Determining Staffing Levels for Primary Care Services using Workload Indicator of Staffing Need in Selected Regions of the Philippines

USAID HRH2030/Philippines: Human Resources for Health in 2030 in the Philippines

Contents

List of Tables

List of Figures

Acronyms and Abbreviations

AIHO	Alliance for Improving Health Outcomes, Inc.
ARMM	Autonomous Region of Muslim Mindanao
AWT	Available Working Time
BHS	Barangay Health Station
BHW	Barangay Health Worker
CHD	Center for Health Development
CHO	City Health Office
DOH	Department of Health
DOTS	Directly-Observed Treatment Short-course
FP	Family Planning
GIDA	Geographically Isolated and Disadvantaged Area
HFSRB	Health Facilities and Services Regulatory Bureau
HHRDB	Health Human Resources Development Bureau
HIV	Human Immunodeficiency Virus
HR	Human Resources
HRH	Human Resources for Health
HRH2030/Philippines	Human Resources for Health in 2030 in the Philippines
HRM	Human Resources Management
HSS	Health Systems Strengthening
ILHZ	Inter-Local Health Zones
IP	In-Patient
LGU	Local Government Unit
MCH	Maternal and Child Health
MIMAROPA	Mindoro, Marinduque, Romblon and Palawan
OP	Out-Patient
PHO	Provincial Health Office
RHU	Rural Health Unit
SDN	Service Delivery Network
TB	Tuberculosis
TTF	Technical Task Force
UHC	Universal Health Care
USAID	United States Agency for International Development
WHO	World Health Organization
WPRO	World Health Organization Western Pacific Regional Office
WAT	Web Archive Transformation
WISN	Workload Indicators of Staffing Need

Definitions of Key Terms

Authorized absence: An excused absence administratively allowed without loss of pay. They include annual leave, sick leave and days away due to training.

Unauthorized absence: An absence that is not authorized, such as non-appearance, late arrival and early departure.

Workload Indicators of Staffing Need (WISN): A human resource (HR) management tool that provides health managers with a systematic way to make staffing decisions to manage their human resources well. It determines how many health workers of a particular type are required to cope with the workload of a given health facility and assesses the workload pressure of the health workers in that facility.

Standard workload: Amount of work within a health service workload component that one health worker can do in a year (if the total working time were to be spent on this activity only).

Workload component: The main activities that take up most of a health workers' daily working time. There are three kinds of workload components:
- *Health service activity:* Health service-related activities performed by all members of the staff category and for which annual statistics are regularly collected.
- *Support activity:* Important activities that support health service activities, performed by all members of the staff category but for which annual statistics are not regularly collected.
- *Additional activity:* Activities performed only by certain (not all) members of the staff category and for which annual statistics are not regularly collected.

Staff category: A group of professionals trained to perform similar activities, e.g., the nursing staff category comprises staff performing nursing-related activities.

Activity standard: Time necessary for a well-trained, skilled and motivated worker to perform an activity to professional standards in the local circumstances. There are two kinds of activity standards:
- *Service standard:* Activity standard for health service activities. (Annual statistics are regularly collected for these activities.)
- *Allowance standard:* Activity standard for support and additional activities. (Annual statistics are not regularly collected for these activities.) There are two kinds of allowance standards:
  - *Category allowance standard:* Allowance standard for support activities, performed by all members of a staff category.
  - *Individual allowance standard:* Allowance standard for additional activities, performed by certain (not all) members of a staff category.

Allowance factor: Factor used to take into account the staff requirement of activities for which annual statistics are not regularly collected. There are two kinds of allowance factors:
- *Category allowance factor:* Multiplier used to calculate the total number of health workers, required for both health service and support activities.
- *Individual allowance factor:* Staff requirement to cover additional activities of certain cadre members. IAF is added to the staff requirement of health service and support activities.

Possible working days: A health worker's time available in a year, which is computed by multiplying the number of weeks in a year (52) by the number of days (5) a health worker is required to work. It does not consider authorized and unauthorized absences. (52*5=260 days)

Available working time (AWT): A health worker's time available in one year to do his or her work, taking into account all authorized and unauthorized absences. AWT=possible working days – non-working days, including authorized and unauthorized absences.

Foreword

The United States Agency for International Development (USAID) Human Resources for Health in 2030 in the Philippines (HRH2030/Philippines) activity, implemented by Chemonics International in collaboration with the Philippine Department of Health (DOH), is committed to strengthening human resources for health (HRH) towards achieving universal health care (UHC) in line with the UHC Law (Republic Act No. 11223). The project's overarching goal is to ensure adequate numbers of health human resources at all levels with the competence to deliver UHC through the continuum of preventive, promotive, curative and rehabilitative health interventions. The project aims to support DOH by providing technical assistance to strengthen deployment, training and management of a fit-for-purpose and fit-for-practice health workforce to improve access to quality tuberculosis (TB) and family planning (FP)/maternal and child health (MCH) services for vulnerable populations. Thus, the need for adequate planning for the right health workers, in the right places, at the right time, with the right skills, competencies and attitudes.

The use of WISN has been accepted by DOH. Adequate planning for the health workforce is vital for the attainment of UHC. It is also clear that traditional methods used for many years like consideration of the population and health worker densities no longer work efficiently. These methods do not take into consideration variations in demand for services and actual workloads, leading to mismatches between HRH expectations and work actually done.

It is against this background that USAID HRH2030/Philippines provided technical and financial support in nine regions of the Philippines to undertake WISN studies to guide staffing of key health cadres who provided essential primary care services. The nine regions were 3, 4A, 4B, 7, 8, 11, 12, National Capital Region and Autonomous Region of Muslim Mindanao (ARMM). By using the WISN tool, it is envisaged that the regions will have reliable evidence for informed decision making on staffing health facilities in the proposed service delivery networks (SDNs) to improve quality and responsive services to achieve the UHC agenda.

The overall goal of this study was to determine staffing requirements for four cadres: medical technologists, physicians, midwives and nurses based on workloads for improved primary care services with emphasis on TB and FP/MCH and in the facilities and within the SDNs. The results should also guide the respective local government units (LGUs) and partners on optimum numbers of health workers required per cadre and level of care for improved quality primary health care services using a rational and scientific approach. The study aimed to provide evidence that will aid DOH and the LGUs in planning, deploying and making evidence-based HRH management decisions. It can serve as an advocacy tool to provide an investment case for HRH, thereby mobilizing resources and partnerships to improve the health workforce.

Acknowledgements

Executive Summary

In the Philippines, significant variations in quality of health care services can be seen in the provision of primary care services, which include tuberculosis (TB) and family planning/maternal child health (FP/MCH) services. At present, the magnitude of TB in the Philippines makes it one of the leading causes of morbidity and mortality. According to the World Health Organization (WHO) in 2011, there were 260,000 projected TB cases in the country with 28,000 dying per year. In addition, DOH notes how the low uptake of FP services in the Philippines—two in every 10 married Filipinas wishing to postpone their next birth or stop childbearing are not using an FP method—is linked to limited access to quality FP services.[1]

It is acknowledged worldwide that the health workforce is the key component of the health system and health services cannot be delivered without an adequate number and type of trained health workers. Global evidence points to a direct correlation between the size of a country's health workforce and its health outcomes. To produce, develop and deploy the right numbers and cadres of health workers, proper evidence-based planning is needed.

The Philippine government has committed to fulfilling national and global commitments to TB and FP/MCH through UHC and acknowledges that health workers are critical to service delivery. However, the country's health care system currently faces several HRH challenges. These challenges include a shortage of health workers, maldistribution, and an urban bias that causes most rural areas to be severely understaffed.

The USAID HRH2030/Philippines project works closely with DOH to advance long-term solutions to improve skill mix competencies and distribution of workers at the primary care levels to provide quality care including TB and FP/MCH control services for vulnerable populations.

LGUs, DOH and USAID HRH2030/Philippines are working to expand and improve the quality of TB and FP/MCH services using WISN to better build, manage and optimize the health workforce. The WISN methodology defines the workload components and standard amount of time it takes to conduct each activity for specific health cadres to provide quality primary services. WISN then combines these standards with service statistics to calculate the workload pressure. This study was undertaken using the WISN methodology to assess current staffing needs for delivering optimum primary health care services and project the staffing needed to implement the essential service packages for different levels of care. The study covered physicians, nurses, midwives and medical technologists in nine regions.

The study was implemented between October 2018 to March 2019 following the WISN steps under the guidance of and collaboration with a steering committee, TTFs and expert working groups. The steps included:
- Determining priority cadres and health facility types;
- Estimating available working time;
- Defining workload components;
- Setting activity standards;
- Establishing standard workloads;
- Calculating allowance factors;
- Determining staffing requirements based on WISN; and
- Analyzing and interpreting WISN results.

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[1] Philippine Statistics Authority. 2017. National Demographic Health Survey.

The study included document reviews, key informant interviews of health managers at DOH, provincial officials and health workers plus planned observations to provide evidence of activity standards. Workload components were defined based on the four cadres' scopes of practice and essential primary care services towards UHC with inputs from the cadres and facility-based experts. The standards developed were later validated and standardized through observations and interviews during facility visits. Information on authorized and unauthorized absences, allowance standards and annual workloads were collected from facility records and in-depth interviews. Finally, standard workloads, category and individual allowance factors, WISN differences, ratios and minimum and maximum WISN staffing requirements were calculated using the WISN software.

The WISN results were obtained by first comparing the current and required number of staff to identify the difference, or the staffing need. Then, the calculated staffing need was divided by the existing staff to determine the WISN ratio, or the measurement used to assess the workload pressure that health workers experience:

1) Where the WISN ratio was **equal to 1**, current staffing equaled the calculated ratio, meaning that the current staff was sufficient to meet the workload according to the local professional standards.
2) Where the WISN ratio was **greater than 1**, it meant that there were more staff than needed to meet the workload requirement according to the local professional standards.
3) Where the WISN ratio was **less than 1**, it indicated that the staff was not sufficient to meet the workload according to the local professional standards.

The WISN results suggest that services provided were generally of good quality, however, some inefficiencies in the systems can still be addressed to improve services.

The results showed varied degrees of surpluses, shortages and normal circumstances at all levels of care and cadres. Based on the criteria for analyzing workloads, the nurses and physicians had the highest workloads at the secondary and tertiary levels of care. Extremely low workload pressures were experienced by midwives at the barangay health stations (BHSs), medical technologists at the rural health units (RHUs)/city health offices (CHOs) and at Level 1, 2 and 3 hospitals, indicating staff underutilization. Shortages in the BHSs were recorded as 16% and 15% at the RHUs/CHOs, with surpluses ranging from 34% in BHSs to 84% in RHUs.

The study showed that some roles overlapped between nurses and midwives, such as immunization and FP services, and some roles overlapped with physicians as well, such as deliveries. This signifies ongoing informal task shifting and sharing without clear policies and guidelines to guard against compromised quality. Absences also varied across cadres for various reasons, with physicians having the highest absences due to prolonged training programs, and midwives having the lowest rates of absence. Most physicians at RHUs offered limited services, mainly consultations and referrals.

Health services data and records were available in the facilities but were not captured in a standardized manner across LGUs. There were slight differences in the way data was reported.

The study recommends the deployment of one full time nurse and midwife for each BHS to undertake primary interventions, revision of health service packages for various levels of care, reclassification of facilities to align with expected services and creation or introduction of mid-level health workers such as pharmacy assistants and records clerks to relieve nurses of non-direct activities that take up most of their time.

Other recommendations include revising scopes of work for midwives to improve FP/MCH, providing more physicians and nurses especially for geographically isolated and disadvantaged areas (GIDAs) and integrating barangay health workers (BHWs) into primary care. There is also a need to develop training plans, develop a health information system and strengthen health managers' capacity to improve supervision, record keeping and resource management.

Background

In the Philippines, significant variations in quality of health care services can be seen in the provision of primary care services, which include TB and FP/MCH services. At present, the magnitude of TB in the Philippines makes it one of the leading causes of morbidity and mortality. According to WHO in 2011, there were 260,000 projected cases in the country with 28,000 dying per year. TB statistics show that vulnerable population groups such as the elderly, those living in urban poor areas, smokers, and those with a compromised immune system are more likely to acquire the disease. The National Drug Resistance Surveys on TB show the emergence of multidrug-resistant TB and extensively drug-resistant TB across population groups have significantly increased. In addition, the 2017 National Demographic and Health Survey (NDHS) showed the low uptake of FP services in the Philippines—two in every 10 married Filipinas wishing to postpone their next birth or stop childbearing are not using an FP method— linked to limited access to quality FP services.[2] This is corroborated by other findings , which reports that among women aged 15-49 who are not using contraception, only 14 percent who visited a health facility (in the 12 months preceding the survey) discussed FP with a health provider. This is despite provisions in the Responsible Planning and Reproductive Health Law (Republic Act No. 10354) guaranteeing universal access to FP information in all public health facilities. The fragmented distribution of a confident, ready-for-practice and fit-for-practice workforce across the country compromises health service equities among Filipino communities and the fulfillment of national and global commitments to improve key health outcomes.

It is acknowledged worldwide that the health workforce is the key component of the health system and health services cannot be delivered without an adequate number and type of trained health workers. Global evidence points to a direct correlation between the size of a country's health workforce and its health outcomes. To produce, develop and deploy the right numbers and cadres of health workers, proper evidence-based planning is needed.

The Philippine government has committed to fulfilling national and global commitments to TB and FP/MCH through UHC and acknowledges that health workers are critical to service delivery. The UHC Law provides for the right to the highest attainable standards of health to every Filipino and places a fundamental duty on DOH and LGUs to use legislative, policy and other measures, including the setting of standards, to achieve progressive realization of this right. These provisions determine the roles and obligations of the health sector to facilitate the right to health. The Philippine Constitution says the "State shall protect and promote the right to health of the people." This is further reaffirmed as a key developmental commitment by the government in Sessional Paper No. 7 of 2012 on universal health coverage. In addition, the UHC Law provides for the formulation and implementation of HR policies and plans that generate, recruit, retrain, regulate, retain and reassess the health workforce based on population health needs. However, the country's health care system currently faces several HRH challenges. These challenges include a shortage of health workers, maldistribution, and an urban bias that causes most rural areas to be severely understaffed. Some health workers are employed on a contractual basis, better known as "job order," either by the government or development partners. This has negative consequences on retention and biases service provision towards specific disease programs.

In order to achieve UHC and provide quality TB detection and treatment, and FP/MCH services as indicated by the Philippine primary care package, it is important to have adequate staffing at the health facilities that take into consideration the workload of the facility. Achieving access to primary health care services will largely be determined by availability of a trained and motivated health workforce. Provision of these services at the different levels of health care within the SDNs depends on the skill mix of a

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[2] Philippine Statistics Authority. 2017. National Demographic Health Survey.

multidisciplinary team of health workers. These include physicians, nurses, midwives and medical technologists among other existing cadres. As such, there is a need to critically analyze the availability and distribution of the health workforce to ensure quality health care services. A more evidenced-based method of determining optimal staffing that can be used by HRH planners and policy makers needs to be explored.

The WISN[3] tool was developed by WHO to estimate the number of staff of a specific category a health facility requires based on the actual workload for that facility. The methodology gives health managers a way of analyzing and determining staffing requirements based on actual workloads in a systematic way. It considers workload components, activity standards, available working time and available workload statistics to calculate the number of health workers required for any particular health facility. This information can then be aggregated for regions and to the whole country. A number of countries supported by WHO, USAID, and other partners have implemented WISN to estimate the number of health workers required to offer quality health care services.

HHRDB aims to develop HRH and personnel-related policies, programs, systems and standards to ensure an adequate, competent, committed, effective and competitive workforce in collaboration with stakeholders, partners and other sectors. Likewise, the USAID HRH2030/Philippines Project has an overarching goal of assisting DOH to ensure adequate numbers of health human resources at all levels with the competence to deliver UHC through the continuum of preventive, promotive, curative and rehabilitative health interventions as prescribed in the packages of care for various levels. Based on this clearly demonstrated need, commitment and mandate, HHRDB and the USAID HRH2030/Philippines Project worked collaboratively to implement WISN to calculate the needed physicians, nurses, midwives and medical technologists to meet the population health needs in selected areas.

General Objective of the Study
The general objective of the study was to conduct a workload analysis using the WHO WISN tool in nine purposively selected regions and 18 provinces to inform HRH planning for effective primary health care services, especially TB and FP/MCH.

Specific Objectives of the Study
The specific objectives of the WISN study were to:
1) Assess the current workload of nurses, midwives, physicians and medical technologists in delivering primary health care services.
2) Determine the number of health workers needed for the workload of primary care services in selected health facilities within the proposed SDNs using the WISN methodology.
3) Build the capacity of DOH and its regional health offices in workforce planning using WISN.
4) Identify shortages and surpluses of the four frontline cadres critical to the provision of essential primary care services as described in the UHC Law.
5) Identify health system issues that have an impact on workloads and make recommendations for improvement.
6) Based on results, provide suggestions and recommendations to guide the development of health workforce norms and standards towards the achievement of UHC.

Study Questions
1) What is the current workload of the different levels of care in the selected regions based on available health service statistics?
2) What is the workload of the different health cadres at the different levels of care?

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[3] WHO, Workload Indicators of Staffing Need (WISN), 2010

3) What are the minimum and maximum numbers of staff required for the workloads in the selected facilities?
4) Which staff cadres have critical gaps that need to be urgently addressed through various interventions to achieve UHC?
5) Which levels of care and facilities have the highest staffing gaps in relation to primary care services?

WISN Study Implementation Process in the Philippines

Study Design

WISN is an HR management tool developed by WHO that determines how many health workers of a particular cadre are required for the workload of a given facility. The tool also identifies workload pressure that affect the quality of services offered. WISN takes into account differences in services provided and the complexity of care in different facilities. The study used both quantitative and qualitative approaches comprising in depth interviews, document review, observations, field visits and application of WISN software for analysis.

Study Scope

The study covered 18 proposed SDNs with facilities ranging from BHSs up to the apex hospitals in the nine regions, including primary, secondary and tertiary care and public and private. The study included four interdependent cadres, namely: physicians, nurses, midwives and medical technologists engaged in essential primary care services. The primary care services studied were offered in selected service areas of the facilities, namely the out-patient department, FP clinics, TB Directly-Observed Treatment Short-course (DOTS) centers, emergency wards, labor/birthing rooms and laboratories.

Sampling Design, Size and Procedure

USAID HRH2030/Philippines used the following criteria for selecting provinces and cities for the WISN study. To begin, purposive stratified sampling design was deployed to capture the nine regions based on HRH TB burden in urban and rural areas and GIDAs. Further criteria for selection of the regions included priority provinces and cities with poor health outcomes, proportional representation from the three major island groups (Luzon, Visayas, and Mindanao), equal representation from high and low access areas and representation from a conflict-affected area in the country. Health outcome indicators for inclusion included maternal and infant deaths from the Philippine Statistics Authority, 2016 and unmet need for modern FP, and HRH indicators from the 2017 NDHS. Thus, the following regions were selected for the study: 3, 4A, 4B, 7, 8, 11, 12, National Capital Region and Autonomous Region of Muslim Mindanao.

Within the selected provinces/cities, USAID HRH2030/Philippines identified facilities to participate, including BHSs, RHUs, secondary level facilities and apex hospitals. Selected private and public facilities including hospitals, private DOTS clinics, and lying-in clinics were included. For provinces with existing clusters of inter-local health zones (ILHZs), all RHUs and referral hospitals were selected. The selection of BHSs was based on the availability of a dedicated midwife. Finally, a total of 49 BHSs, 40 RHUs/CHOs, 16 Level 2 and 3 secondary facilities, 12 apex facilities and 9 private facilities were analyzed. One public laboratory was also included in the study in Manila City. The list of the facilities (see Annex K) was shared with the DOH regional offices for approval to proceed with data collection.

Figure 1. Number and Type of Facilities Studied
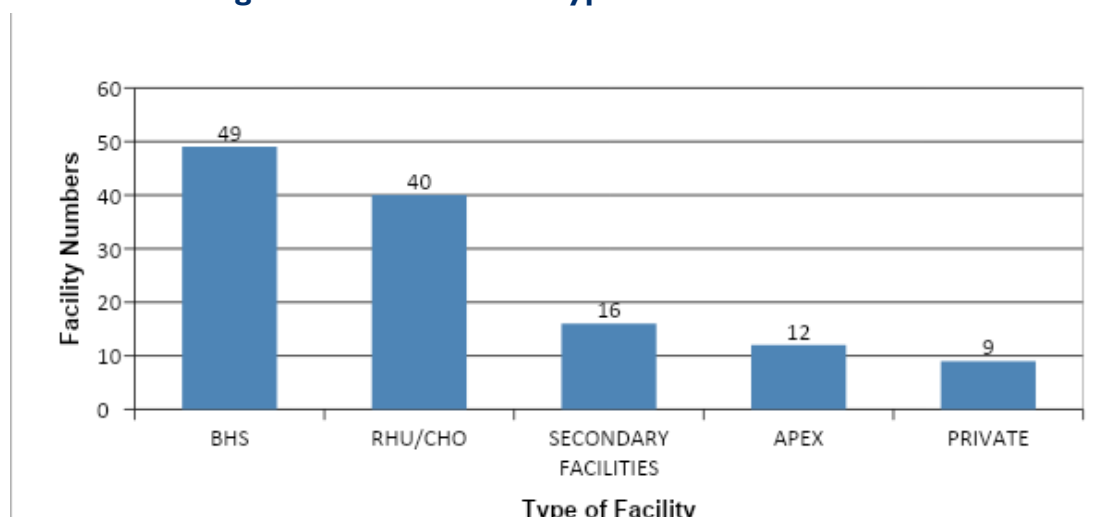
Study Organization

The study was organized into three committees, involving stakeholders from central, regional and provincial DOH offices, as prescribed by the WHO methodology for implementation. The committees had specific roles in the process to ensure accurate implementation. The committee members were selected from the focal regions and provinces and trained to ensure they acquired skills and knowledge on how to use the tool manually and electronically to enable them to use the evidence-based methodology beyond the project's lifetime. The key committees established at the different levels of implementation included the following.

Steering Committee:
The Steering Committee was comprised of senior health managers and policy makers from DOH and representation from the USAID HRH2030/Philippines technical team. As committee chair, the DOH Undersecretary for Health Policy and Systems Development Team provided overall oversight and supervision to the study team. The committee approved the implementation road map and focus of the study for smooth implementation. The Steering Committee had the final mandate of implementing the WISN results for decision making and policy direction to improve health services.

Technical Task Force Committees:
The TTFs included HHRDB staff, program managers of TB, reproductive health and other mid-level health managers from DOH and the nine regions. Selected key health workers from the four focused cadres and technical officers from USAID HRH2030/Philippines were also included. The TTF members underwent WISN training in three different groups. The first one involved the DOH team and was trained in October 2018; the second and third groups were trained in January 2019: the Luzon group in Manila; and the Mindanao and Visayas group in Davao City. They supported the WISN implementation process after being trained on the WISN methodology, both manually and electronically.

Expert Working Group Committees:
The expert working groups were made up of experienced health workers from the four core cadres involved in the provision of essential primary care health services, including TB and FP/MCH at all levels and from both public and private facilities. For the expert working group, the WISN study utilized both the cadre and the health facility working groups to enable establishment of comprehensive workload components and activity standards that were realistic, reliable and acceptable to all health workers

based on acceptable professional standards. The expert working group members underwent a three-day training on the stepwise WISN method to enable acquisition of skills and competencies that would ensure correct implementation. Their work was validated by a control group from the same cadres assisted by professional associations, regulatory councils and representatives from the health training institutions.

Overview of the WISN Methodology

The WISN methodology is consultative in nature and it involves consensus building, especially during the development of workload components and activity standards. All key stakeholders involved in HRH planning, production and management of the health workforce were consulted. WISN calculations require five variables, namely the **available working time, workload components per workload group, activity standards, annual workload data and current staffing.** The WISN method is based on deriving staffing needs based on the specific tasks actually undertaken by the staff. It is facility based, aimed at capturing the effort (i.e., time) from specific health staff to carry out particular activities. It also identifies the different activities a staff category carries out and uses activity time and number of patients (from annual statistics) to derive *standard workloads* for the given activity. For example, a nurse in an RHU with 1402 available working hours a year may spend 13 minutes on average on patient assessment, or approximately 5 assessments an hour. If in one year, the facility records a total of 6000 consultations, it implies that the standard workload for the nurse resulting from this task is 7011, meaning given the available working time, the nurse could conduct 7011 patient assessments in a year. WISN estimates the standard workload for this nurse at this facility by adding the total time required for carrying out the different activities the nurse is expected to do within the context of the facility and professional standards.

The methodology also includes the **category allowance factor**, which is the additional time spent on non-health service activities like meetings (support activities). The last component is the **individual allowance** factor, which is time spent on activities by specific individuals in a staff grouping (e.g., a nurse who is a unit manager has additional activities of supervising others). After this data is entered into the WHO WISN software, these estimates are compared with the available working time for each cadre. The software then produces a report per facility, disaggregated by cadre in the web archive transformation (WAT) files that can be further analyzed and used as a basis for making staffing and policy changes.

Data Collection, Analysis and Reporting

In the Philippines, AIHO collected WISN data from February 6-23, 2019 with support from trained health workers in the regions who were either in an expert working group or TTF. In each of the provinces, the provincial health offices served as the entry point to the health facilities and provided preliminary information for the study. Those in charge of the facilities or their designees were interviewed as key informants to provide information on health services provided in the facility, staff establishment and all the variables that have an effect on WISN, such as authorized and unauthorized leave, actual hours worked per day, and any other health system issues that would impact workloads within the context of the facility. The key informants were also critical for providing required data and relevant source documents to support the WISN results.

Quantitative data was analyzed using the WISN software. The data was entered into Excel format from the field before being entered into the WISN software. The qualitative data was analyzed through establishment of trends. The annual service statistics for the year 2018 were considered. All the health workload groups, namely health service activities, support activities and additional activities for the specific cadre were included. The study surveyed selected health facilities within an SDN, cutting across

all levels of health care. The study targeted primary care services including the out-patient department, emergency rooms, labor/delivery rooms, laboratories, DOTS centers and MCH clinics.

Calculating the Staff Requirements and Interpreting WISN Results

The critical step in the methodology was calculating the staffing requirements for all the workload groups for each of the cadres. This was attained by adding up all the health service activities' components, multiplying the support activities and adding additional activities of the care. The staffing requirement is thus a product of the standard workload and category allowance factors and adding the individual allowance factor. The total staff required is often a fraction. This was rounded off to a whole number as described in Table 1 below, which recommends how to round upwards or downwards. The impact of rounding a number is much greater in a health facility with only a few workers than in a facility with more staff.

Table 1. Guidance on Rounding off Calculated Staffing Requirements

Numbers to Round Down	Numbers to Round Up
1.0 to 1.1 is rounded to 1	>1.1 to 1.9 is rounded to 2
2.0 to 2.2 is rounded to 2	>2.2 to 2.9 is rounded to 3
3.0 to 3.3 is rounded to 3	>3.3 to 3.9 is rounded to 4
4.0 to 4.4 is rounded to 4	>4.4 to 4.9 is rounded to 5
5.0 to 5.5 is rounded to 5	>5.5 to 5.9 is rounded to 6

The WISN results were finally analyzed by looking at the difference and the ratio before being interpreted within the specific contexts and the observations therein. The two analyses helped in examining different aspects of the staffing situation in the facilities. Considering the numerical results of WISN alone is not enough to make critical decisions on staffing. It is therefore advisable to use both the difference and the ratio together and combine them with observations and knowledge of the local situation gained from the discussions and interactions with the health workers, communities served and the management during data collection to holistically interpret what is in the numbers.

1) Where the WISN ratio was **equal to 1,** current staffing equaled the calculated ratio, meaning that the current staff was sufficient to meet the workload according to the local professional standards.
2) Where the WISN ratio was **greater than 1**, it meant that there were more staff than needed to meet the workload requirement according to the local professional standards.
3) Where the WISN ratio was **less than 1**, it indicated that the staff was not sufficient to meet the workload according to the local professional standards.

Therefore, the smaller the WISN ratio, the greater the workload pressure. High pressure among the cadres can compromise quality of services offered and also demotivate the health workers, while surpluses should result in quality services. Results from the WISN analysis for each staff category were aggregated at the different levels of health services to produce the total staff in posts, total calculated requirements, total shortage/excess and average workload pressures. The staff requirements of individual health facilities were added together across administrative areas to estimate staff requirements for provinces and regions. The WISN method can be applied to all health facilities and all personnel categories, including non-medical staff to make better HR decisions.

Limitations of the Study

1) The sample size at the beginning included facilities within the SDNs/ILHZ, including both public and private. However, some facilities had incomplete data and the facility operations/arrangements made separating primary health services difficult.
2) Annual statistics in some facilities were aggregated in their records, which made it difficult to apportion tasks to specific cadres.
3) Limited data for both authorized and unauthorized absences due to inconsistencies in recording them at the facility level.
4) Access to some of the proposed facilities, both private and public, due to bureaucracy, time and distance.

WISN Results on Staffing Requirements

This section describes the results in response to the objectives of the study. The results respond to the four staff categories involved in offering essential primary care services at the various levels of care per health facility.

Health Workforce Calculated Staffing Requirement by Levels of Care and Staff Categories

The study mainly sought to assess the current workload of the midwives, physicians, nurses and medical technologists at different levels of health care delivery and determine the required staffing. The annual workloads for each workload component in the specific service areas were collected from the health facility records. This was divided by the activity time provided by the health workers and uploaded into the WISN software to determine the standard workloads for health services. Then the allowance factors were added to provide the staffing requirements for the facilities under study. This can then be aggregated at different levels to provide country-wide standards.

The requirements of all the workload components were computed to give the total number of staff required. Table 2 provides a key to how the WISN workload pressure was analyzed using the ratio and the difference indicators, while Tables 3 to 7 describe the study results of staffing levels providing primary care services at the out-patient department, FP clinics, emergency rooms, labor rooms and TB clinics and the corresponding calculated staffing requirements based on the 2017 annual service statistics. The immediate results show where there were staff shortages, surpluses and sufficient numbers within the local context of the Philippines. The workload pressure varied according to the facilities' levels and cadres. Generally, physicians, nurses and midwives in the RHUs/CHOs had higher workloads. The tables summarize the shortages, adequacies and surpluses, while Annex I contains the WAT files generated by the WISN software for each facility.

Table 2. Workload Pressure Categories

WISN Ratio	Workload Pressure
From 0.10 to 0.49	Very High
From 0.50 to 0.89	High
From 0.90 to 1.19	Normal
From 1.20 to 1.59	Low
From 1.60 to 1.80	Very Low
From 1.81 and up	Extremely Low

Barangay Health Stations

Table 3. WISN Results for Midwives in Barangay Health Stations

Area	Facility	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure	HR Issue
Bataan	Hermosa Bacong	1	2	-0.24	0.81	High	Shortage
	Colo	2	1	0.97	1.94	Extremely Low	Surplus
	Danao	1	1	0.63	2.7	Extremely Low	Normal
	New San Jose	1	1	0.28	1.33	Low	Normal
	Poblacion	1	2	-0.86	0.54	High	Shortage
	Roosevolt	1	2	-0.31	0.76	High	Shortage
	TuboTubo	2	1	1.78	9.09	Extremely Low	Surplus
	Tucop	1	1	0.61	2.56	Extremely Low	Normal
Batangas	Bilaran, Nasugbu	2	2	0.64	1.47	Low	Normal
	Lumbagan	2	2	0.66	1.49	Low	Normal
	Malapad na Bato	1	1	0.58	2.38	Extremely Low	Normal
	Wawa	3	3	0.78	0.36	Very High	Normal
	Maugat BHS	1	1	0.73	3.7	Extremely Low	Normal
Bohol	Buyog	1	1	0.7	3.3	Extremely Low	Normal
	Nueva Estrella	1	1	0.6	2.4	Extremely Low	Normal
Cebu	Apas BHS	1	2	-1.17	0.46	Very High	Shortage
	Banilad	1	2	-0.23	0.81	High	Shortage
	Kasambagan	1	2	-0.21	0.83	High	Shortage
Davao Oriental	Mati Badas	2	2	0.74	1.59	Low	Normal
	Mati Poblacion	2	2	0.83	1.71	Very Low	Normal
	Mati Poblacion 5	2	1	0.98	1.96	Extremely Low	Surplus
	Tarragona Cabagayan	2	1	1.14	2.3	Extremely Low	Surplus
	Tarragona Central	2	2	0.68	1.52	Low	Normal
Eastern Samar	Asgad	2	2	0.23	1.13	Normal	Sufficient
	Bobon	5	2	3.42	3.16	Extremely Low	Surplus
	Batang	2	1	0.94	1.89	Extremely Low	Surplus
	Baras	2	1	1.56	4.55	Extremely Low	Surplus
	Gamanga	2	1	0.94	1.89	Extremely Low	Surplus
	Canciledes	2	1	1.31	2.90	Extremely Low	Surplus
	Casugaran	2	1	1.56	4.55	Extremely Low	Surplus
Lanao del Sur	Linuk	2	1	1.26	2.70	Extremely Low	Surplus
Oriental Mindoro	Bagongbayan	1	1	0.67	3.03	Extremely Low	Normal
	Malitbog	1	1	0.72	3.57	Extremely Low	Normal

Area	Facility	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure	HR Issue
Palawan	Baldat	1	1	0.76	4.17	Extremely Low	Normal
	Borac	1	1	0.58	2.38	Extremely Low	Normal
	Lajala	1	1	0.62	2.63	Extremely Low	Normal
	Panlaitan	1	1	0.72	3.57	Extremely Low	Normal
Sultan Kudarat	Kulaman	2	1	1.37	3.17	Extremely Low	Surplus
	New Isabela	1	2	-0.61	0.62	High	Shortage
	San Rafael	1	1	0.68	3.12	Extremely Low	Normal
	Tinalon	1	1	0.28	1.39	Low	Normal
Tacloban City, Leyte	Youngfield	2	2	0.39	1.24	Low	Normal
Zambales	Botolan Poonbato	1	1	0.21	1.27	Low	Normal
	Amungan	2	1	1.23	2.60	Extremely Low	Surplus
	Lipay Iba	1	1	0.46	1.85	Extremely Low	Normal
	Bulawin, Palauig	1	1	0.06	1.06	Normal	Sufficient
	Botolan Baquilan	2	1	1.71	6.90	Extremely Low	Surplus
	Sta Barbara	1	1	0.35	1.54	Low	Normal
General Santos City, South Cotabato	Tambler	1	2	-1.11	0.47	Very High	Shortage

Table 3 illustrates the findings from all the BHSs showing the available staff and the WISN required numbers based on the 2017 annual statistics. The facilities had midwives performing primary tasks, including primary consultation for minor illnesses, selected maternal care services like FP services, pre and post-natal care and immunizations. They also provided preventive and promotive services, however, there was very little documentation for inclusion in the health services. The WISN methodology captured such workload support and additional activities through the allowance factors. The results show that while the midwives worked in the barangays, they were not fully optimized. Shortages existed in eight BHSs (16%), adequacies and sufficient numbers existed in 24 BHSs (49%) and 17 BHSs (34%) had surpluses or underutilization of the midwives. The barangays in Bataan, Cebu City, Sultan Kudarat and General Santos had minimal shortages. Overall, the results showed that midwives were not providing the expected range of services for a BHS, and they had the capacity to do more work as prescribed in the workload components.

Figure 2. Workload Pressure Analysis for Barangay Health Stations
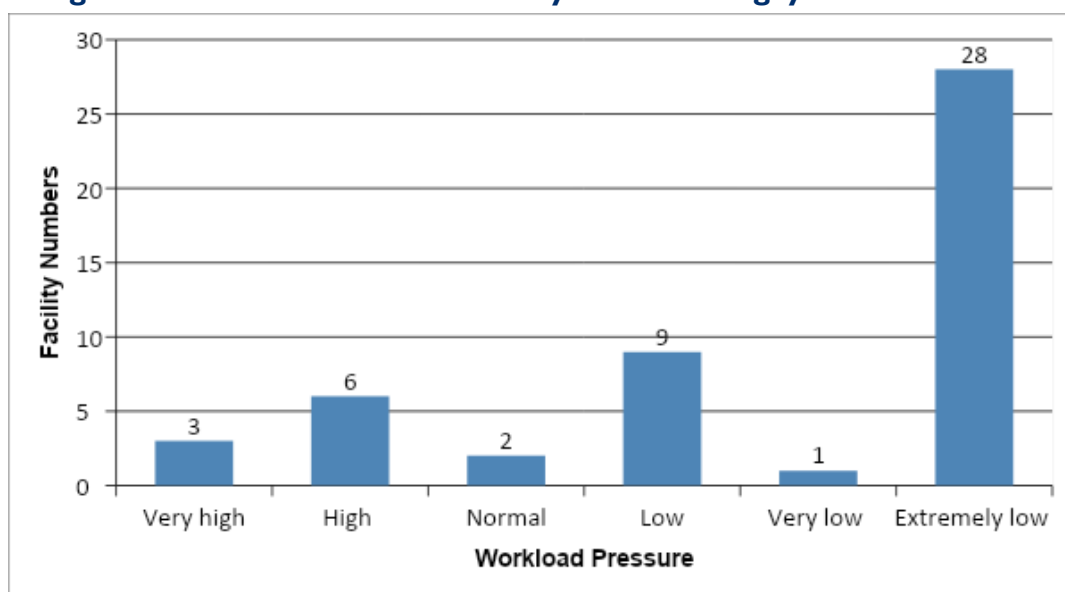
Based on the data provided in Table 2, Figure 2 above summarizes the pressure levels. In 28 BHSs, midwives were operating at extremely low pressure due to very little workload. This means that the midwives were underutilized at this level of care. They were not providing the expected range of services. Only two facilities were operating at normal pressure, meaning that the number of midwives was adequate to offer the expected range of services. Three facilities were operating at very high pressure, which could impact the quality of services offered. Six facilities were operating at high pressure, nine at low and only one facility had a midwife working at a very low pressure.

Rural Health Units/City Health Offices

Table 4. WISN Results for the Four Cadres in RHUs/CHOs

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Bataan	Hermosa RHU	Med. Tech.	1	1	0.85	6.67	Extremely Low
		Physician	1	1	0.49	1.96	Extremely Low
		Nurse-Out-Patient (OP)	1	1	0.62	2.7	Extremely Low
	RHU I Dinalupihan	Med. Tech.	1	1	0.72	3.57	Extremely Low
		Physician	1	1	0.55	2.22	Extremely Low
		Nurse-OP	1	2	-0.16	0.86	High
		Midwife	1	1	0.52	2.08	Extremely Low
	RHU II Dinalupihan	Med. Tech.	2	1	1.54	4.35	Extremely Low
		Physician	1	2	-0.19	0.84	High
		Nurse-OP	3	4	-0.59	0.84	High
	RHU III Dinalupihan	Med. Tech.	1	1	0.87	7.69	Extremely Low
		Physician	1	1	0.42	1.72	Very Low
		Nurse-OP	3	1	2.35	4.62	Extremely Low
Batangas	Nasugbu RHU I	Med. Tech.	3	2	1.68	2.27	Extremely Low
		Physician	2	8	-6.45	0.24	Very High
		Midwife	5	3	2.62	2.10	Extremely Low
		Nurse-OP	5	8	-2.54	0.66	High
Bohol	Buenavista RHU	Med. Tech.	1	1	0.79	4.76	Extremely Low
		Physician	1	2	-0.61	0.62	High

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
		Midwife	3	2	1.01	1.51	Low
		Nurse-OP	4	1	3	4.00	Extremely Low
	Getafe	Med. Tech.	1	1	0.5	2.00	Extremely Low
		Physician	1	1	0.04	1.04	Normal
		Midwife	12	3	9.4	4.62	Extremely Low
		Nurse-OP	8	2	6.49	5.30	Extremely Low
Cebu City	Mabolo Barangay Health Center	Med. Tech.	1	1	0.53	2.13	Extremely Low
		Physician	1	2	-0.24	0.81	High
		Midwife	2	2	0.43	1.27	Low
		Nurse-OP	2	3	-0.87	0.70	High
City of Manila	Tondo Foreshore	Med. Tech.	3	2	1.6	2.14	Extremely Low
		Physician	4	2	2.49	2.65	Extremely Low
		Midwife	7	3	3.83	2.21	Extremely Low
		Nurse-OP	6	7	-2.21	0.83	High
	J. Posadas	Med. Tech.	1	1	0.77	4.35	Extremely Low
		Physician	1	5	-3.47	0.22	Very High
		Midwife	1	1	0.4	1.67	Very Low
		Nurse-OP	3	6	-3.12	0.49	Very High
	Bo. Fugoso	Med. Tech.	1	1	0.46	1.85	Extremely Low
		Physician	3	4	-1.08	0.74	High
		Midwife	8	5	3.35	1.72	Very Low
		Nurse-OP	5	8	-1.89	0.63	High
Davao City	Marilog	Med. Tech.	2	1	1.06	2.13	Extremely Low
		Physician	2	2	0.53	1.36	Low
		Midwife	14	4	10.17	3.66	Extremely Low
Davao Oriental	Tarragona	Med. Tech.	1	1	0.81	5.26	Extremely Low
		Physician	1	1	0.32	1.47	Low
		Midwife	8	1	7.38	12.90	Extremely Low
		Nurse-OP	2	2	0.81	1.68	Very Low
	Mati	Med. Tech.	2	3	-0.45	0.82	High
		Nurse-OP	14	3	11.09	4.81	Extremely Low
Oriental Mindoro	Mansalay	Med. Tech.	1	1	0.79	4.76	Extremely Low
		Physician	1	3	-1.23	0.45	Very High
		Midwife	8	5	3.27	1.69	Very Low
		Nurse-OP	7	1	6.47	13.21	Extremely Low
Eastern Samar	Salcedo	Physician	1	1	0.33	1.49	Low
		Midwife	3	2	0.81	1.37	Low
		Nurse-OP	13	2	11.56	9.03	Extremely Low
	Mercedes	Midwife	4	2	2.19	2.21	Extremely Low
	Hernani	Nurse-OP	2	2	0.15	1.08	Normal
	Guiuan 1	Med. Tech.	3	1	2.4	5.00	Extremely Low
		Physician	1	1	0.01	1.01	Normal
		Midwife	3	2	1.1	1.58	Low
		Nurse-OP	1	1	0.6	2.50	Extremely Low
	Gen MacArthur	Physician	1	1	0	1.00	Normal
		Midwife	4	1	2.9	3.64	Extremely Low
		Nurse-OP	9	2	7.75	7.20	Extremely Low
Lanao Del Sur	Balindong	Med. Tech.	1	1	0.87	7.69	Extremely Low
		Physician	1	1	0.32	1.47	Low
		Midwife	7	6	1.19	1.20	Low
		Nurse-OP	8	4	4.52	2.30	Extremely Low
	Tugaya	Med. Tech.	1	1	0.86	7.14	Extremely Low
		Physician	1	2	-0.45	0.69	High
		Midwife	6	4	2.01	1.50	Low
		Nurse-OP	5	2	2.8	2.27	Extremely Low
	Uyaan	Midwife	1	1	0.03	1.03	Normal

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
		Nurse-OP	1	1	0.33	1.49	Low
Marikina City, Metro Manila	Concepcion	Physician	1	2	-0.17	0.85	High
		Midwife	1	3	-1.62	0.38	Very High
		Nurse-OP	1	4	-3.02	0.25	Very High
	Balubad	Physician	1	2	-0.33	0.75	High
		Midwife	8	5	3.56	1.80	Extremely Low
		Nurse-OP	1	4	-3.35	0.23	Very High
	Tumana	Physician	1	2	-0.26	0.79	High
		Midwife	1	5	-4.04	0.20	Very High
		Nurse-OP	1	5	-3.9	0.20	Very High
Palawan	Culion	Med. Tech.	2	2	0.67	1.50	Low
		Physician	1	2	-0.77	0.56	High
		Midwife	16	10	5.81	1.57	Low
		Nurse-OP	13	4	9.06	3.30	Extremely Low
Sultan Kudarat	Tacurong	Med. Tech.	3	6	-3.46	0.46	Very High
		Physician	3	4	-0.46	0.87	High
		Nurse-OP	6	5	1.46	1.32	Low
	Esperanza	Med. Tech.	3	1	1.92	2.78	Extremely Low
		Physician	1	4	-2.87	0.26	Very High
		Nurse-OP	3	4	-0.45	0.87	High
	Bagumbayan	Med. Tech.	3	3	0.66	1.28	Low
		Physician	1	5	-4.06	0.20	Very High
		Nurse-OP	5	2	3.31	2.96	Extremely Low
	Isulan	Med. Tech.	2	3	-0.44	0.82	High
		Physician	2	4	-1.8	0.53	High
		Nurse-OP	3	2	1.06	1.55	Low
Tacloban City, Leyte	Abucay	Med. Tech.	1	2	-0.78	0.56	High
		Physician	5	6	-0.74	0.87	High
		Nurse-OP	3	5	-1.8	0.63	High
Tawi-Tawi	Tandubas	Med. Tech.	1	1	0.86	7.14	Extremely Low
		Physician	1	2	-0.25	0.80	High
		Midwife	18	5	13.28	3.81	Extremely Low
		Nurse-OP	1	1	0.79	4.76	Extremely Low
	Sapa-Sapa	Midwife	24	4	20.06	6.09	Extremely low
Zambales	Iba	Med. Tech.	2	3	-0.24	0.89	High
		Physician	1	2	-0.63	0.61	High
		Midwife	5	1	4.5	10.00	Extremely low
		Nurse-OP	3	3	0.29	1.11	Normal
	Palauig	Med. Tech.	1	1	0.26	1.35	Low
		Physician	2	3	-0.39	0.84	High
		Midwife	5	7	-2.45	0.67	High
		Nurse-OP	2	2	0.79	1.65	Very Low
	Botolan 1	Physician	1	3	-1.87	0.35	Very High
		Nurse-OP	3	2	1.15	1.62	Very Low
	Botolan 2	Physician	1	1	0.22	1.28	Low
		Nurse-OP	2	1	1.55	2.35	Extremely Low
General Santos City, South Cotabato	Calumpang	Med. Tech.	1	3	-1.48	0.40	Very High
		Physician	1	2	-0.83	0.55	High
		Midwife	8	5	3.1	1.63	Very Low
		Nurse-OP	2	2	0.83	1.71	Very Low
	Labangal	Med. Tech.	1	1	0.41	1.69	Very Low
		Physician	1	1	0.33	1.49	Low
		Nurse-OP	5	2	2.91	2.39	Extremely Low

Table 4 provides results of the WISN study for all the RHUs and CHOs. It shows the existing numbers of nurses, midwives, physicians and medical technologists as provided by the person in charge of the facility during the data collection field visits. It also provides the calculated required numbers of staff from the WISN software based on the three workload groups, namely health services, support activities and additional activities for each workload component, activity standard and allowance factors as developed and validated by the expert working groups. Using the annual statistics from the facilities, the numbers were calculated. This was done for all the facilities under study. Overall, six or 15% of RHUs/CHOs had significant shortages, none were operating at normal levels and 34 or 85% had surplus staff.

Out of the 40 RHUs/CHOs studied, 10 did not have medical technologists to provide laboratory and diagnostic services. The facilities were Salcedo, Mercedes, Hernani, and General McArthur in Eastern Samar; Uyaan in Lanao Del Sur; RHU I and II in Zambales; and all three health centers in Marikina City. Marikina had a city public health laboratory that served all the facilities, however, data collected indicated very minimal services offered by this laboratory. The services mainly being offered were acid fast bacilli test, urinalysis and faecalysis. WISN ratios indicating the level of workload pressure for medical technologists is summarized in Figure 3.

Figure 3. Workload Pressure of Medical Technologists in RHUs/CHOs
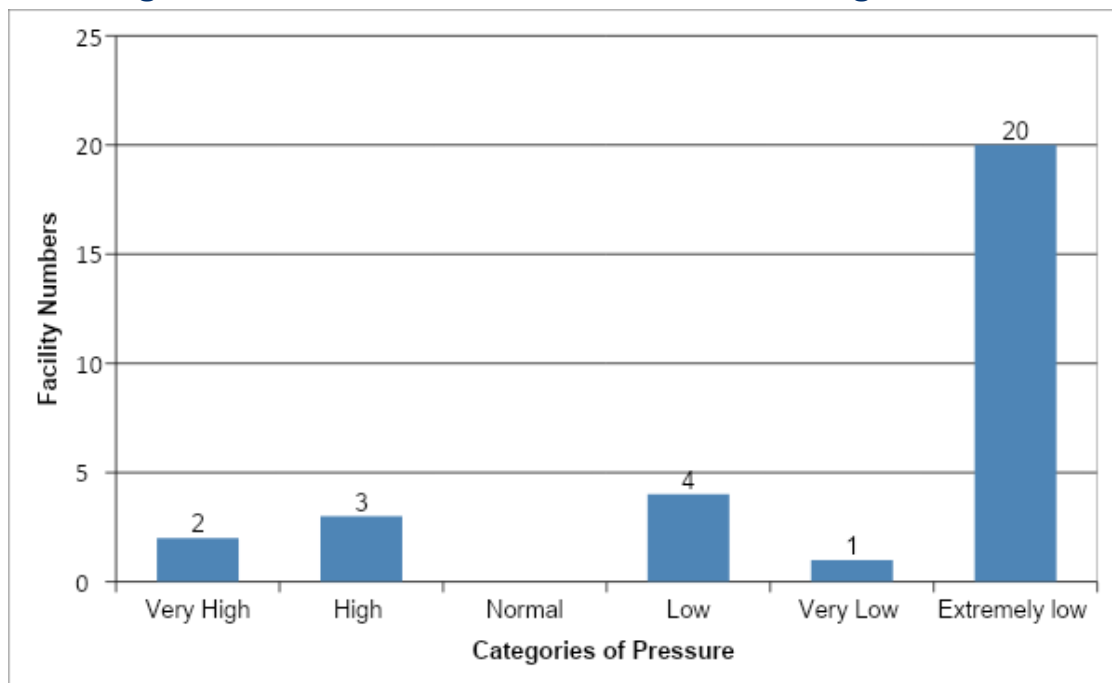
Figure 3 shows underutilization of almost all the medical technologists. Medical technologists in 20 health facilities were working at extremely low workload pressures. This is an indication that this category of staff is "*underworked*" with very limited workload compared to the scope of practice. Most of the facilities offered minimal services, mainly acid-fast bacilli, urinalysis and gram staining tests, an indication of underutilization of staff. It was only Tacurong RHU in Sultan Kudarat with a WISN ratio of 0.46 and Calumpang in General Santos City with a ratio of 0.40 that had high workload pressure. For example, there were three medical technologists in Tacurong and the WISN results require six.

Figure 4. Workload Pressure of Physicians in RHUs/CHOs
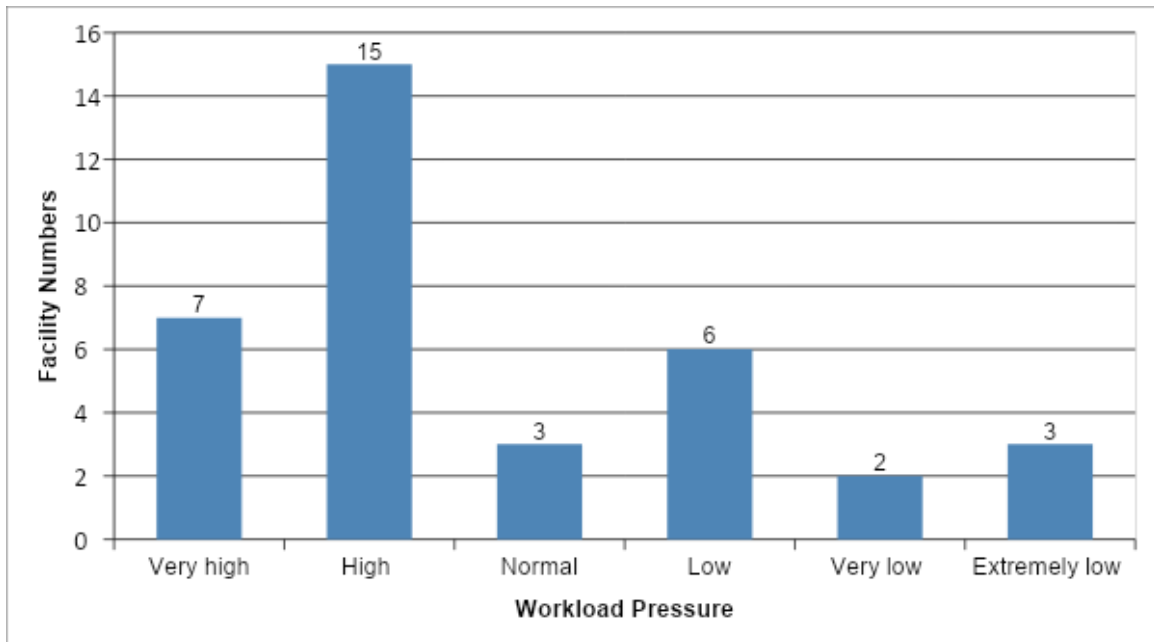
Figure 4 shows workload pressure for physicians working at the RHU/CHO facilities. The results indicate that out of 40 RHUs/CHOs, physicians in seven facilities exhibited very high workloads, in15 facilities they were working under high pressure, while only three facilities had sufficient physicians for the workloads. Six facilities had low pressure, two very low and three extremely low pressure. For example, Nasugbu RHU in Batangas had only two physicians but the WISN requirement was eight. Other facilities with physicians under very high pressure included J. Posadas Health Center in Manila, Mansalay RHU in Oriental Mindoro, and Esperanza and Bagumbayan in Zambales. Data analysis showed that most of the physicians were performing very minimal tasks compared to their scopes of practice as defined by the expert working groups; the physicians were mainly conducting consultations and referrals.

Figure 5. Workload Pressure of Nurses in RHUs/CHOs
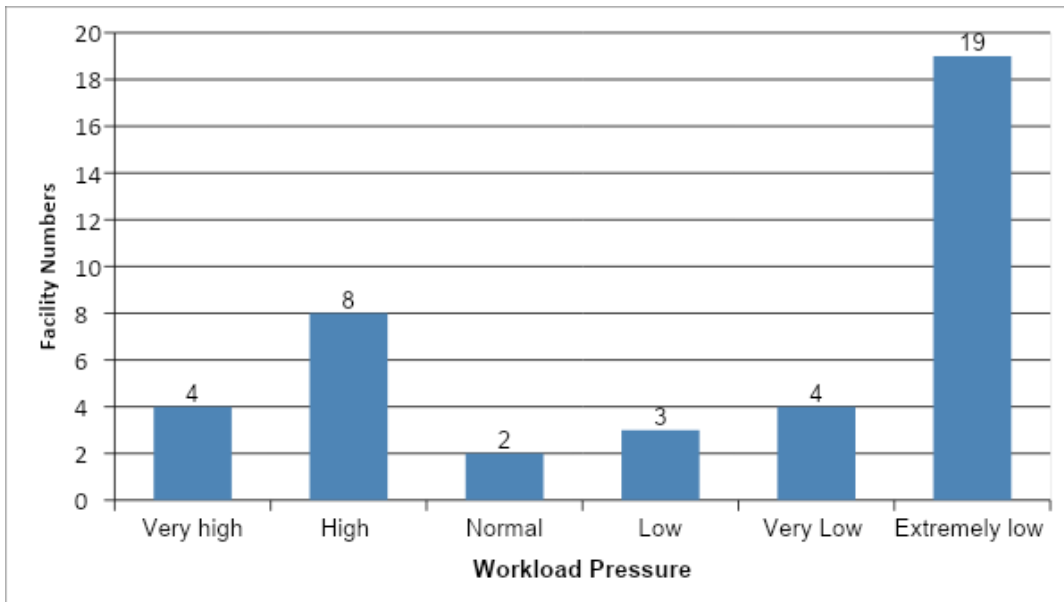
The results showed that all RHUs/CHOs had nurses or nurses that were also licensed as midwives who provided the nursing services. All nurses in the CHOs in Manila City exhibited very high workloads. For example, five nurses at Bo. Fugoso attended to 21,488 patients in the out-patient department in 2017, thus had very high workload pressure compared to three nurses in Abuhay District Health Office in Tacloban City. Two facilities, Iba RHU in Zambales and Hernani in Eastern Samar, had an adequate number of nurses. The nurses in 19 out of 40 facilities were operating at extremely low pressure with minimal workloads. Based on data collection related to workload components of individual and category allowance factors, the very high and high workloads of the nurses were due to work outside their scopes of practice like dispensing drugs and support activities. This means that nurses were not spending most of their time providing direct patient care.

Figure 6. Workload Pressure of Midwives in RHUs/CHOs
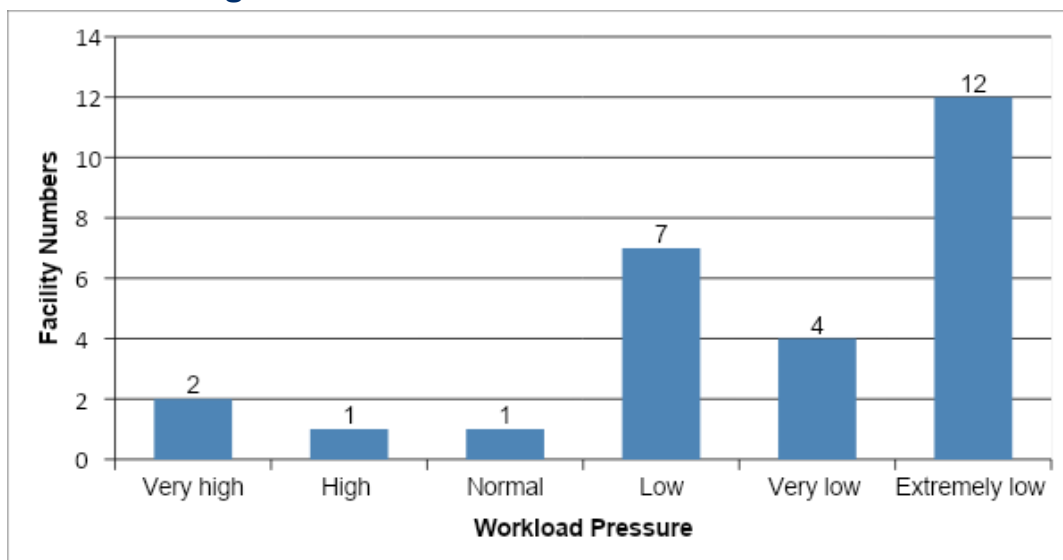
Out of the 40 RHUs/CHOs surveyed, only 27 of them had midwives. Out of the 27, 12 were operating at extremely low pressure, yet they had core responsibilities for maternal care such as FP and pre and post-natal care. All the facilities studied in Sultan Kudarat and General Santos did not have midwives. Mercedes and Sapa RHUs only had midwives as staff in the facilities yet they were all operating at very low-pressure levels with most of their work classified as support and additional activities. These two RHUs were operating as BHSs. Only Uyaan was operating at normal capacity where the current midwife has a ratio of 1. Figure 6 provides a summary of the workload pressures of the midwives. The midwives interviewed during the study lamented having designations different from the midwifery services they provided. One said "*I am a qualified midwife designated as an administrative assistant but performing the role of a midwife. This is frustrating to me and so I am confused.*"

District/Provincial Hospitals

Table 5. WISN Results for the Four Cadres in District/Provincial Hospitals

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Bataan	Jose C. Payumo Memorial Hospital	Med. Tech.	9	8	0.76	1.09	Normal
		Physician	9	13	-4.19	0.68	High
		Midwife	11	9	1.85	1.20	Low
		Nurse-in-patient (IP)	26	16	9.61	1.59	Low
		Nurse-OP	24	20	4.23	1.21	Low
	Bataan Peninsula Medical Center	Med. Tech.	5	9	-4.14	0.55	High
		Physician	5	3	1.83	1.58	Low
		Nurse-IP	8	6	2	1.33	Low
		Nurse-OP	4	3	0.7	1.21	Low
Batangas	Apacible	Med. Tech.	5	2	1.86	2.63	Extremely Low
		Physician	5	4	1.47	1.42	Low
		Midwife	4	2	2.19	2.21	Extremely Low
		Nurse-IP	4	5	-1	0.80	High
		Nurse-OP	1	2	-0.3	0.77	High
	Batangas Medical Centre	Med. Tech.	57	70	-12.54	0.82	High
		Physician	38	71	-33	0.54	High
		Midwife	27	34	-6.53	0.81	High
		Nurse-IP	25	28	-2.88	0.90	Normal
		Nurse-OP	42	47	-4.73	0.90	Normal
Bohol	Don Emilio del Valle Memorial Hospital	Med. Tech.	10	11	-0.93	0.91	Normal
		Physician	30	19	11.32	1.61	Very Low
		Midwife	9	13	-4.21	0.68	High
		Nurse-IP	38	27	10.53	1.38	Low
		Nurse-OP	16	9	6.82	1.74	Very Low
Cebu City	Guba Community Hospital	Med. Tech.	3	1	2.23	3.90	Extremely Low
		Physician	7	3	3.72	2.13	Extremely Low
		Midwife	4	1	3.89	30.7	Extremely Low
		Nurse-IP/OP	5	3	2.71	2.18	Extremely Low
	Cebu City Medical Center	Med. Tech.	16	8	8.46	2.12	Extremely Low
		Physician	31	25	5.63	1.22	Low
		Midwife	5	3	2.51	2.10	Extremely Low
		Nurse-IP	16	14	2	1.14	Normal
		Nurse-OP	15	14	1.35	1.10	Normal
	Cebu North General Hospital	Med. Tech.	15	8	6.59	1.78	Very Low
		Physician	10	4	6.38	2.76	Extremely Low
		Midwife	7	2	5.69	5.34	Extremely Low
		Nurse-IP	15	7	8.31	2.24	Extremely Low
		Nurse-OP	1	1	071	3.45	Extremely Low

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Davao Oriental	Davao Oriental	Med. Tech.	14	18	-3.73	0.79	High
		Physician	18	14	4	1.29	Low
		Midwife	11	14	-2.92	0.79	High
		Nurse-OP	14	11	2.95	1.27	Low
Eastern Samar	Felipe Abrigo Memorial Hospital	Med. Tech.	5	3	1.72	1.52	Low
		Physician	7	11	-4.13	0.63	High
		Midwife	2	3	-0.6	0.77	High
		Nurse-IP	7	6	1.19	1.20	Low
		Nurse-OP	4	4	0.2	1.05	Normal
Lanao del Sur	Balindong District Hospital	Med. Tech.	7	1	6.21	8.86	Extremely Low
		Physician	3	4	-0.6	0.83	High
		Midwife	4	1	3.9	40.0	Extremely Low
		Nurse-OP	20	3	17.23	7.22	Extremely Low
		Nurse-IP	20	15	4.87	1.32	Low
Oriental Mindoro	Oriental Mindoro Southern District Hospital	Med. Tech.	9	15	-6.18	0.59	High
		Physician	3	16	-12.93	0.19	Very High
		Midwife	3	4	-1.31	0.70	High
		Nurse-IP	20	31	-11	0.65	High
		Nurse-OP	9	6	3	1.50	Low
Sultan Kudarat	Senator Ninoy P. Aquino	Med. Tech.	2	1	1.67	6.06	Extremely Low
		Physician	3	3	-0.1	0.97	Normal
		Midwife	4	1	3.9	40.0	Extremely Low
		Nurse-IP	4	1	3	4.0	Extremely Low
		Nurse-OP	2	2	0	1.00	Normal
Tacloban City, Leyte	Tacloban City Hospital	Med. Tech.	7	11	-4.01	0.64	High
		Physician	6	9	-2.99	0.67	High
		Nurse-IP	12	4	7.77	2.84	Extremely Low
		Nurse-OP	9	7	2.09	1.30	Low
Tawi-Tawi	Tuan Ligaddung Lipae	Med. Tech.	2	1	1.7	6.67	Extremely Low
		Physician	3	2	1.86	2.63	Extremely Low
		Nurse-IP	9	2	7.78	7.38	Extremely Low
		Nurse-OP	4	1	3.31	5.80	Extremely Low
Zambales	President Ramon Magsaysay Memorial Hospital	Med. Tech.	6	26	-19.74	0.23	Very High
		Physician	18	41	-22.56	0.44	Very High
		Midwife	6	14	-8.12	0.42	Very High
		Nurse-IP	4	9	-5.19	0.44	Very High
		Nurse-OP	8	17	-8.91	0.47	Very High

Table 5 above provides WISN results for facilities at Levels 2, 3 and 4 in the selected regions. Only 16 facilities met the threshold of data requirements and were included in the study. To obtain more reliable WISN results, WISN should be conducted for all wards of a hospital. However, the results of the current study still provide insight into the weaknesses of the health care system that can be addressed.

Highlights of the results are as follows. The nurses and midwives at New San Jose Payumo Memorial Hospital in Bataan, all had very low pressure. The in-patient nurse had a WISN ratio of 1.59, the out-patient nurse had a ratio of 1.21 and the midwife 1.20. There were nine physicians and the WISN requirement was calculated at 13, thus they were operating with too few staff and a high workload pressure. It is only the medical technologist who were operating at a normal level of pressure. However, the medical technologists still have the capacity to do more work considering the standard workloads for various tests. For example, for the automated complete blood count, the standard workload for one medical technologist is 12,267 tests a year. The statistics for 2017 indicate that a facility with nine staff conducted 29,105 tests, while the nine staff should have been able to conduct 110,403 tests.

Figure 7. Existing Staff vs. Calculated WISN Staff at Tuan Ligaddung Lipae Memorial Hospital in Tawi-Tawi
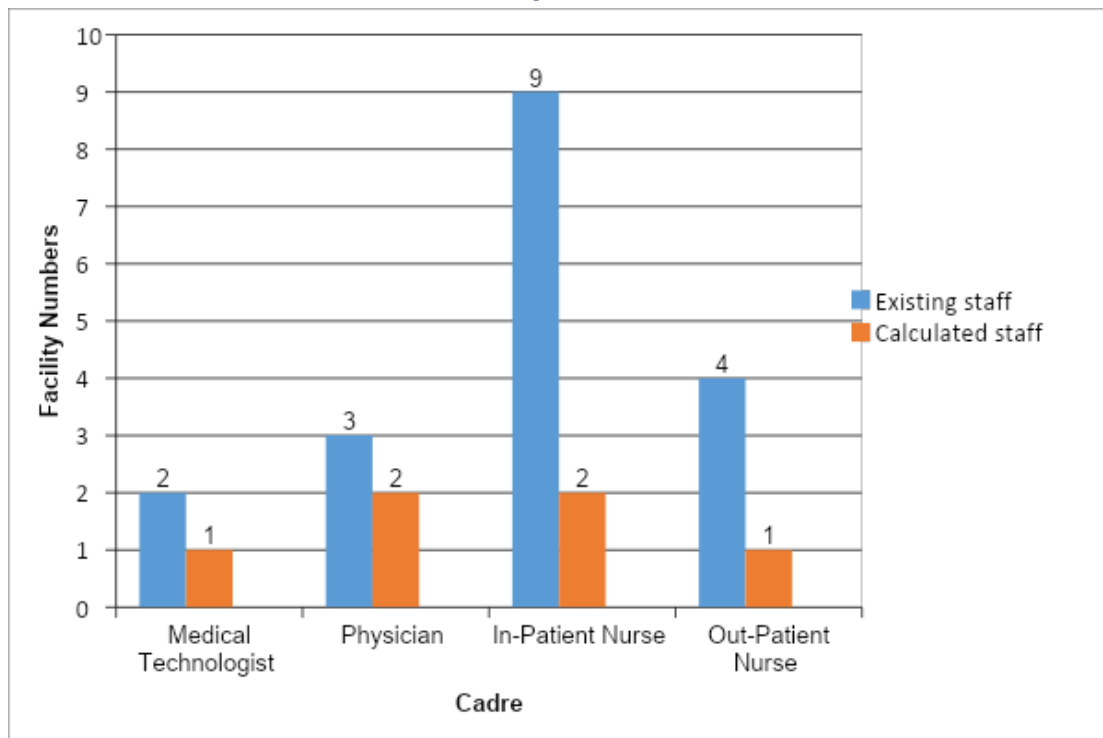
Figure 7 depicts a hospital in a GIDA with surplus health workers. The RHUs in Tawi-Tawi also had surpluses. Both contradict the usual assumption that facilities in GIDAs are understaffed. However, the surpluses observed could be an indicator that the demand for health services in this area is low.

The following facilities were found to have staff surpluses: Guba Community Hospital, Cebu City Medical Center, and Cebu North General Hospital in Cebu; Balindong District Hospital in Lanao Del Sur and Jose C. Payumo Memorial Hospital and Bataan Peninsula Medical Center in Bataan. All exhibit staff surpluses, or a low workload pressure, as data collection demonstrated that limited services were being offered. This is an indication that the health workers were not fully utilized as defined in their scopes of practice.

Conversely, staff shortages were recorded in Oriental Mindoro Southern District Hospital for all four cadres, and Batangas Medical Center and Tacloban City Hospital for physicians and medical technologists. Figure 8 below is an example of existing staff versus the calculated WISN requirements.

Figure 8. Existing Staff vs. WISN Calculated Staff at President Ramon Magsaysay Memorial Hospital in Zambales
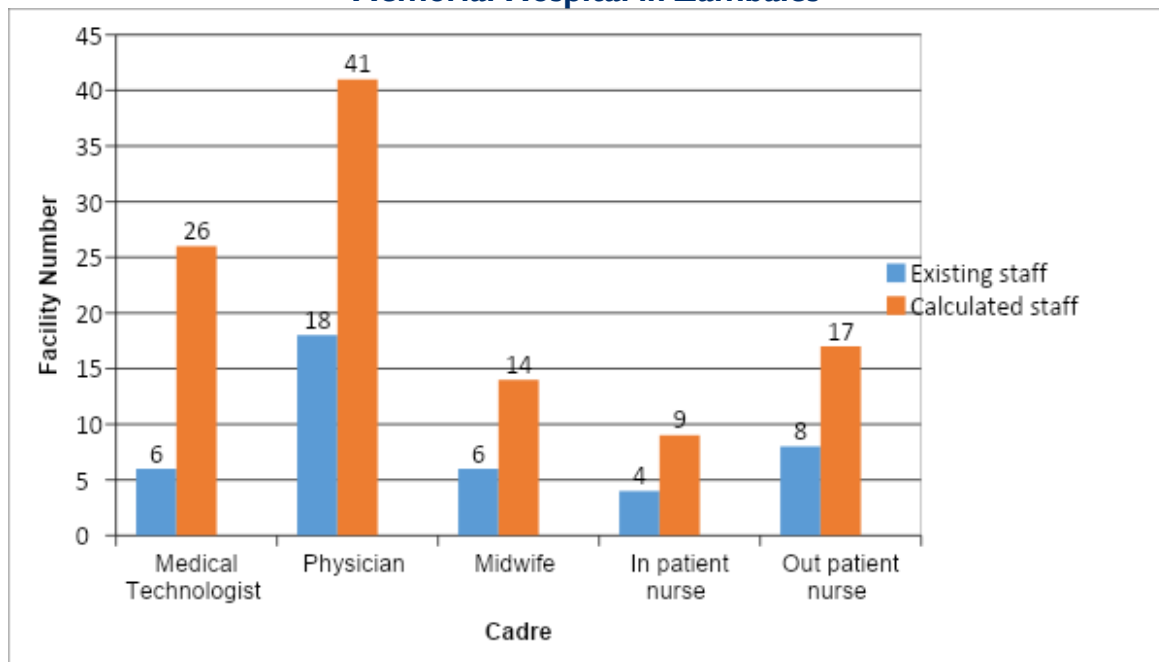
Apex/Tertiary Hospitals

Table 6. WISN Results for the Four Cadres in Apex/Tertiary Hospitals

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Bataan	Bataan General Hospital	Med. Tech.	30	57	-27.44	0.52	High
		Physician	25	53	-27.82	0.47	Very High
		Midwife	16	29	-13.29	0.55	High
		Nurse-IP	12	14	-2.19	0.85	High
		Nurse-OP	38	53	-14.77	0.72	High
Batangas	Batangas General Hospital	Med. Tech.	6	6	-0. 48	0.93	Normal
		Physician	23	20	3.43	1.18	Normal
		Midwife	12	17	-5.12	0.70	High
		Nurse-IP	6	16	-10.13	0.37	Very High
		Nurse-OP	8	13	-5.28	0.60	High
Bohol	Governor Celestino Gallares Memorial Hospital	Med. Tech.	38	45	-7.33	0.84	High
		Physician	60	51	9.05	1.18	Normal
		Midwife	15	30	-15.04	0.50	High
		Nurse-IP	26	43	-17.43	0.60	High
		Nurse-OP	5	15	-9.9	0.34	Very High
Cebu City	Vicente Sotto Memorial Medical Center	Med. Tech.	78	97	-18.68	0.81	High
		Physician	64	63	11.47	1.22	Low
		Midwife	7	42	-35.09	0.17	Very High
		Nurse-IP	73	95	-22.48	0.76	High
		Nurse-OP	21	26	-5.15	0.80	High
	Gat Andres Bonifacio Memorial Medical Center	Med. Tech.	19	21	-2.22	0.90	Normal
		Physician	28	32	-3.91	0.88	High
		Nurse-IP	37	38	-0.72	0.98	Normal
		Nurse-OP	11	10	0.8	1.08	Normal
		Med. Tech.	49	65	-15.53	0.76	High

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Davao Oriental	Davao Regional Medical Center	Physician	38	50	-11.79	0.76	High
		Midwife	26	22	3.71	1.17	Normal
		Nurse-IP	11	5	6.37	2.38	Extremely Low
		Nurse-OP	44	51	-6.69	0.87	High
Marikina City, Metro Manila	Amang Rodriguez	Med. Tech.	30	39	-8.59	0.78	Moderately High
		Physician	49	57	-8.33	0.85	Moderately High
		Midwife	11	16	-5.32	0.67	High
		Nurse-OP	40	44	-4.32	0.90	Normal
		Nurse-IP	13	14	-0.93	0.93	Normal
Tacloban City	Eastern Visayas Regional Medical Center	Med. Tech.	79	81	-2.15	0.97	Normal
		Physician	41	39	2.5	1.06	Normal
		Midwife	25	17	8.37	1.50	Low
		Nurse-IP	18	27	-8.87	0.67	High
		Nurse-OP	11	23	-12.09	0.48	Very High
Zambales	Sta. Cecilia	Med. Tech.	4	4	0.16	1.04	Normal
		Physician	3	5	-1.96	0.60	High
		Midwife	2	1	1.9	20.0	Extremely Low
		Nurse-IP	10	10	0	1.00	Normal
		Nurse-OP	6	4	1.92	1.47	Low
	James Gordon Memorial Hospital	Med. Tech.	32	38	-5.68	0.85	High
		Physician	18	21	-3.25	0.85	High
		Midwife	6	7	-1.31	0.82	High
		Nurse-IP	5	13	-7.65	0.39	Very High
		Nurse-OP	29	26	3.32	1.13	Normal
Sultan Kudarat	Sultan Kudarat Provincial Hospital	Med. Tech.	9	5	4.41	1.96	Extremely Low
		Physician	39	11	28.39	3.68	Extremely Low
		Midwife	6	8	-1.99	0.75	High
		Nurse-IP	34	13	20.56	2.53	Extremely Low
Tawi-Tawi	Datu Halun Sakilan Provincial Hospital	Med. Tech.	12	6	5.54	1.86	Extremely Low
		Physician	13	13	0.27	1.02	Normal
		Midwife	3	3	0.67	1.29	Moderately Low
		Nurse-IP	51	19	31.74	2.65	Extremely Low
		Nurse-OP	15	4	10.66	3.46	Extremely Low

Table 6 summarizes existing staff and calculated WISN requirements for the apex facilities. Only 12 hospitals had complete data for analysis and were included in the study. Datu Halun Sakilan Provincial Hospital had surpluses in all four cadres. The workload components under primary care services were less compared to the overall workload and thus pressure was extremely low.

Private Hospitals

Table 7. WISN Results for the Four Cadres in Private Hospitals

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Batangas	Jabez Medical Centre	Med. Tech.	5	2	3.05	2.56	Extremely Low
		Physician	4	3	1.23	1.44	Low
		Midwife	1	1	0.31	1.45	Low
		Nurse-IP	5	5	1.11	1.29	Low
		Nurse-OP	3	2	1.79	2.48	Extremely Low
Cebu City	Cebu North General Hospital	Med. Tech.	15	8	6.59	1.78	Very Low
		Physician	10	4	6.44	2.81	Extremely Low
		Midwife	7	1	5.99	6.93	Extremely Low

Area	Facility	Cadre	Existing Staff	WISN Calculated Staff	Difference	WISN Ratio	Workload Pressure
Davao City	Isaac T. Robello Hospital	Nurse-IP	15	7	8.36	2.26	Extremely Low
		Nurse-OP	1	1	0.69	3.23	Extremely Low
		Med. Tech.	6	4	2.55	1.74	Low
		Physician	14	5	9.59	3.17	Extremely Low
		Midwife	14	1	13.7	46.6	Extremely Low
		Nurse-IP/OP	11	6	4.8	1.77	Very Low
	Buda Community Health Centre	Med. Tech.	3	5	-1.68	0.64	High
		Physician	2	7	-5.18	0.28	Very High
		Midwife	4	5	-0.44	0.90	Normal
		Nurse-IP	8	7	0.97	1.14	Normal
		Nurse-OP	2	2	0.74	1.59	Low
Manila City	Mary Johnston Hospital	Med. Tech.	15	18	-2.54	0.86	High
		Physician	19	8	10.93	2.35	Extremely Low
		Nurse-IP	20	14	6.26	1.46	Low
		Nurse-OP	17	6	10.91	2.79	Extremely Low
Davao Oriental	St. Camillus Hospital of Mati Foundation Incorporated	Med. Tech.	8	8	0.24	1.03	Normal
		Physician	9	4	5.14	2.33	Extremely Low
		Nurse-IP	3	1	2.14	3.49	Extremely Low
		Nurse-OP	5	3	2.46	1.97	Extremely Low
Marikina City, Metro Manila	Little Angel's Care Lying in and Medical Center	Midwife	5	2	3.11	2.65	Extremely Low
Oriental Mindoro	St. Annes Medical Clinic and Birthing Home	Physician	1	1	0.2	1.25	Low
		Midwife	3	2	1.32	1.79	Very Low
Tacloban City, Leyte	Remedios Trinidad Romualdez Hospital	Med. Tech.	18	16	2.28	1.15	Low
		Physician	5	2	3.72	3.91	Extremely Low
		Nurse-IP/OP	11	8	2.76	1.33	Low

Most private facilities in the study had adequate or surplus staff with minimal shortages. The shortages were at Buda Community Hospital for medical technologist, physician and midwife. Another shortage was registered in Mary Johnston Hospital for medical technologist, but further inquiries indicated that they offered referral services from Manila City CHOs.

The health workers in the private facilities spent most of their time on health service activities with less than 20% of their time on support and additional activities. For example, further analysis indicated that the medical technologists in Jabez Medical Center spent 82% of their time on health service activities, 17% on support activities, and 1% on additional activities while the physician in Jabez spent 84% on health services, 14% on support activities, and 2% on additional activities.

Challenges and Constraints

Despite the fact that the methodology yielded reliable results, there were some limitations.
1) A major limitation was related to the difficulty in getting the annual facility health statistics from some facilities. Some of the information was aggregated while others were not, thus requiring manual counting from the patient files. For example, immunizations and FP services in almost all the facilities visited did not aggregate the totals either on a monthly or quarterly basis. This

required the researchers to physically count from the patient's registers one by one per month to get the annual statistics.

2) Some data collection tools at the level of the facility only capture limited information to inform workload. For example, the FP tool only tracks new acceptors and defaulters, and the antenatal care tool only captures those women who have made four visits. This means that service statistics for continuing users of modern FP methods or women who did not complete four antenatal care visits were not captured, and thus were not considered a part of the workload of a nurse or midwife.

3) The SDNs were a challenge due to some regions were at different stages of implementation and comprehension of the SDN structure.

4) Collecting statistics in the tertiary facilities for primary care services was difficult due to the nature of operations in the hospitals. Several cadres of health workers/skill mix and specialization beyond the four under study sometimes worked together, especially specialists. For example, FP services were part of the study, but it was not possible to collect the statistics in some hospitals because the service providers were not part of the focus of WISN.

5) There were marginal variations in the activity standards and workload components set by the expert working groups, especially the support and additional activities, which differed between LGUs.

6) Some facilities did not have documentation of staff availability, absences and some workload components, which were critical to the first step of the WISN methodology.

7) Some data collectors and compilers made errors and omissions during data collection and compilation.

Recommendations

Recommendations to Strengthen Primary Care

Following analysis of the WISN study results, the following recommendations were developed for strengthening primary care services.

Barangay Health Stations

To address the differences in service provision found among BHSs, services should be standardized and options for optimizing services between midwives and BHWs should be discussed. Table 8 provides recommended cadres for various health interventions in BHSs to attain UHC. The midwives' roles were not standardized, and they did not provide uniform services in all LGUs, making it difficult to define staffing norms. The health service package for a BHS therefore needs revision to define health interventions and specific health provider(s) to undertake them to address the issue of staff underutilization. A midwife and nurse assigned full time in a BHS will improve access and coverage for more clients and patients.

Globally, countries are increasingly turning to community health workers, or BHWs as they are known in the Philippines, as a way to extend health services to underserved areas. During the study interviews, the researchers found that BHWs contributed most of the workloads captured in BHSs and some RHUs. Supporting and recognizing the importance of BHWs, as part of a diverse and sustainable health workforce skills mix through relevant short training, supervision and provision of equipment, will go a long way to strengthen the health system. This is an opportunity for the Philippines to reconsider the engagement and remuneration terms of these workers.

Table 8. Suggested Health Provider Services at Barangay Health Stations

Services	Health Provider
Primary consultations for minor illnesses	Nurse
First aid and follow up consultations	Nurse
TB, non-communicable disease early detection, prevention, control and administration of medication	Nurse
Immunization	Midwife
Pre and post-natal care check-up services	Midwife
FP counselling and provision of oral contraceptives, condoms and injectables	Midwife
Preventive and promotive services on mental health, oral and environmental health	Nurse and BHW
Risk assessment and nutrition counselling	Midwife
Following up on defaulters through BHWs	Midwife, nurse and BHW
Maintenance of health records and commodities	Nurse
Visits to the households and early identification of clients/patients	BHW

Rural Health Units and City Health Offices

The study results show that high priority should be given to revising the standard services offered by nurses in RHUs/CHOs. It is difficult to state categorically what services were offered at this level of care because they differed across LGUs. Generally, the facilities at this level were not offering the full range or package of services as expected. The nurses were underutilized, and the annual workloads were too low for this level of care. They should ideally provide gatekeeping services at the primary care levels. Based on the WISN results and the planned UHC services for RHUs/CHOs, Table 9 shows the minimum staffing levels recommended for urban, rural and GIDAs. The results show that more midwives and nurses are needed in urban areas, since BHSs that act as an entry point to primary services do not exist, and they also have a role in supporting the existing BHWs.

RHUs/CHOs should have functioning laboratories with at least two laboratory technologists to manage cases referred from the BHSs after initial consultations and interventions have been tried and are beyond the capacity of the BHS. Laboratory services at this level of care will minimize overcrowding at Level 1 and 2 facilities, increase early detection of various conditions and thus provide appropriate care nearer to the patients.

The study results also showed the important role played by nurses in TB care as many clients were served by nurses for their routine medication. For example, in Tumana Health Center in Marikina City, the number of out-patients in 2019 were 11,132, and of this amount 64% were TB clients for general check-up and medication. Facilities in areas with high prevalence of TB cases as demonstrated by statistics should have at least a dedicated full-time nurse at their service to avoid having TB patients wait in long queues with non-TB patients.

Table 9. Recommended Minimum Staffing Levels for RHUs and CHOs

Cadre	Urban Areas	Rural Areas	GIDA
Medical Technologist	3	2	2
Physician	4	3	2
Midwife	4	2	2
Nurse	6	6	7

Apex Hospitals

The services provided in the apex facilities should be specialized services not offered at the lower levels to strengthen the referral system. Therefore, the apex facilities should not have very high workloads for

primary care services. Thus, the need for the country to reclassify hospitals based on services offered and prescribed service packages. The role of midwives in maternal care services at apex hospitals needs review under the UHC Law.

The results also show overlapping roles between the nurses, midwives and physicians at apex hospitals. Some tasks, like consultations and normal spontaneous delivery, were conducted by all three cadres, thus making it very difficult to apportion tasks. This situation was present in most of the facilities at this level as shown in Table 5 above. There is a need to clarify roles, revise scopes of work and develop policies on task sharing/shifting and separation of roles to improve accountability and improve services.

Scopes of Practice

There is a need to revise scopes of work for some of the cadres and create new cadres. For example, nurses spent time at the primary care facilities dispensing drugs, which is outside their scope of practice. A lower cadre to supplement the work of pharmacists at the primary care level should be encouraged. There were also overlapping roles that can only be clarified through such revisions, which would improve quality of work and accountability. The nurses also spent a significant amount of time on support activities like recording and reporting. Therefore, a cadre of administrative staff should be created at the facilities to support health service record keeping.

The lack of a policy guiding task shifting/sharing and adequate training and supervision has made task shifting irrational and raises concerns about the quality of care provided. The evidence from WISN can support the development of appropriate policy guidelines that ensure integration, teamwork and synergy for the various skill mixes.

Immediate, Short and Long-Term Recommendations

Short and long-term recommendations were developed based on the WISN results. Short-term recommendations are focused on administrative and operational actions that should be taken. The long-term recommendations may require significant policy, financial and wider stakeholder consultations and involvement before implementation.

The immediate and short-term recommendations are:
1) Redistribute staff from facilities with high numbers of staff compared to the needed workloads to understaffed facilities. The study found obvious imbalances across the facilities, cadres and even regions. There were facilities with shortages, some with surpluses and some had sufficient numbers within the same SDNs and ILHZs. The responsible managers should redistribute, reallocate and transfer those from facilities with low workloads to those with high workloads based on the higher differences and ratios. This information also helps managers prioritize which health workers to hire when funds are available. This requires consultations at various levels since health workers are recruited and deployed at different levels by DOH, LGUs and others.
2) Strengthen the capacity of health facility managers to improve resource management, supportive supervision and service efficiency at all levels of care. This will create a conducive environment for health workers to implement health programs.
3) LGUs and HHRDB should conduct annual needs assessments and then plan for training and any other development programs. Ad hoc training programs deny health workers enough contact time with patients, especially among physicians. Equal opportunities for skill development based on identified needs should be prioritized.
4) Develop new HRH norms and standards based on workloads for primary care facilities. For the secondary and tertiary levels of care, better results can be gathered for the whole hospital. The current results only covered selected service areas handling primary care services.

5) Expand the nursing scope to offer clinical services at BHSs and GIDAs where there are few physicians, like in Tawi-Tawi and Lanao Del Sur. This can be done by also reducing some of the support activities and additional activities to enable them to devote their time to health service activities.
6) Expand and strengthen the HRH coordination network to involve more relevant stakeholders as HRH issues are complex and require a multisectoral approach to solve them. Cascade this to the regional levels as they also play a key role in HRH recruitment, development and management.
7) Negotiate with development partners on feasible deployment mechanisms for extra staff that are sustainable within the capacities and structures of the government. Additional staff recruited and deployed by development partners should be aligned to government guidelines and structures for the specific cadres, considering remuneration and job descriptions within regulatory frameworks. This will make it easier for the government to absorb and retain these staff beyond the projects' life cycles. Where partners are involved in hiring health workers for LGUs and DOH, it is recommended that the engagement contracts follow DOH guidelines so the health workers can be optimally used in the system, thereby creating opportunities for absorption and retention beyond the projects' end dates. This was explicitly clear from the workload analysis of the medical technologists hired for TB services as their workload consisted solely of TB tests even in facilities where they were the only medical technologists at the facility.

The long-term recommendations are:
1) Develop referral guidelines to strengthen services at all levels involving both the public and private sector befitting the urban, rural and GIDA contexts. The study notes unnecessary patient referrals especially from the RHU level to Level 1 and 2 facilities. It also raises concerns about quality of services and "dumping" of tasks to others.
2) The need for revision of job descriptions to align with scopes of practice to accommodate new cadres, upgrade others and even create new ones to meet the health needs and respond to trends in the labor market. This can also involve the revision of curricula.
3) Consider accelerating production of nurses and midwives as most of them involved in the different steps of WISN indicated an aging staff.
4) Standardize the package of services offered to reduce variation among BHSs.
5) The study showed there were BHSs and RHUs with extremely low workloads within the same communities in the same LGUs. The LGUs could consider merging some and reclassifying some staff to align them with the needs of the populations. There were cases where the data collectors could not ascertain the correct levels of care and if they did, they differed with the versions provided by the facilities and the DOH documentation. For example, some facilities, like birthing and lying-in clinics, had no records of deliveries even though they were created primarily to provide this service. It is therefore an opportune time for DOH to revise/reclassify both public and private health facilities and revise health services packages for each level to respond to the planned care as defined in the UHC Law.
6) Information systems did not cover all facilities and were not linked to each other. DOH should develop standardized tools for adoption by the LGUs for collection of health service statistics at the service points. This will enable a comprehensive health information system that meets the needs of the health sector. Health information is one of the critical components of the health system that supports evidence-based planning and interventions.

Conclusion

Having the right health workers in the right place with the right skills mix is critical to achieving goals set for TB case detection and treatment, increasing modern contraceptive prevalence rate and reducing

teenage pregnancy, as well as achieving universal health coverage in the Philippines. This WISN study identified staffing maldistribution and differences in service packages between facilities; a need to update scopes of practice and job descriptions, explore task-sharing and strengthen referral guidelines; and interestingly, a significant amount of absences due to health workers attending trainings. These results highlight several opportunities to address inefficiencies and weaknesses in the health system at various levels by different stakeholders. Since the methodology provides for minimum and maximum numbers, a finding of high workload pressure does not necessarily mean that new staff need to be hired. Instead, it is necessary to scrutinize how each health worker cadre is utilized across the three workload groups (clinical workload, individual workload and category workload) used in WISN calculations to improve efficiency and improve direct patient services. While most of these results may seem obvious, DOH is now equipped with the data and evidence to strategically address these issues. Next steps will include USAID HRH2030/Philippines working with DOH to institutionalize the WISN methodology for continued use of the process and to act on the results at all levels of the health system. This will greatly support the current drive of the national and local governments to revitalize primary level health facilities and provide UHC for all Filipinos.

Annex A: Workload Components and Activity Standards for Medical Technologists

Workload Group 1: Health Service Activities

	Workload Component	Activity Standard
1	Complete blood count - automated	9 minutes/sample
2	Complete blood count - manual	15 minutes/sample
3	ABO and Rh blood typing	10 minutes/sample
4	Prothrombin/activated plasma thromboplastin	24 minutes/sample
5	Erythrocyte sedimentation rate	9 minutes/sample
6	Fasting blood sugar	33 minutes/sample
7	Oral glucose tolerance test (OGTT)	123 minutes/sample
8	HBA1c	9 minutes/sample
9	Albumin (serum/urine)	9 minutes/sample
10	Alkaline phosphatase	9 minutes/sample
11	Alanine aspartate aminotransferase (ALT)/serum glutamic pyruvate transaminase (SGPT)	9 minutes/sample
12	Amylase	9 minutes/sample
13	Aspartate transaminase/serum glutamic oxaloacetic transaminase (SGOT)	9 minutes/sample
14	Bilirubin (B1B2)	9 minutes/sample
15	Blood urea nitrogen	9 minutes/sample
16	Calcium (serum/urine)	9 minutes/sample
17	Chloride (serum/urine)	9 minutes/sample
18	Cholesterol	9 minutes/sample
19	Creatinine (serum/urine)	9 minutes/sample
20	Lactic dehydrogenase	9 minutes/sample
21	Lipid profile	9 minutes/sample
22	Lithium	9 minutes/sample
23	Magnesium	9 minutes/sample
24	Phosphorous	9 minutes/sample
25	Potassium (serum/urine)	9 minutes/sample
26	Sodium (serum/urine)	9 minutes/sample
27	Serum uric acid	9 minutes/sample
28	Total protein	9 minutes/sample
29	Triclycerides	9 minutes/sample
30	Alpha feto protein (AFP)	10 minutes/sample
31	Antistreptolysin O (ASO)	10 minutes/sample
32	C reactive protein (CRP)	9 minutes/sample
33	C3	9 minutes/sample
34	CA125	9 minutes/sample
35	Dengue rapid	10 minutes/sample
36	Helecobacter pylori (H Pylori)	9 minutes/sample
37	CKMB	10 minutes/sample
38	Hepatitis B antigen rapid	10 minutes/sample
39	Hepatitis A antigen rapid	10 minutes/sample
40	Hepatitis C antigen rapid	10 minutes/sample
41	Hepatitis B (AHBS) - automated	9 minutes/sample
42	Hepatitis BHBc - automated	9 minutes/sample
43	Hepatitis B IgG	9 minutes/sample
44	Hepatitis C	9 minutes/sample
45	HIV - automated	29 minutes/sample
46	HIV rapid	31 minutes/sample
47	CD4	9 minutes/sample
48	Prostate specific antigen (PSA)	9 minutes/sample
49	Rheumatoid factor	9 minutes/sample
50	Rapid syphilis	10 minutes/sample
51	Free triiodo thyronine (FT3)	9 minutes/sample
52	Free thyroxine (FT4)	9 minutes/sample
53	Tiiodothyronine (T3)	9 minutes/sample

	Workload Component	Activity Standard
54	Thyroxine (T4)	9 minutes/sample
55	Neutrophil gelatinase-associated lipocalin (NGAL)	9 minutes/sample
56	Pro calcitonin blood test (PCT)	9 minutes/sample
57	Polymerase chain reaction test for hepatitis	29 minutes/sample
58	Treponema pallidum hemagglutination test	33 minutes/sample
59	Thypidot	11 minutes/sample
60	Anti-nuclear antibody screening	11 minutes/sample
61	Leptospira	11 minutes/sample
62	Rubella IgM	11minutes/sample
63	Rubella IgG	11 minutes/sample
64	Taclorimus	9 minutes/sample
65	Ferritin	9 minutes/sample
65	Anti mullerian hormone	9 minutes/sample
66	Connecting peptide	9 minutes/sample
67	Cytomegalo virus IgG	9 minutes/sample
68	Cytomegalo virus IgM	9 minutes/sample
70	Dehydroepiandrosteron (DHEA-S)	9 minutes/sample
71	Digoxin	9 minutes/sample
72	Folic acid	9 minutes/sample
73	Growth hormone	9 minutes/sample
74	Homocystein	9 minutes/sample
75	Parathyroid hormone	9 minutes/sample
76	Total IgG	9 minutes/sample
77	Vitamin B12	9 minutes/sample
78	Beta HcG	12 minutes/sample
79	Vitamin D25 hydroxy	9 minutes/sample
80	Polymerase chain reaction test for TB/GeneXpert	29 minutes/sample
81	TB culture	18 minutes/sample
82	Cross matching - automated	9 minutes/sample
83	Cross matching - manual	27 minutes/sample
84	Antibody screening	27 minutes/sample
85	Coomb's test	9 minutes/sample
86	Du Variant	9 minutes/sample
87	Lineage panel cytoplasmic	183 minutes/sample
88	AML M3 panel	183 minutes/sample
89	AML Mo-Mt panel	183 minutes/sample
90	CLL mantle panel	183 minutes/sample
91	Microbiology water analysis	33 minutes/sample
92	Chemical water analysis	33 minutes/sample
93	Drug testing screening	16 minutes/sample
94	Biopsy	63 minutes/sample
95	Frozen section	9 minutes/sample
96	Fine needle aspiration biopsy	33 minutes/sample
97	Pap smear staining	33 minutes/sample
98	Cell block/cell cytology	63 minutes/sample
99	Rectal biopsy	4 minutes/sample
100	Estrogen receptor assay	63 minutes/sample
101	Progesteron receptor assay	63 minutes/sample
102	Human epidermal growth factor receptor	63 minutes/sample
103	Pan cytokeratin	63 minutes/sample
104	Vimentin	63 minutes/sample
105	Desmin	63 minutes/sample
106	Leucocyte common antigen	63 minutes/sample
107	Cluster of determinate (CD20) (classification of differentiation)	63 minutes/sample
108	Cluster of determinate (CD3)	63 minutes/sample
109	Cluster of determinate (CD30)	63 minutes/sample
110	Cluster of determinate (CD34)	63 minutes/sample

	Workload Component	Activity Standard
111	Cluster of determinate (CD45)	63 minutes/sample
112	Cytokeratin 7	63 minutes/sample
113	Cytokeratin 20	63 minutes/sample
114	Blood culture and sensitivity - automated	23 minutes/sample
115	Blood culture and sensitivity - manual	49 minutes/sample
116	Non-blood culture and sensitivity - automated	23 minutes/sample
117	Non-blood culture and sensitivity - manual	53 minutes/sample
118	Gram staining	13 minutes/sample
119	Acid fast bacilli	29 minutes/sample
120	Potassium hydroxide (KOH)	5 minutes/sample
121	India ink staining	5 minutes/sample
122	Newborn screening	9 minutes/sample
123	Glucose 6 phosphate dehydrogenase (G6PD)	9 minutes/sample
124	Urinalysis - automated	4 minutes/sample
125	Urinalysis - manual	8 minutes/sample
126	Fecalysis	23 minutes/sample
127	Pregnancy test/human chorionic gonadotropin (hCG)	4 minutes/sample
128	Malarial	15 minutes/sample
129	Filaria	41 minutes/sample
130	Feacal occult blood	4 minutes/sample
131	Semen analysis	20 minutes/sample
132	Body fluid analysis	20 minutes/sample
133	Donor screening	12 minutes/sample
134	Blood collection	23 minutes/sample
135	Blood screening	20 minutes/sample
136	Platelet concentrate	11 minutes/sample
137	Fresh frozen plasma	11 minutes/sample
138	Pack red blood cells	11 minutes/sample
139	Cryo precipitate	11 minutes/sample
140	Blood distribution	9 minutes/sample
141	Capillary blood glucose	5 minutes/sample
142	Hemoglobin (HB)	9 minutes/sample

Workload Group 2: Support Activities

Workload Component	Activity Standard
Internal quality control (IQC)	40 minutes/day
Calibration of equipment	30 minutes/day
Inventory management	1 hour/month
Advocacy lecture	2 hours/week
Mobile blood collection	6 hours/year
External quality control	1 hour/month
Departmental meetings	2 hours/month

Workload Group 3: Additional Activities

Workload Component	Activity Standard
Registration of health certificates	1 hour/day
Management meetings and review	12 hours/year
Supervision of staff	30 minutes/day
Orientation new staff	2 hours/year
Monthly reports	1 hour/month
Evaluation of new equipment	3 hours/year
Billing forms	2 hours/month
Quality manual review	2 hours/year
Research	2 hours/month

Annex B: Workload Components and Activity Standards for Physicians

Workload Group 1: Health Service Activities

Workload Component	Activity Standard
Consultations	18 minutes/patient
Admission	10 minutes/patient
Ward rounds	10 minutes/in-patient/shift
Minor surgical procedures	30 minutes/patient
Major surgical procedures	120 minutes/patient
Referrals	9 minutes/patient
Post-mortem care	20 minutes/patient
Discharge	8 minutes/patient
Family planning - bilateral tubal ligation (BTL)	30 minutes/patient
Family planning - vasectomy	30 minutes/patient

Workload Group 2: Support Activities

Workload Component	Activity Standard
Health education	2 hours/month
Departmental meetings	2 hours/month
Continuing professional development	8 days/year
Outreach program (medical mission)	8 hours/month
Endorsement meetings/rounds	45 minutes/day
Issuance of documents and medicolegal management	8 hours/month

Workload Group 3: Additional Activities

Workload Component	Activity Standard
Staff supervision	30 minutes/day
Trainee supervision	2 hours/week
Administrative functions	1 hour/week
Interpretation and action on surveillance	2 hours/week
Barangay visits	8 hours/week

Annex C: Workload Components and Activity Standards for Midwives

Workload Group 1: Health Service Activities

Workload Component	Activity Standard
Antenatal visits	35 minutes/client
Family planning - male condoms	10minutes/client
Family planning - injectables	15 minutes/client
Family planning - intrauterine device (IUD)	48 minutes/client
Family planning - natural	33 minutes/client
Family planning - implants	35 minutes/client
Family planning - pills	12 minutes/client
Normal spontaneous delivery	99 minutes/patient
Newborn care	35 minutes/patient
Labor management	168 minutes/patient
Post-natal care	35 minutes/patient
Childcare/well baby clinic	18 minutes/patient
Integrated management of childhood illness	22 minutes/patient
Visual inspection with acetic acid (VIA)	25 minutes/patient
Pap smear	20 minutes/patient
Rehabilitation of malnourished children	20 minutes/patient
Caesarean section (pre-operative care)	45 minutes/patient
Referral	19 minutes/patient
Immunization	15 minutes/patient

Workload Group 2: Support Activities

Workload Component	Activity Standard
Health education	30 minutes/day
Home visits	8 hours/month
Staff meetings	2 hours/month
Continuous professional development	2 hours/month
Medical missions	8 hours/month
Housekeeping (5S) practice	40 minutes/day
Mentoring of students	2 hours/week

Workload Group 3: Additional Activities

Activity	Activity Standard
Supervision of BHWs	1 hour/day
Management meetings	1 hour/month
Mass circumcision	8 hours/year
Report writing	2 hours/month

Annex D: Workload Components and Activity Standards for In-Patient Nurses

Workload Group 1: Health Service Activities

Workload Component	Activity Standard
Patient assessment	13 minutes/patient
Nursing diagnosis and management	34 minutes/patient
Admission of patients	24 minutes/patient
Minor surgery	37 minutes/patient
Major surgery	200 minutes/patient
Assisted normal spontaneous deliveries	44 minutes/patient
Wound care	29 minutes/patient
Burn care	49 minutes/patient
Blood transfusion	35 minutes/patient
In-patient nursing care	34 minutes/patient
Administration of medication	20 minutes/patient
Immunization	12 minutes/patient
External referral with escort	132 minutes/patient
Internal referral/external without escort	12 minutes/patient
Ward rounds	18 minutes/in-patient/shift
Discharge of patients	14 minutes/patient
Post-mortem care	20 minutes/patient

Workload Group 2: Support Activities

Workload Component	Activity Standard
Health teachings	30 minutes/day
Home visits	8 hours/week
Reporting patient census	30 minutes/day
Staff meetings	1 hour/month
Community outreach programs	8 hours/month
Endorsement meetings	45 minutes/day
Group counselling	2 hours/month
Continuing education program	2 hours/month

Workload Group 3: Additional Activities

Workload Component	Activity Standard
Surveillance	1 hour/month
Supervision	1 hour/day
Staff scheduling	1 hour/week
Mentoring of students	1 hour/week
Management meetings	2 hours/month
Supervisor's monthly reports	1 hour/month
Performance evaluation	2 hours/year
Nursing audit	2 hours/month
Committee work	3 hours/month

Annex E: Workload Components and Activity Standards for Out-Patient Nurses

Workload Group 1: Health Service Activities

Workload Component	Activity Standard
Patient assessment	13 minutes/patient
Nursing diagnosis and management	34 minutes/patient
Minor surgery	37 minutes/patient
Wound care	29 minutes/patient
Administration of medication	20 minutes/patient
Immunization	12 minutes/patient
External referral with escort	132 minutes/patient
Internal referral/external without escort	12 minutes/patient

Workload Group 2: Support Activities

Workload Component	Activity Standard
Health teachings	30 minutes/day
Home visits	8 hours/week
Reporting patient census	30 minutes/day
Staffing meetings	1 hour/month
Community outreach programs	8 hours/month
Group counselling	2 hours/month
Continuing education program	2 hours/month

Workload Group 3: Additional Activities

Activity	Activity Standard
Surveillance	1 hour/month
Supervision of staff	1 hour/day
Staff scheduling	1 hour/week
Mentoring of students	1 hour/week
Management meetings	2 hours/month
Supervisor's monthly reports	1 hour/month
Performance evaluation	2 hours/year
Nursing audit	2 hours/month
Committee work	3 hours/month

Annex F: List of Facilities

Province/City	Cluster/SDN	Facility Name	Facility Type
Bataan	Cluster 1	Bataan General Hospital	Apex Hospital
Bataan	Cluster 1	Bataan Peninsula Medical Center	Apex Hospital
Bataan	Cluster 1	Colo BHS	BHS
Bataan	Cluster 1	Danao BHS	BHS
Bataan	Cluster 1	Dinalupihan RHU 1	RHU/CHO
Bataan	Cluster 1	Dinalupihan RHU 2	RHU/CHO
Bataan	Cluster 1	Dinalupihan RHU 3	RHU/CHO
Bataan	Cluster 1	Hermosa - Bacong BHS	BHS
Bataan	Cluster 1	Hermosa RHU	RHU/CHO
Bataan	Cluster 1	Jose C. Payumo Memorial Hospital (Level 1)	City/District/Provincial Hospital
Bataan	Cluster 1	New San Jose BHS	BHS
Bataan	Cluster 1	Poblacion BHS (Dongan, Sto. Cristo, Mabuco)	BHS
Bataan	Cluster 1	Roosevelt BHS	BHS
Bataan	Cluster 1	Tubo-Tubo BHS	BHS
Bataan	Cluster 1	Tucop BHS	BHS
Batangas	Lian-Nasugbu (LiNa)	Apacible District Hospital	City/District/Provincial Hospital
Batangas	LiNa	Batangas Medical Center	Apex Hospital
Batangas	LiNa	Batangas Provincial Hospital	City/District/Provincial Hospital
Batangas	LiNa	Bilaran, Nasugbu	BHS
Batangas	LiNa	Jabez Medical Center	Private Facility
Batangas	LiNa	Lumbanga, Nasugbu	BHS
Batangas	LiNa	Malapad na Bato, Nasugbu	BHS
Batangas	LiNa	Maugat BHS, Nasugbu	BHS
Batangas	LiNa	Nasugbu RHU 1	RHU/CHO
Batangas	LiNa	Wawa BHS, Nasugbu	BHS
Bohol	Bohol - Sub-North SDN	Buenavista RHU	RHU/CHO
Bohol	Bohol - Sub-North SDN	Buyog BHS, Getafe	BHS
Bohol	Bohol - Sub-North SDN	Don Emilio del Valle Memorial Hospital	City/District/Provincial Hospital
Bohol	Bohol - Sub-North SDN	Getafe RHU	RHU/CHO
Bohol	Bohol - Sub-North SDN	Governor Celestino Gallares Memorial Hospital	Apex Hospital
Bohol	Bohol - Sub-North SDN	Nueva Estrella BHS, Bien Unido	BHS
Cebu City	Cebu City North	Apas BHC	BHS
Cebu City	Cebu City North	Banilad BHC	BHS
Cebu City	Cebu City North	Cebu City Medical Center	City/District/Provincial Hospital

Province/City	Cluster/SDN	Facility Name	Facility Type
Cebu City	Cebu City North	Cebu North General Hospital	Private Facility
Cebu City	Cebu City North	Guba Community Hospital	City/District/Provincial Hospital
Cebu City	Cebu City North	Kasambagan BHC	BHS
Cebu City	Cebu City North	Mabolo BHC	RHU/CHO
Cebu City	Cebu City North	Vicente Sotto Memorial Medical Center	Apex Hospital
City of Manila	City of Manila	Bo. Fugoso Health Center and Lying-in Clinic	RHU/CHO
City of Manila	City of Manila	Gat Andres Bonifacio Memorial Medical Center (Level 2)	Apex Hospital
City of Manila	City of Manila	J. Posadas Health Center	RHU/CHO
City of Manila	City of Manila	Mary Johnston Hospital	Private Facility
City of Manila	City of Manila	Tondo Foreshore Health Center and Lying-in Clinic	RHU/CHO
Davao City	Marilog District	Buda Community Care Health Center (infirmary)	Private Facility
Davao City	Marilog District	Isaac T. Robillo Memorial Hospital (Level 1)	Private Facility
Davao City	Marilog District	Marilog District RHU	RHU/CHO
Davao Oriental	Davao Oriental	Davao Oriental Provincial Hospital	City/District/Provincial Hospital
Davao Oriental	Davao Oriental	Davao Regional Medical Center	Apex Hospital
Davao Oriental	Davao Oriental	Mati Balay Paanakan - South	Lying-in
Davao Oriental	Davao Oriental	Mati CHO	RHU/CHO
Davao Oriental	Inter-Local Health System Cooperation 1	Mati-Badas BHS	BHS
Davao Oriental	Inter-Local Health System Cooperation 1	Mati-Poblacion 5 BHS	BHS
Davao Oriental	Inter-Local Health System Cooperation 1	Mati-Poblacion 6 BHS	BHS
Davao Oriental	Davao Oriental	Paanakan ng Tarragona	Lying-in
Davao Oriental	Davao Oriental	St. Camillus Hospital	Private Facility
Davao Oriental	Davao Oriental	Tarragona RHU	RHU/CHO
Davao Oriental	Inter-Local Health System Cooperation 1	Tarragona-Cabagayan BHS	BHS
Davao Oriental	Inter-Local Health System Cooperation 1	Tarragona-Central BHS	BHS
Eastern Samar	Guiuan ILHZ	Asgad BHS	BHS
Eastern Samar	Guiuan ILHZ	Baras BHS	BHS
Eastern Samar	Guiuan ILHZ	Batang BHS	BHS
Eastern Samar	Guiuan ILHZ	Bobon BHS	BHS
Eastern Samar	Guiuan ILHZ	Cancilede BHS	BHS
Eastern Samar	Guiuan ILHZ	Casuguran BHS	BHS
Eastern Samar	Guiuan ILHZ	Felipe Abrigo Memorial Hospital	City/District/Provincial Hospital
Eastern Samar	Guiuan ILHZ	Gamanga BHS	BHS

Province/City	Cluster/SDN	Facility Name	Facility Type
Eastern Samar	Guiuan ILHZ	General MacArthur RHU	RHU/CHO
Eastern Samar	Guiuan ILHZ	Guiuan RHU 1	RHU/CHO
Eastern Samar	Guiuan ILHZ	Guiuan RHU 2	RHU/CHO
Eastern Samar	Guiuan ILHZ	Hernani RHU	RHU/CHO
Eastern Samar	Guiuan ILHZ	Mercedes RHU	RHU/CHO
Eastern Samar	Guiuan ILHZ	Salcedo RHU	RHU/CHO
Eastern Samar	Guiuan ILHZ	San Jose Birthing Clinic, Mercedes	Lying-in
General Santos City	General Santos City	Calumpang	RHU/CHO
General Santos City	General Santos City	Labangal	RHU/CHO
General Santos City	General Santos City	Tambler	BHS
Lanao del Sur	Balindong District	Balindong District Hospital	City/District/Provincial Hospital
Lanao del Sur	Balindong District	Balindong RHU	RHU/CHO
Lanao del Sur	Balindong District	Linuk BHS, Madalum	BHS
Lanao del Sur	Balindong District	Tugaya RHU	RHU/CHO
Lanao del Sur	Balindong District	Uyaan Proper BHS, Madamba	BHS
Marikina City	Marikina City	Amang Rodriguez Memorial Medical Center	Apex Hospital
Marikina City	Marikina City	Balubad Health Center and Lying-in Clinic	RHU/CHO
Marikina City	Marikina City	Concepcion Dos Health Center	RHU/CHO
Marikina City	District 2	Little Angel's Care Lying-In and Medical Clinic	Private Facility
Marikina City	District 2	Marikina City Public Health Laboratory	Laboratory
Marikina City	District 2	Tumana Health Center	Apex Hospital
Oriental Mindoro	Southern ILHZ	Bagongbayan BHS	BHS
Oriental Mindoro	Southern ILHZ	Malitbog BHS	BHS
Oriental Mindoro	Southern ILHZ	Mansalay RHU	RHU/CHO
Oriental Mindoro	Southern ILHZ	Oriental Mindoro Southern District Hospital	City/District/Provincial Hospital
Oriental Mindoro	Southern ILHZ	St. Anne Hospital	Private Facility
Palawan	Busuanga-Coron-Culion-Linapacan (BCCL)	Baldat BHS	BHS
Palawan	BCCL	Borac BHS	BHS
Palawan	BCCL	Coron RHU	RHU/CHO
Palawan	BCCL	Lajala BHS	BHS
Palawan	BCCL	Panlaitan BHS, Busuanga	BHS
Sultan Kudarat	Bagumabayan, Isulan, Tacurong, Esperanza, and Senator Ninoy Aquino (BITES)	Bagumbayan RHU	RHU/CHO

Province/City	Cluster/SDN	Facility Name	Facility Type
Sultan Kudarat	BITES	Esperanza RHU	RHU/CHO
Sultan Kudarat	BITES	Isulan RHU	RHU/CHO
Sultan Kudarat	BITES	Kulaman Poblacion, Senator Ninoy Aquino BHS	BHS
Sultan Kudarat	BITES	New Isabela, Tacurong BHS	BHS
Sultan Kudarat	BITES	San Raphael, Tacurong BHS	BHS
Sultan Kudarat	BITES	Senator Ninoy Aquino Municipal Hospital	City/District/Provincial Hospital
Sultan Kudarat	BITES	Sultan Kudarat Provincial Hospital	City/District/Provincial Hospital
Sultan Kudarat	BITES	Tacurong CHO	RHU/CHO
Sultan Kudarat	BITES	Tinalon, Senator Ninoy Aquino BHS	BHS
Tacloban City	Abucay District	Abucay District Health Center	RHU/CHO
Tacloban City	Abucay District	Eastern Visayas Regional Medical Center	Apex Hospital
Tacloban City	Abucay District	Remedios Trinidad Romualdez Memorial Hospital	Private Facility
Tacloban City	Abucay District	Tacloban City Hospital	City/District/Provincial Hospital
Tacloban City	Abucay District	Youngfield	BHS
Tawi-Tawi	Tawi-Tawi	Datu Halun Sakilan Provincial Hospital	City/District/Provincial Hospital
Tawi-Tawi	Tawi-Tawi	Sapa-Sapa	RHU/CHO
Tawi-Tawi	Tawi-Tawi	Tandubas	RHU/CHO
Tawi-Tawi	Tawi-Tawi	Tuan Ligaddung Lipae Memorial Hospital	City/District/Provincial Hospital
Zambales	2nd District B ILHZ	Amungan, Iba BHS	BHS
Zambales	2nd District B ILHZ	Botolan Poonbato BHS	BHS
Zambales	2nd District B ILHZ	Botolan RHU 1	RHU/CHO
Zambales	2nd District B ILHZ	Botolan RHU 2	RHU/CHO
Zambales	2nd District B ILHZ	Botolan, Baquilan BHS	BHS
Zambales	2nd District B ILHZ	Bulawin, Palauig BHS	BHS
Zambales	2nd District B ILHZ	Iba RHU	RHU/CHO
Zambales	2nd District B ILHZ	James Gordon Memorial Hospital	Apex Hospital
Zambales	2nd District B ILHZ	Lipay, Iba BHS	BHS
Zambales	2nd District B ILHZ	Palauig RHU	RHU/CHO
Zambales	2nd District B ILHZ	President Ramon Magsaysay Memorial Hospital	City/District/Provincial Hospital
Zambales	2nd District B ILHZ	Sta. Barbara, Iba BHS	BHS
Zambales	2nd District B ILHZ	Sta. Cecilia Medical Center	Apex Hospital

Annex G: Standardized Tools for Analysis

Medical Technologists' Data Collection Tool

Facility Properties

Region	
Province	
City	
Municipality	
SDN	
Facility Ownership (Public/Private)	
Name of Facility	
Facility type	

Information on the Staff Category in the Facility

	LGU-Hired Staff		DOH-Hired Staff		Partner Contracted
	Permanent/Plantilla Staff	**Job Order Staff**	**Permanent/Plantilla Staff**	**Contractual Staff**	
Medical Technologist					

Number of Staff		
Service Area		
Absence Days Last Year for the Staff Category	**Sick Leave (on average)**	
	Annual Leave (15+15+3)	
	Training (on average)	
	No Notice Leave	
	Public Holidays	

Workload Group 1: Health Service Activities

	Workload Component	**Activity Standard**	**Annual Workload**
1	Complete blood count - automated	9 minutes/sample	
2	Complete blood count - manual	15 minutes/sample	
3	ABO and Rh blood typing	10 minutes/sample	
4	Prothrombin/activated plasma thromboplastin	24 minutes/sample	
5	Erythrocyte sedimentation rate	9 minutes/sample	
6	Fasting blood sugar	33 minutes/sample	
7	Oral glucose tolerance test (OGTT)	123 minutes/sample	
8	HBA1c	9 minutes/sample	
9	Albumin (serum/urine)	9 minutes/sample	
10	Alkaline phosphatase	9 minutes/sample	
11	Alanine aspartate aminotransferase (ALT)/serum glutamic pyruvate transaminase (SGPT)	9 minutes/sample	
12	Amylase	9 minutes/sample	
13	Aspartate transaminase/serum glutamic oxaloacetic transaminase (SGOT)	9 minutes/sample	
14	Bilirubin (B1B2)	9 minutes/sample	

	Workload Component	Activity Standard	Annual Workload
15	Blood urea nitrogen	9 minutes/sample	
16	Calcium (serum/urine)	9 minutes/sample	
17	Chloride (serum/urine)	9 minutes/sample	
18	Cholesterol	9 minutes/sample	
19	Creatinine (serum/urine)	9 minutes/sample	
20	Lactic dehydrogenase	9 minutes/sample	
21	Lipid profile	9 minutes/sample	
22	Lithium	9 minutes/sample	
23	Magnesium	9 minutes/sample	
24	Phosphorous	9 minutes/sample	
25	Potassium (serum/urine)	9 minutes/sample	
26	Sodium (serum/urine)	9 minutes/sample	
27	Serum uric acid	9 minutes/sample	
28	Total protein	9 minutes/sample	
29	Triclycerides	9 minutes/sample	
30	Alpha feto protein (AFP)	10 minutes/sample	
31	Antistreptolysin O (ASO)	10 minutes/sample	
32	C reactive protein (CRP)	9 minutes/sample	
33	C3	9 minutes/sample	
34	CA125	9 minutes/sample	
35	Dengue rapid	10 minutes/sample	
36	Helecobacter pylori (H Pylori)	9 minutes/sample	
37	CKMB	10 minutes/sample	
38	Hepatitis B antigen rapid	10 minutes/sample	
39	Hepatitis A antigen rapid	10 minutes/sample	
40	Hepatitis C antigen rapid	10 minutes/sample	
41	Hepatitis B (AHBS) - automated	9 minutes/sample	
42	Hepatitis BHBc - automated	9 minutes/sample	
43	Hepatitis B IgG	9 minutes/sample	
44	Hepatitis C	9 minutes/sample	
45	HIV - automated	29 minutes/sample	
46	HIV rapid	31 minutes/sample	
47	CD4	9 minutes/sample	
48	Prostate specific antigen (PSA)	9 minutes/sample	
49	Rheumatoid factor	9 minutes/sample	
50	Rapid syphilis	10 minutes/sample	
51	Free triiodo thyronine (FT3)	9 minutes/sample	
52	Free thyroxine (FT4)	9 minutes/sample	
53	Tiiodothyronine (T3)	9 minutes/sample	
54	Thyroxine (T4)	9 minutes/sample	
55	Neutrophil gelatinase-associated lipocalin (NGAL)	9 minutes/sample	
56	Pro calcitonin blood test (PCT)	9 minutes/sample	
57	Polymerase chain reaction test for hepatitis	29 minutes/sample	
58	Treponema pallidum hemagglutination test	33 minutes/sample	
59	Thypidot	11 minutes/sample	
60	Anti-nuclear antibody screening	11 minutes/sample	
61	Leptospira	11 minutes/sample	
62	Rubella IgM	11minutes/sample	
63	Rubella IgG	11 minutes/sample	
64	Taclorimus	9 minutes/sample	
65	Ferritin	9 minutes/sample	
65	Anti mullerian hormone	9 minutes/sample	
66	Connecting peptide	9 minutes/sample	
67	Cytomegalo virus IgG	9 minutes/sample	
68	Cytomegalo virus IgM	9 minutes/sample	
70	Dehydroepiandrosteron (DHEA-S)	9 minutes/sample	
71	Digoxin	9 minutes/sample	

	Workload Component	Activity Standard	Annual Workload
72	Folic acid	9 minutes/sample	
73	Growth hormone	9 minutes/sample	
74	Homocystein	9 minutes/sample	
75	Parathyroid hormone	9 minutes/sample	
76	Total IgG	9 minutes/sample	
77	Vitamin B12	9 minutes/sample	
78	Beta HcG	12 minutes/sample	
79	Vitamin D25 hydroxy	9 minutes/sample	
80	Polymerase chain reaction test for TB/GeneXpert	29 minutes/sample	
81	TB culture	18 minutes/sample	
82	Cross matching - automated	9 minutes/sample	
83	Cross matching - manual	27 minutes/sample	
84	Antibody screening	27 minutes/sample	
85	Coomb's test	9 minutes/sample	
86	Du Variant	9 minutes/sample	
87	Lineage panel cytoplasmic	183 minutes/sample	
88	AML M3 panel	183 minutes/sample	
89	AML Mo-Mt panel	183 minutes/sample	
90	CLL mantle panel	183 minutes/sample	
91	Microbiology water analysis	33 minutes/sample	
92	Chemical water analysis	33 minutes/sample	
93	Drug testing screening	16 minutes/sample	
94	Biopsy	63 minutes/sample	
95	Frozen section	9 minutes/sample	
96	Fine needle aspiration biopsy	33 minutes/sample	
97	Pap smear staining	33 minutes/sample	
98	Cell block/cell cytology	63 minutes/sample	
99	Rectal biopsy	4 minutes/sample	
100	Estrogen receptor assay	63 minutes/sample	
101	Progesteron receptor assay	63 minutes/sample	
102	Human epidermal growth factor receptor	63 minutes/sample	
103	Pan cytokeratin	63 minutes/sample	
104	Vimentin	63 minutes/sample	
105	Desmin	63 minutes/sample	
106	Leucocyte common antigen	63 minutes/sample	
107	Cluster of determinate (CD20) (classification of differentiation)	63 minutes/sample	
108	Cluster of determinate (CD3)	63 minutes/sample	
109	Cluster of determinate (CD30)	63 minutes/sample	
110	Cluster of determinate (CD34)	63 minutes/sample	
111	Cluster of determinate (CD45)	63 minutes/sample	
112	Cytokeratin 7	63 minutes/sample	
113	Cytokeratin 20	63 minutes/sample	
114	Blood culture and sensitivity - automated	23 minutes/sample	
115	Blood culture and sensitivity - manual	49 minutes/sample	
116	Non-blood culture and sensitivity - automated	23 minutes/sample	
117	Non-blood culture and sensitivity - manual	53 minutes/sample	
118	Gram staining	13 minutes/sample	
119	Acid fast bacilli	29 minutes/sample	
120	Potassium hydroxide (KOH)	5 minutes/sample	
121	India ink staining	5 minutes/sample	
122	Newborn screening	9 minutes/sample	
123	Glucose 6 phosphate dehydrogenase (G6PD)	9 minutes/sample	
124	Urinalysis - automated	4 minutes/sample	
125	Urinalysis - manual	8 minutes/sample	
126	Fecalysis	23 minutes/sample	
127	Pregnancy test/human chorionic gonadotropin (hCG)	4 minutes/sample	

	Workload Component	Activity Standard	Annual Workload
128	Malarial	15 minutes/sample	
129	Filaria	41 minutes/sample	
130	Feacal occult blood	4 minutes/sample	
131	Semen analysis	20 minutes/sample	
132	Body fluid analysis	20 minutes/sample	
133	Donor screening	12 minutes/sample	
134	Blood collection	23 minutes/sample	
135	Blood screening	20 minutes/sample	
136	Platelet concentrate	11 minutes/sample	
137	Fresh frozen plasma	11 minutes/sample	
138	Pack red blood cells	11 minutes/sample	
139	Cryo precipitate	11 minutes/sample	
140	Blood distribution	9 minutes/sample	
141	Capillary blood glucose	5 minutes/sample	
142	Hemoglobin (HB)	9 minutes/sample	

Workload Group 2: Support Activities

Workload Component	Allowance Factor	Confirm if the Activity was Done (Yes/No)	Remarks
Internal quality control (IQC)	40 minutes/day		
Calibration of equipment	30 minutes/day		
Inventory management	1 hour/month		
Advocacy lecture	2 hours/week		
Mobile blood collection	6 hours/year		
External quality control	1 hour/month		
Departmental meetings	2 hours/month		

Workload Group 3: Additional Activities

Activity	Allowance Factor	Number of staff	Remarks
Registration of health certificates	1 hour/day		
Management meetings and review	12 hours/year		
Supervision of staff	30 minutes/day		
Orientation new staff	2 hours/year		
Monthly reports	1 hour/month		
Evaluation of new equipment	3 hours/year		
Billing forms	2 hours/month		
Quality manual review	2 hours/year		
Research	2 hours/month		

Observations

What went well: _____

Challenges: _____

Comments: _____

_____

Name and Signature of Data Collection Coordinator: _____

Name and Signature of the Facility In-Charge: _____

Date: _____

Physicians' Data Collection Tool

Facility Properties

Region	
Province	
City	
Municipality	
SDN	
Facility Ownership (Public/Private)	
Name of Facility	
Facility type	

Information on the Staff Category in the Facility

	LGU-Hired Staff		DOH-Hired Staff		Partner Contracted
Physician	**Permanent/Plantilla Staff**	**Job Order Staff**	**Permanent/Plantilla Staff**	**Contractual Staff**	

Number of Staff		
Service Area		
Absence Days Last Year for the Staff Category	**Sick Leave (on average)**	
	Annual Leave (15+15+3)	
	Training (on average)	
	No Notice Leave	
	Public Holidays	

Workload Group 1: Health Service Activities

Workload Component	Activity Standard	Annual Workload
Consultations	25 minutes/patient	
Admission	10 minutes/patient	
Ward rounds	10 minutes/in-patient	
Minor surgical procedures	30 minutes/patient	
Major surgical procedures	120 minutes/patient	
Referrals	9 minutes/patient	
Post-mortem care	41 minutes/patient	
Discharge	8 minutes/patient	
Family planning - bilateral tubal ligation (BTL)	30 minutes/patient	
Family planning - vasectomy	30 minutes/patient	

Workload Group 2: Support Activities

Workload Component	Allowance Factor	Confirm if the Activity was Done (Yes/No)	Remarks
Health education	30 minutes/week		
Departmental meetings	2 hours/month		
Continuing professional development	8 days/year		
Outreach program (medical mission)	8 hours/month		
Endorsement meetings/rounds	I hour/day		
Issuance of documents	I hour/week		
Issuance of documents and medicolegal management	8 hours/month		

Workload Group 3: Additional Activities

Workload Component	Allowance Factor	Number of Staff	Confirm if Done (Yes/No)
Staff supervision	30 minutes/day		
Trainee supervision	8 hours/month		
Administrative functions	2 hours/week		
Interpretation and action on surveillance	4 hours/week		
Issuance of various documents	I hour/week		
Barangay visits	8 hours/week		

Observations

What went well: _____

_____

Challenges: _____

_____

Comments: _____

_____

Name and Signature of Data Collection Coordinator: _____

Name and Signature of the Facility In-Charge: _____

Date: _____

Midwives' Data Collection Tool

Facility Properties

Region	
Province	
City	
Municipality	
SDN	
Facility Ownership (Public/Private)	
Name of Facility	
Facility type	

Information on the Staff Category in the Facility

	LGU-Hired Staff		DOH-Hired Staff		Partner Contracted
	Permanent/Plantilla Staff	**Job Order Staff**	**Permanent/Plantilla Staff**	**Contractual Staff**	
Midwife					

Number of Staff		
Service Area		
Absence Days Last Year for the Staff Category	**Sick Leave (on average)**	
	Annual Leave (15+15+3)	
	Training (on average)	
	No Notice Leave	
	Public Holidays	

Workload Group 1: Health Service Activities

Workload Component	Activity Standard	Annual Workload
Antenatal visits	39 minutes/patient	
Family planning - male condoms	10 minutes/patient	
Family planning - injectables	23 minutes/patient	
Family planning - intrauterine device (IUD)	53 minutes/patient	
Family planning - natural	33 minutes/patient	
Family planning - implants	35 minutes/patient	
Family planning - pills	15 minutes/patient	
Normal spontaneous delivery	99 minutes/patient	
Newborn care	35 minutes/patient	
Labor management	168 minutes/patient	
Post-natal care	35 minutes/patient	
Childcare/well baby clinic	18 minutes/patient	
Integrated management of childhood illness	22 minutes/patient	
Visual inspection with acetic acid (VIA)	25 minutes/patient	
Pap smear	20 minutes/patient	
Rehabilitation of malnourished children	20 minutes/patient	
Caesarean section (pre-operative care)	45 minutes/patient	
Referral	19 minutes/patient	

Workload Component	Activity Standard	Annual Workload
Immunization	15 minutes/patient	

Workload Group 2: Support Activities

Workload Component	Allowance Factor	Confirm if the Activity was Done (Yes/No)	Remarks
Health education	30 minutes/day		
Home visits	8 hours/month		
Staff meetings	2 hours/month		
Continuous professional development	2 hours/month		
Medical missions	8 hours/month		
Housekeeping (5S) practice	40 minutes/day		
Mentoring of students	2 hours/week		

Workload Group 3: Additional Activities

Activity	Allowance Factor	Number of Staff	Confirm if Done (Yes/No)
Supervision of BHWs	1 hour/day		
Management meetings	1 hour/month		
Mass circumcision	8 hours/year		
Report writing	2 hours/month		

Observations

What went well: _____

_____

Challenges: _____

_____

Comments: _____

_____

Name and Signature of Data Collection Coordinator: _____

Name and Signature of the Facility In-Charge: _____

Date: _____

In-Patient Nurses' Data Collection Tool

Facility Properties

Region	
Province	
City	
Municipality	
SDN	
Facility Ownership (Public/Private)	
Name of Facility	
Facility type	

Information on the Staff Category in the Facility

	LGU-Hired Staff		DOH-Hired Staff		Partner Contracted
In-Patient Nurse	Permanent/Plantilla Staff	Job Order Staff	Permanent/Plantilla Staff	Contractual Staff	

Number of Staff		
Service Area		
Absence Days Last Year for the Staff Category	Sick Leave (on average)	
	Annual Leave (15+15+3)	
	Training (on average)	
	No Notice Leave	
	Public Holidays	

Workload Group 1: Health Service Activities

Workload Component	Activity Standard	Annual Workload
Patient assessment	13 minutes/patient	
Nursing diagnosis and management	34 minutes/patient	
Admission of patients	24 minutes/patient	
Minor surgery	37 minutes/patient	
Major surgery	207 minutes/patient	
Assisted normal spontaneous deliveries	99 minutes/patient	
Wound care	29 minutes/patient	
Burn care	49 minutes/patient	
Blood transfusion	49 minutes/patient	
In-patient nursing care	34 minutes/in-patient	
Administration of medication	20 minutes/patient	
Immunization	12 minutes/patient	
External referral with escort	132 minutes/patient	
Internal referral/external without escort	12 minutes/patient	
Ward rounds	18 minutes/in-patient/shift	
Discharge of patients	14 minutes/patient	
Post-mortem care	20 minutes/patient	

Workload Group 2: Support Activities

Workload Component	Allowance Factor	Confirm if the Activity was Done (Yes/No)	Remarks
Health teachings	30 minutes/day		
Home visits	8 hours/week		
Reporting patient census	30 minutes/day		
Staff meetings	1 hour/month		
Community outreach programs	8 hours/month		
Endorsement meetings	45 minutes/day		
Group counselling	30 minutes/week		
Continuing education program	2 hours/month		

Workload Group 3: Additional Activities

Workload Component	Allowance Factor	Number of Staff	Confirm if Done (Yes/No)
Surveillance	1 hour/month		
Supervision	1 hour/day		
Staff scheduling	1 hour/week		
Mentoring of students	1 hour/week		
Management meetings	2 hours/month		
Supervisor's monthly reports	1 hour/month		
Performance evaluation	2 hours/year		
Nursing audit	2 hours/month		
Committee work	8 hours/month		

Observations

What went well: _____

_____

Challenges: _____

_____

Comments: _____

_____

Name and Signature of Data Collection Coordinator: _____

Name and Signature of the Facility In-Charge: _____

Date: _____

Annex H: WAT Files per Province

See the attached zip file.