIC OBJECTIVES

2.1 Research questions

1. How many healthcare providers were removed from public services in 2017, and what were the reasons for the outflows?

2. What is the impact in terms of workload pressure and staffing requirements following the removal of healthcare providers with unqualified certificates from public services?

2.2 Overall program Objective

To advocate for improved availability and equitable distribution of skilled and qualified healthcare providers in the country following the freezing of recruitment over the last two years and removal of civil servants with phony certificates from the public service.

2.3 Objectives of this study

1. To determine the outflow of healthcare providers from public services following the government exercise of removing civil servants with fake certificates.
2. To compare the workload pressure of healthcare providers in rural and urban public health facilities before and after removing civil servants with fake certificates from public services.
3. To determine the required staffing by number and qualification following said dismissal of healthcare providers with fake certificates.

3.0 METHODOLOGY

3.1 Study Areas

The study was conducted in two districts, one rural, one urban, located in two different regions i.e, Dar es Salaam and Lindi. For reasons of availability of activity standards in Tanzania, the scope of this study was restricted to the primary levels of care i.e. dispensaries and health centres. The hierarchy of health facilities in Tanzania is as presented in figure 1 below. These include from the bottom to the top, dispensaries, health centres, district hospitals, regional referral hospitals, zonal hospitals and the national hospital. In addition to the public there are private health facilities at different levels of care which also provide services, but these were not included in this study because the exercise of removing care providers with phony certificates involved mainly the public sector.

Figure 1: Hierarchy of health services provided in Tanzania



Source: United Republic of Tanzania, Ministry of Health.[14]

3.2 Study Design

A cross-sectional descriptive study was undertaken with quantitative data collection using a set of structured tools.

Variables in the study: Available working time, inflow and outflow of health care providers, workload indicators [existing staff, calculated requirement, workload pressure (WISN Ratio) and difference]

3.3 Sampling Design and Size

For financial reasons, a purposive sampling technique was applied to select two regions in Tanzania i.e. Dar es Salaam and Lindi regions. Simple random selection was applied to identify one urban district (Temeke municipality) from Dar es Salaam and Kilwa District Council to represent the rural setting. While Temeke has 2 Health Centers and 20 Dispensaries, Kilwa District has 5 Health and 50 dispensaries. From these districts, lists of public dispensaries and health centres were obtained from the respective offices of district / municipal medical officers. A stratified sampling method was employed to select two health centres and three dispensaries from the rural district and municipality, making a total of 10 health facilities. Selected health facilities included the following:

Temeke municipal council

- Health centres: Yombo Vituka, Mbagala Round Table
- Dispensaries: Buza, Majimatitu and Mzinga

Kilwa district council

- Health centres: Tingi and Kilwa Masoko
- Dispensaries: Somanga, Nangurukuru and Mpara

3.4 Data Sources and Data Collection Tools

Structured questionnaires were used to collect the following data: available workforce in all health institutions in 2016 and 2017, and the number of sub-activities/tasks performed in the year 2016. The categories and number of staff were extracted from the staff registries available in the offices of those in-charge of the health facilities. For reasons of availability of activity standards, this study was restricted to two groups of healthcare providers i.e. nurses and clinicians. For each health facility the number of following staff categories of staff was determined:

- Clinicians: clinical assistants, clinical officers; assistant medical officers (AMO) and medical officers.
- Nurse-midwives: enrolled nurses; registered nurses (assistant nursing officers - ANO) and nursing officers.

For each staff team, the number of days the staff was absent for the year 2016 was collected from the registers or the files for absences available in the health facilities.

Reasons for absences included annual leaves, sick leaves, training days and public holidays and other.

The number of sub-activities/tasks performed in 2016 was extracted from the Health Management Information System (HMIS) booklets available in the health facilities based on the categories of service providers. These sub-activities/tasks (services) included consultations (first and follow up visits), minor surgeries, referrals, counselling and testing, deliveries, antenatal care services, family planning, vaccination services, postnatal care, child healthcare (vaccinations, growth monitoring assessment), caesarean sections, dispensing, collection of dried blood spots (DBS), wound dressings, injections and health promotion (see the data collection tools).

Information on support activities usually performed by all members of staff were considered during analysis. These include report preparation, monthly staff meetings, national health campaigns, morning meetings, quarterly meetings, general cleanliness, decontaminations and sterilization and triage of patients (see the data collection tools). Analysis also included activities usually conducted by individual staff members, like attending village meetings, monthly stocktaking, ordering medicines, equipment and supplies, mobile clinics, preparing rosters, home-based care and transporting of dried blood spots (see the data collection tools in the appendices).

3.5 Workload Indicators

A Workload Indicators of Staffing Need (WISN) method was used to calculate the workload pressure (WISN ratio) and staffing requirements for all categories of staff involved in this study. WISN was developed by the World Health Organization (WHO) to calculate optimal distribution and staff deployment [15]. It is a human resources management tool that (i) determines how many staff members are needed to handle the workload of a healthcare facility, and (ii) assesses the workload pressures of healthcare providers in that facility using the WISN ratio (actual staff to required staff). This method considers annual work volume statistics, working time available for healthcare providers, and how long it takes them to complete an activity. This method links supply (presence of human resources) and demand (activities volume). In Tanzania the activity standards, including how long it takes healthcare providers to complete an activity, are only available for nurse-midwives and clinicians working at the dispensary and health centre levels.

The number of staff required in each health facility was estimated by determining the available working time (AWT) for each staff category and the annual work volume statistics. AWT is the time a health worker has available in one year to do his or her work, considering authorized and unauthorized absences. The available working time is the number of working days in a health worker's year (number of weeks per year (52) multiplied by the number of working days in a week (5)) minus the average of number of non-working days for each staff category (i.e. the average amount of annual leave, public holidays, sick leaves, training days per year and special no notice leaves). In Tanzanian public services, the standard is five working days per week, eight working hours per day and 17 public holidays per year, and 20 working days of annual leave (i.e. 4 weeks x 5 days/week). The average sick leaves, training days and special no notice leave per year were collected from the facility level and were computed based on staff category. The annual working time of each activity is the time spent performing the activity in one year, i.e., the duration of the activity multiplied by the total number of times the activity is performed in the year. In order to minimize errors, the calculation of non-working days for facilities which lacked data on absent days for sick leaves and training days, a representative set of such facilities with such data was used to compute the average number of absence days.

3.6 Ethics and Permission

Permission to conduct this research was obtained from the President's Office for Regional Administration and Local Governments (PORALG), the offices of the District Medical Officers and from the health facility management. Confidentiality and all national and

international ethical considerations were observed during implementation of the research.

3.7 Data Management and Analysis

Completion of data collection tools was verified before leaving the health facilities. All data was entered directly into the WISN software for analysis. Nationally accepted service standards for sub-activities of the workload components were entered into the software to enhance the generation of results. Results are presented in tables and graphs using principal summary measures i.e. available working time, available staff, calculated required staff and the WISN ratio (proportions of available staff versus the requirements) for the year 2016 and the workload pressure based on staff categories in 2017.

4.0 RESULTS

4.1 Available Working Time

The average annual working time varied from facility to facility and from one cadre to another (Table 1). The general picture showed that the more trained the nurses and clinicians were, the more working time became available, which ranged from 1,600 hours to 1,736 hours for clinicians, and from 1,480 hours to as high as 1,672 hours for nurses. The difference was based on the number of sick leaves and training days reported for each category of staff.

Table 1: Available working time in primary health facilities in 2016.

Health facilities	Available Working Time in Hours				
	Clinical Assistants	Clinical Officers	AMO	Enrolled Nurses	Registered Nurse
Buza dispensary	1,688	1,688		1600	1,624
Mzinga dispensary	1,696	1,672	-	1,624	-
Majimatitu disp.	1,688	1,688	-	1600	1,624
Somanga disp.	-	1,704	-	1,608	-
Nangurukuru disp.	-	1,656	-	1,584	-
Yombo Vituka HC	1,624	1,600	1,648	1,552	1,544
Mbagala R.T HC	-	1,720	1,712	1,640	1,672
Kilwa Masoko HC	-	1,688	1712	1600	1,624
Tingi HC	-	1,736	-	1480	1,536

Note: HC = health centre; disp = dispensary

4.2 The Workload indicators in 2016

Workload indicators for Mpara dispensary were not computed because the facility was managed by only one medical attendant. There was no clinician or any trained nurse in

this facility. This carter (medical attendant) was not included in the categories of staff for assessment because at this time there was no nationally agreed activity standards for them. However, she played the roles of the clinician, nurse, midwife and the facility manager altogether.

Box 1. Case report

"Mpara dispensary in Kilwa district had no any qualified professional. The facility was managed by a medical attendant who provided medical care services. Shockingly, in 2016, she attended 2110 outpatients, 368 antenatal clients, 558 children (for vaccination, growth monitoring and nutritional assessment), 603 family planning clients and provided many other medical services."

In 2016, she (medical attendant) attended 2110 outpatients, 368 antenatal clients, 558 children (for vaccination, growth monitoring and nutritional assessment), 603 family planning clients and provided many other medical services.

As expected, health facilities in Temeke municipal council had bigger numbers of healthcare providers than those in the Kilwa district council. However, more patients and clients were attended to in facilities in Temeke than those in Kilwa. There were remarkable variations of healthcare providers' skill levels between the Kilwa district and Temeke municipal councils and between health facilities within the same district/municipal council. For instance, there was only one assistant medical officer and four assistant nursing officers in one of the two health centres in Kilwa district council compared to eight AMOs and seventeen ANOs in two health centres in Temeke. There was no functional operating room (theatre) in any of the health centres.

There was no remarkable difference in terms of WISN ratio between Kilwa district and Temeke municipal councils in all the staff categories. The institutional WISN ratios for clinical assistants ranged from 0.45 to 0.98 with an average of 0.64 (Table 2).

Table 2: The workload indicators for clinicians based on 2016 statistics.

Staff category/ Health facilities	Existing staff	Calculated Requirement	WISN Ratio	Difference
Clinical Assistants				
Buza dispensary	2	2	0.98	0
Majimatitu dispensary	1	2	0.63	-1
Mzinga dispensary	1	2	0.49	-1
Yombo Vituka HC	4	9	0.45	-5
Sub-total	8	15	0.64	-7
Clinical Officers				
Buza dispensary	4	5	0.89	-1
Majimatitu dispensary	4	6	0.69	-2
Mzinga dispensary	2	4	0.48	-2
Somanga dispensary	1	2	0.62	-1
Nangurukuru dispensary	1	2	0.57	-1
Yombo Vituka HC	9	13	0.67	-4
Mbagala Round Table HC	6	13	0.48	-7
Kilwa Masoko HC	2	4	0.51	-2
Tingi HC	1	5	0.21	-4
Subtotal	30	54	0.57	-24
Assistant Medical Officers				
Yombo Vituka HC	3	5	0.56	-2
Mbagala Round Table HC	5	12	0.41	-7
Kilwa Masoko HC	1	3	0.39	-2
Subtotal	9	20	0.45	-11

There were remarkable variations in terms of institutional WISN ratios for clinical officers ranging from 0.21 at the Tingi health centre to 0.89 at the Buza dispensary with an average of 0.57. High work pressure was prevalent in the Tingi Health Center while Buza has very low work pressure, given variation in workload weighed against available staff. The Tingi Health center in Kilwa district council never had even a single assistant medical officer. In the other three health centres the shortage of AMOs ranged from 44% at Yombo Vituka to as high as 61% at the Kilwa Masoko health centre.

Table 3: The workload indicators for nurses based on 2016 workload statistics

Health facilities	Existing staff	Calculated Requirement	WISN Ratio	Difference
Enrolled Nurses				
Buza dispensary	5	9	0.57	-4
Majimatitu dispensary	6	11	0.56	-5
Mzinga dispensary	3	15	0.20	-12
Somanga dispensary	1	3	0.32	-2
Nangurukuru dispensary	1	2	0.54	-1
Yombo Vituka HC	8	14	0.57	-6
Mbagala Round Table HC	15	25	0.60	-10
Kilwa Masoko HC	6	8	0.72	-2
Tingi HC	4	6	0.66	-2
Subtotal	49	93	0.53	-44
Assistant Nursing Officers				
Buza dispensary	3	7	0.40	-4
Majimatitu	2	4	0.60	-2
Yombo Vituka HC	5	11	0.44	-6
Mbagala Round Table HC	7	14	0.51	-7
Kilwa Masoko HC	1	2	0.58	-1
Tingi HC	3	6	0.49	-3
Subtotal	21	44	0.50	-23

Out of all health centres, a nursing officer was only found at the Yombo Vituka health centre. The shortage of enrolled nurses ranged from 28% at Kilwa Masoko to 80% at Mzinga dispensary in Temeke (Table 3). The average WISN ratio for the enrolled nurses was 0.53. Assistant nursing officers existed in all four health centres and in only two dispensaries located in Temeke, Dar es Salaam. The shortage of assistant nursing officers ranged from 40% at Majimatitu to 60% at Buza dispensary in Temeke municipal council.

4.3 The inflow and outflow pattern of health care providers in 2017

From January to November 2017, a total of 17 nurses and clinicians left the health facilities while the inflow was only eight, transferred in from elsewhere, making a net loss of nine staff (Table 4). There were **no** new recruited staff during this period. Out of 17 healthcare providers who left the health facilities, eight (47%) were removed from work due to a lack of genuine certificates. These included six enrolled nurses and two clinical officers from four health facilities. The rest (nine) were transferred out to other places for miscellaneous reasons.

Table 4: The inflow and outflow of health workers from Jan- Nov, 2017

SN	Staff category	Health workers Inflow	Health workers Outflow	Net Gain/ Loss of Health workers
1.	Buza	1	3	-2
2.	Majimatitu	2	1	1
3.	Mpara	1	0	1
4.	Yombo Vituka	1	3	-2
5.	Mbagala Round Table	1	8	-7
6.	Tingi	1	2	-1
7.	Kilwa Masoko	1	0	1
Total staff		8	17	-9

Note: Inflow staff were those transferred in from elsewhere and included 3 ANOs and 2 EN, 1 MO and 1 AMO.

With the assumption that the number of patients and clients who attended the health facilities in 2016 remained the same in 2017, the impact of the healthcare providers' staff who left jobs on the resulting workload pressure is presented in figure 2 below. These results included the transferring out and removal of those from public services for reasons related to a lack of authorized secondary school and professional certificates. The two exercises further worsened the shortage of clinical officers and enrolled nurses. For instance, the shortage of clinical officers increased from 52% to as high as 69% at Mbagala Round Table health centre, and increased the shortage of enrolled nurses from 34% to 50% at Tingi health centre.

Figure 2. The workload pressure following the inflow and outflow of health care providers in 2017

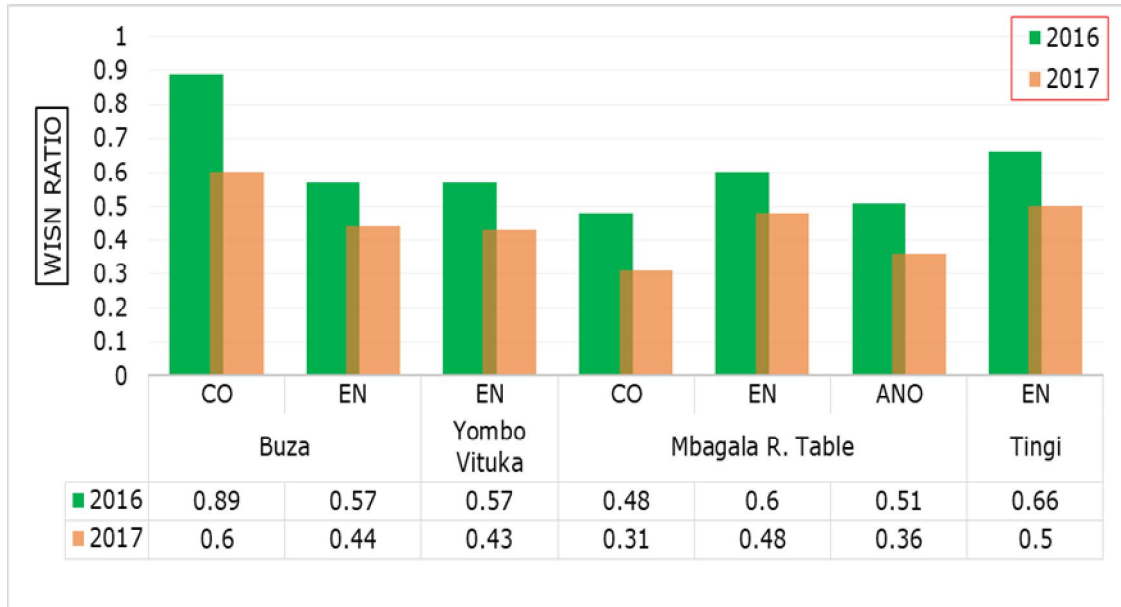
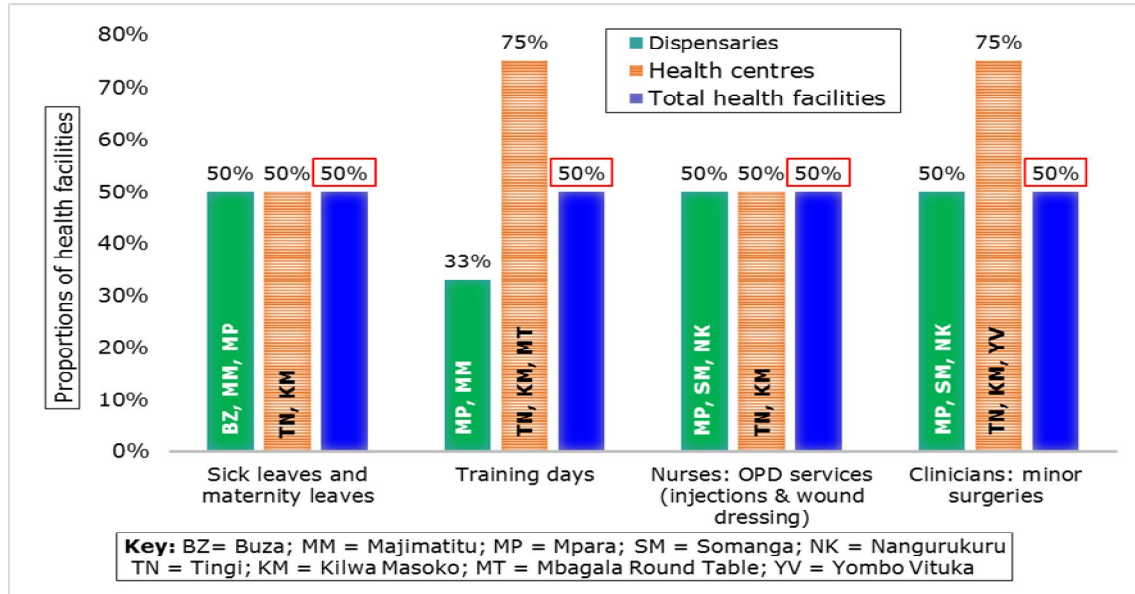


Figure 3: Health facilities with missing data on absent days of staff, OPD services (injections and wound dressing) and minor surgeries in 2016.



4.4 Availability and quality of data in studied health facilities

It is very striking from the table above that records are available at 50% level in several service management parameters. During data collection, the research team observed substandard record keeping of vital information essential for the calculation of WISN ratio. The data on the absent days for sick leaves and training days for 2016 was missing in 5 (50%) health facilities. The data on minor surgeries was missing in 60% of the health facilities. In most of these facilities, invitations for training were made by either phone calls or text messages through either the in-charge of the facilities or directly to the staff. None of the health facilities had records on the number of days the staff were absent for special no notice reasons (Figure 3).

None of the health centres provided major operation services or in-patient services. However, Mbagala Round Table health centre admitted pregnant women and hence few inpatients were reported. Three out of four health centres (75%) never had records of minor surgeries (incision and drainage, stitching and wound dressing) for 2016. There was no data on deaths at Tingi and Kilwa Masoko health centres. Other data also missed in some health facilities included number of patients/ clients who were referred to higher health facilities.

5.0 DISCUSSION

5.1 The Workload Pressure in Primary Health Facilities

The available working time ranged from 1,480 to 1,736 hours per year and was comparable with that reported in Ugandan health facilities which ranged from 1,664 to 1,696 hours [16]. However, this study has revealed a worrisome state of the health workforce characterized by critical shortages and inequitable distribution in the country. Although on average the WISN ratios for clinicians were 0.45 – 0.64 and 0.50 – 0.53 for nurses, the shortage of clinical officers and enrolled nurses were as high as 79% and 80% respectively. **The shortage strongly suggests a serious crisis of human resources for health in the primary health facilities in Tanzania and the need for urgent interventions.**

These results are comparable to those reported in other low and mid-income African countries such as Uganda, Burkina Faso and South Africa. The WISN ratio for nurses is reported at 42–70% and midwives at 49–67% in Uganda [16, 17], and in rural South Africa the overall number of doctors was only 7%, enrolled nurses were 60% and enrolled nurse assistants were 17% of the requirement [18]. However, our ratios were slightly lower than those reported in Burkina Faso referral hospitals where the WISN ratio for nurses was 0.68 (nurses) and 0.79 for midwives [19]. As opposed to our findings, WISN studies from other resource limited countries like India, Bangladesh and Nepal have shown a surplus of health workforce members (physicians, nurses and paramedical staff) in a large majority of health facilities [20]. Our findings suggest that the existing staff are under an extremely high workload pressure leading to a reduction in professionals' standards. The Human Resources for Health (HRH) shortfall in Tanzania highlights the importance of identifying innovative ways to bridge the existing gap of human resources for health, particularly in the context of population growth, increased demand for services and evolving disease management policies.

Although nurses were the most numerous among the healthcare providers, on average they had comparable WISN ratios with the clinicians. The AMOs had relatively the lowest WISN ratio (0.45) and this finding strongly suggests that when deploying new staff members, the highest priority should be when considering clinicians.

5.2 Implication of Low WISN Ratio

A low WISN ratio at the health facility level strongly suggests that the existing staff are spending much less time on average on each activity than the professional standards

require, leading to a high likelihood of poor service provision quality and failure to reduce case fatality rates. High workload pressure leads to poor attitude within healthcare providers, lack of morale, absenteeism and passivity when attending patients. High workload pressure translates to poor quality services and has a negative impact on staff motivation, leading to high staff turnover, thus widening staff shortages [21]. The existing shortage can partly explain the strikingly high failure rate of healthcare providers to correctly diagnose and manage common conditions. It has been reported that currently, healthcare providers in Tanzania can correctly diagnose only 60% of common conditions, ranging from 70% in the urban areas to as low as 44% in public rural facilities [22].

The shortage of the healthcare sector's workforce hinders the translation of the vision of universal health coverage into reality. **The current state of HRH defeats the government policy of quality health care for all as stated in its vision 2025;** "Health services of high quality, effective, accessible and affordable, delivered by a well performing and sustainable national health system that encourages responsiveness to the needs of the people" [23]. The existing shortage of health the workforce can partly explain the unsatisfactory health status indicators of the Tanzanian population: Life expectancy at birth (62 years), births attended by skilled health personnel (64%), maternal mortality ratio (556/ 100,000 live births) and neonatal mortality rate (21/ 1,000 live births) [24, 25].

5.3 Geographical Distribution of Health Care Providers

Like other studies, our study has revealed differences in the healthcare providers' skill mix between the two councils [26]. The numbers of more trained care providers (assistant medical officers and assistant nursing officers) were higher in Temeke municipal council than those in Kilwa district council presumably due to urban attraction and accessibility to other services. For example, Mzinga dispensary has the highest work pressure of the nurse category, and as such deserves priority attention when distributing nursing staff. But this prioritization is affected by their abnormal situation at Mpara dispensary whereby healthcare services were provided by a medical attendant who underwent both the nurse and clinician roles. Such differences of availability of more trained care providers may affect the quality of health services in the two councils. Therefore, the first priority in distribution of staff would go to Mpara dispensary and Mzinga dispensary would follow. The rural district was mainly served by relatively less-well-trained healthcare providers and therefore poorer access to good quality healthcare services.

However, when it comes to the total number of healthcare providers, this study showed that the bigger numbers of healthcare providers in Temeke health facilities were offset by the demand, as more patients and clients were attended to in these facilities than in Kilwa health facilities. As a result, there was no overall significant difference in terms of WISN ratio between Kilwa district and Temeke municipal councils in all staff categories. However, huge differences in WISN ratios of the same staff categories occurred between the health facilities within the same district/municipal council. This suggests an inequitable distribution of healthcare providers within the district/municipal council and calls for the managers to consider equitable redistribution.

5.4 The Impact of Removing Healthcare Providers From Public Services

This study shows that a total number of 17 healthcare providers left their jobs in 2017 (in both districts) and of these, eight (47%) were removed from public services due to a lack of genuine certificates. However, there were no new recruited staff members (no replacement) during this period. Considering the context of severe shortage of human resources for health and an increasing population, the exercise of removing healthcare providers from public services further decreased the ability of meeting the public's demand for health services. The shortage of clinical officers increased from 52% to as high as 69% at Mbagala Round Table health centre and increased the shortage of enrolled nurses from 34% to 50% at Tingi health centre. In order to minimize the impact, in future, such an exercise should be preceded with deployment or immediately followed with replacement with appropriately skilled care providers. Although the exercise of removing ghost workers had financial resource gains, findings suggest that the removal of public servants with fake certificates affected the workload pressure, performance and possibly the quality of healthcare.

5.5 Limitations of the study

This study used the WISN method to estimate the workload pressure in health facilities. However, this method has a number of limitations, including:

- 1) The accuracy of the method depends on the accuracy of a facility's record keeping. To minimize the chances of errors, all available reports and HMIS records were reviewed. Some of the data collection assistants were themselves peers of such professions which enabled proper data collection. It also depends on the completeness of records, which in this case was at 50% in specified categories (data on absent days of staff, injections, wound dressing and minor surgeries) in 2016.
- 2) The method utilizes statistics from the past year and gives the estimates of what the staffing levels should have been.

- 3) The quality of WISN results depends heavily on the definition of service standards for each health cadre. For credibility purposes of these results, only national activity standards were used (see the tools in the appendices).
- 4) This method applies the needs-based approach and is dependent on the package of services offered, which does not necessarily reflect changes in services offered.
- 5) This study did not assess the impacts in terms of the patient care outcomes (i.e. mortality and morbidity) attributed to the exercise of removing healthcare providers with fake certificates from public services.

6.0 CONCLUSIONS

This study revealed a serious shortage of clinicians and nurses before removing health care providers with fake certificates, worsening the situation. There are also inequalities in the skill-mix distribution between rural and urban councils. The current staffing level in primary health facilities suggests that it is almost impossible for the government to achieve its vision to provide “health services of high quality”, which are “effective, accessible and affordable, delivered by a well performing and sustainable national health system that encourages responsiveness to the needs of the people.” The current WISN ratio indicators in these facilities offer scientific evidence for the importance of staff allocation, deployment, posting and internal transfer for equity distribution. To be comprehensively informative, the tool demands complete records. The workload pressure measured sets the initial arguments for exploring pros and cons of task redistribution, studying factors influencing staff performance and productivity; hence encouraging further studies.

7.0 RECOMMENDATIONS

In view of these results and assuming that the same picture of workload indicators for healthcare providers occurs across the two regions (Dar es Salaam and Lindi) and possibly the whole country, we recommend the following measures to the managers, decision makers and all stakeholders:

Dar es Salaam and Lindi: Council Level Recommendations:

1. Councils should urgently trigger the recruitment of new staff for primary healthcare facilities and distribution in the health facilities should be based on the workload and needs of each specific staff category to ensure health facilities' functionality.
2. Council Health Management Teams should review and adjust the staffing levels in health facilities based on the workload and needs i.e. to redistribute staff and tasks where necessary.

Countrywide Recommendations

3. The MoHCDGEC in collaboration with PORALG should promote documentation and record keeping for essential information for WISN ratio estimation in all health facilities in the country in order to enhance data accuracy for national workforce planning, contributing to the workload-based distribution of healthcare providers.
4. The Department responsible for Human Resources Development in the Health Sector should implement WISN estimation at a national level and determine the workforce requirements of individual facilities, responding to the results for workload-based distribution of healthcare providers.
5. The WISN tool enables one to determine staffing needs more precisely since it considers the existing workload and its relationship to available staff. Therefore, during the recruitment and posting, the Government should consider using the tool as a backup to the existing health worker staffing levels for distribution and redistribution of staff. This proves better when balancing staff distribution within the district, helping to address equity issues and quality of service facing health facilities with high work pressure.
6. Further studies are needed to assess the impact in terms of patient-care outcomes (i.e. mortality and morbidity), and staff performance and productivity attributed to the exercise of removing health care providers with fake certificates from public services.

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10.0 APPENDICES: INSTRUMENTS

INSTRUMENT 1: TOTAL ANNUAL DAYS ABSENT

Name of data collector: _____

1.0 HEALTH FACILITY BACKGROUND INFORMATION

1.1	Region		1.2 District	
1.3	Name of the health facility		1.4 Facility Category	1. Dispensary 2. Health centre

2.0 ABSENT DAYS IN YEAR 2016 FOR THE CATEGORY OF STAFF

Instructions:

Fill in the following table all staff categories (only clinicians and nurse midwives) and the number of days they were absent in 2016. Sources of data: staff files, and other records.

S N	Names of staff	Staff category†	Reasons for absent			
			Annual leave††	Sick leave	Training days/year	Special no notice days
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						

Note: Staff category†: MO = medical officer; AMO = assistant medical officer; CO = clinical officer; CA = clinical assistant; EN = enrolled nurse-midwife; ANO = assistant nursing officer; NO = nursing officer; annual leave include maternity and paternity leaves.

INSTRUMENT 2: STAFF OUTFLOWS FROM JANUARY – NOVEMBER, 2017

Name of the data Collector: _____

1.0 HEALTH FACILITY BACKGROUND INFORMATION

1.1	Region		1.2 District	
1.3	Name of the health facility		1.4 Facility Category	1. Dispensary 2. Health centre

2.0 STAFF LEFT THE JOB IN 2017

Instructions:

Fill in the following table the number of staff who left the job in 2017 from this facility.

Source: Very the availability based on the staff list in 2016 and any other records.

	Staff category	Reasons for leaving the job								
		Dismissal	Maternity leave	Lack of authorized	Resignation	Morbidity and mortality	Retirement	Transfer	Other reasons	Total
	Clinical Assistants									
	Clinical Officers									
	Assistant Medical Officers									
	Medical Officers									
	Enrolled nurse-midwives									
	Assistant Nursing Officers									
	Nursing Officers									

Inflows staff in 2017

		Transferred	New recruitment	Others	Total
1.	Clinical Assistants				
2.	Clinical Officers				
3.	Assistant Medical Officers				
4.	Medical Officers				
5.	Enrolled nurse-midwives				
6.	Assistant Nursing Officers				
7.	Nursing Officers				

INSTRUMENT 3: CLINICAL ASSISTANTS' DATA COLLECTION FORM

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility (Name):	
Level of care:	DISPENSARY

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (<i>enter the Unit time set by the Expert group</i>)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	10 min/patient			
		Physical examination	15 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	30 min/patient			
	Follow up Consultation	History taking	? 3 min/patient			
		Physical examination	5 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	13 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		Fracture immobilization	10 min per client			
	Referrals	Documentation	10 min/patient			
		Communication	10 min/patient			
TOTAL		20 min/patient				
Counselling and testing	Counselling & HIV testing-PITC	45 min per client				
	Delivery	Conduct delivery	210 min per client			
RCH services	Antenatal Services	ANC services first visits	45 min per client			
		ANC subsequent visits	20 min per client			
Work Load	Main Work Load	List all sub-activities/task	Service standard	Specify	Specify	Enter the

Group	Component		(enter the Unit time set by the Expert group)	the statistics	sources and where	statistics (Annual)
	Family Planning Services	Family planning 1 st visit	15 min per client			
		Family planning subsequent visit	10 min per client			
	Vaccination Services	Vaccination	15 min per child			
	Postnatal Service	Postnatal care	10 min per client			

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Report preparation	4 hours per month	
Monthly staff meeting	2 hours per month	
National health campaigns	8 days per year	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Village meetings		3 hours, 4 times per year	
Monthly stocktaking		1 hour per month	
Ordering of medicines ,equipment and supplies		1 hour quarterly	
Mobile clinics		4 hours per week	

Observation/Comments

Signature -----

Date -----

INSTRUMENT 4: CLINICAL OFFICERS' DATA COLLECTION FORM

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility:	
Level of care:	DISPENSARY
Ownership: Public, Private, FBO	

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (<i>enter the Unit time set by the Expert group</i>)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	10 min/patient			
		Physical examination	15 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	30 min/patient			
	Follow up Consultation	History taking	3 min/patient			
		Physical examination	5 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	13 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		Fracture immobilization	10 min per client			
		TOTAL	20 min/patient			
	Referrals	Documentation	10 min/patient			
Communication		10 min/patient				
TOTAL		20 min/patient				
Counselling and testing	Counselling & HIV testing- PITC	45 min per client				
HEALTH SERVICES	Delivery Ante Natal Care	Conduct delivery	210 min per client			
		ANC services first visits	45 min per client			

ACTIVITIES (RCH Services)		ANC subsequent visits	20 min per client			
	Main Work Load Component	List all sub-activities/task	Service standard (enter the Unit time set by the Expert group)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
	Family Planning	Family planning 1 st visit	15 min per client			
		Family planning subsequent visit	10 min per client			
	Child Health	Vaccination	10 min per child			
Postnatal Care	Postnatal care	10 min per client				

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Report preparation	4 hours per month	
Monthly staff meeting	2 hours per month	
National health campaigns	8 days per year	
Health education	15 min per day	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Attending village meetings		12 hours per year	
Financial management		20 min per day	
Administrative duties		20 min per day	
Health facility committee meeting		8 hours per year	
Pre planning meeting		5 days per year	
Monthly stocktaking		1 hour per month	
Ordering of medicines ,equipment and supplies		1 hour quarterly	
Mobile clinics		4 hours per week	
School health screening		24 hours per year	
School health education sessions		16 hours per year	

INSTRUMENT 5: DATA COLLECTION FORM FOR ENROLLED NURSES

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility Name;	
Level of care:	DISPENSARY

2. Data on health service activities performed by all members of each staff category with collected statistics

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Antenatal care	Antenatal 1 st visit	40 min per client			
		ANC Subsequent visit	20 min per client			
		PMTCT Counselling and testing	40 min per client			
		Health promotion	10min per client			
		Vital signs	5 min per client			
	Child health	ANC Vaccination (TT)	5 min per client			
		Vaccination	10 min per client			
		Growth monitoring	15 min per client			
Delivery	Delivery	Nutritional assessment	15 min per client			
		Vital signs	5 min per client			
		PV examination	10 min per patient			
		Delivery prime	210 min per client			
		Delivery multipara	90min per client			
		Help the baby to breath	5 min per client			
		Immediate Care of the new born	30 min per client			
		Immediate care of mother	10 min per client			
PMTCT Counselling and testing (Missed During ANC visit)	40 min per client					

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
	Post natal care	Physical examination	20min per client			
		Counselling for informed choice on family planning	30min per client			
		PMTCT counselling (Missed during ANC visit)	40min per client			
		Dispensing	5 min per patient			
		Dressing (caesarean section)	15 min per client			
		Family planning 1 st visit	40min per client			
		Family planning subsequent visits	30 min per client			
Health Service Activities	Outpatient Service	Collection of DBS	30 min per child			
		Wound dressing	15 min per client			
		Injection	5 min per client			
		Dispensing	5 min per client			
		Vital signs	30 min per in			
		Health promotion	15 min per client			

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Monthly report	3 hours per month	
Monthly meeting	3 hours per month	
General cleanliness	1 hour day	
Decontamination and sterilization	1 hour day	
Triage of patients	5 min per day	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		1 hour per week	
Preparing duty roster		1 hour per week	
Home based care		1 hour weekly	
Ordering of supplies		1 hour per week	
Stock taking		4 hour per month	
Transportation of DBS		1 day per week	

Observation/Comments -----

INSTRUMENT 6: DATA COLLECTION FORM FOR ASSISTANT NURSING OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility Name;	
Level of care:	DISPENSARY
Ownership: Public	

2. Data on health service activities performed by all members of each staff category with collected statistics

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Sources and where	Annual statistics
Health Service Activities	Antenatal care	Antenatal 1 st visit	40 min per client			
		ANC Subsequent visit	20 min per client			
		PMTCT Counselling and testing	40 min per client			
		Health promotion	10min per client			
		Vital signs	5 min per client			
	Child health	Vaccination	15 min per client			
		Growth monitoring	15 min per client			
		Nutritional assessment	15 min per client			
	Delivery	Vital signs	5 min per Client			
		PV examination	10 min per patient			
		Delivery Prime	210 min per client			
		Delivery Multipara	90 min per Client			
		Help the baby to breath	5 min per new born			
		Immediate Care of the new born	30 min per new born			
		Immediate care of mother	10 min per client			
PMTCT Counselling and testing (missed)		40 min per client				
Post natal care	Physical examination	20min per client				
	Counselling for family planning	30 min per client				
	PMTCT counselling (Missed in ANC)	40 min per client				
	Dispensing	5 min per patient				
	Dressing (caesarean section)	15 min per client				

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Post natal care	Family planning 1 st visit	40 min per client			
		Family planning subsequent visits	30 min per client			
		Collection of DBS	30min per client			
	Outpatient Service	Wound dressing	15 min per client			
		Injection	5 min per injection			
		Dispensing	5 min per client			
		Health promotion	5 min per Client			
	Vital signs	30 min per client				

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Monthly report	3 hours per month	
Morning report	30 Min. per day	
Quarterly meeting	3 hours per quarter	
General cleanliness	1 hour day	
Decontamination and sterilization	1 hour day	
Triage of patients	5 min per day	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		1 hour per week	
Preparing duty roster		1 hour per week	
Home based care		1 hour weekly	
Ordering of supplies		1 hour per week	
Stock tacking		4 hour per month	
Transportation of DBS		1 day per week	

Observation/Comments

Signature-----

Date -----

INSTRUMENT 7: DATA COLLECTION FORM FOR CLINICAL ASSISTANTS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility:	
Level of care:	HEALTH CENTRE
Ownership: Public, Private, FBO	

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/tasks	Service standard (enter the Unit time set by the Experts)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	10 min/patient			
		Physical examination	15 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	30 min/patient			
	Follow up Consultation	History taking	3 min/patient			
		Physical examination	5 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	13 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		Fracture immobilization	10 min per client			
	Counselling and Testing	Counselling & HIV testing- PITC	45 min per client			
RCH services	Delivery	Conduct delivery	210 min per client			
	Antenatal Services	ANC services first visits	45 min per client			
		ANC subsequent visits	20 min per client			
	Family Planning Services	Family planning 1 st visit	15 min per client			
		Family planning subsequent visit	10 min per client			
	Vaccination Services	Vaccination	15 min per client			

	Postnatal Services	Postnatal care	10 min per client			
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3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Recording and reporting	30 min per day	
Clinical Meeting	1 hour per day	
Health education	30 min per day	
Monthly staff meetings	2 hours per month	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation

Observation/Comments

Signature-----

Date -----

INSTRUMENT 8: DATA COLLECTION FORM FOR CLINICAL OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility;	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (enter the Unit time set by the Expert group)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	10 min/patient			
		Physical examination	15 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	30 min/patient			
	Follow up Consultation	History taking	min/patient			
		Physical examination	5 min/patient			
		Patient management (Documentation, Investigation)	5 min/patient			
		TOTAL	13 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		POP application	30 min/patient			
		Catheterization	30 min/patient			
	Counselling and Testing	Counselling & HIV testing-PITC	45 min per client			
HEALTH SERVICES ACTIVITIES (Inpatients)	Ward rounds	Review management orders	3 min/patient			
		Examination	9 min/ inpatient			
		Documentation	3 min/ patient			
		TOTAL	15 min/patient			
	Discharges	Documentation	10 min/patient			

Services)		Counselling	15 min/patient				
		TOTAL	25 min/patient				
	Main Work Load Component	List all sub-activities/task	Service standard (enter the Unit time set by the Expert group)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)	
	Referrals		Documentation	10 min/patient			
			Communication	10 min/patient			
			TOTAL	20min/patient			
Delivery		Delivery	210 min/patient				

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Reports	30 min per day	
Meetings	2 hour per month	
Clinical meetings	1 hour per day	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Outreach		8 hours per month	
Home based care		3 hours weekly	
Facility supervision		2 hours per month	
Delegation of tasks		30 min per day	

Observation/Comments

Signature-----

Date -----

INSTRUMENT 9: DATA COLLECTION FORM FOR ASSISTANT MEDICAL OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility:	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (enter the Unit time set by the Expert group)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	15 min/patient			
		Physical examination	20 min/patient			
		Investigation & management	5 min/patient			
		TOTAL	40 min/patient			
	Follow up Consultation	History taking	10 min/patient			
		Physical examination	10 min/patient			
		Investigation & management	5 min/patient			
		TOTAL	25 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		PoP application	30 min/patient			
		Manual Vacuum Aspiration	30 min/patient			
Suprapubic catheterization		40 min/patient				
Counselling and Testing	Counselling & HIV testing-PITC	45 min per client				
Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (enter the Unit time set by the Expert group)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)

HEALTH SERVICES ACTIVITIES (Inpatients Services)	Ward rounds	Review management orders	3 min/patient			
		Examination	9 min/ inpatient			
		Documentation	3 min/ patient			
		TOTAL	15 min/patient			
	Discharges	Documentation	10 min/patient			
		Counselling	15 min/patient			
		TOTAL	25 min/patient			
	Referrals	Documentation	10 min/patient			
		Communication	10 min/patient			
		TOTAL	20 min/patient			
	Major surgery	Hydrocelectomy	60 min/patient			
		Herniorrhaphy	60 min/patient			
		Appendectomy	60 min/patient			
		Chest tube insertion	30 min/patient			
		Caesarean section	60 min/patient			
		Disarticulation	30 min/patient			
		Intraosseous	30 min/patient			
		Bilateral Tubal Ligation	30 min/patient			
		Laparotomy	120 min/patient			
		Post-mortem	120 min/dead body			
Complicated Delivery	Vacuum delivery	30 min/delivery				
	Forceps delivery	30 min/delivery				

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Report and recording	1 hour weekly	
Clinical Meetings	1 hour daily	
Departmental meetings	1 hour monthly	
Health promotion	1 hour monthly	
Staff meeting	2 hours monthly	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		2 hours monthly	
Control and management of equipment and supplies		1 hour monthly	
Preparation of monthly report		2 hours per month	
Home based care		3 hours weekly	
Delegation of tasks		20 min daily	

Observation/Comments

Signature -----

Date -----

INSTRUMENT 10: DATA COLLECTION FORM FOR MEDICAL OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility:	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Work Load Group	Main Work Load Component	List all sub-activities/task	Service standard (<i>enter the Unit time set by the Expert group</i>)	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
HEALTH SERVICES ACTIVITIES (Outpatient Services)	Consultations (first visit)	History taking	15 min/patient			
		Physical examination	20 min/patient			
		Investigation & management	5 min/patient			
		TOTAL	40 min/patient			
	Follow up Consultation	History taking	10 min/patient			
		Physical examination	10 min/patient			
		Investigation & management	5 min/patient			
		TOTAL	25 min/patient			
	Minor Surgery	Incision & drainage	20 min/ patient			
		Stitching	30 min/ patient			
		Circumcision	30 min/patient			
		Pop application	30 min/patient			
		Manual Vacuum Aspiration	30 min/patient			
Suprapubic catheterization		40 min/patient				
Counselling and Testing	Counselling & HIV testing-PITC	45 min per client				
HEALTH SERVICES ACTIVITIES (Inpatients Services)	Ward rounds	Review management orders	3 min/patient			
		Examination	9 min/ inpatient			
		Documentation	3 min/ patient			
		TOTAL	15 min/patient			
Work Load	Main Work Load	List all sub-activities/task	Service standard	Specify	Specify	Enter the

Group	Component		(enter the Unit time set by the Expert group)	the statistics	sources and where	statistics (Annual)
HEALTH SERVICES ACTIVITIES (Inpatients Services)	Discharges	Documentation	10 min/patient			
		Counselling	15 min/patient			
		TOTAL	25 min/patient			
	Referrals	Documentation	10 min/patient			
		Communication	10 min/patient			
		TOTAL	20 min/patient			
	Major surgery	Hydrocelectomy	60 min/patient			
		Herniorrhaphy	60 min/patient			
		Appendectomy	60 min/patient			
		Chest tube insertion	30 min/patient			
		Caesarean section	60 min/patient			
		Disarticulation	30 min/patient			
		Intraosseous	30 min/patient			
		Bilateral Tubal Ligation	30 min/patient			
		Laparotomy	120 min/patient			
		Post-mortem	120 min/dead body			
	Complicated Delivery	Vacuum delivery	30 min/delivery			
Forceps delivery		30 min/delivery				

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Report and recording	1 hour in a day	
Preparation of operation list	30 min in a day	
Clinical meeting	1 hour daily	
Staff meeting	2 hours quarterly	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Local government meetings		2 hours monthly	
Administrative issues		1 hour daily	
Delegation of tasks		30 min daily	
Supervision to satellite		2 hour monthly	

INSTRUMENT 11: DATA COLLECTION FORM FOR ENROLLED NURSE

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility Name;	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Antenatal care	Antenatal 1 st visit	40 min per client			
		ANC Subsequent visit	20 min per client			
		PMTCT Counselling and testing	40 min per client			
		Health promotion	10min per client			
		Vital signs	5 min per client			
		ANC Vaccination (TT)	5 min per client			
	Child health	Vaccination	10 min per client			
		Growth monitoring	15 min per client			
		Nutritional assessment	15 min per client			
	Delivery	Vital signs	30 min per in patients day			
		PV examination	10 min per patient			
		Delivery prime	210 min per delivery			
		Delivery multipara	90min per delivery			
		Help the baby to breath	5 min per client			
		Immediate Care of the new born	30 min per the new born			
		Immediate care of mother	10 min per client			
PMTCT Counselling and testing (Missed During ANC visit)		40 min per client				

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Post natal care	Physical examination	20min per client			
		Counselling for informed choice on family planning	30min per client			
		PMTCT counselling (Missed during ANC visit)	40min per client			
		Dispensing	5 min per patient			
		Dressing (caesarean section)	15 min per client			
		Family planning 1 st visit	40min per client			
		Family planning subsequent visits	30 min per client			
		Collection of DBS	30 min per child			
	Inpatient care	Admission	15 min per client			
		Vital signs	30 min per inpatient day			
		Medication (in patients only)	10 min per in patients day			
		Ward round (Pt file, documentation, specimen collection)	15 min per in patient day			
		Dressing	30 min per patient			
		Discharge	10 min per client			
		PITC	20 min per client			
		Prepare patient for surgery	30 min patient			
		Health promotion	15 min per client			
	Last office	Body bathing	30 min dead body			
		Wrapping of the body & labelling	10 min dead body			
		TOTAL	40 min per dead body			
	Outpatient Service	Wound dressing	15 min per dressing			
		Injection	5 min per injection			
		Dispensing	5 min per client			

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Decontamination and sterilization	1 hour day	
Monthly report	3 hours per month	
Clinical meeting	1 hour per day	
Monthly meeting	3 hours per month	
General cleanliness	1 hour day	
Triage of patients	5 min per day	In this activity, no statistics are collected.

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		1 hour per week	
Preparing duty roster		1 hour per week	
Home based care		1 hour weekly	
Ordering of supplies		1 hour per week	
Stock taking		4 hour per month	
Transportation of DBS		1 day per week	

Observation/Comments

Signature-----

Date -----

INSTRUMENT 12: DATA COLLECTION FORM FOR ASSISTANT NURSING OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility Name;	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Antenatal care	Antenatal 1 st visit	40 min per client			
		ANC Subsequent visit	20 min per client			
		PMTCT Counselling and testing	40 min per client			
		Health promotion	10min per client			
		Vital signs	30 min per client			
		ANC Vaccination (TT)	5 min per client			
	Child health	Child Vaccination	15 min per client			
		Growth monitoring	15 min per client			
		Nutritional assessment	15 min per client			
	Delivery	Vital signs	30 min per in patients day			
		PV examination	10 min per patient			
		Delivery prime	210 min per client			
		Delivery Multipara	90 min per client			
		Help the baby to breath	5 min per baby			
		Immediate Care of the new born	30 min per newborn			
Immediate care of mother		10 min per client				
PMTCT Counselling and testing (Missed During ANC visit)		40 min per client				

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
	Post natal care	Physical examination	20min per client			
		Counselling for informed choice on family planning	30min per client			
		PMTCT counselling (Missed during ANC visit)	40 min per client			
		Dispensing	5 min per patient			
		Dressing (caesarean section)	15 min per client			
Health Service Activities	Post natal care	Family planning 1 st visit	40min per client			
		Family planning subsequent visits	30 min per client			
		Collection of DBS	30 min per Client			
	Inpatient care	Admission	15 min per client			
		Vital signs	30 min per inpatient day			
		Medication (In patients only)	10 min per in patients day			
		Ward round (patient file, documentation, specimen collection)	15 min per in patient day			
		Dressing	30 min per in patient day			
		Discharge	10 min per patient			
		PITC	20 min per client			
		Prepare patient for surgery	30 min patient			
		Health promotion	15 min per client			
	Last office	Body bathing	30 min dead body			
		Wrapping of the body & labelling	10 min dead body			
		TOTAL	40 min/dead body			
	Outpatient Service	Wound dressing	15 min per dressing			
		Injection	5 min per injection			
		Dispensing	5 min per client			

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Monthly report	3 hours per month	
Clinical meeting	1 hour per day	
Monthly meeting	3 hours per month	
General cleanliness	1 hour day	
Decontamination and sterilization	1 hour day	
General body hygiene	30 min day	
Triage of patients	5 min per day	In this activity, no statistics are collected

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		1 hour per week	
Preparing duty roster		1 hour per week	
Home based care		1 hour weekly	
Ordering of supplies		1 hour per week	
Stock tacking		4 hour per month	
Transportation of DBS		1 day per Week	

Observation/Comments

Signature-----

Date -----

INSTRUMENT 13: DATA COLLECTION FORM FOR NURSING OFFICERS

Name of the data Collector: _____

1. Facility properties

Region:	
District:	
Health Facility Name;	
Level of care:	HEALTH CENTRE

2. Data on health service activities performed by all members of each staff category with collected statistics

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
Health Service Activities	Antenatal care	Antenatal 1 st visit	40 min per client			
		ANC Subsequent visit	20 min per client			
		PMTCT Counselling and testing	40 min per client			
		Health promotion	10min per client			
		Vital signs	5 min per client			
	Child health	Vaccination	10 min per client			
		Growth monitoring	15 min per client			
		Nutritional assessment	15 min per client			
	Delivery	Vital signs	30 min per in patients day			
		PV examination	10 min per patient			
		Delivery prime	210 min per client			
		Delivery multipara	90min per client			
		Help the baby to breath	5 min per client			
		Immediate Care of the new born	30 min per client			
Immediate care of mother		10 min per client				
	PMTCT Counselling and testing (Missed During ANC visit)	40 min per client				

Workload Group	List all workload components	List all sub-activities/task	Service standard	Specify the statistics	Specify sources and where	Enter the statistics (Annual)
	Post natal care	Physical examination	20 min per client			
		Counselling for informed choice on family planning	30 min per client			
		PMTCT counselling (Missed during ANC visit)	40min per client			
		Dispensing	5 min per patient			
Health Service Activities	Post natal care	Dressing (caesarean section)	15 min per client			
		Family planning 1 st visit	40min per client			
		Family planning subsequent visits	30 min per client			
	Inpatient care	Admission	15 min per client			
		Vital signs	30 min per inpatient day			
		Medication (In patients only)	10 min per in patients day			
		Ward round (patient file, documentation, specimen collection)	15 min per in patient day			
		Dressing	30 min per patient			
		Discharge	10 min per client			
		PITC	20 min per client			
		Prepare patient for surgery	30 min patient			
		Health promotion	15 min per patient			
	Last office	Body bathing	30 min dead body			
		Wrapping of the body & labelling	10 min dead body			
		TOTAL	40 min / dead body			
	Outpatient Service	Wound dressing	15 min per dressing			
		Injection	5 min per injection			
		Dispensing	5 min per patient			

3. Support activities performed by all members of each staff category without collected statistics

List of all support activities	Enter the Unit time	Observations
Monthly report	3 hours per month	
Clinical meeting	1 hour per day	
Monthly meeting	3 hours per month	
Triage of patients	5 min per day	
General cleanliness	1 hour day	
Decontamination and sterilization	1 hour day	

4. Individual activities performed by certain members of each staff category without collected statistics

List of all additional activities	Number of staff performing the activity last year	Enter the Unit time	Observation
Supervision		1 hour per week	
Preparing duty roster		1 hour per week	
Home based care		1 hour weekly	
Ordering of supplies		1 hour per week	
Stock taking		4 hour per month	

Observation/Comments

Signature-----

Date -----