



Assessment of Healthcare Providers in Bangladesh 2021

(Data Collection Period: September - October 2019)



AUTHORS AND CONTRIBUTORS

STUDY TEAM

The report is prepared by:

- Md. Foyzul Bari Himel, Lead Analyst, Consiglieri Private Limited and Associates for Development Services Limited.
- Md. Abdul Mannan, Expert and Retired Joint Chief (Planning), Ministry of Health and Family Welfare.
- Khodadad Hossain Sarker, Statistical Consultant, Associates for Development Services Limited.
- Syed Mizanur Rahman, Data Management Expert, Consiglieri Private Limited.

In addition to the study team, following individuals contributed to the report –

- Sabina Alam, Joint Secretary (HR) and Program Manager (HRD), HSD, MOHFW.
- Md Saroar Hossain, Deputy Secretary (GNSP) and Deputy Program Manager (HRD), HSD, MOHFW.
- Professor Dr Md Humayun Kabir Talukder, Centre for Medical Education.
- Dr Plaban Sutradhar, Medical Officer, HR Branch, HSD, MOHFW.
- Md Alamgir Hossen, Deputy Director, Bangladesh Bureau of Statistics (BBS).
- Dr Pascal Zurn, Coordinator, WHO HQ.
- Dr Michelle Mcisaac, Labour Economist – WHO HQ.
- Dr Tomas Zapata, Regional Advisor – HRH, WHO SEARO.
- Dr Mathieu Boniol, Statistician, WHO HQ.
- Dr Sangay Wangmo, Team Leader – Health Systems, WHO Bangladesh.
- Md Nuruzzaman, National Professional Officer – HRH, WHO Bangladesh.
- Ai Tanimizu, Technical Officer – HRH (Nursing and Midwifery), WHO Bangladesh.
- Md Joynul Islam, Technical Assistant – HRH, WHO Bangladesh.
- Md Almamun, Health Workforce Information Systems Associate, WHO Bangladesh.
- Md Nurnabi Sheikh, Former HRH Associate, WHO Bangladesh.
- Dr Ahmed Mustafa, Government Retiree and Former Focal Point – Bangladesh National Health Accounts, Health Economics Unit, HSD (for reviewing the final draft report and providing comments and inputs).

Further acknowledgement goes to the following:

- Ministry of Health and Family Welfare (MOHFW), particularly Additional Secretary (Admin) and Line Director (HRD), HSD, MOHFW for facilitation and support to conduct the assessment.
- Members of the Technical Support Group (TSG) for advising, guidance and monitoring of the assessment (Annex Three).
- Bangladesh Bureau of Statistics (BBS) for providing the list of Primary Sampling Units (PSU)/Mouza and sampling guidelines.
- District and Upazila level authorities of DGHS, DGFP and DGNM for their cooperation and support
- All data enumerators and supervisors.

Suggested citation:

Assessment of Healthcare Providers in Bangladesh 2021. Dhaka: Human Resources Branch, Health Services Division, Ministry of Health and Family Welfare Bangladesh and World Health Organization (WHO) Bangladesh, 2021.

This report does not necessarily represent the decisions or policies of the Government of Bangladesh, Ministry of Health and Family Welfare and WHO Bangladesh.

Senior Secretary
Health Services Division
Ministry of Health & Family Welfare
Government of the People's
Republic of Bangladesh



FOREWARD



A capable and responsive health system is a prerequisite for any healthy nation. Health workforce is the key enabler as well as an indispensable component of the health system. In fact, performance of the health system heavily depends on a competent and motivated health workforce. We have experienced this in managing the pandemic COVID-19. Therefore, development and distribution of a competent and well motivated health workforce in adequate number for ensuring quality healthcare to all is a priority. This turns into a challenge when informal and unqualified health workers get involved with the healthcare delivery due to shortage of qualified health workers. Here we see the value of the report.

This is one of the few reports, which provides us data and information about the health workforce from both public and private sectors in Bangladesh. A profile of the private sector health service providers is developed and useful information about them is provided. It is encouraging to see that dependency on the private sector informal care providers is gradually decreasing in Bangladesh. We must strengthen our regulatory systems and undertake initiatives on capacity development of the existing workforce and at the same time, need to increase production of the qualified health workforce.

Bangladesh is committed to achieve the Sustainable Development Goals (SDGs) along with Universal Health Coverage (UHC) by 2030. The country is also committed to combat the COVID-19 pandemic through nationwide vaccination programs and public awareness campaigns against the disease. We need more and more qualified health workforce than ever to fight with the virus. We need to conduct this kind of assessment on periodic basis so that we can learn the country context explicitly. Similar study can be conducted in every five years (at least) so that we can track country progress on the densities of both formal and informal health workforce in Bangladesh.

I am pleased to know that Health Services Division is going to publish this report. I am sure the report will add value to the knowledgebase of health workforce in Bangladesh. I congratulate all who directly or indirectly involved in development and publication of the report. Now it is time to act on the recommendations. All actors and agencies need to come forward on this and work together. I would like to reiterate commitment of the Health Services Division in this regard.

Wish you all the best!

Lokman Hossain Miah

MESSAGE



Health workers are the backbone of any health system, and only an adequate number of qualified healthcare providers can ensure the health system's resilience and optimal performance.

The COVID-19 pandemic outlined the essential role health workers play in our societies, unearthing the global shortfall of about 18 million health workers, especially in low- and middle-income countries; the South-East Asian Region alone accounts for 6.9 million.

In 2020, Bangladesh had a density of 9.9 doctors, nurses and midwives per 10 000 people, a figure much lower than the global median of 48.6. In order to map out a more recent and reliable estimation of the density of national health workers, the Ministry of Health and Family Welfare (MOHFW) conducted this latest assessment. It is meant to be used as a baseline to promote evidence-based policies to address the shortfall of health workers in order to ultimately strengthen the national health system.

The study demonstrates that in Bangladesh, the health system is characterized by a pluralistic nature, which implies the engagement of both the public and private sectors in healthcare delivery. The report indicates that about 68% of the total healthcare providers are qualified and recognized. In contrast, unqualified and unrecognized healthcare providers, such as drug sellers, traditional healers, and kabiraj, among the others, account for the remaining 32% of the national healthcare workforce, a high percentage that constitutes a significant concern for policymakers and health regulators. This urges for undertaking appropriate measures in healthcare regulation, capacity development and production of qualified health workers so that access to a qualified health worker is ensured to all.

I must thank all the contributors to the report. I sincerely acknowledge the Foreign, Commonwealth and Development Office (FCDO) of the Government of the United Kingdom for its financial support and the Human Resources Branch at the HSD, MOHFW for implementing the activities.

Building a robust, resilient and sustainable health system in Bangladesh requires a joint effort from all the stakeholders. WHO is committed to working closely with the Government and people of Bangladesh and all the public and private partners to achieve this goal, thus contributing to Agenda 2030 and Universal Health Coverage.



Dr Bardan Jung Rana

**Additional Secretary (Admin)
& Line Director (HRD)**
Health Services Division
Ministry of Health & Family Welfare
Government of the People's
Republic of Bangladesh



ACKNOWLEDGEMENTS



After a long engagement and hard work of concerned stakeholders, the report "Assessment of Healthcare Providers in Bangladesh 2021" is ready for publish. This report is the result of a collaborative effort between the Health Services Division (HSD) of the Ministry of Health and Family Welfare (MOHFW) and the World Health Organization (WHO) Bangladesh.

Having reliable data is always important for successful planning and management towards effective health care delivery. COVID-19 has made us realize the importance of health workforce data to properly plan and execute our response. This report is a reflection of the stock, trends and distribution of the health workforce involved in the health sector of Bangladesh.

Many institutions and individuals were involved in conceiving this project and preparing the report. I acknowledge their contributions with deep appreciation.

Specifically, I would like to express my sincere gratitude to the Honorable Minister, MOHFW Mr. Zahid Maleque, MP for his inspiration and thoughtful guidance. I would also like to express my gratitude to Mr. Lokman Hossain Miah, Senior Secretary, HSD for his continuous support and advice to make this report publish.

I thank Dr. Bardan J. Rana, WHO Representative to Bangladesh and the entire WHO team who worked hard in supporting us to make this report final. I acknowledge with appreciation the financial contribution of FCDO extended to the project. I thank all Director Generals and head of agencies under MOHFW for extending their wholehearted support in bringing the report at this stage. Finally, I would like to express my deep sense of appreciation to all my officers, fieldworkers, and everyone related to this project for their dedication and hard work.

I hope this report will be beneficial for all users.

Sabina Yeasmin

ACRONYMS

ADSL	Associates for Development Services Limited
AFPI	Assistant Family Planning Inspector
AHI	Assistant Health Inspector
APR	Annual Program Review
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BHW	Bangladesh Health Watch
BMDC	Bangladesh Medical and Dental Council
BNMC	Bangladesh Nursing and Midwifery Council
BSCO	Bangladesh Standard Classification of Occupation
CHCP	Community Healthcare Provider
CI	Confidence Interval
CME	Centre for Medical Education
CPL	Consiglieri Private Limited
CV	Coefficient of Variation
DGDA	Directorate General of Drug Administration
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DGNM	Directorate General of Nursing and Midwifery
ESP	Essential Service Package
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitors
GIS	Geographic Information System
GOB	Government of Bangladesh
GPS	Global Positioning System
HA	Health Assistant
HI	Health Inspector
HLMA	Health Labour Market Analysis
HR	Human Resources
HRD	Human Resources Development
HRH	Human Resources for Health
HRM	Human Resources Management
HSD	Health Services Division
HTR	Hard to Reach
HWF	Health Workforce
ILO	International Labour Organization
IMPS	Integrated Multi-Purpose Sample
ISCO	International Standard Classification of Occupations
MOHFW	Ministry of Health and Family Welfare
ODK	Open Data Kit
PDA	Personal Digital Assistants
PHC	Primary Healthcare
PSU	Primary Sampling Unit
SACMO	Sub Assistant Community Medical Officer
SDG	Sustainable Development Goals
TBA	Traditional Birth Attendants
TOR	Terms of Reference
TSG	Technical Support Group
TT	Technical Taskforce
UHC	Universal Health Coverage
WHO	World Health Organization

TABLE OF CONTENTS

Table of Contents	xii
List of Tables	xiii
List of Figures	xiv
Executive Summary	xv
Chapter One: Introduction	1
1.1 Context and Rationale of the Study	1
1.2 Purpose and Objectives of the Study	2
1.3 Scope of Work of the Study	2
1.4 Methodology	3
1.5 Strengths of the Study	7
1.6 Limitations of the Study	7
Chapter Two: Major Findings of the Assessment: Number of Health Workers	8
2.1 Number of Health Workers of Different Categories as per Survey	8
2.2 Urban and rural distribution of Service Providers	10
2.3 Health Workers Identified per 10,000 Population	13
2.4 Extrapolation of Assessment Findings to National Level	17
2.5 Comparison of Findings with the MOHFW's HRH Datasheet, 2019	19
2.6 Comparison of findings with other literature	20
Chapter Three: Major Findings of the Assessment: profile of the Health Workers	21
3.1 Overview	21
3.2 Demographic Characteristics of the Healthcare Service Providers	22
3.3 Education and Training Information of the Health Workers	27
3.4 Service Information of the Health Workers	29
3.5 Decent Work Environment for Health Workers	39
3.6 Registration/Affiliation of the Health Workers	42
Chapter Four: Conclusion and Recommendations	43
REFERENCES	45
Annexes	47
Annex One: No Objection Certificate issued by BBS	47
Annex Two: Tool used in the Assessment for Data Collection	48
Annex Three: Composition of the Technical Support Group for supervising the Assessment	60
Annex Four: Classification of Healthcare Service Providers Identified as per ISCO-08 and BSCO-12	61
Annex Five: Skills/Occupation Title-Wise Number of Health Workers	64
Annex Six: Mapping of ISCO-08 Major Groups to Skill Levels	66
Annex Seven: List of PSU with Weight	67

LIST OF TABLES AND FIGURES

List of Tables

Table 1: Division-wise Distribution of PSUs in the Study along with weight	3
Table 2: Relationships of Categories in 2013 HRH Bangladesh Country Profile with ISCO-08 Categories	
Used in this Assessment	6
Table 3: Government and Non-government Health Workers in the Identified	8
Table 4: Minor Group-wise Classification of Identified Health Workers in the Assessment	9
Table 5: Occupation Classification of Healthcare Service Providers Identified in the Assessment	10
Table 6: Presence of Identified Health Workers in Urban and Rural PSUs	12
Table 7: Minor Group-wise Location of Health Service Providers Identified	12
Table 8: Occupation-wise Classification of Health Workers Identified in the Assessment	13
Table 9: Sub-major Group Wise Availability of Health Workers for 10,000 Population	14
Table 10: Density of Government and Non-government Health Workers (per 10,000 Population)	15
Table 11: Sub-major Group Wise Density of Government and Non-Government Health Workers	
(per 10,000 Population)	15
Table 12: Division-wise density of the health workers (per 10,000 population)	16
Table 13: Division-wise density of sub-major group of health workers (per 10,000 population)	16
Table 14: Division-wise extrapolation of Health Workers	18
Table 15: Division-wise Extrapolation of Sub-major Group of Health Workers	19
Table 16: Comparison of Health Workers Identified in the Assessment Vis-a-vis Number Presented in HRH	
Datasheet, 2019	20
Table 17: Segregation of the Health Workers Interviewed from Different Divisions by ISCO-08 sub major group	22
Table 18: Gender Segregation of the Minor Group Health Workers Interviewed	22
Table 19: Age of the Healthcare Service Providers	23
Table 20: Marital Status of the Health Workers	24
Table 21: Average Number of Dependent Children in Each Minor Group Category	25
Table 22: Residence of the Healthcare Service Providers	26
Table 23: Educational Qualifications of the Health Workers	27
Table 24: Number of Minor Group Healthcare Service Providers with at least One Relevant Training	28
Table 25: Number of Trainings for the Health Workers	29
Table 26: Average Number of Years of Engagement in Profession for Minor Group-wise Health Workers	29
Table 27: Number of Places in Which the Health Workers Work	30
Table 28: First Priority Workplace for the Healthcare Service Providers	31
Table 29: Average working hours for Health Workers in First Priority Workplace (Hours per Week)	32
Table 30: Contractual Relationship of the Healthcare Service Providers with their First Priority Workplace	32
Table 31: Percent of Health Workers Referring Patients	33
Table 32: Reasons for Referring Patients by the Health Workers	34
Table 33: Place for Referral from Different Health Workers	35
Table 34: Percentage of Healthcare Service Providers Taking Commissions for Referrals	36
Table 35: Trends of Patients to the Health Workers	37
Table 36: Satisfaction of the Health Workers	38
Table 37: Issues with Payment as per Contract	40
Table 38: Workplace Conditions	41
Table 39: Contractual Conditions	41
Table 40: Proportion of the Health Workers that could Show License or at least Mention License or Registration	
Number	42
Table 41: Reasons for those who mentioned having registration but could not show any registration or affiliation	
document or mention the number	42

List of Figures

Figure 1: Division-wise distribution of PSUs	4
Figure 2: Proportion of Recognized and Non-recognized HWF	8
Figure 3: Classification of Identified Health Workers as per Sub-Major Groups	9
Figure 4: Rural and Urban Segregation of Health Workers (Total Number of Identified Health Workers)	11
Figure 5: PSU-wise Rural and Urban Health Workers Identified (No. of Health Workers/PSU)	11
Figure 6: Availability of Healthcare Workers per 10,000 Population (Number Rounded Up)	14
Figure 7: Availability of Health Workers per 10,000 Population in Rural and Urban Areas as per the Assessment ..	14
Figure 8: National Scenario of Health Workers in Bangladesh (Extrapolated from Assessment Findings)	17
Figure 9: Sub-major Group-wise Extrapolation of Health Workers	18
Figure 10: Extrapolation of Minor Group of Health Workers	19
Figure 11: Distribution of Eligible Respondents of the Detailed Survey	21
Figure 12: Gender Segregation of the Sub-Major Group Healthcare Service Providers Interviewed	23
Figure 13: Age Distribution of the Health Workers	24
Figure 14: Marital Status of the Health Workers (Sub-Major Group Wise)	25
Figure 15: Average Number of Dependent Children of the Health Workers (Sub-Major Group Wise)	26
Figure 16: Average Number of Trainings for Minor Group-wise Health Workers	28
Figure 17: Number of Patients Referred by Different Categories of Health Workers (No. of Patients per Month)	34
Figure 18: Number of Patients Served per Day by the Health Workers	37
Figure 19: Average Income of the Health Workers (BDT/Month)	38
Figure 20: Percentage of Health Workers having Written Contract with their Employers (Only for Employed Health Workers)	39
Figure 21: Percentage of Health Workers Getting Overtime Payment for Working More than Contractual Hours (N = 885)	40

EXECUTIVE SUMMARY

Government of Bangladesh (GOB) is committed towards ensuring equitable access to healthcare for its citizens, regardless of demographic and geographic locations. Availability, retention and continuation of quality health workers is one of the impediments. GOB has plan to increase the production, upgrading and retention of the health workers. However, in doing so, there needs realistic information and projection of existing health workers in the country. While there are reliable sources to do so within the public system, unfortunately, there is no recent information on the private and informal sector health workers in the country. This particular assessment has been commissioned by World Health Organization (WHO) in partnership with Ministry of Health and Family Welfare (MOHFW) to map out the active health workers to make valid and reliable estimate of their density per 10,000 population and development of the profiles of private and informal health workers with the basic particulars.

The assessment was conducted following a quantitative method, facilitated by the Bangladesh Bureau of Statistics (BBS). Population census 2011 sampling frame by BBS was adopted in designing the sampling plan, which included 133 Primary Sampling Units (PSU), selected randomly and provided by BBS to the MOHFW. The sample size was derived considering 5% precision level and 90% response rate. A Technical Support Group (TSG) was formed the MOHFW, taking representation from Directorate General of Health Services (DGHS), Directorate General of Family Planning (DGFP), Directorate General of Nursing and Midwifery (DGNM), Centre for Medical Education (CME), Bangladesh Bureau of Statistics (BBS) and WHO Bangladesh to guide the study team. The consultants from the consortium, in discussion with the TSG, developed and finalized the data collection plan and tools. Enumerators were selected and trained using the tools. TSG members were directly involved in the training of the enumerators as well. Enumerators administered the tools using Personal Data Assistants (PDA) in the Open Data Kit (ODK) platform. The data collection was done during 16 September to 30 October 2019 by visiting each of the households within the selected PSUs. Upon completion of the data collection, occupations were grouped into International Standard Classification of Occupations version 2008 (ISCO-08) classifications and aligned with the Bangladesh Standard Classification of Occupations 2012 (BSCO-12), as recommended by the TSG on 26 November, 2019 for the purpose of synchronization of national statistics with global and national benchmarks and data was analyzed to produce descriptive statistics.

The study identified a total of 6,700 health workers from the 133 PSUs, out of which, 67.69% (4,535 health workers) could be termed as recognized health workers. About 1,177 (17.57%) of the identified health workers were from government sector, while 5,523 (82.43%) were from non-government sector. The TSG defined the remaining as non-qualified and unrecognized health workers. The proportion of health professionals, health associate professionals and personal care workers in the identified health workers was 23.52%, 35.24% and 6.78% respectively. Both population and recognized health workers in the selected PSUs were found to be high in urban areas in comparison to the rural areas. Using 95% Confidence Interval (CI) normal approximation method, a total of 49.01 health workers (including both unqualified and qualified) were found for per 10,000 population (2% coefficient of variance), out of which 15.21 were non-qualified and unrecognized, and therefore not included in the subsequent analysis. Density of recognized health workers (both government and non-government) was seen to be more in urban areas (73.72) than rural areas (11.48). Using the proportion, an extrapolation was done for the whole country, considering the BBS, 2015 population projection. From the extrapolation, the study identified 531,454 recognized health workers (both government and non-government), out of which, 184,691 health professionals, 276,684 health associate professionals and 53,204 personal care workers. Considering the government and non-government health worker ratio from the assessment and extrapolating that, we can estimate around 137,932 health workers engaged in government sector and 393,522 involved in non-government sector.

The profiling of the health workers was done by taking participation only from private and informal health workers. However, some of the government health workers providing private services in the selected PSUs were also included in the profiling but were termed as dual services providers. Around 42% of the doctors were found to be involved in dual practicing, while 3% were found to be involved in more than two practices. Dual practicing for other occupations were seen very minimum. Majority of the health workers providing private and informal healthcare are male (75%). Average age of the health professionals, health associate professionals, personal care workers and non-qualified health workers was found to be 41 years, 42 years, 43 years and 50 years respectively. Majority of the health workers are married 83%, with an average of 1.42 dependent children. Overall, only 28% percent of the health workers have diploma education (minimum three years education relevant to occupation) or above. Around 62% of the health workers have below diploma education (e.g. they only have a certificate courses, short courses, etc.) and 10% have no relevant education. Around 46% percent of health workers interviewed had at least one relevant training for their occupation. Around 47% of the medical doctors and 45% of the nursing and midwifery professionals are not residents of the PSUs in which they were found working. All the health workers initially mentioned that they had at least one kind of registration or affiliation. However, while asking if they can show the license or at least can mention the number, only 58% of the sample could show license/registration or at least could mention the number. On an average, the health workers interviewed are engaged for 15 years in service. About 90% of the health workers (included in the profiling) work in one place. Around 44 percent of the health workers were referring patients to other facilities or service providers. The assessment identified the health workers were serving around 28 patients per day. Majority of the health workers (62%) are satisfied with the services that they provide. Health workers were asked about their income in Bangladesh Taka (BDT) per month. Average income was found to be BDT 15,877 per month. Detailed profiles of the health workers have been shown in chapter three of this report.

A comparison of the findings from this assessment was made with other published literature. Considerable improvements in health workforce have been seen from the comparison. Considerable decreases have been seen in case of the Traditional Birth Attendants (TBA), from 33.2 per 10,000 population in 2007 to 2.94 in 2019. Density of traditional healers have also been reduced to 2.50 per 10,000 in 2019 from 64.2 per 10,000 population in 2007. Density of community health workers (CHW) have been increased from 9.6 per 10,000 population in 2007 to 10.15 per 10,000 population in 2019. There has been an increase of 12% of the qualified and recognized healthcare providers since 2007.

Although this assessment was a structured survey, the key members of the consultant team had qualitative observations, gained from transact walks, facility and household visits during the field works, and qualitative discussions with policy stakeholders and field level private and informal health workers. A few recommendations have been made from the qualitative observations of the consultants, including standardization of the classification of HRH in the country in line with the global as well local standard like ILO's ISCO-08 and BSCO-12, identification of possible health workers from the unrecognized categories that can be capacitated to provide limited services and facilitate their capacity development, regulations of the remaining unrecognized categories of health workers so that they cannot provide services which can be harmful for the service recipients, ensure BMDC and other professional bodies introducing systems through which the service recipients can identify recognized health workers, enabling regulations and supervisions to improve working conditions for private sector health workers, and regular assessment (similar to this particular one) of health workers from both government and non-government sector.

CHAPTER ONE: INTRODUCTION

1.1 Context and Rationale of the Study

Bangladesh is in the process of attaining a number of targets towards achieving universal health coverage (UHC), consistent with the UN Sustainable Development Goals (SDG) framework. Promoting and sustaining health and nutrition along with containing population growth are priorities in the human development strategy. Vision 2021 envisions a middle-income Bangladesh with drastic reduction in poverty and with living conditions that allow individuals to reach and maintain the highest attainable level of health. To improve service delivery and utilize the vast health network, a number of innovative approaches have been adopted by Ministry of Health and Family Welfare (MOHFW), including reviewing existing field-based service delivery, decentralization of the management of facilities including involvement of local government institutions and providing autonomy to hospitals by protecting the interests of the poor; updating of essential service package (ESP) at different tiers of health service delivery; diversification of service provision (inclusive of public-private partnership) particularly for hard-to-reach areas; development of a functional referral system involving all levels of facilities; and ensuring quality of care targeting UHC.

Shortage of qualified healthcare providers, along with their retention in rural and remote health facilities is a challenge for countries like Bangladesh in achieving major goals in equitable distribution and delivery of health services. Absolute shortage coupled with internal migration of existing qualified human resources for health (HRH) to urban areas poses an additional challenge against equitable access and use of health services, and eventually of universal health coverage. Geographical and skills imbalances are longstanding concerns in Bangladesh, with distribution skewed towards urban areas for many occupations, particularly for doctors. For example, 35% of doctors and 30% of the nurses are serving 15% of the total population living in four major cities of Bangladesh including Dhaka, Chattogram, Rajshahi, and Khulna, whereas less than 20% of health workers serve over 70% people living in rural areas¹. Staffing rural and remote areas where the majority of the poor live, continues to be an ongoing challenge despite the implementation of various retention initiatives over the years. Achieving a more equitable distribution of staff at the PHC levels, according to demographic composition, rural-urban mix and under-served areas or populations especially in hard to reach (HTR) and rural areas is critical to ensure services are accessible to all. Lessons learned from the implementation of previous strategies and the newly available evidence can be used to identify contextually appropriate and sustainable options (revised staffing patterns, use of mid-level workers, task shifting, devolution of HRM functions, performance-based contracting, etc.) for improving skills mix, managing performance and improving retention².

To ensure access to quality healthcare, there is a need for the right number of health workers with the right skills in the right place with the right job. In this regard, Bangladesh Health Workforce Strategy 2015 calls for determination of service level-wise health workforce needs and for the projection of demands up to 2030. To accomplish this, relevant health workforce data, segregated by geographical and service tier levels is needed. While public sector health workforce data is collected quite regularly and available in public domains, there is very little evidence or data for private sector health workforce, which by some accounts is larger than the public sector. The Bangladesh Health Labour Market Study was conducted in 2003 (Within the context of the World Bank's Analytical and Advisory Assistance (AAA) in Bangladesh³, The World Bank collaborated with the Government of Bangladesh and other development partners to conduct a Private Sector Assessment for Health, Nutrition, and Population (HNP) in Bangladesh.) which identified "alternative private practitioners outnumber all qualified allopathic physicians by about 12:1." A sample-based national

¹ Ahmed SM, Hossain MA, Chowdhury AMR, Bhuiya AU. The health workforce crisis in Bangladesh: shortage, inappropriate skill-mix and inequitable distribution. *Hum Resour Health*. 2011;9(1):3.

² Government of Bangladesh. 2019. Annual Programme Review (APR) of 4th HPNSP. Ministry of Health and Family Welfare.

³ David H. Peters and Richard D. Kayne. 2003. "Bangladesh Health Labour Market Study Final Report". Johns Hopkins Bloomberg School of Public Health and Government of Bangladesh Supported by The World Bank, CIDA, DfID (UK), The Netherlands Government and WHO.

level survey was conducted by Bangladesh Health Watch Secretariat⁴, during 2006-07. It indicated availability of around 146 health workers for 10,000 population, among which, 64.2 were found to be traditional healers, 33.2 traditional birth attendants, 12.5 village doctors and rural medical practitioners, 11.4 drug sellers, and 9.6 community health workers. Only 7.4 providers out of that 146 health workers were found to be qualified providers, whereas the study defined the remaining larger portion as informal care providers⁴. However, there was no such initiative repeated after that, leaving our knowledge of the entire health labour market in Bangladesh outdated. Up-to-date data and information of the health workforce especially from the private sector given that the private sector is large and widely dispersed is therefore not available. This is a bottleneck in formulation of evidence-based national level health workforce policy and plan given that a complete picture of the contemporaneous health workforce in Bangladesh unavailable. This also complicates understanding the specific role of the public and private sectors in health care delivery. To resolve these constraints, MOHFW and WHO commissioned this study on the private and informal health workers. This study aimed to map all the active healthcare providers (qualified, semi-qualified and unqualified from allopathy, traditional and alternative care backgrounds from government, as well as private and informal sector) to make a reliable estimate of the total density of all health workers per 10,000 population of Bangladesh and to develop profile of the private and informal health workers⁵. The consortium of consultancy firms – Associates for Development Services Limited (ADSL) and Consiglieri Private Limited (CPL) jointly undertook the responsibility of conducting this comprehensive health workforce assessment, with the supervision from the Technical Support Group (TSG) comprising of representation from MOHFW, Directorate General of Health Services (DGHS), Directorate General of Family Planning (DGFP), Directorate General of Nursing and Midwifery (DGNM), Bangladesh Bureau of Statistics (BBS), Centre for Medical Education (CME) and World Health Organization (WHO).

1.2 Purpose and Objectives of the Study

The main purpose of this assignment was to map out the active health workers to make valid and reliable estimate of the density of all health workers per 10,000 population in Bangladesh and development of their profiles with the basic particulars.

This assessment had the following objectives:

- To identify the different health workers (formal and informal as well as public and private) and health care organizations or health associated organizations active in the study area covering both public and private sectors;
- To use the nationally representative sample to estimate the density (per 10,000 population) of different types of health workers at national level;
- To explore the education, training, and professional experiences of the health workers' working in non-government sector, and the range of services they provide.

While estimating of density of health workers, the study took into account of all regardless of working in public, private or informal sector, although all estimates of education, training, professional experiences, services provided, etc. relate to only those working in non-government sector.

1.3 Scope of Work of the Study

Terms of Reference (TOR) of the assessment specified the following scopes for the study:

- i. Finalize the methodology of the assessment including determination of a statistically valid and nationally representative sample of the study areas and a clear-cut description of the data collection strategy;
- ii. Describe the preferred approach to be adopted;
- iii. Develop and finalize the data collection tools and forms;

⁴ Bangladesh Health Watch. "The State of Health in Bangladesh 2007. Health Workforce in Bangladesh Who Constitutes the Healthcare Systems?". James P. Grant School of Public Health, Centre for Health Systems Studies. BRAC University. 2008.

⁵ Resolution of the Technical Support Group (TSG) Meeting "Health Labour Market Analysis in Bangladesh" on 11 July 2019.

- iv. Maintain close association with the government entities like Ministry of Health and Family Welfare (MOHFW) and other relevant ministries and directorates;
- v. Identify and list the key sources of data in the selected study areas covering both rural and urban with contact details;
- vi. Identify and classify the healthcare providers under three broad categories i.e. allopathic providers (qualified, semi-qualified and unqualified), alternative medical care provider (qualified and unqualified) and traditional birth attendant (trained and untrained) in the study area;
- vii. Build a database, both paper based and computer-based, covering the basic information of the health care providers such as male-female, educational qualification (in country and outside country), formal training (in country and outside country), lengths of professional experiences, public sector practice, private practice or both, nature or type of service is provided, specialty or sub-specialty, age, registration/license number, and other particulars as necessary;
- viii. Prepare maps to show the geographical presence of the main data sources/points, healthcare providers and health care organizations both public and private by using appropriate GIS or relevant tools/systems;
- ix. Ensure data quality and reliability through monitoring and quality check initiatives at all level of data collection and compilation;
- x. Calculate the density of the different kind of health care providers per 10,000 population;
- xi. Establish a Technical Taskforce (TT) for this activity with a specific “Terms of Reference” which will include - review of data collection tools and determination of assessment areas and roadmaps of data collection etc. Membership of the TT should include experts from both public and private sectors organizations. This should include membership of the HR Branch, Health Service Division, MOHFW and WHO Bangladesh;
- xii. Organize regular TT meetings to discuss progress and potential solutions of the project;
- xiii. Organize group discussion, key informant interview and consultative meeting as and when needed.

1.4 Methodology

1.4.1 Overall Framework

Methodology of the assessment was proposed by the consortium in the inception report and agreed upon by the TSG through a series of meetings. The study used of the sampling frame, provided by the Bangladesh Bureau of Statistics (BBS). As per this design, the unit of sampling is the Mauza considered as the Primary Sampling Unit or PSU. A list of 133 PSUs, provided by BBS, were taken to represent the country context of Bangladesh, considering 5% precision level and 90% response rate. From each PSU, the total number of private sector (for profit and not for profit) and informal health workers along with public health workers were ascertained. The distribution of PSUs taken from different divisions of Bangladesh is shown in table 1, as well as in figure one. About 56 percent of the total PSUs in the study were rural and 44 percent were urban, which reflects the present urbanization situation in the country, as per BBS.

Table 1: Division-wise Distribution of PSUs in the Study along with weight⁶

Division	Total No. of PSUs Taken	Weight	Population in PSU	Number of Rural PSUs	Weight	Number of Urban PSUs	Weight
Dhaka	36	47169.9870	859,569	10	17800.1342	26	29369.8528
Mymensingh	10	11446.7589	96,687	8	6767.3851	2	4679.3738
Chattogram	20	37225.8696	152,467	10	25024.2188	10	12201.6508
Khulna	14	25699.8692	78,299	9	16216.2794	5	9483.5898
Rajshahi	19	58552.9035	50,027	15	46409.6149	4	12143.2886
Rangpur	17	36833.4919	63,675	9	21370.1369	8	15463.3550
Barishal	9	18079.3705	41,078	8	17434.4789	1	644.8916
Sylhet	8	29674.9941	25,393	5	21430.5256	3	8244.4685
Total	133	264683.2447	1,367,195	74	172452.7738	59	92230.4709

⁶ PSU list, population size and distribution were provided by BBS.

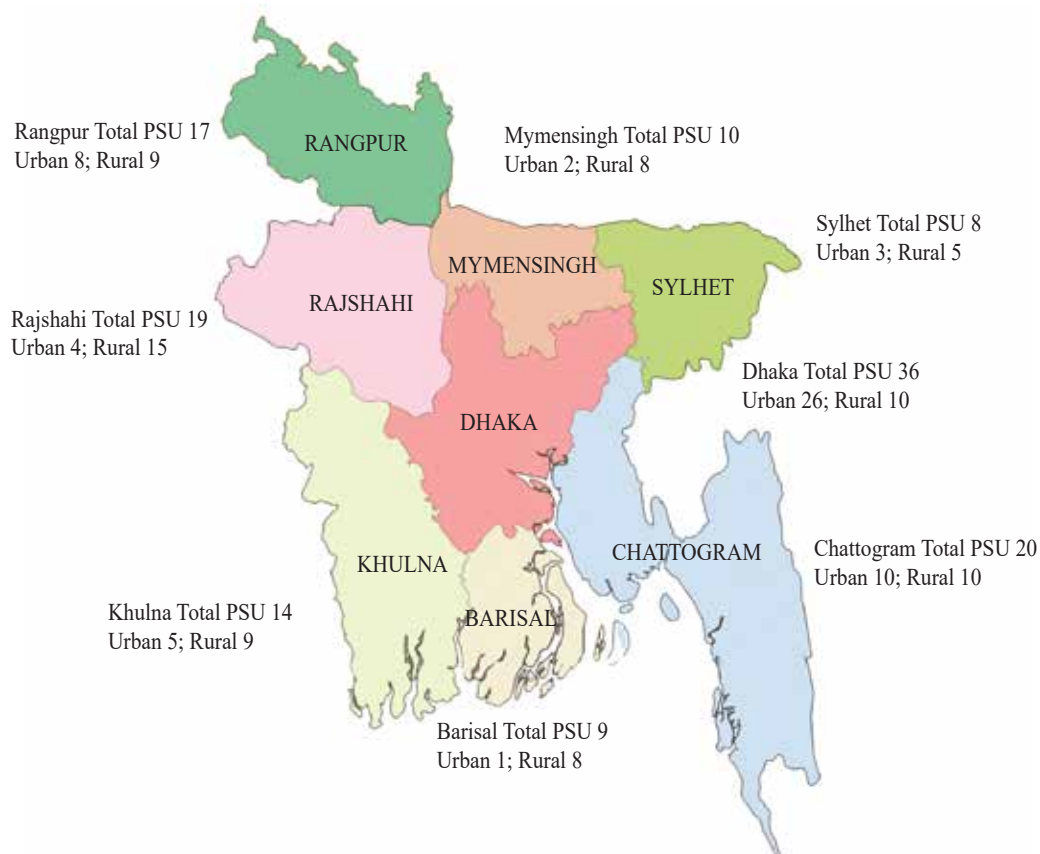


Figure 1: Division-wise distribution of PSUs

1.4.2 Tool Development and finalization

A semi-structured questionnaire was used to collect information from the respondents, i.e. health workers. The consortium submitted a draft tool along with the inception report on 19 July 2019. There was feedback from WHO Country Office, SEAR Office and Headquarter. The consortium addressed those comments and suggestions. At the same time, there was a TSG (equivalent to the Technical Taskforce or TT in this study, headed by the Joint Secretary, HR Branch, MOHFW. Composition of the TSG is shown in the Annex 3.) meeting at HR Branch, MOHFW on 25 July 2019. In the meeting, the TSG reviewed the tool and provided their feedback, based on which another round of update was made. After this round of review, the tool was translated into Bengali and transferred into the Open Data Kit (ODK) platform. Afterwards, BBS, being a member of the TSG, called another meeting on 31 July 2019 in which there were another round of review and feedback on the tool. With this updated version of the tool, mock testing of the tool was done during 1 to 4 September 2019, based on which, there were several modifications. After the enumerators' training, the enumerators did another round of field testing of the tool on 9 and 10 September 2019. In the meantime, WHO provided another round of feedback on 10 September 2019. The tool was finalized incorporating all of these on 14 September 2019.

1.4.3 Training of Enumerators

Enumerators training was done in two phases. The first round was completed on 8 September 2019. This was focused primarily on the theoretical aspects of the study and the tool. Enumerators were gone through the paper-based tool as well as the ODK version of it. There were mock interviews as well during this phase. Afterwards, as mentioned before, enumerators conducted field testing in 9 and 10 September. On 12 September, they came back to the office for the feedback session. They shared their experience, provided their opinion on tools and expressed issues that they face. Based on their feedback, the tool was further modified. A field guideline was prepared for their aid in the field. This was developed in Bangla and is solely for the enumerators' use. There were representations from WHO Country Office, MOHFW and BBS in the training sessions, along with the senior consultants of the consortium.

1.4.4 Administration of Data Collection

The questionnaire was administered using PDA (Personal Digital Assistants – mobile or tab) and ODK platform. In this regard, ODK platform KOBACOLLECT assistant was used which is a secure and user-friendly software and gained worldwide recognition. Data Analyst developed XLS Form following the developed questionnaire for the survey and set it up in tablet computers; trained the data collectors on PDA usage for data collection; supervised data collection on tablet devices; send collected data in to the server; and screen and managed the online data. The data collection was carried out from 16 September 2019 to 31 October 2019.

Once deployed in the PSUs, the enumerators conducted a transect walk within and around the PSU including household visits and identified the health workers. Then they had discussions with the local knowledgeable people (Union Parishad Chairmen, members, counselors, schoolteachers, imams and others) to identify if there were any other health workers that were missed during the transect walk. While they had discussions with the health workers, they conducted a snowballing exercise to further check if any health workers were missing.

The enumerators reached each of the health workers identified, took their designations, place of employment (in case of those employed), type of engagement (government vis-à-vis non-government) and GIS location. This information has been put in the “PSU Database”. In case the health worker was not found in the location on that day, the enumerators returned on the next day. If s/he was not found in the next day, then the enumerators collected the telephone number of the health worker and communicated over telephone. The detailed profiling was done for the private and informal health workers. Government workers doing private practices after office hour in the selected PSUs were also taken for profiling. Detailed profile information of the health workers has been put in the “Survey Database”. Point to be noted that, only those willing to provide detailed information were included in the Survey database. Hence, the number of respondents included in the survey database is less than that included in PSU database.

1.4.5 Classifications of Healthcare Providers

From the field data, there were more than 70 categories of health workers identified. For ease of analysis and to synchronize the findings with international standards, a TSG meeting was called on 26 November 2019. In this meeting, the TSG members reclassified the skills identified in the survey in terms of sub-major groups, minor groups and occupations as per International Standard Classification of Occupations version 08 (ISCO-08) classifications. The classification is shown in the Annex 4. For classification, ISCO-08 framework has been used so that the findings of the assessment can easily be compared with other countries and subsequent decisions can be taken. Apart from those specified in Table 2, other health workers providing health services as per the assessment were defined as non-qualified and unrecognized⁷.

HRM unit of MOHFW used a classification in 2013 based on ISCO-2008 when it developed the Country Profile of HRH for Bangladesh, with support from WHO⁸. The categories of health workers in that classification are also included in the present categories of ISCO-08 in this assessment. Table 2 shows how the categories of 2013 country profile is relevant with the ISCO-08 classifications used in this assessment.

⁷ Initially, the study team defined these health workers (i.e. those having no relevant education and training and not included in any classifications of ISCO) as unqualified. However, in the TSG meeting of 26 November 2019, government representatives opined that they can also be called Non-qualified. They mentioned calling them unrecognized as well, since these health workers do not have the recognition of government. The participants, at the end, agreed to term these health workers as non-qualified and unrecognized – two synonymous words to be used simultaneously.

⁸ Government of Bangladesh, 2013. “Human Resources for Health: Country Profile Bangladesh”. Human Resource Management Unit, Ministry of Health and Family Welfare and World Health Organization, Dhaka, Bangladesh.

Table 2: Relationships of Categories in 2013 HRH Bangladesh Country Profile with ISCO-08 Categories Used in this Assessment

Subcategories of Health Workers in 2013 HRH Bangladesh Country Profile	ISCO-08 Sub-Major Groups: Professional categories	ISCO-08 Minor Groups in which these have been included
General Medical Practitioners	Health professionals (Code 22)	Medical Doctors (Code 221)
Medical Assistants	Health associate professionals (Code 32)	Other health associate professionals (Code 325)
Dentists	Health professionals (Code 22)	Other health professionals (Code 226)
Dental Technicians	Health associate professionals (Code 32)	Other health associate professionals (Code 325)
Pharmacist (Bachelor)	Health professionals (Code 22)	Other health professionals (Code 226)
Pharmacist (Diploma)	Health professionals (Code 22)	Other health professionals (Code 226)
Pharmacy Technician/Assistant	Health associate professionals (Code 32)	Pharmaceutical technicians and assistants (Code 3213)
Nurse-Midwife Professionals (Diploma)	Health professionals (Code 22)	Nursing and midwifery professionals (Code 222)
Graduate Nurse (B. Sc. and B. Sc. PH)	Health professionals (Code 22)	Nursing and midwifery professionals (Code 222)
Post Basic 6 Month Training Midwife	Nursing and midwifery associate professionals (Code 322)	Midwifery associate professionals (Code 3222)
Medical Technologist (Laboratory)	Health associate professionals (Code 32)	Medical and pharmaceutical technicians (Code 321)
Medical Technologist (Radiography)	Health associate professionals (Code 32)	Medical and pharmaceutical technicians (Code 321)
Medical Technologist (Sanitary Ins.)	Health associate professionals (Code 32)	Other health associate professionals (Code 325)
Medical Technologist (Physiotherapy)	Health associate professionals (Code 32)	Other health associate professionals (Code 325)
Medical Technologist (Radiotherapy)	Health associate professionals (Code 32)	Medical and pharmaceutical technicians (Code 321)
Medical Technologist (EPI)	Health associate professionals (Code 32)	Medical and pharmaceutical technicians (Code 321)
Community Health Worker	Health associate professionals (Code 32)	Other health associate professionals (Code 325)
Ayurvedic Graduate Practitioner	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)
Ayurvedic Diploma Practitioner	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)
Ayurvedic Certificate Practitioners	Health associate professionals (Code 32)	Traditional and complementary medicine associate professionals (Code 323)
Unani Graduate Practitioners	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)
Unani Diploma Practitioners	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)
Unani Certificate Practitioners	Health associate professionals (Code 32)	Traditional and complementary medicine associate professionals (Code 323)
Homeopathy Graduate Practitioners	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)
Homeopathy Diploma Practitioners	Health professionals (Code 22)	Traditional and complementary medicine professionals (Code 223)

1.5 Strengths of the Study

- Methodology design was assisted by BBS, the highest authority of statistical data provision in the country
- Nationally representative sample size was used;
- Rigorous methods to identify health workers in individual PSUs were used;
- Each identified health worker was assigned with a Global Positioning System (GPS) coordinate and unique identification number – hence there is very little chances of repeated information of the same health workers or double counting;
- Multilayer of monitoring was used from the consortium members, including spot checking and back checking. Field monitoring was also done by WHO and MOHFW;
- A technical taskforce headed by a Joint Secretary from the Ministry of Health and Family Welfare (MOHFW) provided guidance throughout the assessment.

1.6 Limitations of the Study

- The study primarily focused on collection of information from private and informal sector health workers. Although the government health workers were included in the mapping, their profile information (e.g. age, gender, years of experience, educational backgrounds, etc.) were not collected while they were providing services from government facilities. The detailed survey carried out to get profile information of health workers only in their private/own practice setup. Although some government health workers were found providing services from private/individual facilities after office hours, however, they were considered as dual service providers. Hence, the information provided in chapter three, i.e. profile of the health workers, in this report cannot be generalized over the government health workers;
- For identification of health workers, the field team spent, on an average, 5 days in each PSU. Health workers being present during that period were only included in the study. In case the health worker was not physically present, the field team communicated over telephone, if any contact information was found from community people or other service providers. So, if there was any health worker not being present during the PSU visit period and not having contact information available to his/her neighbors, community people or other service providers, was not included in the assessment;
- As mentioned before, the data collection period of the assessment is 16 September to 30 October 2019. Information on health workers initiating service provision after 30 October 2019 are not reflected in the assessment.

CHAPTER TWO: MAJOR FINDINGS OF THE ASSESSMENT: NUMBER OF HEALTH WORKERS

2.1 Number of Health Workers of Different Categories as per Survey

2.1.1 Classifications of the Health Workers Identified

The survey of the 133 PSUs from all around the country identified a total of 6,700 health workers providing services. Among them, 1,177 were found to be working in government sector, while the remaining 5,523 were found to be working in non-government sector, shown in table 3.

Table 3: Government and Non-government Health Workers in the Identified

Type of Health Workers	Number	Percentage
Government Health Workers	1,177	18%
Non-government Health Workers	5,523	82%
Total	6,700	100%

In order to identify the recognized and qualified healthcare providers, ILO's International Standard Classification of Occupations-2008 (ISCO-08)⁹ and Bangladesh Standard Classification of Occupations-2012 (BSCO-12)¹⁰ were referred. Out of 6,700 identified health workers, 4,535 were categorized as qualified and recognized providers and found in the list of occupations of the ISCO-08 and BSCO-12. A small portion of the health workers were found in the list of occupations of the ISCO-08 and BSCO-2012 but they did not have any formal education and training, however, the TSG, in its meeting on 26 November 2019, listed them in the recognized category but not qualified. Hence, these health workers were classified as recognized and unqualified health workers. The rest of the identified health workers were defined as unqualified and non-recognized in this assessment. This means, around 68% (rounding up 67.69%) of the health workers identified in the survey are recognized and qualified healthcare service providers (figure 2).

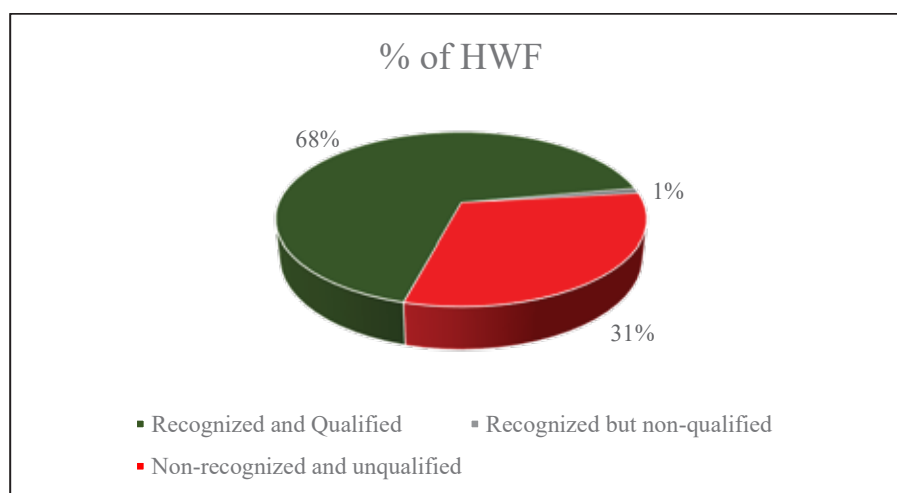


Figure 2: Proportion of Recognized and Non-recognized HWF

2.1.2 Sub-Major Group-wise Number of Health Workers Identified

As mentioned in the methodology, the health workers were classified into nine sub-major groups out of which, seven are as per ISCO-08 classification¹¹ – Health Professionals (Code 22), Health Associate Professionals (Code 32), Legal, social and cultural professionals (Code 26), Production and specialized service managers (Code 13), legal, social, cultural and associate professionals (Code 34), sales workers (Code 52) and personal care workers (Code 53). The non-qualified and unrecognized do not have the required

⁹ International Labour Organization. International Standard Classification of Occupations Structure, group definitions and correspondence tables. ISCO-08. Vol 1. 2012. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf (Accessed on 12 June 2020).

¹⁰ Government of Bangladesh. Bangladesh Standard Classification of Occupations-2012. Bangladesh Bureau of Statistics (BBS).

¹¹ Definition of Major Group, Sub-major group, Minor Group and Unit Groups are provided in the Annex.

ISCO or subsequent BSCO codes. Numbers of identified HWF among these sub-major groups out of the 6,700 identified in the assessment are shown in figure 3 below.

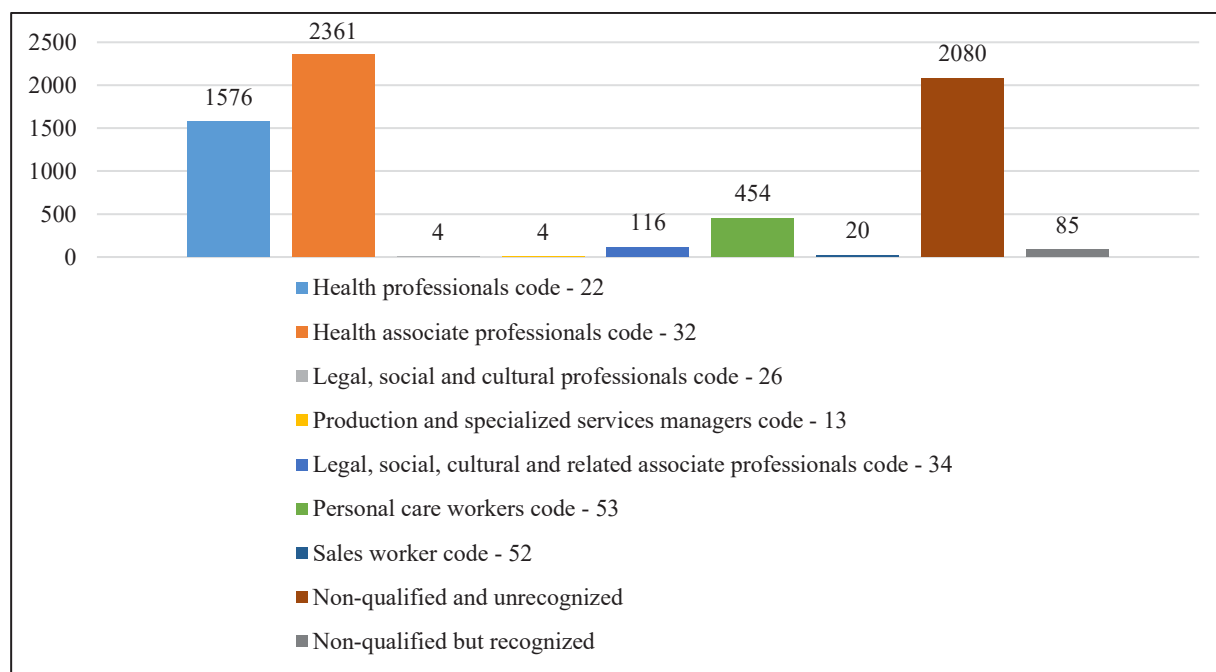


Figure 3: Classification of Identified Health Workers as per Sub-Major Groups

2.1.3 Minor Group Wise Number of Health Workers Identified

In terms of minor groups specified in ISCO-08 and BSCO-12 classification, we could categorize the identified health workers into 13 minor groups, as shown in Table 4. The highest number of recognized health workers were found to be in other health associate professionals, which comprise of community health workers, medical assistants and dental assistants and therapists.

Table 4: Minor Group-wise Classification of Identified Health Workers in the Assessment

ISCO-08, BSCO-12 Minor Group and Code	No of Health Workers Identified	% of Health Workers Identified
Professional services managers (Code 134)	4	0.09%
Medical doctors (Code 221)	635	14.00%
Nursing and midwifery professionals (Code 222)	384	8.47%
Traditional and complementary medicine professionals (Code 223)	274	6.04%
Other health professionals (Code 226)	283	6.24%
Social and religious professionals (Code 263)	4	0.09%
Medical and pharmaceutical technicians (Code 321)	627	13.83%
Nursing and midwifery associate professionals (Code 322)	229	5.05%
Traditional & complementary medicine associate professionals (Code 323)	105	2.32%
Other health associate professionals (Code 325)	1400	30.87%
Legal, social and religious associate professionals (Code 341)	116	2.56%
Other sales workers (Code 524)	20	0.44%
Personal care workers in health services (Code 532)	454	10.01%
Total	4535	100%

2.1.4 Occupation Title Wise Number of Health Workers Identified

From the survey, we categorize the health workers identified into 24 different occupation titles, as per the ISCO-08 and BSCO-12 classification. The categorization is shown Table 5. It can be seen that, community health workers constitute the highest number of health workers' occupation. The recognized but unqualified

and non-recognized and unqualified category of HWF are also included in the table to show the complete picture, however, these are not any occupations under ISCO-08 or BSCO-12.

Table 5: Occupation Classification of Healthcare Service Providers Identified in the Assessment

Occupation as per ISCO-08 & BSCO-12 Classification	Grand Total	Proportion to Total
Generalist medical	418	6.24%
Specialist medical	217	3.24%
Nursing professionals	317	4.73%
Midwifery professionals	67	1.00%
Traditional and complementary medicine professionals	274	4.09%
Dentists	132	1.97%
Pharmacists	109	1.63%
Physiotherapists	37	0.55%
Dieticians and nutritionists	5	0.07%
Sub-Major Group Total: Health Professionals	1576	23.52%
Medical and pathology laboratory technicians	257	3.84%
Pharmaceutical technicians and assistants	370	5.52%
Nursing associate professionals (Code 3221)	151	2.25%
Midwifery associate professionals (Code 3222)	78	1.16%
Traditional and complementary medicine associate professionals (Code 3230)	105	1.57%
Community health workers (Code 3253)	1269	18.94%
Dental assistants and therapists (Code 3251)	95	1.42%
Medical assistants (Code 3256)	36	0.54%
Sub-Major Group Total: Health Associate Professionals	2361	35.24%
Social working counselling professional	4	0.06%
Sub-Major Group Total: Legal, social and cultural professionals	4	0.06%
Health Service Managers	4	0.06%
Sub-Major Group Total: Production and specialize service managers	4	0.06%
Social work associate professionals Code	17	0.25%
Religious Associate Professionals	99	1.48%
Sub-Major Group Total: Legal, social, cultural and related associate professionals	116	1.73%
Door to door salesperson Code	20	0.30%
Sub-Major Group Total: Sales worker	20	0.30%
Personal care workers in health services not elsewhere classified	78	1.16%
Pharmacy aide Code	376	5.61%
Sub Major Group Total: Personal Care Workers	454	6.78%
Total Recognized Service Providers	4535	67.69%
Total Non-qualified but Recognized	85	1.27%
Total Non-qualified and Unrecognized	2080	31.04%
Total Healthcare Service Providers Identified	6700	100.00%

2.2 Urban and rural distribution of Service Providers

2.2.1 Recognized and unrecognized Health Workers in Rural and Urban Areas

As shown in table 1, a total of 1,367,195 population was found in the surveyed 133 PSUs. Among them, 890,788 were from rural PSUs and 476,407 were from urban PSUs. Which means that the rural and urban proportion of population in our surveyed PSUs were 65% and 35% respectively. Considering the recognized

and qualified health workers, about 77% of the ISCO-08/BSCO-12 recognized health workers were found to be in urban areas and only 23% were found to be in rural areas. In urban areas, around 75% of the total identified health workers are recognized as per ISCO-08/BSCO-12 classifications and qualified as per MOHFW. On the contrary, this percentage is 54% in rural areas. Figure 4 further illustrates the information presented.

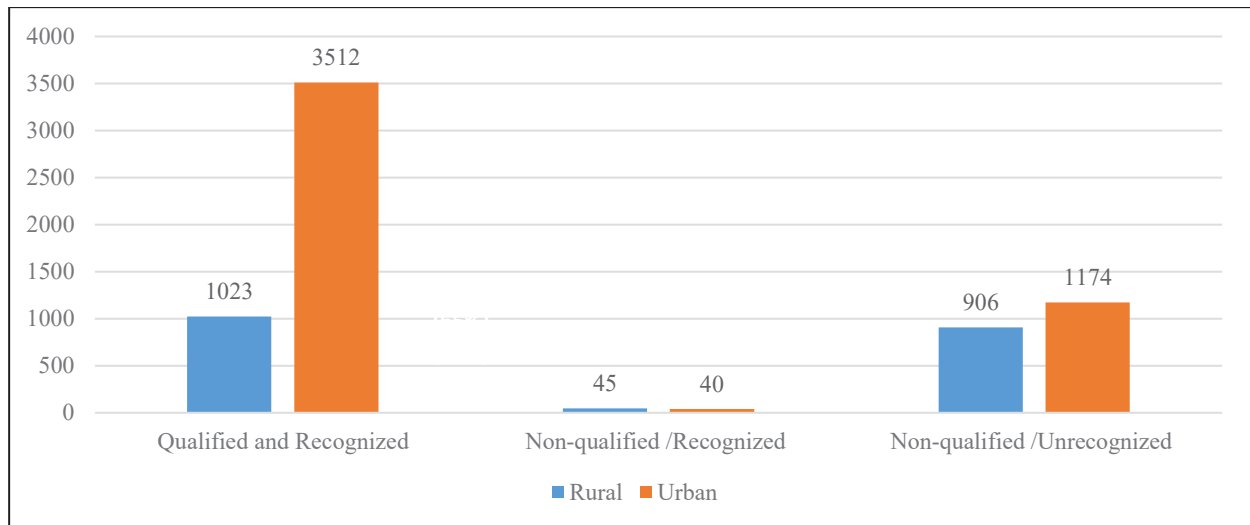


Figure 4: Rural and Urban Segregation of Health Workers (Total Number of Identified Health Workers)

If we consider number of identified health workers per PSU, then the rural situation worsens. The study identified 80 health workers/PSU in urban areas and only just over 26 health workers/PSU in rural areas (Figure 5). Considering only recognized and qualified health workers (as per ISCO-08/BSCO-12 classification), number of health workers per PSU in rural areas was found to be only close to 14, whereas the same for urban areas was seen as close to 60.

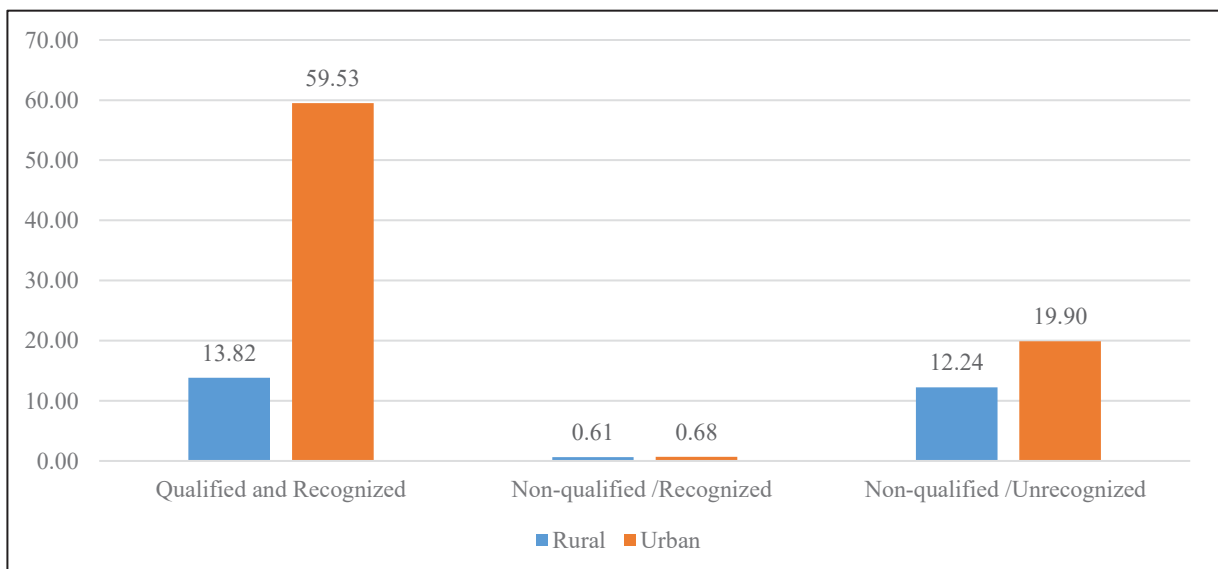


Figure 5: PSU-wise Rural and Urban Health Workers Identified (No. of Health Workers/PSU)

2.2.2. Sub-major Group-wise Location of the Health Workers

Sub-major group-wise number of HWF per PSU is shown in table 6 below. Although recognized but non-qualified and unrecognized and non-qualified are not included in ISCO-08 and BSCO-12 as sub-major groups, these two categories have been included in the table for comparison purpose.

Table 6: Presence of Identified Health Workers in Urban and Rural PSUs

Area	No of PSUs	No of Health Workers (Total)								
		Health Professionals	Health Associate Professionals	Production and specialized services managers Code - 13	Legal, social and cultural professionals Code - 26	Legal, social, cultural and related associate professionals Code - 34	Sales worker Code - 52	Personal Care Worker	Non-qualified and Recognized	Non-qualified and Unrecognized
Urban PSUs	59	1,484	1,555	3	2	44	11	413	40	1,174
Rural PSUs	74	92	806	1	2	72	9	41	45	906
Total PSUs	133	1,576	2,361	4	4	116	20	454	85	2080
	No of PSUs	No of Health Workers (Per PSU)								
Urban PSUs	59	25.15	26.36	0.05	0.03	0.75	0.19	7.00	0.68	19.22
Rural PSUs	74	1.24	10.89	0.01	0.03	0.97	0.12	0.55	0.61	12.24
Total PSUs	133	11.85	17.75	0.00	0.00	0.87	0.00	0.00	0.64	15.64

2.2.3 Minor Group-wise Location of the Recognized Health Workers Identified

Table 7 below indicates recognized health workers in urban and rural areas, segregated as per minor groups. Similar to table 6, insertion of non-qualified and unrecognized and non-qualified groups are only for comparison purpose and they are not included in ISCO-08 or BSCO-12 as any minor group.

Table 7: Minor Group-wise Location of Health Service Providers Identified

Minor Group	No of Health Workers		
	Urban PSUs (n=59)	Rural PSUs (n=74)	All PSUs (n=133)
Medical doctors Code 221	625	10	635
Nursing and midwifery professionals Code 222	376	8	384
Traditional and complementary medicine professionals Code 223	229	45	274
Other health professionals Code 226	254	29	283
Medical and pharmaceutical technicians Code 321	527	100	627
Nursing and midwifery associate professionals Code 322	182	47	229
Traditional and complementary medicine associate professionals Code 323	69	36	105
Other health associate professionals Code 325	777	623	1,400
Professional services managers Code 134	3	1	4
Social and religious professionals Code 263	2	2	4
Personal care workers in health services Code 532	413	41	454
Legal, social and religious associate professionals Code 341	44	72	116
Other sales workers Code 524	11	9	20
Non-qualified /Recognized	40	45	85
Non-qualified /Unrecognized	1174	906	2080
Total	4726	1974	6700

2.2.4 Occupation Title-wise Location of Health Workers Identified

From the survey, we categorized the health workers identified into 24 different occupations, as per the ISCO-08 and BSCO-12 classification. The categorization is shown in Table 8. It can be seen that, community health workers constitute the highest number of health workers in terms of ISCO-08/BSCO-12 recognized occupation. Insertion of non-qualified and unrecognized and non-qualified groups are only for comparison purpose and they are not included in ISCO-08 or BSCO-12 as any occupations.

Table 8: Occupation-wise Classification of Health Workers Identified in the Assessment

Occupation Title	No of Health Workers		
	Urban PSUs (n=59)	Rural PSUs (n=74)	All PSUs (n=133)
Generalist Medical Practitioners	408	10	418
Specialist medical	217	0	217
Nursing professionals	313	4	317
Midwifery professionals	63	4	67
Traditional and complementary medicine professionals	229	45	274
Dentists	116	16	132
Pharmacists	97	12	109
Physiotherapists	37	0	37
Dieticians and nutritionists	4	1	5
Medical and pathology laboratory technicians	251	6	257
Pharmaceutical technicians and assistants	276	94	370
Nursing associate professionals	147	4	151
Midwifery associate professionals	35	43	78
Traditional and complementary medicine associate professionals	69	36	105
Community health workers	669	600	1269
Dental assistants and therapists	81	14	95
Medical assistants	27	9	36
Health Service Managers	3	1	4
Social working counselling professional	2	2	4
Social work associate professionals	5	12	17
Religious Associate Professionals	39	60	99
Door to door salesperson	11	9	20
Personal care workers in health services not elsewhere classified	64	14	78
Pharmacy aide	349	27	376
Non-qualified /Recognized	40	45	85
Non-qualified /Unrecognized	1174	906	2080
Total	4726	1974	6700

2.3 Health Workers Identified per 10,000 Population

From BBS, we could identify 1,367,195 population in the surveyed 133 PSUs. From this number, availability of service providers of different categories was derived for 10,000 population. Considering the number of health workers identified and the estimates of the population in the identified PSUs, we can calculate a total of 49.01 health workers (both government and non-government and all categories and subcategories) per 10,000 population, which varies from 47.83 to 50.18 considering 95% Confidence Interval (CI) normal approximation with Coefficient of variation (CV) of 2% within the CI. Among these 49.01 health workers, 33.17 are qualified and recognized; 0.62 are non-qualified but recognized and 15.21 are non-qualified and unrecognized for each 10,000 population.



Figure 6: Availability of Healthcare Workers per 10,000 Population

Considering the rural and urban population estimates of BBS and the number of health workers the assessment identified, the calculated density of total health workers (government and non-government, and combination of all subcategories) per 10,000 population comes around 22.16 in rural areas and 98.36 in urban areas. Specific availability of qualified and other categories of HWF are shown in figure-7 below.

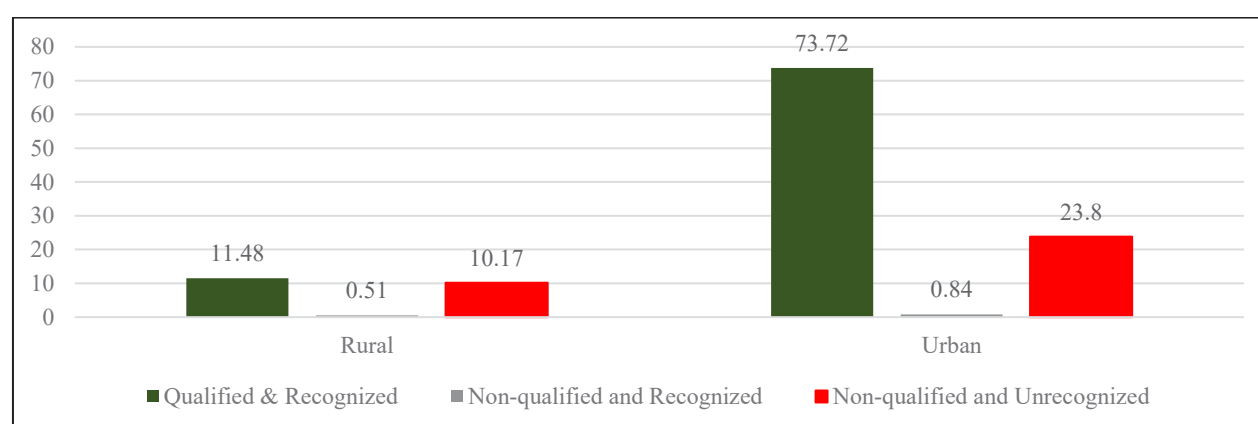


Figure 7: Availability of Health Workers per 10,000 Population in Rural and Urban Areas as per the Assessment

2.3.1. Sub-major Group-wise Density of the Health Workers in Rural and Urban Settings

As per the estimated population in the PSUs received from BBS, the population in rural PSUs were found to be higher (1.9 times) than the urban PSUs. However, the prevalence of health workers was significantly higher (4.4 times) in urban PSUs in comparison to the rural PSUs. The density of health workers, i.e. number of health workers per 10,000 population, was also seen considerably higher in urban population than the rural population, as shown in table 9 below. Insertion of non-qualified and unrecognized and non-qualified groups are only for comparison purpose and they are not included in ISCO-08 or BSCO-12 as any sub-major groups.

Table 9: Sub-major Group Wise Availability of Health Workers for 10,000 Population

Area	No of PSUs	Density (Number per 10,000 Population)									
		Health Professionals	Health Associate Professionals	Production and specialized services managers	Legal, social and cultural professionals	Legal, social, cultural and related associate professionals	Sales worker	Personal Care Worker	Non-qualified and Recognized	Non-qualified and Unrecognized	Total Qualified and Recognized
All PSU	133	11.53	17.27	0.03	0.03	0.85	0.15	3.32	0.62	15.21	33.17
Rural PSUs	74	1.03	9.05	0.01	0.02	0.81	0.1	0.46	0.51	10.17	11.48
Urban PSUs	59	31.15	32.64	0.06	0.04	0.92	0.23	8.67	0.84	23.8	73.72

2.3.2 Density of Government and Non-government Health Workers

As mentioned before, the assessment identified 1,177 government health workers and 5,523 non-government (private and NGO) health workers among the 6700 identified health workers. Considering the population size of the PSUs, the assessment identified 8.61 government health workers and 40.40 non-government health workers per 10,000 population (shown in Table 10). Table 11 shows the sub-major group wise density of government and non-government health workers.

Table 10: Density of Government and Non-government Health Workers (per 10,000 Population)

Attributes	No. of Health Workers per 10,000 Population	
	Government Health Workers	Non-Government Health Workers
Point Estimate (Density)	8.61	40.40
Lower Boundary in 95% CI normal approximation	8.12	39.33
Upper Boundary in 95% CI normal approximation	9.10	41.46
CV	6%	3%

Table 11: Sub-major Group Wise Density of Government and Non-Government Health Workers (per 10,000 Population)

Sub-major Group	Government	Non-Government
Health Professionals	4.64	6.89
Health Associate Professional ¹²	3.96	13.31
Production and specialized services managers	0	0.03
Legal, social and cultural professionals	0	0.03
Legal, social, cultural and related associate professionals	0	0.85
Sales worker	0	0.15
Personal Care Worker	0	3.32
Total Qualified and Recognized	8.61	24.56
Non-qualified and Recognized	0	0.62
Non-qualified and Unrecognized	0	15.21
Total Health Workers	8.61	40.40

2.3.3 Division-wise Density of Health Workers

The updated population per PSU provided by BBS gave a population representation at division-level, based on which, a division-wise density of health workers could be derived (table 12). It can be seen that Dhaka division has the highest number of health workers per 10,000 population, followed by Khulna division. Sylhet division has the lowest density of health workers per 10,000 population. Considering the ISCO-08/BSCO-12 recognized health workers, Dhaka division again has the highest density, followed by Chattogram division. Rajshahi division has the lowest density of ISCO-08/BSCO-12 recognized health workers.

¹² Health associate professionals include medical assistants. While the survey identified medical assistants in government set up in the position of Sub-Assistant Community Medical Officers (SACMO), there was no occupation mentioned by the private health associate professionals as medical assistants. Rather, they mentioned medical technicians or laboratory technicians. Hence, there was no occupation identified as “Medical Assistant” in non-government (i.e. private and NGO) sector.

Table 12: Division-wise density of the health workers (per 10,000 population)

Division	Qualified and Recognized	Non-qualified /Recognized	Non-qualified /Unrecognized	Total
Barishal	18.85	0.64	16.28	35.77
Rural	15.88	0.67	15.1	31.65
Urban	99.07	0	48.03	147.1
Chattogram	36.72	0.21	9.73	46.65
Rural	12.3	0.23	6.73	19.26
Urban	86.79	0.16	15.87	102.81
Dhaka	90.01	1.15	37.27	128.42
Rural	17.29	0.33	9.46	27.08
Urban	139.02	1.45	52.47	192.94
Khulna	31.56	0.9	18.38	50.85
Rural	20.18	1.07	18.74	39.99
Urban	51.03	0.61	17.76	69.41
Mymensingh	15.56	2.71	20.46	38.73
Rural	20.03	4.01	26.6	50.63
Urban	9.1	0.83	11.58	21.51
Rajshahi	8	0.13	7.21	15.34
Rural	8.55	0.08	6.09	14.73
Urban	5.9	0.32	11.48	17.7
Rangpur	28.07	0.58	9.04	37.69
Rural	12.14	0.45	10.33	22.92
Urban	50.08	0.75	7.26	58.09
Sylhet	11.29	0.26	5.09	16.64
Rural	5.33	0	5.51	10.84
Urban	26.77	0.94	3.99	31.7
Grand Total	33.17	0.62	15.21	49.01

Sub-major group wise HWF in different divisions are shown in table 13 below. Again, insertion of non-qualified and unrecognized and non-qualified groups are only for comparison purpose and they are not included in ISCO-08 or BSCO-12 as any sub-major groups.

Table 13: Division-wise density of sub-major group of health workers (per 10,000 population)

Division	Health Professionals	Health associate professionals	Production and specialized services managers	Personal care workers	Sales worker	Legal, social, cultural and related associate professionals	Legal, social and cultural professionals	Non-qualified /Recognized	Non-qualified /Unrecognized	Total
Barishal	1.82	14.03	0	0.86	0.64	1.39	0.11	0.64	16.28	35.77
Rural	1.22	12.21	0	0.44	0.44	1.44	0.11	0.67	15.1	31.65
Urban	18.01	63.04	0	12.01	6	0	0	0	48.03	147.1
Chattogram	9.62	21.63	0	5.15	0.1	0.21	0	0.21	9.73	46.65
Rural	1.55	9.67	0	0.93	0.08	0.08	0	0.23	6.73	19.26
Urban	26.18	46.17	0	13.8	0.16	0.48	0	0.16	15.87	102.81
Dhaka	40.1	35.71	0.12	12.6	0.29	1.15	0.04	1.15	37.27	128.42
Rural	2.18	13.6	0	1.31	0.11	0.11	0	0.33	9.46	27.08

Division	Health Professionals	Health associate professionals	Production and specialized services managers	Personal care workers	Sales worker	Legal, social, cultural and related associate professionals	Legal, social and cultural professionals	Non-qualified /Recognized	Non-qualified /Unrecognized	Total
Urban	63.54	53.26	0.2	20.04	0.46	1.45	0.07	1.45	52.47	192.94
Khulna	9.57	19.21	0	1.36	0.15	1.21	0.08	0.9	18.38	50.85
Rural	1.55	15.76	0	1.07	0.24	1.43	0.12	1.07	18.74	39.99
Urban	23.27	25.11	0	1.84	0	0.82	0	0.61	17.76	69.41
Mymensingh	2.88	9.3	0	0.51	0.17	2.71	0	2.71	20.46	38.73
Rural	2	13.45	0	0.86	0.29	3.43	0	4.01	26.6	50.63
Urban	4.14	3.31	0	0	0	1.65	0	0.83	11.58	21.51
Rajshahi	0.73	6.84	0	0.03	0.03	0.36	0	0.13	7.21	15.34
Rural	0.63	7.59	0	0	0	0.33	0	0.08	6.09	14.73
Urban	1.12	3.99	0	0.16	0.16	0.48	0	0.32	11.48	17.7
Rangpur	10.09	16.71	0	0.37	0.05	0.79	0.05	0.58	9.04	37.69
Rural	0.27	10.96	0	0.09	0.09	0.72	0	0.45	10.33	22.92
Urban	23.66	24.66	0	0.75	0	0.88	0.13	0.75	7.26	58.09
Sylhet	2.54	7.11	0.07	0.72	0	0.85	0	0.26	5.09	16.64
Rural	0.9	2.44	0.09	0.81	0	1.08	0	0	5.51	10.84
Urban	6.81	19.26	0	0.47	0	0.23	0	0.94	3.99	31.7
Grand Total	11.53	17.27	0.03	3.32	0.15	0.85	0.03	0.62	15.21	49.01

2.4 Extrapolation of Assessment Findings to National Level

Since the division-wise density of health workers have been calculated based on the weightage of the PSU and an updated estimate of the population, the figures now represent the population dynamics of the particular divisions. Considering this as a basis, an extrapolation of health workers was done in the assessment. Since the last census was done in Bangladesh in 2011, to get the most updated division-wise population number, the assessment used the population project of Bangladesh of BBS¹³ and took the projection till 2016¹⁴. The extrapolation identified 785,169 HWF in the country, out of which, 531,454 are qualified and recognized, 9,961 are non-qualified but recognized and 243,754 are non-qualified and unrecognized.

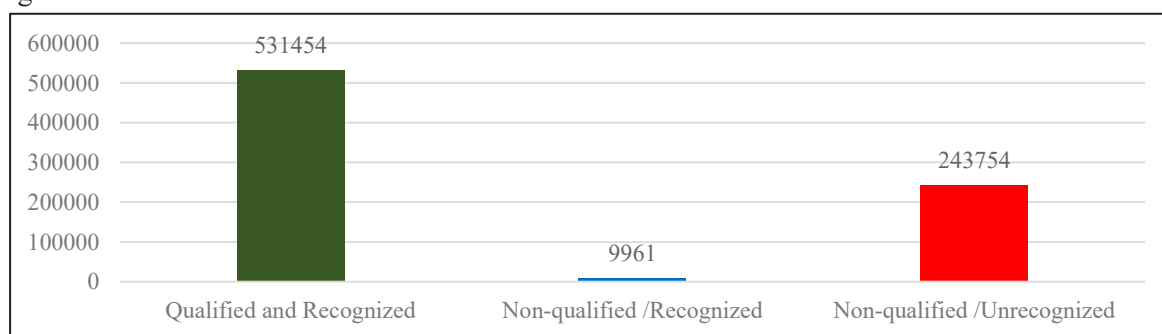


Figure 8: National Scenario of Health Workers in Bangladesh (Extrapolated from Assessment Findings)

¹³ BBS, 2015. Population Projection of Bangladesh: Dynamics and Trends, 2011-2061. Bangladesh Bureau of Statistics, Ministry of Planning, Government of Bangladesh, Dhaka, Bangladesh.

¹⁴ The population projection was done in a five-year interval, with the nearest estimation of the assessment time being 2016 and 2021. Since the data collection of the assessment was done in 2019, the extrapolation took the 2016 estimate of population projection.

Division-wise segregation of the health workers is shown in the table 14 below. As it has been shown, Dhaka division has significantly high number of health workers in comparison to other divisions and constitutes for almost 47 percent of the total health workers and around 48 percent of the ISCO-08/BSCO-12 recognized health workers.

Table 14: Division-wise extrapolation of Health Workers

Division	Total Number	Qualified and Recognized	Non-qualified /Recognized	Non-qualified /Unrecognized
Barishal	39,141	20,625	703	17,813
Chattogram	105,119	82,736	469	21,914
Dhaka	366,686	256,997	3,281	106,408
Khulna	79,103	49,102	1,406	28,594
Mymensingh	26,836	10,781	1,875	14,180
Rajshahi	54,376	28,360	469	25,547
Rangpur	84,025	62,579	1,289	20,157
Sylhet	29,883	20,274	469	9,141
Grand Total	785,169	531,454	9,961	243,754

Sub-major group-wise extrapolation was done and shown in figure 9 below. Division-wise sub-major group of health workers are shown in table 15. The extrapolation identified 785,169 HWF in the country, out of which, 531,454 are qualified and recognized, 9,961 are non-qualified but recognized and 243,754 are non-qualified and unrecognized. Insertion of non-qualified and unrecognized and non-qualified groups are only for comparison purpose and they are not included in ISCO-08 or BSCO-12 as any sub-major groups.

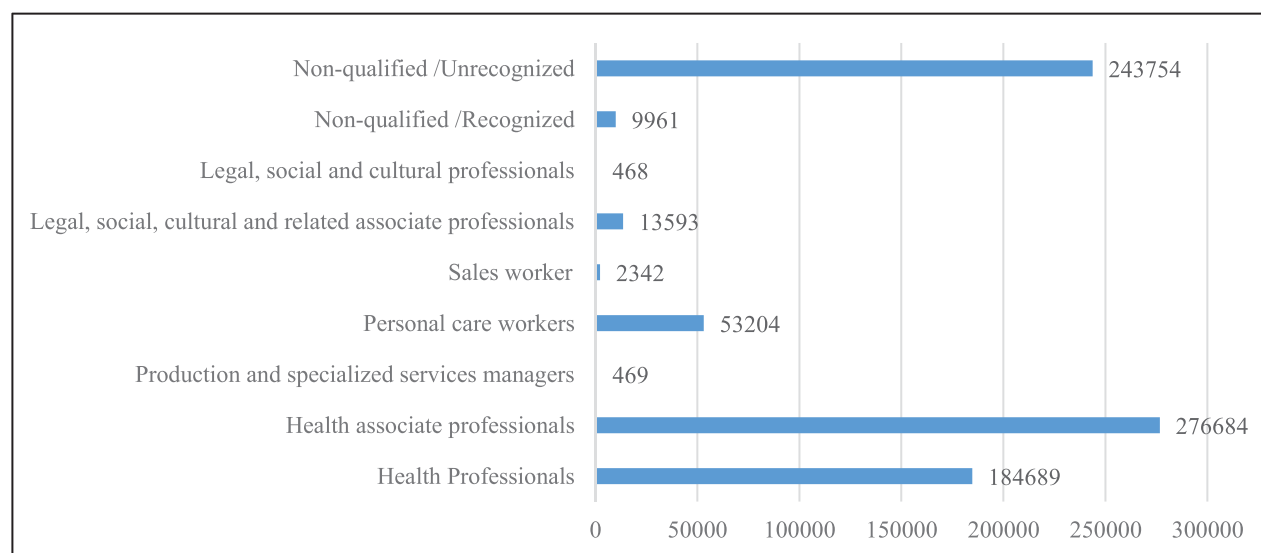


Figure 9: Sub-major Group-wise Extrapolation of Health Workers

Table 15: Division-wise Extrapolation of Sub-major Group of Health Workers

Division	Health Professionals	Health associate professionals	Production and specialized services	Personal care workers	Sales worker Code	Legal, social, cultural and related associate professionals	Legal, social and cultural professionals	Non-qualified / Recognized	Non-qualified /Unrecognized
Barishal	1992	15352	0	938	703	1523	117	703	17813
Chattogram	21680	48751	0	11602	234	469	0	469	21914
Dhaka	114494	101955	352	35977	821	3280	118	3281	106408
Khulna	14883	29883	0	2109	234	1875	117	1406	28594
Mymensingh	1992	6445	0	352	117	1875	0	1875	14180
Rajshahi	2578	24258	0	117	118	1289	0	469	25547
Rangpur	22501	37266	0	820	117	1758	117	1289	20157
Sylhet	4571	12774	117	1289	0	1523	0	469	9141
Grand Total	184691	276684	469	53204	2344	13593	469	9961	243754

The extrapolation of minor group of health workers are shown in figure 10 below.

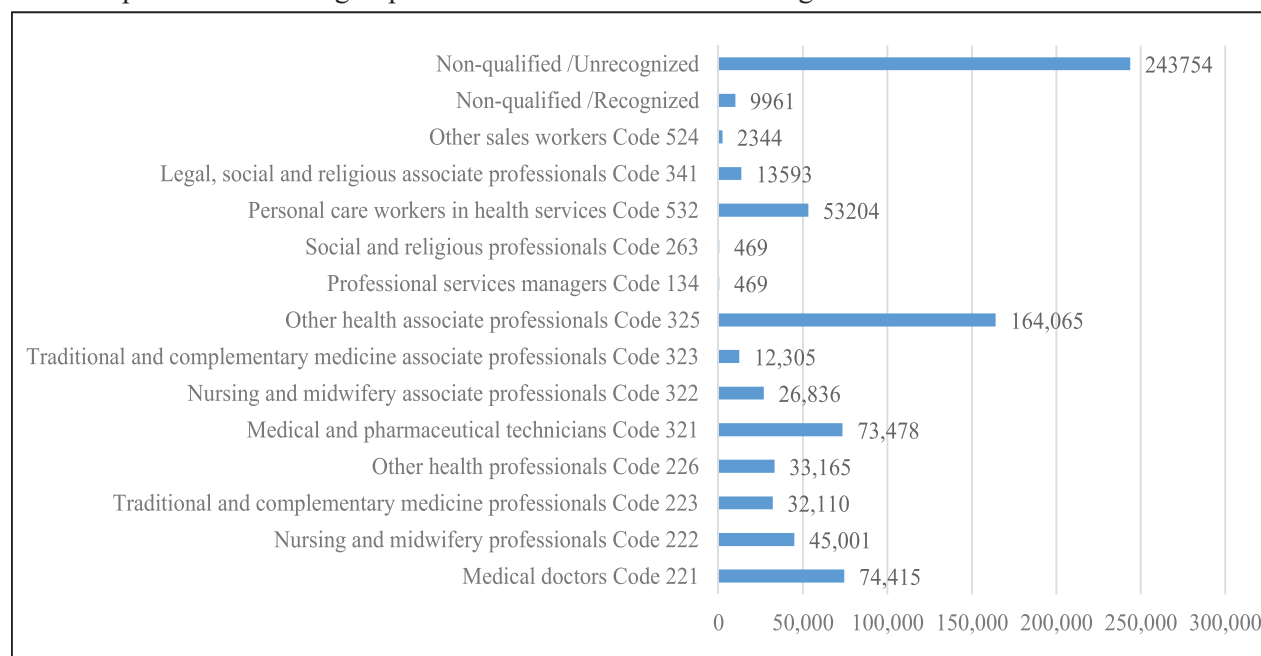


Figure 10: Extrapolation of Minor Group of Health Workers

2.5 Comparison of Findings with the MOHFW's HRH Datasheet, 2019

Human Resources Branch of HSD under MOHFW published the HRH Data Sheet in 2019. The datasheet primarily looked into the number of HWF under MOHFW, and in the production side of the health workers. Although the purpose and methodology of the HRH Datasheet, 2019 is quite different from the present study, due to the absent of a national database or study, we are comparing some of the numbers of health workers with the datasheet (shown in Table 16).

Table 16: Comparison of Health Workers Identified in the Assessment Vis-a-vis Number Presented in HRH Datasheet, 2019

Minor Groups as per ISCO	Number of Health Workers as per the Assessment	Number of Relevant Workers as per HRH Datasheet 2019
Medical doctors	74,415	76,867 ¹⁵
Nursing and midwifery professionals	45,001	56,734 ¹⁶
Traditional and complementary medicine professionals	32,110	37,272
Other health professionals	33,165	40,202
Medical and pharmaceutical technicians	73,478	120,154 ¹⁷
Nursing and midwifery associate professionals	26,836	16,385 ¹⁸
Traditional and complementary medicine associate professionals	12,305	7,771 ¹⁹
Other health associate professionals	164,065	39,359 ²⁰

2.6 Comparison of findings with other literature

Bangladesh Health Watch provides a platform for citizens groups to take an active interest in understanding and sharing the challenges and choices, policy and programme options of the country's health sector. The Bangladesh Health Watch report-2007 assessed the situation of Health Workforce in Bangladesh with special focus on production, availability, and quality of services. Due to the absence of a national level HWF survey or assessment, this report is most referred document in the literature. Although, objective wise, the current assessment is relevant to the BHW, 2007 report, there are methodological differences. However, there are some issues which can be compared to comment on the overall change in trend of health service delivery in the country, narrated below:

- There has been a considerable reduction of Traditional Birth Attendants (TBA), evident from the 33.2 per 10,000 population in 2007 and 2.94 in the current assessment (CV of 10% at 95% CI normal approximation). Discussions with the experts and the birth attendants revealed that a large number of these TBAs went through CSBA and other trainings and certifications of the government and became recognized service providers.
- Density of traditional healers was very high in 2007, around 64.2 per 10,000 population. This figure was found to be only 2.50 per 10,000 population in the present assessment of 2019 (CV of 8% at 95% CI normal approximation). This is again, a tremendous progress in last 12 years.
- There also has been an increase in the community health worker (CHW) category. In 2007, the density of CHW was 9.6 per 10,000 population. The present study found this density being 10.15 (CV of 6% at 95% CI normal approximation)

¹⁵ This figure in HRH Datasheet indicates the estimated number of medical doctors in Bangladesh. The extrapolated figure from the assessment is very close to this estimate.

¹⁶ This number in HRH Datasheet is for all nurses and midwives, including those who are dead, migrated and currently inactive, whereas the assessment information is only for active nurses and midwives.

¹⁷ HRH Datasheet primarily include the certified pharmacists under this category (with reference to the Pharmacy council of Bangladesh). However, this number include those certified till date, including those who are dead, migrated and currently being inactive, not only the active ones. Number of registered allopathic pharmacies is around 120.5 K, which implies assumed/cited reason for the difference around 47 K not plausible.

¹⁸ HRH Datasheet only include Family Welfare Visitors and Community Based Skilled Birth Attendants under this category. However, there are a number of other professionals in this category, including junior midwives, assistant nurses, nursing attendants and different types of short course trained midwifery associate professionals. The assessment included these categories of professionals as well for which the number increased.

¹⁹ HRH Datasheet included certified Unani professionals and certified Ayurvedic professionals under this category, but the certified Homeopathic professionals, which constitute a large number in the country. Since the assessment included this category, hence there is a difference with the number reported in HRH Datasheet under this category.

²⁰ HRH Datasheet did not include some of the active government health workers like SACMO (5,945 active), HI (1,047 active), AHI (3,636 active), HA (15,420 active), CHCP (around 14,500 active), FPI (4,103 active), AFPI (1,371 active) and FWA (17,308 active). In addition, there are numerous NGO health workers (e.g. only BRAC has more than 50,000 Shyastho Karmi and Shyastho Shebika), which were also not included into the HRH Datasheet. If all these categories of workers, that have been excluded from HRH Datasheet, are considered then the number is close to that identified in the assessment.

CHAPTER THREE: MAJOR FINDINGS OF THE ASSESSMENT: PROFILE OF THE HEALTH WORKERS

3.1 Overview

The assessment was delegated to the consortium to identify information for profiling of the private and non-government health workers in the country. Hence, although the assessment identified 6,700 health workers, those working in government were not interviewed in a government facility during office hours for their profile development. The interview of the health workers took place only when s/he was providing services from a non-government facility or private place (including the providers' residence). Nevertheless, some of the government health workers were found providing services from private facilities and hence, those were termed as dual service providers and included in the assessment. At the same time, some of the private, non-government and informal service providers refused to provide detailed information about them and their services. As a result, the total number of healthcare providers identified in the PSUs is not the same as the total number interviewed. A total of 4124 health workers were interviewed from the 133 PSUs. However, considering the completeness of information, 4,010 were considered as eligible, which means the response rate is around 97%²¹. The division-wise segregation of the health workers interviewed is shown in the figure 11 below.

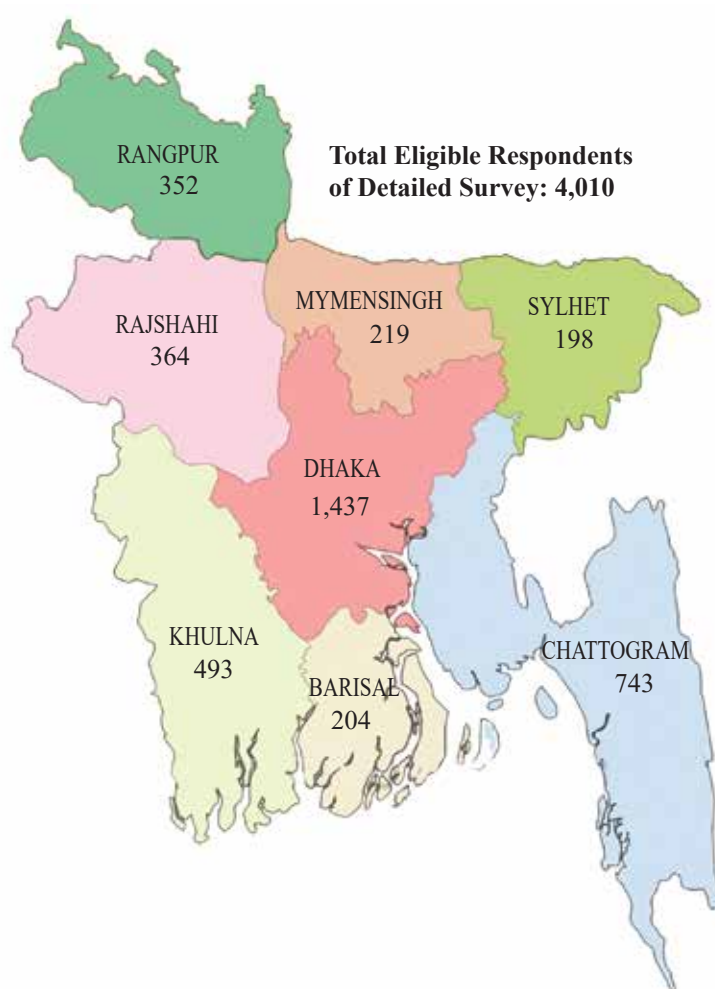


Figure 11: Distribution of Eligible Respondents of the Detailed Survey

Sub-major group classifications of the health workers interviewed from different divisions are shown in Table 17.

²¹ 114 respondents either did not complete the assessment or refused to take part. The proportion is, however, only 3%, which is well within the considered response rate (90%) of the assessment.

Table 17: Segregation of the Health Workers Interviewed from Different Divisions by ISCO-08 sub major group

Division	Health associate professionals (Code - 32)	Health professionals (Code - 22)	Legal, social and cultural professionals (Code - 26)	Legal, social, cultural and related associate professionals (Code - 34)	Personal care workers (Code 53)	Sales worker (Code - 52)	Non-qualified /Recognized	Non-qualified /Unrecognized	Grand Total
Barishal	82	6	1			88	26	1	204
Chattogram	285	162				220	72	4	743
Dhaka	351	430	1	1	27	515	104	8	1437
Khulna	176	70	2	1	10	173	61		493
Mymensingh	55	6			14	119	24	1	219
Rajshahi	100	21			10	213	19	1	364
Rangpur	125	38		3	12	166	8		352
Sylhet	80	34			6	72	6		198
Grand Total	1254	767	4	5	79	1566	320	15	4010

3.2 Demographic Characteristics of the Healthcare Service Providers

3.2.1 Gender of Health Workers

Overall, three-fourths of the all health workers interviewed was found to be male (Table 18). With the only exception of nursing and midwifery professionals and nursing and midwifery associate professionals, all other categories have significantly more male service provider than female ones.

Table 18: Gender Segregation of the Minor Group Health Workers Interviewed²²

Minor Groups	Number			Percentage	
	Female	Male	Grand Total	Female	Male
Legal, social and religious associate professionals (Code 341)	5		5	100%	0%
Medical and pharmaceutical technicians (Code 321)	25	409	434	6%	94%
Medical doctors (Code 221)	75	194	269	28%	72%
Nursing and midwifery associate professionals (Code 322)	46	3	49	94%	6%
Nursing and midwifery professionals (Code 222)	67	8	75	89%	11%
Other health associate professionals (Code 325)	105	582	687	15%	85%
Other health professionals (Code 226)	35	102	137	26%	74%
Other sales workers (Code 524)		15	15	0%	100%
Personal care workers in health services (Code 532)	109	211	320	34%	66%
Social and religious professionals (Code 263)	4		4	100%	0%
Traditional and complementary medicine associate professionals (Code 323)	1	83	84	1%	99%
Traditional and complementary medicine professionals (Code 223)	46	240	286	16%	84%
Non-qualified /Recognized	4	75	79	5%	95%
Non-qualified /Unrecognized	483	1083	1566	31%	69%
Grand Total	1005	3005	4010	25%	75%

²² Health workers only providing services as private or informal provider – not the entire health worker population as discussed in chapter 2.

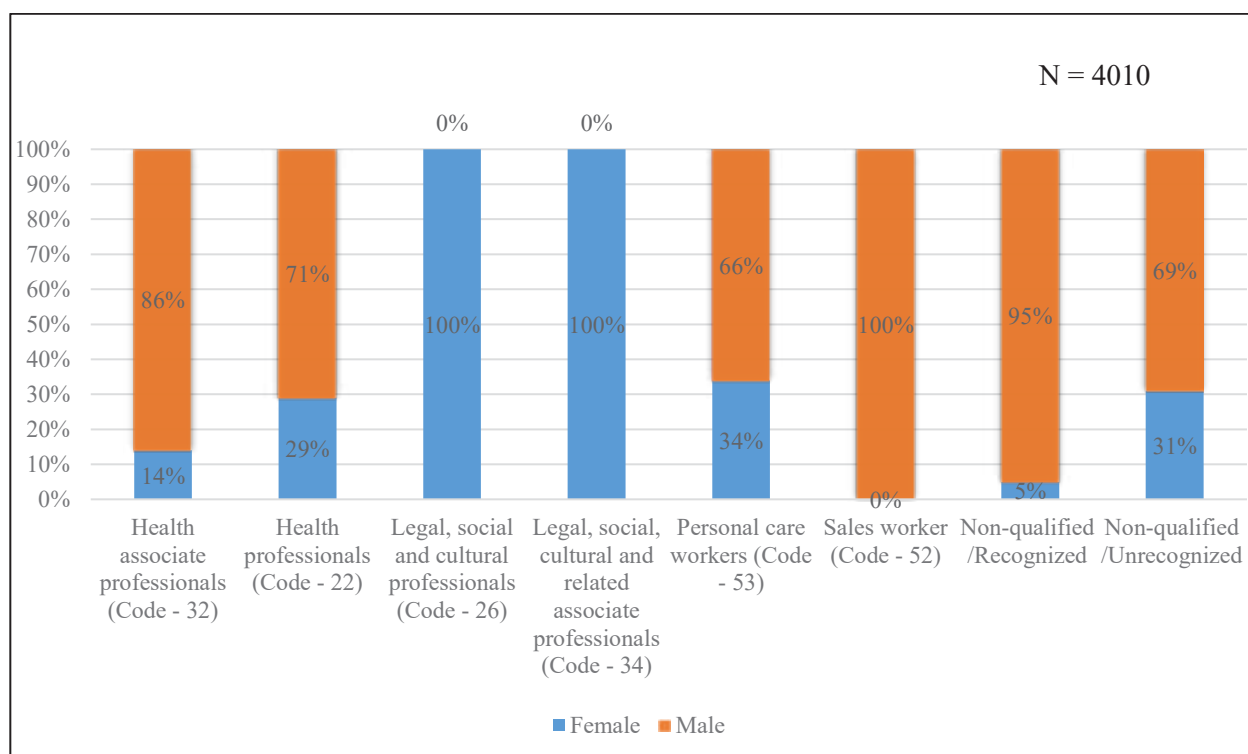


Figure 12: Gender Segregation of the Sub-Major Group Healthcare Service Providers Interviewed

3.2.2 Age of the Health Workers

The highest proportion of the health workers was found to be within the age range of 36 to 45 years (25 percent), followed by 26 to 35 years range (24 percent) and 46 to 55 percent (20 percent). Average age of the HWF was found to be 43.26 years.

Table 19: Age of the Healthcare Service Providers

Minor Group of Service Providers	Count (n = 4010)	Age Range of Healthcare Service Providers						Avg. Age
		16-25	26-35	36-45	46-55	56-65	66+	
Legal, social and religious associate professionals	5	20%	60%	0%	20%	0%	0%	32.20
Medical and pharmaceutical technicians	434	12%	38%	26%	17%	5%	2%	37.77
Medical doctors	269	6%	37%	25%	16%	11%	4%	40.67
Nursing and midwifery associate professionals	49	12%	22%	16%	29%	16%	4%	42.88
Nursing and midwifery professionals	75	61%	21%	11%	5%	1%	0%	27.65
Other health associate professionals	687	7%	30%	31%	19%	11%	2%	40.94
Other health professionals	137	14%	47%	25%	9%	4%	2%	35.20
Other sales workers	15	27%	27%	0%	27%	20%	0%	38.73
Personal care workers in health services	320	25%	18%	14%	17%	14%	13%	42.85
Social and religious professionals	4	25%	0%	50%	25%	0%	0%	38
Traditional and complementary medicine associate professionals	84	5%	14%	18%	25%	25%	13%	50.74
Traditional and complementary medicine professionals	286	3%	20%	31%	26%	13%	7%	45.77
Non-qualified /Recognized	79	5%	13%	15%	23%	28%	16%	51.63
Non-qualified /Unrecognized	1566	8%	17%	25%	23%	19%	9%	46.60
Grand Total	4010	10%	24%	25%	20%	14%	7%	43.26

Figure 13 below shows the age distribution of male and female health workers. As it can be seen, the percentage of male health workers are more than that of female health workers in age group 26-35 and 36-45, but less in age group 16-25, 56-65 and 65+. At age group 46-55, the percentage of male and female health workers are almost the same.

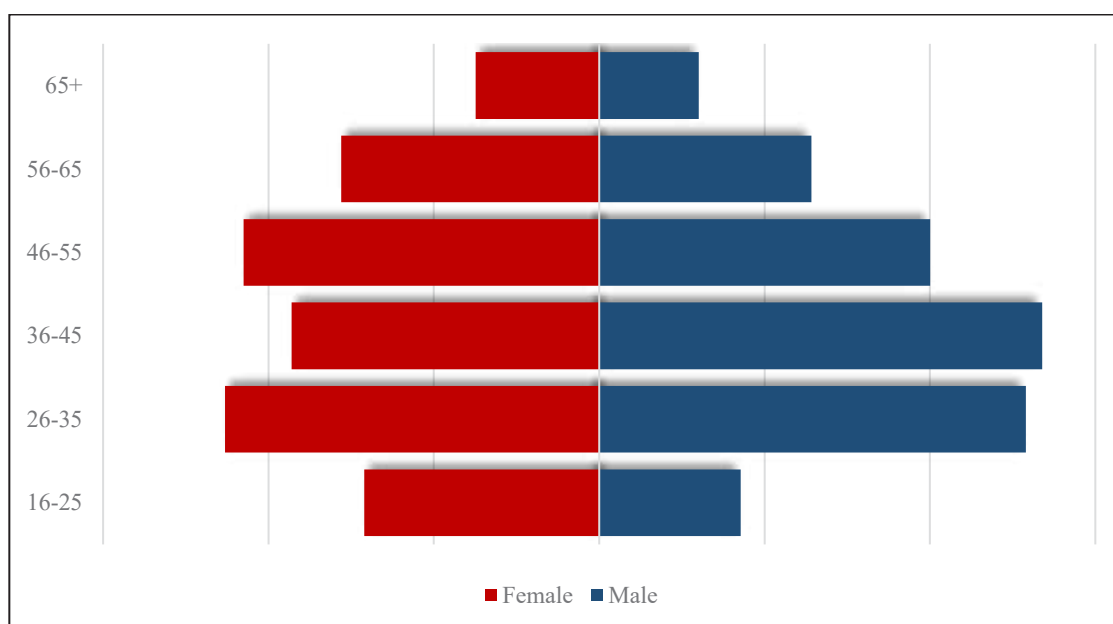


Figure 13: Age Distribution of the Health Workers

3.2.3 Marital Status of the Health Workers

Around 83% of the health workers interviewed were married, with only over 10% being unmarried (table 20). In the nursing and midwifery professional's category, however, the married and unmarried are almost at equal percentage., whereas in other categories, majority of the HWFs were found to be married. Proportions of other marital status of health workers were seen very insignificant.

Table 20: Marital Status of the Health Workers

Minor Groups	Divorced	Married	Separated	Unmarried	Widow/ Widower	Count
Medical doctors (Code 221)	0%	85%	0%	14%	1%	269
Nursing and midwifery associate professionals (Code 322)	0%	73%	0%	18%	8%	49
Nursing and midwifery professionals (Code 222)	0%	51%	0%	49%	0%	75
Other health associate professionals (Code 325)	0%	89%	0%	10%	0%	687
Legal, social and religious associate professionals (Code 341)	0%	100%	0%	0%	0%	5
Medical and pharmaceutical technicians (Code 321)	0%	80%	0%	19%	0%	434
Other health professionals (Code 226)	0%	78%	0%	22%	0%	137
Other sales workers (Code 524)	0%	73%	0%	27%	0%	15
Personal care workers in health services (Code 532)	0%	82%	0%	11%	7%	320

Minor Groups	Avg.	Max	Min
Personal care workers in health services (Code 532)	1.34	6	0
Social and religious professionals (Code 263)	1.25	2	1
Traditional and complementary medicine associate professionals (Code 323)	1.58	5	0
Traditional and complementary medicine professionals (Code 223)	1.7	5	0
Non-qualified /Recognized	1.47	5	0
Non-qualified /Unrecognized	1.37	6	0
Grand Total	1.42	9	0

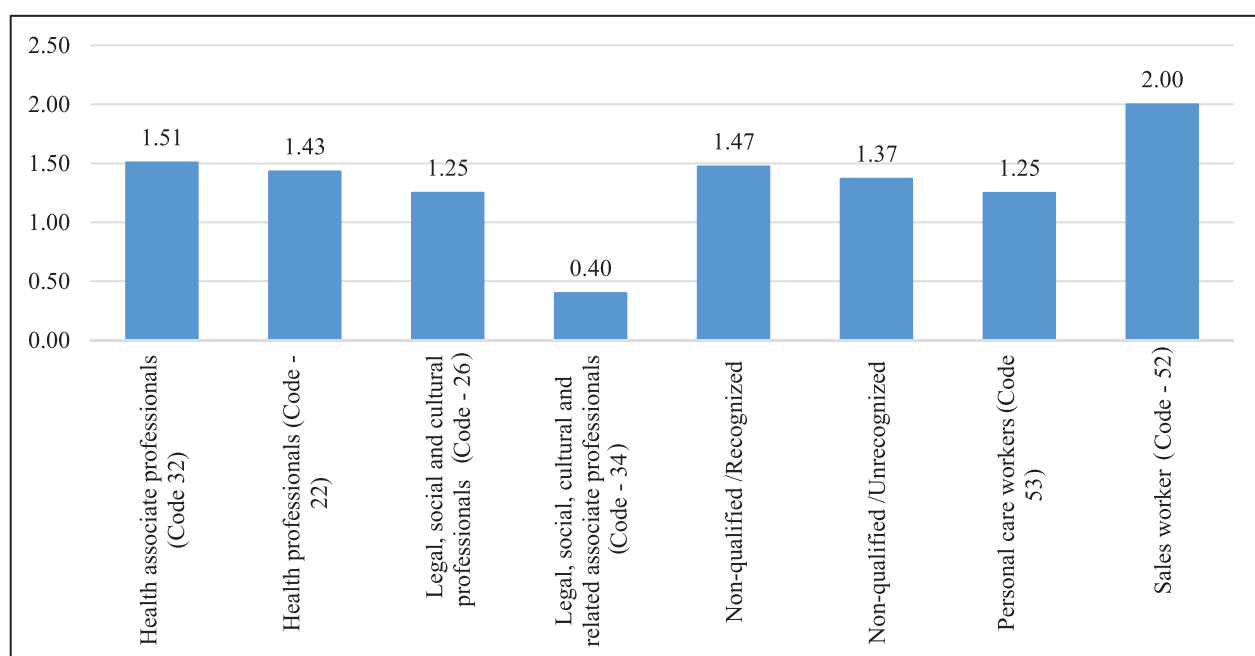


Figure 15: Average Number of Dependent Children of the Health Workers (Sub-Major Group Wise)

3.2.5 Residence

All the health workers identified in the assessment are Bangladeshi citizens by birth. Health workers were asked whether they were the residents of the PSUs in which they were found and interviewed. Predominant answer (82%) to this question was “yes” they were the residents of the PSU in which they were found and interviewed (Table 22). However, 47% of medical doctors and 45% nursing and midwifery professionals were not the residents of the PSU in which they were found and interviewed.

Table 22: Residence of the Healthcare Service Providers

Minor Groups	Not a Residence of PSU	Residence of PSU	Count
Medical doctors (Code 221)	47%	53%	269
Nursing and midwifery associate professionals (Code 322)	16%	84%	49
Nursing and midwifery professionals (Code 222)	45%	55%	75
Other health associate professionals (Code 325)	15%	85%	687
Legal, social and religious associate professionals (Code 341)	0%	100%	5
Medical and pharmaceutical technicians (Code 321)	20%	80%	434
Other health professionals (Code 226)	28%	72%	137
Other sales workers (Code 524)	20%	80%	15
Personal care workers in health services (Code 532)	16%	84%	320

Minor Groups	Not a Residence of PSU	Residence of PSU	Count
Social and religious professionals (Code 263)	25%	75%	4
Traditional and complementary medicine associate professionals (Code 323)	14%	86%	84
Traditional and complementary medicine professional (Code 223)	17%	83%	286
Non-qualified /Recognized	9%	91%	79
Non-qualified /Unrecognized	11%	89%	1566
All HWF	18%	82%	4010

3.3 Education and Training Information of the Health Workers

3.3.1 Education Level of the Health Workers

Overall, only 28% percent of the health workers have diploma education or above (Table 23). Around 62% of the health workers have below diploma education (e.g. certificate courses, short courses, etc.). All the medical doctors were found having Diploma education and above. Although the category name is “Diploma Education and Above”, actually, all the professionals in medical doctors’ category (code 221) have minimum MBBS level education. Although a diploma is necessary for being in the health professional category, however, 7% of nursing and midwifery professionals, 5% of traditional and complementary medicine professionals and 5% of other health professionals do not have a minimum diploma level education in relevant fields. Majority of the associate professionals have below diploma level education (certificate courses, short courses, etc.). However, around 20% of nursing and midwifery associate professionals, 4% of medical and pharmaceutical technicians and 27% of the personal care workers do not have any relevant education.

Table 23: Educational Qualifications of the Health Workers

Minor Group	Count	Below Diploma	Diploma and Above	No Education	Grand Total
Medical doctors (Code 221)	269	0%	100%	0%	100%
Nursing and midwifery associate professionals (Code 322)	49	76%	4%	20%	100%
Nursing and midwifery professionals (Code 222)	75	7%	93%	0%	100%
Other health associate professionals (Code 325)	687	83%	17%	0%	100%
Legal, social and religious associate professionals (Code 341)	5	100%	0%	0%	100%
Medical and pharmaceutical technicians (Code 321)	434	65%	32%	4%	100%
Other health professionals (Code 226)	137	5%	95%	0%	100%
Other sales workers (Code 524)	15	80%	0%	20%	100%
Personal care workers in health services (Code 532)	320	73%	0%	27%	100%
Social and religious professionals (Code 263)	4	100%	0%	0%	100%
Traditional and complementary medicine associate professionals (Code 323)	84	94%	6%	0%	100%
Traditional and complementary medicine professionals (Code 223)	286	5%	95%	0%	100%
Non-qualified /Recognized	79	96%	0%	4%	100%
Non-qualified /Unrecognized	1566	79%	2%	19%	100%
Grand Total	4010	62%	28%	10%	100%

3.3.2 Training of the Health Workers

Around 46% percent of the recognized health workers interviewed had at least one relevant training, as shown in Table 24.

Table 24: Number of Minor Group Healthcare Service Providers with at least One Relevant Training

Minor Groups	At least one training	No Training	Count
Medical doctors (Code 221)	79%	21%	269
Nursing and midwifery associate professionals (Code 322)	90%	10%	49
Nursing and midwifery professionals (Code 222)	37%	63%	75
Other health associate professionals (Code 325)	82%	18%	687
Legal, social and religious associate professionals (Code 341)	80%	20%	5
Medical and pharmaceutical technicians (Code 321)	67%	33%	434
Other health professionals (Code 226)	68%	32%	137
Other sales workers (Code 524)	20%	80%	15
Personal care workers in health services (Code 532)	18%	82%	320
Social and religious professionals (Code 263)	0%	100%	4
Traditional and complementary medicine associate professionals (Code 323)	61%	39%	84
Traditional and complementary medicine professionals (Code 223)	25%	75%	286
Non-qualified /Recognized	6%	94%	79
Non-qualified /Unrecognized	27%	73%	1566
All HWF	46%	54%	4010

On an average, the recognized health workers interviewed in the survey had 1.36 relevant trainings as shown in figure 16 below.



Figure 16: Average Number of Trainings for Minor Group-wise Health Workers

Around 76% of the health workers had one training, and 22 percent had two to four trainings, shown in table 25 below.

Table 25: Number of Trainings for the Health Workers

Minor Groups	One Training	Two to Four Trainings	Five and More	Count
Medical doctors (Code 221)	70%	24%	6%	213
Nursing and midwifery associate professionals (Code 322)	73%	25%	2%	44
Nursing and midwifery professionals (Code 222)	86%	11%	4%	28
Legal, social and religious associate professionals (Code 341)	25%	50%	25%	4
Medical and pharmaceutical technicians (Code 321)	78%	21%	0%	292
Other health associate professionals (Code 325)	69%	30%	1%	565
Other health professionals (Code 226)	82%	15%	3%	93
Other sales workers (Code 524)	67%	33%	0%	3
Personal care workers in health services (Code 532)	98%	2%	0%	48
Social and religious professionals (Code 263)				0
Traditional and complementary medicine associate professionals (Code 323)	92%	8%	0%	51
Traditional and complementary medicine professionals (Code 223)	80%	15%	4%	71
Non-qualified /Recognized	80%	20%	0%	5
Non-qualified /Unrecognized	81%	18%	0%	417
All HWF	76%	22%	2%	1834

3.4 Service Information of the Health Workers

3.4.1 Time in Profession

On an average, the health workers identified are engaged for 15 years in service as shown in table 26.

Table 26: Average Number of Years of Engagement in Profession for Minor Group-wise Health Workers

Minor Groups	Average of Active Service Years
Medical doctors (Code 221)	13.8
Nursing and midwifery associate professionals (Code 322)	17.02
Nursing and midwifery professionals (Code 222)	6
Other health associate professionals (Code 325)	14.66
Other health professionals (Code 226)	9.66
Other sales workers (Code 524)	11.56
Personal care workers in health services (Code 532)	14.85
Social and religious professionals (Code 263)	10.15
Traditional and complementary medicine associate professionals (Code 323)	20.03
Traditional and complementary medicine professionals (Code 223)	15.69
Legal, social and religious associate professionals (Code 341)	7.05
Medical and pharmaceutical technicians (Code 321)	11.92
Non-qualified /Recognized	19.75
Non-qualified /Unrecognized	15.84
All HWF	14.74

3.4.2 Workplace

Bulk of the health workers interviewed work in one place. Only around 8 percent work in two places and two percent work in more than two places. Work in multiple places are predominantly seen among Medical doctors, 42 percent of whom work in two places and three percent in more than two places.

Table 27: Number of Places in Which the Health Workers Work

Minor Groups	No Fixed Place	One Place	Two Places	More Than Two Places	Count
Medical doctors	0%	56%	42%	3%	269
Nursing and midwifery associate professionals	0%	94%	6%	0%	49
Nursing and midwifery professionals	0%	93%	7%	0%	75
Other health associate professionals	0%	93%	7%	1%	687
Legal, social and religious associate professionals	0%	100%	0%	0%	5
Medical and pharmaceutical technicians	0%	94%	6%	0%	434
Other health professionals	0%	77%	23%	1%	137
Other sales workers	0%	87%	0%	13%	15
Personal care workers in health services	0%	97%	2%	1%	320
Social and religious professionals	0%	75%	25%	0%	4
Traditional and complementary medicine associate professionals	0%	93%	6%	1%	84
Traditional and complementary medicine professionals	1%	91%	8%	1%	286
Non-qualified /Recognized	1%	96%	3%	0%	79
Non-qualified /Unrecognized	0%	94%	3%	3%	1566
All HWF	0%	90%	8%	2%	4010

Health workers were asked about their first priority place in which they provide services. Overall, the highest number of health workers expressed providing services from pharmacies or drugstores as their first priority (41%). Other large number (15%) mentioned providing services from home or from standalone chambers, which is their priority place of service provision. However, there are differences in opinion based on the minor groups. Table 28 shows preferred workplace for different categories of HWF.

Table 28: First Priority Workplace for the Healthcare Service Providers

Minor Groups	Government Facilities	Private Facilities	NGO Facilities	Pharmacies or Drug Store	Practice from Home	Standalone Chamber or Shop	Traveling, No Specific Place	Other Facilities	Total
Medical doctors (Code 221)	13%	58%	4%	7%	0%	15%	0%	2%	100%
Nursing and midwifery associate professionals (Code 322)	2%	29%	4%	2%	17%	2%	13%	31%	100%
Nursing and midwifery professionals (Code 222)	1%	82%	11%	1%	1%	1%	0%	1%	100%
Legal, social and religious associate professionals (Code 341)	0%	0%	60%	0%	0%	0%	20%	20%	100%
Medical and pharmaceutical technicians (Code 321)	1%	24%	2%	63%	0%	9%	0%	1%	100%
Other health associate professionals (Code 325)	3%	5%	7%	59%	2%	18%	4%	1%	100%
Other health professionals (Code 226)	5%	32%	1%	22%	0%	39%	0%	2%	100%
Other sales workers (Code 524)	0%	8%	0%	54%	0%	0%	38%	0%	100%
Personal care workers in health services (Code 532)	1%	29%	2%	18%	40%	2%	6%	4%	100%
Social and religious professionals (Code 263)	0%	0%	50%	0%	25%	0%	25%	0%	100%
Traditional and complementary medicine associate professionals (Code 323)	0%	1%	0%	44%	11%	43%	1%	0%	100%
Traditional and complementary medicine professionals (Code 223)	1%	2%	0%	27%	4%	66%	0%	0%	100%
Non-qualified /Recognized	1%	1%	0%	32%	26%	40%	0%	0%	100%
Non-qualified /Unrecognized	0%	3%	1%	45%	27%	7%	13%	5%	100%
All HWF	2%	14%	2%	41%	15%	15%	7%	3%	100%

Health workers mentioned spending on average around 45 hours per week in their first priority workplace. Among these, the medical and pharmaceutical technicians spend the highest, an average of 60.71 hours per week, in their first priority workplace. Legal, social and religious associate professionals were found to be spending the least amount of time, an average of 32.6 hours per week. Gender-wise, male health workers were found spending significantly more time in their first priority workplace than the female health workers (Table 29).

Table 29: Average working hours for Health Workers in First Priority Workplace (Hours per Week)

Minor Groups of Healthcare Service Providers	Avg. Time Spent in First Priority Workplace (Hours per Week)		Grand Total
	Female	Male	
Medical doctors (Code 221)	36.09	37.84	37.35
Nursing and midwifery associate professionals (Code 322)	35.91	46	36.54
Nursing and midwifery professionals (Code 222)	51.35	48.29	51.06
Legal, social and religious associate professionals (Code 341)	32.6		32.6
Medical and pharmaceutical technicians (Code 321)	50.32	61.35	60.71
Other health associate professionals (Code 325)	40.03	56.86	54.26
Other health professionals (Code 226)	38.97	46.3	44.36
Other sales workers (Code 524)		52.62	52.62
Personal care workers in health services (Code 532)	43.27	38.37	40.04
Social and religious professionals (Code 263)	39.5		39.5
Traditional and complementary medicine associate professionals (Code 323)	42	46.13	46.08
Traditional and complementary medicine professionals (Code 223)	40.52	47.6	46.43
Non-qualified /Recognized	30.75	48.57	47.65
Non-qualified /Unrecognized	12.91	49.9	38.48
Grand Total	27.78	50.83	45.03

Health workers were asked about the contractual relationship with their first priority workplace. The majority mentioned ownership (67 percent), while around 26 percent were salaried full-time staff. However, there are differences in different minor groups as well, shown in table below.

Table 30: Contractual Relationship of the Healthcare Service Providers with their First Priority Workplace

Minor Group	Ownership	Full Time (Salaried)	Full Time (commission-based)	Full Time (Salary + Commission)	Part Time (Salaried)	Part Time (commission-based)	Part Time (Salary + Commission)	Occasional/Seasonal	Other Arrangements	On Request from the Owner - No Contractual	Grand Total
Medical doctors (Code 221)	21%	51%	2%	0%	6%	2%	0%	0%	1%	17%	100%
Nursing and midwifery associate professionals (Code 322)	25%	38%	0%	0%	0%	0%	0%	0%	10%	27%	100%
Nursing and midwifery professionals (Code 222)	11%	86%	0%	0%	3%	0%	0%	0%	0%	0%	100%
Other health associate professionals (Code 325)	77%	18%	0%	0%	1%	1%	0%	0%	0%	2%	100%
Legal, social and religious associate professionals (Code 341)	0%	60%	0%	0%	0%	0%	0%	20%	0%	20%	100%
Medical and pharmaceutical technicians (Code 321)	70%	29%	0%	0%	1%	0%	0%	0%	0%	0%	100%
Other health professionals (Code 226)	58%	34%	2%	0%	2%	2%	1%	0%	0%	2%	100%

Minor Group	Ownership	Full Time (Salaried)	Full Time (commission-based)	Full Time (Salary + Commission)	Part Time (Salaried)	Part Time (commission-based)	Part Time (Salary + Commission)	Occasional/Seasonal	Other Arrangements	On Request from the Owner - No Contractual	Grand Total
Other sales workers (Code 524)	62%	23%	0%	0%	0%	0%	0%	0%	0%	15%	100%
Personal care workers in health services (Code 532)	46%	48%	0%	0%	1%	0%	0%	1%	1%	3%	100%
Social and religious professionals (Code 263)	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Traditional and complementary medicine associate professionals (Code 323)	95%	4%	0%	0%	0%	0%	0%	0%	0%	1%	100%
Traditional and complementary medicine professionals (Code 223)	94%	5%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Non-qualified /Recognized	91%	8%	0%	0%	0%	0%	0%	0%	0%	1%	100%
Non-qualified /Unrecognized	84%	7%	0%	0%	0%	0%	0%	0%	1%	6%	100%
All HWF	66.53%	26.22%	0.41%	0.09%	1.47%	0.73%	0.05%	0.32%	0.18%	3.99%	100%

3.4.3 Referral

Around 44 percent of the health workers were referring patients to other facilities or service providers. Medical Doctors (77 percent) and other health associate professionals (74 percent) were found to be referring patients in higher proportion of cases.

Table 31: Percent of Health Workers Referring Patients

Minor Groups	% of Health Workers Referring Patients
Medical doctors (Code 221)	77%
Nursing and midwifery associate professionals (Code 322)	29%
Nursing and midwifery professionals (Code 222)	13%
Legal, social and religious associate professionals (Code 341)	20%
Medical and pharmaceutical technicians (Code 321)	44%
Other health associate professionals (Code 325)	74%
Other health professionals (Code 226)	63%
Other sales workers (Code 524)	20%
Personal care workers in health services (Code 532)	6%
Social and religious professionals (Code 263)	25%
Traditional and complementary medicine associate professionals (Code 323)	40%
Traditional and complementary medicine professionals (Code 223)	38%
Non-qualified /Recognized	29%
Non-qualified /Unrecognized	35%
All HWF	44%

The surveyed health workers were found to be referring on an average of 8.5 patients per month. Minor group-wise number of referral patients are shown in Figure 17.

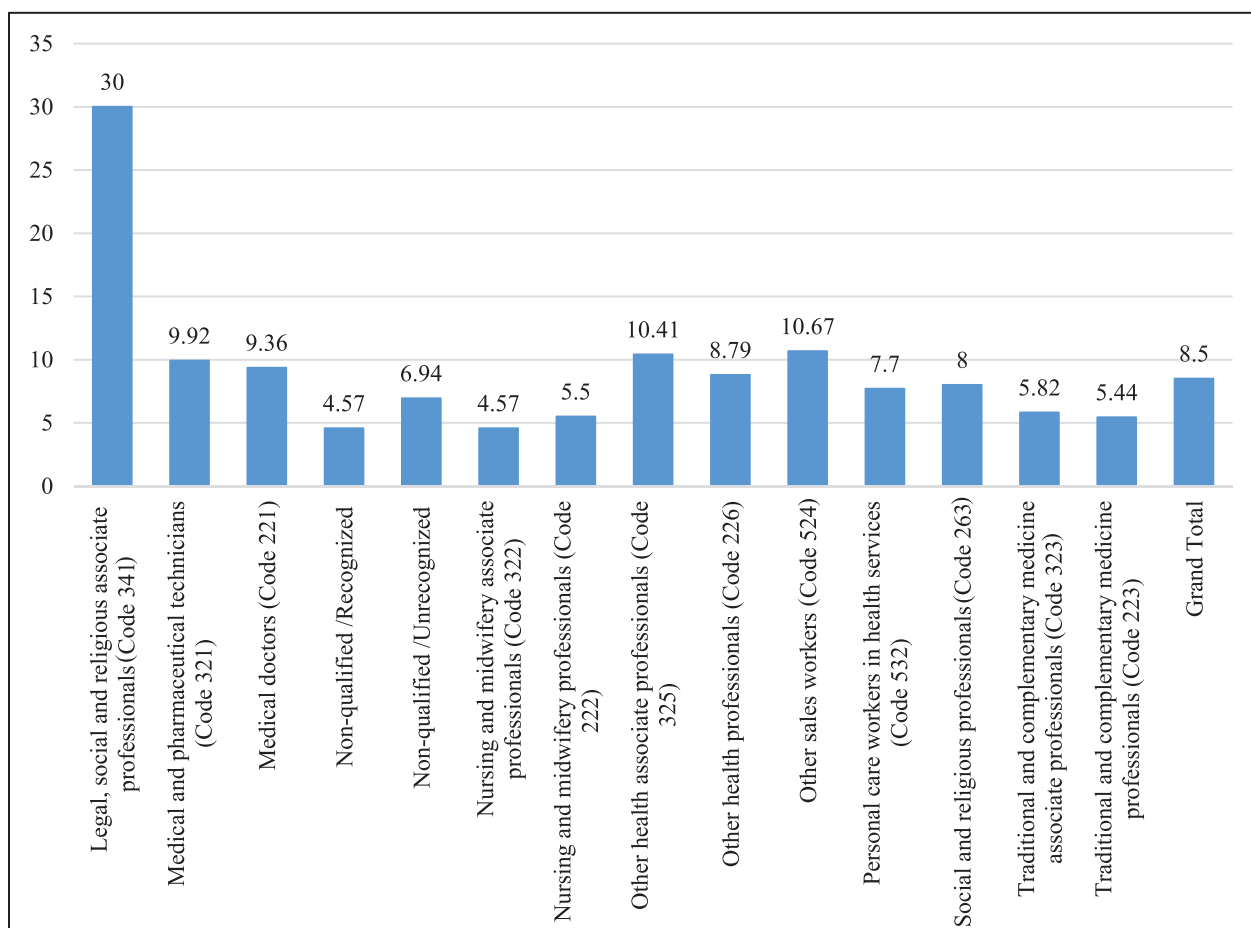


Figure 17: Number of Patients Referred by Different Categories of Health Workers (No. of Patients per Month)

Majority of the health workers mentioned they referred patients either since they do not have enough facility to provide services or they are not specialist in the particular field of service.

Table 32: Reasons for Referring Patients by the Health Workers

Minor Groups	Not specialist in particular disease	No facility for providing services	No time for providing services	Space limitation in the hospital/service providing place	The patient do not want to get services for the particular provider	Others	Total
Medical doctors (Code 221)	44%	39%	7%	3%	5%	2%	100%
Nursing and midwifery associate professionals (Code 322)	48%	52%	0%	0%	0%	0%	100%
Nursing and midwifery professionals (Code 222)	33%	53%	7%	7%	0%	0%	100%
Legal, social and religious associate professionals (Code 341)	50%	50%	0%	0%	0%	0%	100%
Medical and pharmaceutical technicians (Code 321)	43%	54%	0%	1%	2%	0%	100%
Other health associate professionals (Code 325)	36%	58%	0%	3%	2%	0%	100%
Other health professionals (Code 226)	45%	43%	4%	3%	5%	0%	100%

Minor Groups	Not specialist in particular disease	No facility for providing services	No time for providing services	Space limitation in the hospital/service providing place	The patient do not want to get services for the particular provider	Others	Total
Other sales workers (Code 524)	25%	75%	0%	0%	0%	0%	100%
Personal care workers in health services (Code 532)	43%	53%	0%	0%	3%	0%	100%
Social and religious professionals (Code 263)	0%	100%	0%	0%	0%	0%	100%
Traditional and complementary medicine associate professionals (Code 323)	28%	72%	0%	0%	0%	0%	100%
Traditional and complementary medicine professionals (Code 223)	41%	49%	4%	3%	2%	1%	100%
Non-qualified /Recognized	43%	54%	0%	0%	3%	0%	100%
Non-qualified /Unrecognized	43%	51%	1%	0%	5%	0%	100%

Majority of the referrals are directed towards the government health facilities (66 percent), while the second highest place for referral was found to be Private facilities. A large number of traditional and complementary medicine professionals, traditional and complementary medicine associate professionals and other health professionals refer patients to individual doctors.

Table 33: Place for Referral from Different Health Workers

Minor Groups	Public Facilities	Private Facilities	NGO Facilities	Individual Doctors	Other Facilities	Total
Medical doctors (Code 221)	76%	15%	0%	9%	0%	100%
Nursing and midwifery associate professionals (Code 322)	78%	14%	5%	3%	0%	100%
Nursing and midwifery professionals (Code 222)	68%	26%	3%	3%	0%	100%
Legal, social and religious associate professionals (Code 341)	80%	20%	0%	0%	0%	100%
Medical and pharmaceutical technicians (Code 321)	65%	19%	2%	14%	0%	100%
Other health associate professionals (Code 325)	65%	24%	1%	9%	0%	100%
Other health professionals (Code 226)	60%	23%	1%	16%	2%	100%
Other sales workers (Code 524)	50%	50%	0%	0%	0%	100%
Personal care workers in health services (Code 532)	80%	13%	0%	7%	0%	100%
Personal care workers in health services (Code 532)	45%	45%	0%	9%	0%	100%
Social and religious professionals (Code 263)	50%	50%	0%	0%	0%	100%

Minor Groups	Public Facilities	Private Facilities	NGO Facilities	Individual Doctors	Other Facilities	Total
Traditional and complementary medicine associate professionals (Code 323)	70%	11%	0%	18%	0%	100%
Traditional and complementary medicine professionals (Code 223)	58%	15%	0%	22%	4%	100%
Non-qualified /Recognized	53%	14%	2%	22%	9%	100%
Non-qualified /Unrecognized	65%	24%	2%	9%	1%	100%
All HWF	66%	22%	1%	11%	1%	100%

Health workers were asked if they take commission for referrals. On average 91% of the health workers replied they do not take any commission for referrals. Nursing and midwifery associate professionals are largest group to take commission for referrals.

Table 34: Percentage of Healthcare Service Providers Taking Commissions for Referrals

Minor Groups	% of HWF taking commission for referral	Count
Medical doctors (Code 221)	1%	207
Nursing and midwifery associate professionals (Code 322)	21%	14
Nursing and midwifery professionals (Code 222)	10%	10
Legal, social and religious associate professionals (Code 341)	0%	1
Medical and pharmaceutical technicians (Code 321)	8%	192
Other health associate professionals (Code 325)	14%	511
Other health professionals (Code 226)	2%	86
Other sales workers (Code 524)	0%	3
Personal care workers in health services (Code 532)	5%	20
Social and religious professionals (Code 263)	0%	1
Traditional and complementary medicine associate professionals (Code 323)	0%	34
Traditional and complementary medicine professionals (Code 223)	0%	108
Non-qualified /Recognized	0%	23
Non-qualified /Unrecognized	12%	548
Grand Total	9%	1758

3.4.4 Patients Served by the Health Workers

The assessment identified the health workers serving around 28 patients per day. Medical and pharmaceutical technicians were found to be serving more patients – around 47 per day, while nursing and midwifery associate professionals were seen serving the least number of patients – around 8 per day.

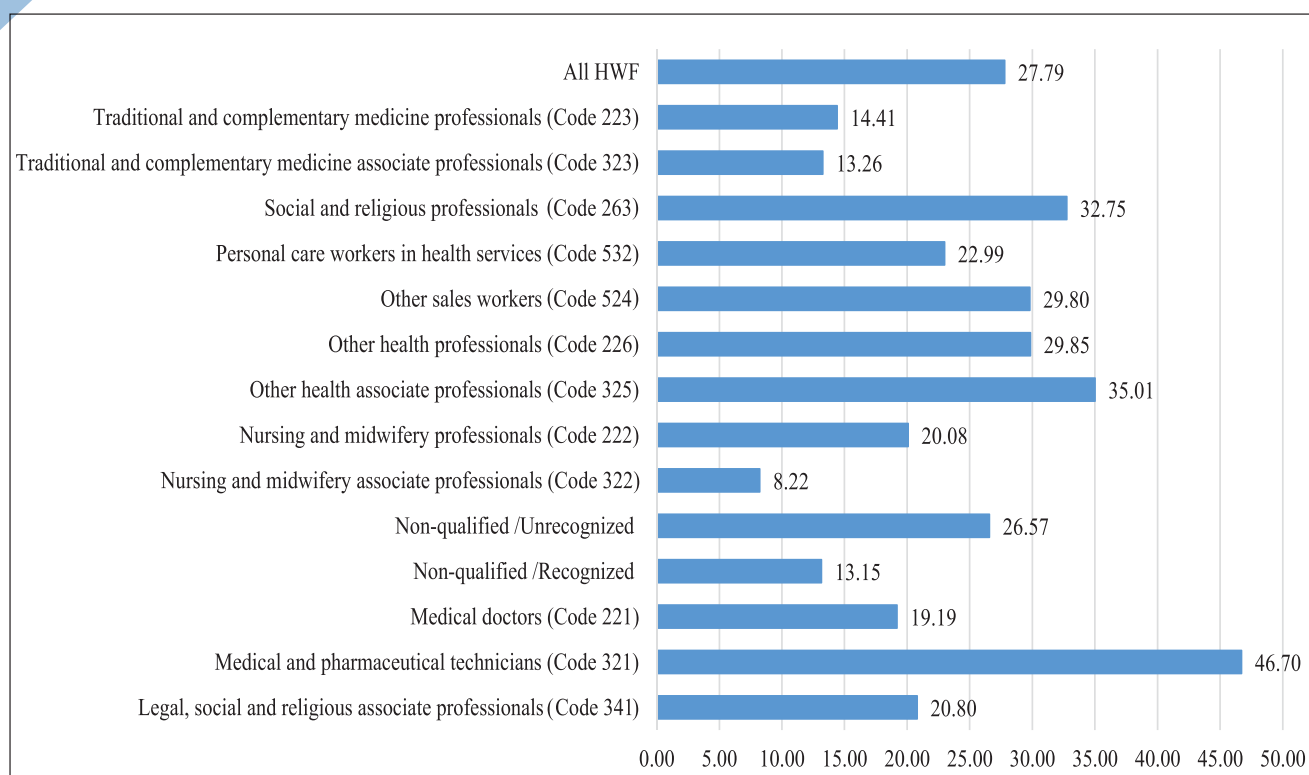


Figure 18: Number of Patients Served per Day by the Health Workers

More than 62 percent of the health workers interviewed mentioned that their patient number is increasing recently. Around 24 percent said it remained same.

Table 35: Trends of Patients to the Health Workers

Minor Groups	Decreasing	Increasing	Same	Grand Total
Medical doctors	4%	77%	19%	100%
Nursing and midwifery associate professionals	18%	45%	37%	100%
Nursing and midwifery professionals	1%	81%	17%	100%
Legal, social and religious associate professionals	0%	100%	0%	100%
Medical and pharmaceutical technicians	5%	79%	15%	100%
Other health associate professionals	6%	73%	21%	100%
Other health professionals	7%	73%	20%	100%
Other sales workers	40%	53%	7%	100%
Personal care workers in health services	23%	49%	28%	100%
Social and religious professionals	0%	50%	50%	100%
Traditional and complementary medicine associate professionals	21%	52%	26%	100%
Traditional and complementary medicine professionals	11%	61%	29%	100%
Non-qualified /Recognized	29%	36%	35%	100%
Non-qualified /Unrecognized	20%	53%	27%	100%
All HWF	14%	62%	24%	100%

3.4.5 Satisfaction of the Health Workers

Majority of the health workers (62%) are satisfied with the services that they provide. The satisfaction scenario is shown in table 36.

Table 36: Satisfaction of the Health Workers

Minor Groups	Moderately Satisfied	Not Satisfied	Satisfied	Count
Medical doctors (Code 221)	28%	0%	72%	269
Nursing and midwifery associate professionals (Code 322)	41%	0%	59%	49
Nursing and midwifery professionals (Code 222)	32%	0%	68%	75
Legal, social and religious associate professionals (Code 341)	40%	0%	60%	5
Medical and pharmaceutical technicians (Code 321)	36%	1%	62%	434
Other health associate professionals (Code 325)	25%	1%	74%	686
Other health professionals (Code 226)	31%	3%	66%	137
Other sales workers (Code 524)	60%	7%	33%	15
Personal care workers in health services (Code 532)	46%	6%	48%	320
Social and religious professionals (Code 263)	75%	0%	25%	4
Traditional and complementary medicine associate professionals (Code 323)	27%	8%	64%	84
Traditional and complementary medicine professionals (Code 223)	25%	2%	73%	284
Non-qualified /Recognized	42%	1%	56%	78
Non-qualified /Unrecognized	40%	3%	57%	1561
All HWF	35%	2%	62%	4001

3.4.6 Income for the Health Workers

Health workers were asked about their income in terms of Bangladesh Taka (BDT) per month. Average income was found to be BDT 15,877 per Month. As shown in the figure below, medical doctors were found to have the highest average monthly income (BDT 63,646). Point to be noted that the income figure shown in figure 19 of different categories of HWF are self-reported, i.e. mentioned by the interviewed HWF. These figures were not validated with any other sources.

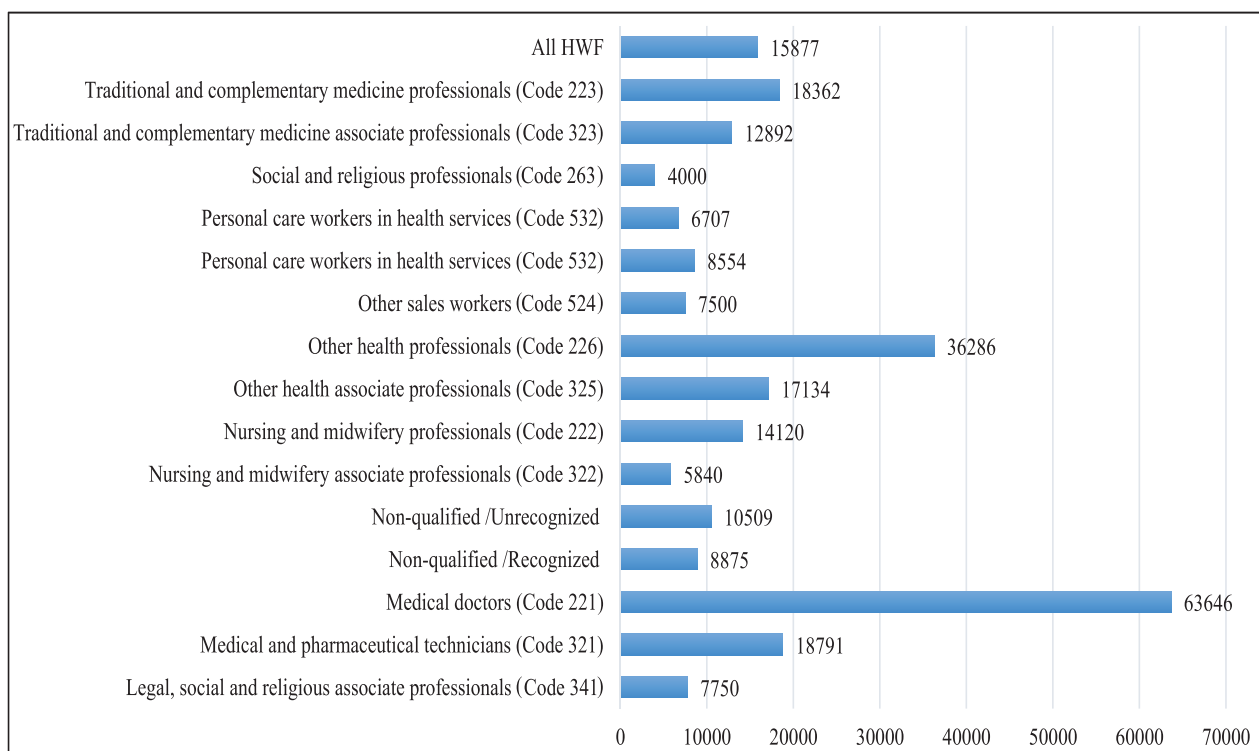


Figure 19: Average Income of the Health Workers (BDT/Month)

3.5 Decent Work Environment for Health Workers

Health Workers being employed or contractual relationship with the employer were asked a number of questions about their working conditions. The following subsections are based on their responses.

A total of 885 out of the surveyed 4,010 HWF were found to be in employment status. Around 79% of the health workers were found to have a written contract with their employers. Almost 89% of the healthcare service providers mentioned receiving payments as per their contract. Around 87% get the payment within the timeline as stipulated in the contract. However, only 57% receive any non-monetary benefits. Health workers were asked if they receive overtime payment for working more than the contractual hours. Only 19% of the healthcare service providers employed mentioned they receive some sort of overtime. Health workers were asked about workplace conditions. Almost all of them specified having ample light and ventilation at workplace and facilities of safe drinking water. However, only 65% of the health workers mentioned about gender-specific washroom. 61% of the health workers mentioned that they get appropriate breaks during work. Around 75% get appropriate holidays and breaks. However, only 28% mentioned their salary and payments increase in case their performances are improved.

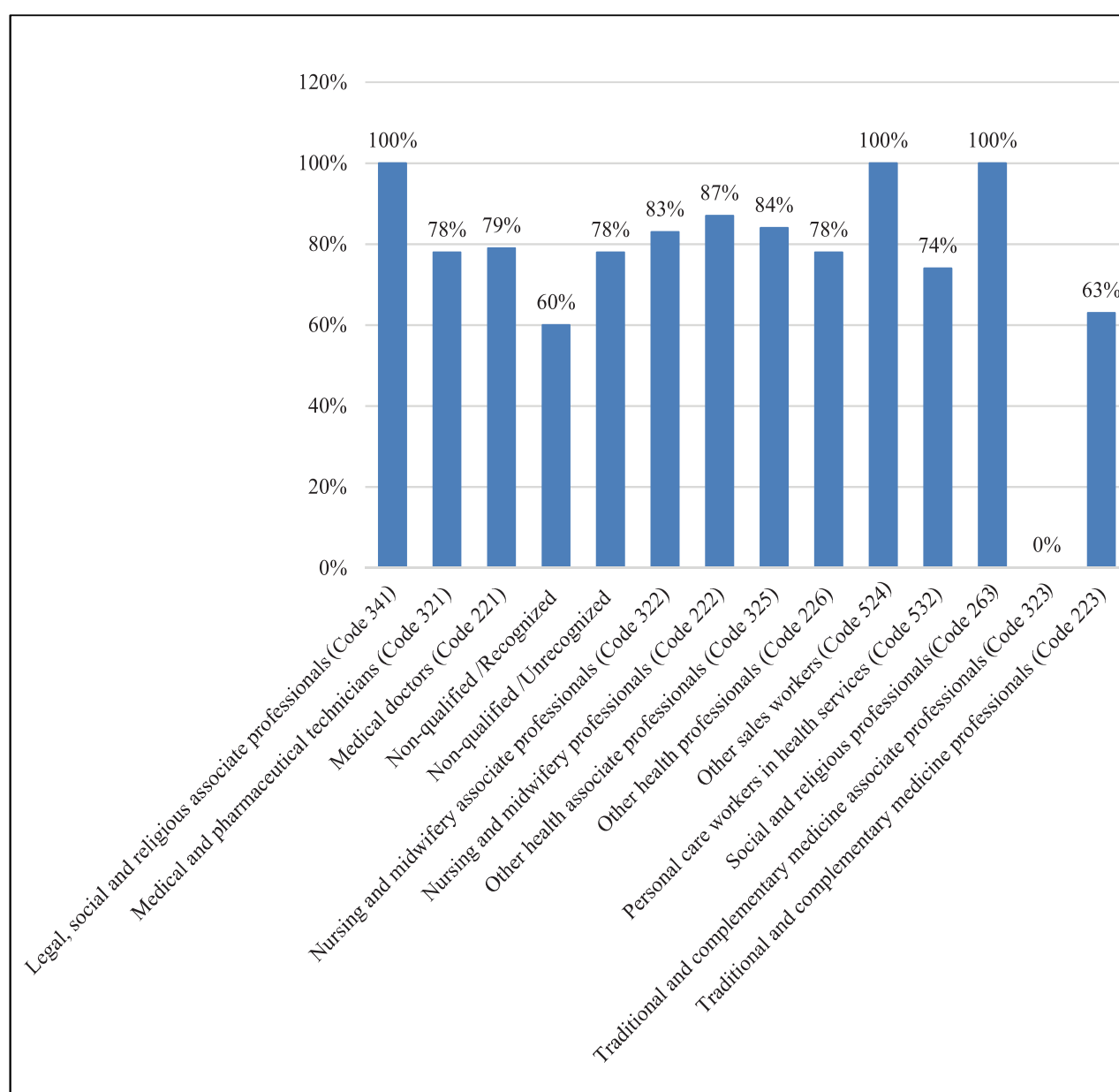


Figure 20: Percentage of Health Workers having Written Contract with their Employers (Only for Employed Health Workers)

Table 37: Issues with Payment as per Contract

Minor Group	Count (n=885)	Have a written contract	Receive payment as per contract	On time payment	Get non-monetary benefits as per contract
Medical doctors (Code 221)	164	79%	80%	80%	60%
Nursing and midwifery associate professionals (Code 322)	18	83%	100%	94%	78%
Nursing and midwifery professionals (Code 222)	69	87%	91%	91%	68%
Legal, social and religious associate professionals (Code 341)	3	100%	100%	100%	33%
Medical and pharmaceutical technicians (Code 321)	134	78%	90%	88%	49%
Other health associate professionals (Code 325)	141	84%	94%	91%	64%
Other health professionals (Code 226)	51	78%	82%	84%	47%
Other sales workers (Code 524)	2	100%	100%	100%	100%
Personal care workers in health services (Code 532)	155	74%	92%	89%	57%
Social and religious professionals (Code 263)	2	100%	50%	50%	0%
Traditional and complementary medicine associate professionals (Code 323)	2	0%	0%	0%	0%
Traditional and complementary medicine professionals (Code 223)	19	63%	74%	74%	37%
Non-qualified /Recognized	5	60%	100%	100%	40%
Non-qualified /Unrecognized	120	78%	91%	89%	56%
All HWF (Employed)	885	79%	89%	87%	57%

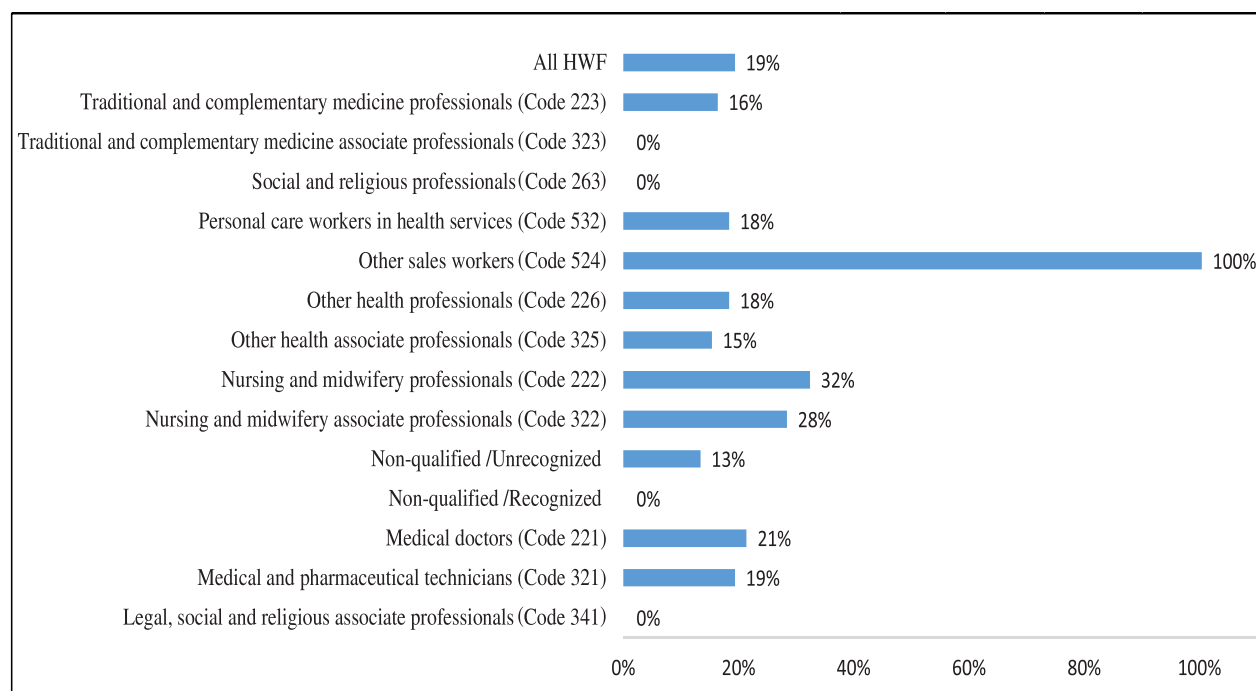


Figure 21: Percentage of Health Workers Getting Overtime Payment for Working More than Contractual Hours (N = 885)

Table 38: Workplace Conditions

Minor Groups	Count	Safe Drinking Water	Sunlight & Ventilation	Gender-specific Washroom
Medical doctors	164	93%	93%	85%
Nursing and midwifery associate professionals	18	100%	100%	89%
Nursing and midwifery professionals	69	94%	96%	91%
Legal, social and religious associate professionals	3	100%	100%	67%
Medical and pharmaceutical technicians	134	93%	94%	69%
Other health associate professionals	141	91%	96%	67%
Other health professionals	51	88%	92%	69%
Other sales workers	2	50%	100%	0%
Personal care workers in health services	155	89%	96%	60%
Social and religious professionals	2	50%	100%	50%
Traditional and complementary medicine associate professionals	2	100%	100%	0%
Traditional and complementary medicine professionals	19	84%	79%	37%
Non-qualified /Recognized	5	80%	80%	0%
Non-qualified /Unrecognized	120	81%	88%	26%
All HWF (Employed)	885	90%	94%	65%

Table 39: Contractual Conditions

Minor Groups	Count	Appropriate Breaks during Work	Appropriate Holidays	Salary Increase due to Performance
Medical doctors	164	77%	77%	34%
Nursing and midwifery associate professionals	18	83%	100%	33%
Nursing and midwifery professionals	69	65%	75%	35%
Legal, social and religious associate professionals	3	100%	100%	0%
Medical and pharmaceutical technicians	134	57%	79%	23%
Other health associate professionals	141	67%	82%	16%
Other health professionals	51	57%	69%	35%
Other sales workers	2	50%	100%	100%
Personal care workers in health services	155	61%	67%	28%
Social and religious professionals	2	0%	50%	0%
Traditional & complementary medicine associate professionals	2	0%	0%	0%
Traditional and complementary medicine professionals	19	63%	58%	21%
Non-qualified /Recognized	5	40%	60%	0%
Non-qualified /Unrecognized	120	35%	76%	31%
All HWF (Employed)	885	61%	75%	28%

3.6 Registration/Affiliation of the Health Workers

All the health workers initially mentioned that they had at least one kind of registration or affiliation. However, while asking if they can show the license or at least can mention the number, only 58% of the sample could show license/registration or at least could mention the number. Almost all the medical doctors could mention their registration number or could show the license and registration number.

Table 40: Proportion of the Health Workers that could Show License or at least Mention License or Registration Number

Minor Groups	Count	% of Showing/ Mentioning License Number
Medical doctors (Code 221)	269	96%
Nursing and midwifery associate professionals (Code 322)	49	18%
Nursing and midwifery professionals (Code 222)	75	71%
Legal, social and religious associate professionals (Code 341)	5	0%
Medical and pharmaceutical technicians (Code 321)	434	74%
Other health associate professionals (Code 325)	687	50%
Other health professionals (Code 226)	137	84%
Other sales workers (Code 524)	15	0%
Personal care workers in health services (Code 532)	320	2%
Social and religious professionals (Code 263)	4	0%
Traditional and complementary medicine associate professionals (Code 323)	84	35%
Traditional and complementary medicine professionals (Code 223)	286	80%
All HWF	2365	58%

Those who could not produce a license or registration were asked the reason for not showing license number and not mentioning the license/registration number. Majority replied that the documents are not near to them or they cannot recall where they put the documents. Around a quarter mentioned that they forgot their license/registration number.

Table 41: Reasons for those who mentioned having registration but could not show any registration or affiliation document or mention the number

Minor Groups	Forgot	Not near	Not willing to say	Total
Medical doctors (Code 221)	31%	49%	21%	100%
Nursing and midwifery associate professionals (Code 322)	0%	75%	25%	100%
Nursing and midwifery professionals (Code 222)	36%	64%	0%	100%
Medical and pharmaceutical technicians (Code 321)	24%	75%	1%	100%
Other health associate professionals (Code 325)	24%	73%	4%	100%
Other health professionals (Code 226)	26%	65%	9%	100%
Personal care workers in health services (Code 532)	0%	100%	0%	100%
Traditional and complementary medicine associate professionals (Code 323)	40%	60%	0%	100%
Traditional and complementary medicine professionals (Code 223)	30%	66%	4%	100%
All HWF Mentioning Having License	27%	69%	4%	100%

CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

The key Human Resource Management (HRM) functions assumed by MOHFW include institutional education of HWF, in-service training and development, and recruitment and retention. In addition, stewardship and governance of the HWF from private sector and development of relevant HWF development policies and strategies are also within the purview of government, i.e. MOHFW. For that, a reliable and accurate database for HRH in the country is essential. While MOHFW, through its key directorates like DGHS, DGFP, DGDA and DGNM have administrative records for the public sector HRH, the situation of private and informal sector remained relatively unexplored till date. In this context, this particular assessment will provide a realistic overview and situation assessment for MOHFW regarding the private and informal sector HRH in Bangladesh. This will particularly be helpful in updating the HRH strategy and action plan and development of plan, projection and career planning for the HWF in the country.

Although this assessment was a quantitative one, the key members of the consultant team had qualitative observations, gained from the field visits, observations and qualitative discussions with policy stakeholders and field level private and informal health workers. The following recommendations have been made from the qualitative observations of the consultants, backed up by the quantitative information already discussed before:

- There needs to be standardization in classification of HRH in the country. The study identified health workers mentioning around 70 occupations, whereas some of those are really designations. Even at the senior level, there seem to be confusion regarding occupations and designations. Different MOHFW documents classify the health workers in different ways. As a result, it becomes quite difficult to compare the country situation with global benchmarks. Hence, the consultants think there should be a uniform classifications of health workers in the country by MOHFW, to be followed in all future documents. The ISCO-08 classification, being a globally recognized benchmarking framework, can be used in this regard.
- MOHFW to develop a plan to address issues on unrecognized health workers. It can be seen from the assessment that around 31 percent of the identified health workers are still unrecognized, as they do not have relevant education or training. However, this huge workforce are providing healthcare to a significant portion of the citizens. From our field observations, we have found that not only they are involved in mere selling of medicine, some of them are even involved in minor surgical interventions. MOHFW should carefully lay plan on what to do with this large workforce. In some hard-to-reach areas (e.g. char areas, haor areas, hill tracts, previous enclaves, etc.) and for the left-behind population (e.g. urban slums, floating population, transgender community, sex workers, tea garden workers, ethnic minority), in cases, unrecognized providers like medicine sellers, drug store workers, faith healers and unskilled birth attendants are the only service providers. So it is difficult to terminate the activities of all these health workers in one go. On the other hand, without regulating the services of these health workers, there are possibilities of doing harm than benefit in some cases. There can be careful analysis from the Human Resources Branch of the HSD to identify the number and particular skills of unrecognized health workers and can think about ways to involve them, in limited extent, to the different public health service provisions like mass awareness building, domiciliary/close to community primary health care, etc. At the same time, government may think about gradual skills development of these providers through short term training courses and on-the-job trainings. The model pharmacy initiative of DGDA under which the grade C pharmacies and drug store workers are being trained is one of such interventions which is effective. However, the DGDA initiative is still accelerating at quite a slow pace and the target is only 5,000 pharmacies. Human Resources Branch may consider being involved into this and accelerate the pace. In case of some of other unrecognized service providers like unrecognized (quack) dental professionals, surgical interventions providers, MOHFW should conduct rigorous screening to identify these providers and take measures to refrain them from conducting these malpractices.
- Regulatory bodies like Bangladesh Medical and Dental Council (BMDC) to take appropriate steps in creating of an life database/registry of all active doctors and dentists in the country and make it accessible for all citizens so that a service recipient can identify the registered professionals near him/her. The BMDC website is not very user-friendly in this regard and only provide a bare

minimum information. Most importantly, BMDC have the information on the MBBS/BDS degree of a doctor and dentist, but do not include the updated professionals and trainings attained by them. So, it is difficult to verify the professional qualifications claimed in visiting cards, signboards and advertisement materials by doctors in their private practices. Also, the field visits of the doctors and dentists found, in numerous cases, the BMDC registration number not placed in visible locations of the practice area – which has been made mandatory by BMDC. As there is very limited monitoring and supervision from BMDC, doctors and dentists are not carefully maintaining this practice. Quacks and unrecognized medical professionals are taking these opportunities and claiming themselves as physicians, even in some cases, specialized doctors/dentists. So, BMDC, with support from MOHFW, should conduct mass awareness raising programs so that the registered doctors and dentists place their registration numbers in visible locations.

- Improve work environment and work-related conditions in health sector in case of the salaried and employed health workers. Private employment in health sector still seems to be unregulated. The assessment did not find any suitable authority to supervise the contractual issues and work environments for the health workers in private sector. While the doctors, nurses and midwives can lodge complaint in their respective professional councils like BMDC and BNMC, health workers like pharmacy workers, NGO workers, private clinic associate workers, etc. have no mechanism to express and resolve grievances. MOHFW should think about setting a grievances redress mechanism to support the health workers, particularly those in private sector. A hotline can be introduced to lodge complaint to, say for example, Civil Surgeon, Deputy Director or Drug Superintendent at district level, initially.
- Although there has been huge proportion of women entering into medical education, particularly in MBBS, BDS, nursing and midwifery, the entry into private practices by women still seems to be relatively low from the assessment. Particularly, it can be seen that the women private health workers are putting less than half the time than their male counterparts. MOHFW should carefully explore this issue to identify why there is such low participation of women in private practices. A specific, focused study can be carried out taking a small number of women-private practitioners from different occupations within the health sector.
- Conduct a Health Labour Market Analysis to better inform policy makers on current trends of supply and demand of HWF in Bangladesh and future actions.
- Conduct a similar health workforce assessment in every three to four years, preferably in the same PSUs, taking both government and non-government (private and informal) health workers, and update the health workforce strategies and action plans accordingly.

REFERENCES

1. Ahmed SM, Hossain MA, Chowdhury AMR, Bhuiya AU. The health workforce crisis in Bangladesh: shortage, inappropriate skill-mix and inequitable distribution. *Hum Resour Health*. 2011;9(1):3.
2. Government of Bangladesh. 2019. *Annual Programme Review (APR) of 4th HPNSP*. Ministry of Health and Family Welfare.
3. David H. Peters and Richard D. Kayne. 2003. “Bangladesh Health Labour Market Study Final Report”. Johns Hopkins Bloomberg School of Public Health and Government of Bangladesh Supported by The World Bank, CIDA, DfID (UK), The Netherland Government and WHO.
4. Bangladesh Health Watch. “The State of Health in Bangladesh 2007. Health Workforce in Bangladesh Who Constitutes the Healthcare Systems?”. James P. Grant School of Public Health, Centre for Health Systems Studies. BRAC University. 2008.
5. Resolution of the Technical Support Group (TSG) Meeting “Health Labour Market Analysis in Bangladesh” on 11 July 2019.
6. Government of Bangladesh, 2013. “Human Resources for Health: Country Profile Bangladesh”. Human Resource Management Unit, Ministry of Health and Family Welfare and World Health Organization, Dhaka, Bangladesh.
7. International Labour Organization. International Standard Classification of Occupations Structure, group definitions and correspondence tables. ISCO-08. Vol 1. 2012. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/publ/documents/publication/wcms_172572.pdf (Accessed on 12 June 2020).
8. Government of Bangladesh. Bangladesh Standard Classification of Occupations-2012. Bangladesh Bureau of Statistics (BBS). Ministry of Planning.
9. Government of Bangladesh. 2020. HRH Data Sheet-2019. Bangladesh Bureau of Statistics (BBS). Human Resources Branch. Health Services Division. Ministry of Health and Family Welfare and World Health Organization, Dhaka, Bangladesh.

ANNEXES

Annex One: No Objection Certificate issued by BBS

ফরম-২

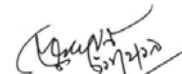
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিকল্পনা মন্ত্রণালয়
পরিসংখ্যান ও তথ্য ব্যবস্থাপনা বিভাগ
বাংলাদেশ পরিসংখ্যান ব্যুরো

সংস্থা কর্তৃক পরিসংখ্যান প্রস্তুত ও প্রকাশের জন্য বাংলাদেশ পরিসংখ্যান ব্যুরোর অনাপত্তি

পরিসংখ্যান আইন, ২০১৩ (২০১৩ সনের ১২নং আইন) এর ধারা ১১ এর উদ্দেশ্য পূরণকল্পে উক্ত আইন এবং এতদসংক্রান্ত বিধি ও নীতিমালা অনুযায়ী নিম্নবর্ণিত শর্তসাপেক্ষে স্বাস্থ্য সেবা বিভাগ কে 'Health Labor Market Analysis in Bangladesh 2021' শীর্ষক কর্মসূচির অংশ হিসেবে 'Private Sector Health Workforce Survey' পরিচালনায় অনাপত্তি প্রদান করা হইল।

শর্তসমূহ :

- (ক) জরিপের শিরোনাম 'Private Sector Health Workforce Survey' ব্যবহার করিতে হইবে;
 - (খ) আলোচনায় নির্দেশিত বিশেষজ্ঞ নমুনায়ন টিম গঠন এবং নমুনা ইউনিটগুলোর যথাযথ বিন্যাস নিশ্চিত করিতে হইবে;
 - (গ) তথ্য সংগ্রহের পূর্বে তথ্য সংগ্রহকারীদের যথাযথ প্রশিক্ষণ প্রদান নিশ্চিত করিতে হইবে এবং প্রশিক্ষণসহ মাঠ পর্যায়ে তথ্য সংগ্রহ কার্যক্রম পরিবীক্ষণে বিবিএসকে সম্পৃক্ত করিতে হইবে;
 - (ঘ) জরিপের তথ্য সংগ্রহের পর প্রস্তুতকৃত প্রতিবেদন এ কমিটির সভায় উপস্থাপন করিতে হইবে;
 - (ঙ) 'সংস্থা কর্তৃক পরিসংখ্যান প্রস্তুত ও প্রকাশ নীতিমালা, ২০১৬'-এর অনুচ্ছেদ-৫(গ) মোতাবেক 'Bangladesh Standard Classification of Occupation (BSCO) Code' ব্যবহার করিতে হইবে;
 - (চ) প্রকাশিত জরিপ প্রতিবেদনের সাথে বিবিএস-এর অনাপত্তিপত্র সংযুক্ত করিতে হইবে এবং বিবিএসকে প্রকাশনার ১০ (দশ) টি কপি এবং Metadata সহ Microdata সরবরাহ করিতে হইবে;
 - (ছ) 'সংস্থা কর্তৃক পরিসংখ্যান প্রস্তুত ও প্রকাশ নীতিমালা, ২০১৬'-এর অনুচ্ছেদ-৪, ৫ ও ৭ এর নির্দেশনাসমূহ যথাযথভাবে প্রতিপালন করিতে হইবে।
- ২। সংস্থা নীতিমালা অনুসরণ এবং ব্যুরো কর্তৃক প্রদত্ত শর্তাবলী পূরণ ও মান বজায় রাখিবার বিষয়টি নিশ্চিত করিবে।
- ৩। নির্ধারিত সময়সীমার মধ্যে পরিসংখ্যান প্রস্তুত ও প্রকাশের কার্যক্রম সম্পন্ন করিতে না পারিলে সংস্থা এই বিধিমালার অধীন বাংলাদেশ পরিসংখ্যান ব্যুরোর নিকট সময় বৃদ্ধির জন্য আবেদন করিতে পারিবে।
- ৪। নীতিমালা যথাযথভাবে অনুসরণ এবং শর্তসমূহ যথাযথভাবে পূরণ ও মান বজায় রাখিবার বিষয়টি বাংলাদেশ পরিসংখ্যান ব্যুরো ও সংস্থার যৌথ পরিবীক্ষণের (Monitoring) মাধ্যমে নিশ্চিত করা হইবে।



(ড. কৃষ্ণা গায়ের)

মহাপরিচালক

অতিরিক্ত সচিব

ফোন: ০২-৫৫০০৭০৫৬

ইমেইল: dg@bbs.gov.bd

Assessment of Healthcare Providers in Bangladesh

Questionnaire for Healthcare Providers

Hello, my name is <.....>. I am working with the Data Collection Team of Associates for Development Services Limited (ADSL) and Consiglieri Private Limited (CPL). We are conducting an assessment to better understand healthcare providers in Bangladesh. The study is acknowledged by Ministry of Health and Family Welfare (MOHFW) in Bangladesh. The information we collect from you and other individuals will help MOHFW for preparation of policy, plan and programme, improving, strengthening quality of healthcare services and service providers in Bangladesh. We shall keep strict confidentiality about your identity and any information provided by you. I would like to tell you more about this study/assessment now, so you can decide if you want to participate. You are free to ask questions at any time. If you do not understand any words, please ask.

We are asking you to take part in this assessment because you provide important healthcare services in one of the Primary Sampling Units (PSU) selected by this assessment. 133 PSUs like this one has been selected to conduct this assessment. If you agree to participate, we will talk to you in private to ask you a few questions about yourself such as age, work, education, training and some specific questions about your service provision. The interview will take approximately 15-20 minutes of your time. We will protect information about you and you're taking part in this assessment to the best of our ability. We will not use your name in any of the documents. You will be given a code number that will be the only identifier on the questionnaire in the records. We will not tell anyone about your participation. Other information you provide that does not directly identify you may be shared with others, including the funder of this study. After we analyze the data, the transcripts will be destroyed. If necessary, we can also correct/ collect some information over telephone.

Information Collected By,

.....
Name
.....
Date

Information Verified By,

.....
Name
.....
Date

101. Identification Questions

SL	Question	Answer
101.a	Name	
101.b	Contact Number	
101.c	Type of Service:	<input type="checkbox"/> Public Service Provider <input type="checkbox"/> Private Service Provider <input type="checkbox"/> Both Public and Private <input type="checkbox"/> NGO <input type="checkbox"/> Service Provider <input type="checkbox"/> Informal Service Provider <input type="checkbox"/> Others
102.a	Union:	
102.b	Upazila:	
102.c	District:	
102.d	Ward No:	
102.e	City Corporation/ Municipality:	
103	Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Others
104	Age (in years):	
105	Marital Status	<input type="checkbox"/> Married <input type="checkbox"/> Unmarried <input type="checkbox"/> Widow/Widower <input type="checkbox"/> Others
106	No. of Dependent Children
107	Are you a residence of this place/area/Primary Sampling Unit (PSU)/'Mouza'?	<input type="checkbox"/> Yes <input type="checkbox"/> No
108	If No then where is your place of Residence?
109	Nationality:	<input type="checkbox"/> Bangladeshi (country-born) <input type="checkbox"/> Foreign <input type="checkbox"/> Specify if Foreign

108. Category of Health Workforce: [Multiple Answers are Possible]

<input type="checkbox"/> General Physician/Medical Doctor (MBBS)	<input type="checkbox"/> Specialist/Consultant Physician (MBBS with at least one year specialized training) (Please specify specialization) <input type="checkbox"/> Midwife (Diploma) BNMCM... <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Dental Surgeon (Bachelor of Dental Surgery (BDS))	<input type="checkbox"/> Specialist Dental Doctor (BDS with at least one-year specialized training) (Please specify specialization) <input type="checkbox"/> Medical Technologist (B Sc.) Specialization..... (Please specify)
--	---	--	---

<input type="checkbox"/> Registered <input type="checkbox"/> Unregistered		<input type="checkbox"/> Physiotherapist untrained (with no academic degree)	<input type="checkbox"/> Medical Technologist (Diploma) <input type="checkbox"/> Laboratory <input type="checkbox"/> Physiotherapy <input type="checkbox"/> Radiology and Imaging <input type="checkbox"/> Blood Bank <input type="checkbox"/> EPI (Immunization) <input type="checkbox"/> Radiotherapy <input type="checkbox"/> others please specify
<input type="checkbox"/> Alternative Medical Care (AMC) Provider			
<input type="checkbox"/> Homeo Bachelor <input type="checkbox"/> Homeo Diploma <input type="checkbox"/> Homeo Short course <input type="checkbox"/> Homeopathy care provider (with no formal education/training) <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Unani Bachelor <input type="checkbox"/> Unani Diploma <input type="checkbox"/> Unani Short course <input type="checkbox"/> Unani care provider (with no formal education/training) <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Ayurveda Bachelor <input type="checkbox"/> Ayurveda Diploma <input type="checkbox"/> Ayurveda Short course <input type="checkbox"/> Ayurveda care provider (with no formal education/training) <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Nurse (B. Sc.) <input type="checkbox"/> Nurse (Diploma) Bangladesh Nursing and Midwifery Council (BNMC) ... <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered
<input type="checkbox"/> Nutritionist	<input type="checkbox"/> Health Educator or promotor	<input type="checkbox"/> Health Counselor <input type="checkbox"/> Social Worker	<input type="checkbox"/> Acupuncture care provider
<input type="checkbox"/> Dental Technologist (Diploma) <input type="checkbox"/> Dental Technician (with short term training up to six months)	<input type="checkbox"/> Pharmacist (Graduate) <input type="checkbox"/> Pharmacist (Diploma) <input type="checkbox"/> Pharmacist (short training Certificate) <input type="checkbox"/> Family Welfare Assistant (FWA) <input type="checkbox"/> Assistant Health Inspector (AHI)	<input type="checkbox"/> Family Welfare Visitor (FWV) <input type="checkbox"/> Health Assistant (HA) <input type="checkbox"/> Health Inspector (HI)	<input type="checkbox"/> Community Paramedic <input type="checkbox"/> Assistant Family Planning Inspector (AFPI) <input type="checkbox"/> Sub-Assistant Community Medical Officer (SACMO)
<input type="checkbox"/> Community Health Care Provider (CHCP) <input type="checkbox"/> Family Planning Inspector (FPI) NGO Health Worker <input type="checkbox"/> Doctor <input type="checkbox"/> Nurse <input type="checkbox"/> Midwife <input type="checkbox"/> Others please specify	Associate Nursing workforce (with below three years academic training)– <input type="checkbox"/> Assistant Nurse <input type="checkbox"/> Nursing Attendant <input type="checkbox"/> Assistant Nursing <input type="checkbox"/> Attendant <input type="checkbox"/> Junior Nurse	BNMC - <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Local Medical Assistant and Family Planning (LMAF)

	<input type="checkbox"/> Female Medical Attendant <input type="checkbox"/> Patient Care Attendant		
<input type="checkbox"/> Drug/Medicine Seller	<input type="checkbox"/> Drug/Medicine Store Worker <input type="checkbox"/> Religious/Faith Healer (Ojha) <input type="checkbox"/> Totka	<input type="checkbox"/> Mobile Drug Seller <input type="checkbox"/> Skilled Birth Attendant (SBA/CSBA) <input type="checkbox"/> Female Health Visitor	<input type="checkbox"/> Kaviraj <input type="checkbox"/> Traditional Birth Attendant (Dai) <input type="checkbox"/> Palli Chikitshok (Village doctor) - Trained <input type="checkbox"/> Palli Chikitshok (Village doctor) – Untrained
<input type="checkbox"/> Hekim (Unani or Ayurveda providers)			
<input type="checkbox"/> Caregiver (e.g. Old aged home/day care giver)			
<input type="checkbox"/> Assistant Family Welfare Officer	<input type="checkbox"/> Upazila Family Planning Officer (UFPO)	<input type="checkbox"/> Assistant Upazila Family Planning Officer (AUFPO)	
Please write down the category of health workforce who is not included into the list <input type="checkbox"/>			

305. How many health workers (category-wise) are providing healthcare services along with you in your health facility with reference to the below able? (Please put tick mark and write down the number currently available in the respective health facility)

<input type="checkbox"/> General Physician/Medical Doctor (MBBS)	<input type="checkbox"/> Specialist/Consultant Physician (MBBS with at least one-year specialized training) (Please specify specialization) <input type="checkbox"/> Midwife (Diploma) BNMC.... <input type="checkbox"/> Registered <input type="checkbox"/> Unregistered	<input type="checkbox"/> Dental Surgeon (Bachelor of Dental Surgery (BDS)) <input type="checkbox"/> Physiotherapist trained Please specify qualification <input type="checkbox"/> Physiotherapist untrained (with no academic degree)	<input type="checkbox"/> Specialist Dental Doctor (BDS with at least one-year specialized training) (Please specify specialization) <input type="checkbox"/> Medical Technologist (B Sc.) Specialization..... (Please specify) <input type="checkbox"/> Medical Technologist (Diploma) <input type="checkbox"/> Laboratory <input type="checkbox"/> Physiotherapy
<input type="checkbox"/> Nurse (B. Sc.) <input type="checkbox"/> Nurse (Diploma) Bangladesh Nursing and Midwifery Council (BNMC)...	<input type="checkbox"/> Registered		

<input type="checkbox"/> Caregiver (e.g. Old aged home/day care giver)	<input type="checkbox"/> Totka	<input type="checkbox"/> Female Health Visitor	<input type="checkbox"/> Palli Chikitshok (Village doctor) - Trained <input type="checkbox"/> Palli Chikitshok (Village doctor) – Untrained
<input type="checkbox"/> Assistant Family Welfare Officer	<input type="checkbox"/> Upazila Family Planning Officer (UFPO)	<input type="checkbox"/> Assistant Upazila Family Planning Officer (AUFPO)	
Please write down the category of health workforce who is not included into the list <input type="checkbox"/>			

Educational/Professional Attainments

201. Educational Degree (Diploma and above)

Level	Degree title	Major	Institute Name	Government or Private Institute?	City where the institution is	Board/University ²³	Country	Duration (Years)	Year of graduation (finalization of the studies)
Diploma									
Bachelor									
Masters									
Doctorate									
Post Doctorate									
Professional Course									
Others Please specify.....									

202. [In case the provider does not have at least a bachelor's degree] Highest Educational Attainment:

HSC/Equivalent
 SSC/Equivalent
 Class VIII-X
 Class V – VII
 below Class V
 No formal education

203. Training

Training Name	Issue/Area	Institute Name	City where the institution is	Board/University	Country	Duration	Government or Private Institute?	Year in which training was taken

²³ BSMMU, Dhaka University, BTEB, SMF, Board of Homeopathy, etc.

Practice Information

301. Current Status of professional service: Active In a Break now Inactive

302. Number of Years in Service: |__|_|_| Years |__|_| MONTHS

303. Status of Employment: Employed Self-employed Dual practice (both public and private practice)

304. Place, Nature and Duration of Service Position

Place of Service Provision	Tick if it is your 1 st place of engagement ²⁴	Tick if it is your 2 nd place of engagement ²⁵	Tick if it is your 3 rd place of engagement ²⁶	Duration of Service Provision in this place (Year & Month)	Contractual Arrangement with the Place of Practice ²⁷	Designation ²⁸	No. of Hours Spend here per Week
<input type="checkbox"/> Govt. District Hospital							
<input type="checkbox"/> Govt. Medical College Hospital							
<input type="checkbox"/> Govt. Specialized Hospital							
<input type="checkbox"/> Govt. Upazila Health Complex							
<input type="checkbox"/> Govt. Union Health and Family Welfare Center (UH&FWC)							
<input type="checkbox"/> Govt. Union Sub Center (USC)							
<input type="checkbox"/> Govt. Maternal and Child Welfare Center (MCWC)							
<input type="checkbox"/> Govt. Community Clinic							
<input type="checkbox"/> Administrative Position at MOHFW (Dhaka)							
<input type="checkbox"/> Administrative Position at DGHS (Dhaka)							
<input type="checkbox"/> Administrative Position at DGHS (Divisional Director Office)							
<input type="checkbox"/> Administrative Position at DGHS (District/CS Office)							

²⁴ Primary Engagement

²⁵ Secondary Engagement - In addition to primary engagement

²⁶ Tertiary Engagement – in addition to primary and secondary engagement

²⁷ (1. Ownership; 2. Full Time (Salaried); 3. Full Time (commission-based) 4. Full Time (Salary + Commission) 5. Part Time (Salaried); 6. Part Time (commission-based) 7. Part Time (Salary + Commission); 8. Occasional/Seasonal; 9. Other Arrangements (Specify)

²⁸ (Follow the Table under 305 to identify the designation of the service provider in this place)

306. Type of Services that you provide: [Multiple Answers are Possible]

<input type="checkbox"/> Primary Diagnosis ²⁹	<input type="checkbox"/> Primary Treatment (General Practice)
<input type="checkbox"/> Emergency Services	<input type="checkbox"/> Prescription for Medicine
<input type="checkbox"/> Surgery	<input type="checkbox"/> Advice for Investigations ³⁰
<input type="checkbox"/> Family Planning Methods (Short Term/long term)	<input type="checkbox"/> Clinical Family Planning Services
<input type="checkbox"/> Health/Family Planning Information	<input type="checkbox"/> ANC/PNC Services
<input type="checkbox"/> Delivery Services	<input type="checkbox"/> Neonatal/Child Health
<input type="checkbox"/> MR/MRM Services	<input type="checkbox"/> Sexual and Reproductive Health Services
<input type="checkbox"/> Vaccine/Immunization	<input type="checkbox"/> VD/STI Prevention/Management Services
<input type="checkbox"/> Dermatological Services	<input type="checkbox"/> Dental treatment
<input type="checkbox"/> Physiotherapy/physical medicine	<input type="checkbox"/> Orthopedic (Bone/Fracture)services
<input type="checkbox"/> Ophthalmology (Eye care) Services	<input type="checkbox"/> Gastroenterology Services
<input type="checkbox"/> Diabetes/Endocrinology	<input type="checkbox"/> Cardiology/Heart Diseases
<input type="checkbox"/> Nursing care	<input type="checkbox"/> Medicine Selling
<input type="checkbox"/> Midwifery care	<input type="checkbox"/> Adolescent health care
<input type="checkbox"/> Nutrition Services	<input type="checkbox"/> Mental health services
<input type="checkbox"/> Psycho-social counselling	<input type="checkbox"/> Others (Please specify)
<input type="checkbox"/> General Administrative Services	

307. Do you refer your patients? Yes No [If answer is Yes then go to 308; if it is No then go to 311]

308. How many patients do you refer in one month? | |_| |_| |_| |_|

309. Mention some common reasons for referral?

- a. _____
- b. _____
- c. _____
- d. _____

310. In case of referral then where do you most commonly refer the patient to? [Multiple Answers are Possible]

²⁹ Blood Pressure, Blood Sugar, Temperature, Vital Symptoms, etc.

³⁰ X-ray, ECG, Blood/Urine test, etc.

<input type="checkbox"/> Public District/General Hospital	<input type="checkbox"/> Public Medical College Hospital
<input type="checkbox"/> Public Specialized Hospital	<input type="checkbox"/> Public Upazila Hospital
<input type="checkbox"/> Union Health and Family Welfare Center	<input type="checkbox"/> Community Clinics
<input type="checkbox"/> Union Sub Center	<input type="checkbox"/> Maternal and Child Welfare Center (MCWC)
<input type="checkbox"/> Private Hospital/Medical College	<input type="checkbox"/> Private Clinic
<input type="checkbox"/> NGO Clinic/Health Facility	<input type="checkbox"/> Individual Doctor (General Physician)
<input type="checkbox"/> Individual Doctor (Specialist/Consultant)	<input type="checkbox"/> Diagnostic Center
<input type="checkbox"/> Others (Please specify).....	

311	Do you receive any commission for referral?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
312	Number of Patients Services:	Per day:	
		Per Month:	
313	What is the trend in this number of patients?	<input type="checkbox"/> Increasing	<input type="checkbox"/> Same
314	What type of services for which there is growing need from the community?	<input type="checkbox"/> Increasing	<input type="checkbox"/> Decreasing
315.	What are the challenges that you face in service provision/providing services?		
316.	How do you overcome the challenge?		
317	What are your future plan regarding the service provision?		
318	Are you satisfied with your existing job?	<input type="checkbox"/> Satisfied	<input type="checkbox"/> Moderately Satisfied <input type="checkbox"/> Not Satisfied

319. On-Call Duty

- a. Do you provide on-call services? Yes No (If No then go to Question 320)
- b. Please mention how many hours you provide on-call services and for whom

Name of Facility	Number of Hours of On-call Duty per Week
Total	

320. Decent Work [Applicable for those involved in salaried/contractual relationship with a facility. Not applicable for the entrepreneur/self-employed service provider]

- a. Do you have a written contract with the employer? Yes No N/A
- b. Do you receive payment as per the contract? Yes No N/A

- c. Do you get the salary/fees within the time as per contract? Yes No N/A
- d. Do you get non-monetary benefits as per contract? Yes No N/A
- e. How is the working hour related to the contract?
 As per contract More than the contract Less than the contract
- f. Do you get overtime if you work more than the contractual hours? Yes No N/A
- g. Is the workplace got ample lighting and ventilation facilities? Yes No N/A
- h. Is there ample opportunities for safe drinking water? Yes No N/A
- i. Is there ample opportunities for gender-specific washroom? Yes No N/A
- j. Do you get appropriate breaks during work? Yes No N/A
- k. Do you get the appropriate number of holidays/leaves as per the contract?
 Yes No N/A

- l. Is there any performance indicator in your contract which is linked to the salary/fee increase?
 Yes No N/A

204. Affiliation/Registration/Licensing

License/Registration No.	Issuing Body ³¹	Year of Issue	Duration	Date of expiry

321. Location of the respondents:

Longitude:

Latitude:

322. Enumerator name: _____ I

Thank you so much for your time and information.

³¹ Bangladesh Medical & Dental Council, Bangladesh Nursing and Midwifery Council, Pharmacy Council of Bangladesh, State Medical Faculty, etc.

Annex Three: Composition of the Technical Support Group for supervising the Assessment

1. Joint Secretary (HR) and Programme Manager (HRD), Health Services Division - (Chair).
2. Deputy Chief (Planning), Medical Education & Family Welfare Division, (MOHFW).
3. Professor, (Curriculum Development and Evaluation), Centre for Medical Education (CME).
4. Deputy Director (Medical Education), Directorate General of Health Services.
5. Deputy Director, Bangladesh Bureau of Statistics.
6. Deputy Programme Manager (HRD), Directorate General of Family Planning .
7. Deputy Programme Manager (HRD), Directorate General of Health Services.
8. Deputy Programme Manager (HRD), Directorate General of Nursing & Midwifery .
9. National Professional Officer – HRH, WHO Bangladesh.
10. Deputy Secretary (GNSP) and Deputy Programme Manager (HRD), Health Services Division- (Member Secretary).

Annex Four: Classification of Healthcare Service Providers Identified as per ISCO-08 and BSCO-12

Sub-major Group Title	Minor Group Title	Occupation title	Health Workers Identified in the Assessment
Health professionals Code - 22	Medical doctors Code 221	Generalist medical Practitioners Code 2211	General Physicians/Doctors (Regardless of Employment Status)
			Medical Officer / Assistant surgeon
			MBBS doctors involved with administrative or clinical services of facilities (e.g. resident medical officers, registrar, assistant registrar, superintendent of hospital, etc.)
		Specialist medical Practitioners Code 2212	Specialist/Consultant Physician (Any specialty)
			Junior Consultant (Any specialty)
			Consultant (Any specialty)
			Senior Consultant (Any specialty)
			Chief Senior Consultant (non-govt)
			MBBS doctors with higher education in any specialty and regardless of employment status (e.g. Gynecologist, Pathologist, Anesthesiologist, Radiologist, etc.)
		Nursing and midwifery professionals Code 222	Nursing professionals Code 2221
			Nurse (Diploma)
	Midwifery professionals Code 2222		Midwife (Diploma)
	Traditional and complementary medicine professionals Code 223	Traditional and complementary medicine professionals Code 2230	Bachelor in Homeopathy (BHMS)
			Bachelor of Unani (BUMS)
			Bachelor of Ayurvedic (BAMS)
			Diploma in Homeo (DHMS)
			Diploma in Unani (DUMS)
			Diploma in Ayurvedic (DAMS)
	Hakim (Unani or Ayurvedic providers)		
	Other Health professionals Code 226	Dentists Code 2261	Dental Surgeon
Specialist Dental Doctor			
Pharmacists Code 2262		Pharmacist (Graduate)	
		Pharmacist (Diploma)	
Physiotherapists Code 2264		Physiotherapist	
Dieticians and nutritionists Code 2265	Nutritionist		

Sub-major Group Title	Minor Group Title	Occupation title	Health Workers Identified in the Assessment	
Health associate professionals Code 32	Medical and pharmaceutical technicians Code 321	Medical and pathology laboratory technicians Code 3212	Medical Technologist (Diploma)	
			Medical Technologist (B Sc.)	
	Medical Technologist (Short Training Course)			
	Nursing and midwifery associate professionals Code 322	Pharmaceutical technicians and assistants Code 3213	Pharmacist (short training Certificate)	
			Nursing associate professionals Code 3221	Associate Nursing workforce (with below three years academic training)
	Nursing Assistant (with below three years academic training)			
	Junior Nurse (with below three years academic training)			
	Nursing Attendant (with below three years academic training)			
	Midwifery associate professionals Code 3222	Traditional and complementary medicine associate professionals Code 3230	Skilled Birth Attendant (SBA/CSBA)	
			Family Welfare Visitor (FWV)	
			Female Health Visitor (working in NGOs)	
	Traditional and complementary medicine associate professionals Code 323	Community health workers Code 3253	Acupuncture care provider	
			Homeo Short course	
			Unani Short course	
			Ayurvedic Short course	
			Homeopathy care provider (with no formal education/training) * Non-qualified But Recognized	
	Other health associate professionals Code 325		Dental assistants and therapists Code 3251	Assistant Health Inspector (AHI)
				Health Inspector (HI)
				Community Paramedic (CP)
				Community Health Care Provider (CHCP)
				Assistant Family Planning Inspector (AFPI)
		NGO Health Worker		
		Family Welfare Assistant (FWA)		
		Health Assistant (HA)		
		Family Planning Inspector (FPI)		
		Palli Chikitshok (Village doctor) - Trained		
	Medical assistants Code 3256	Dental Technologist (Diploma)	Dental Technician (with short term training up to six months)	
Sub-Assistant Community Medical Officer (SACMO)				

Sub-major Group Title	Minor Group Title	Occupation title	Health Workers Identified in the Assessment
Production and specialized services managers Code 13	Professional services managers Code 134	Health Service Managers Code 1342	Manager
			Assistant Coordinator/Asst. Manager/Admin
			Account Manager/Health
Legal, social and cultural professionals Code 26	Social and religious professionals Code 263	Social working counselling professional Code 2635	Health Counsellor
Legal, social, cultural and related associate professionals Code 34	Legal, social and religious associate professionals Code 341	Social work associate professionals Code 3412	Assistant Social Services Officer
			Social Worker
		Religious Associate Professionals Code 3413	Health Educator or promotor (Working in NGO)
Sales worker Code 52	Other sales workers Code 524	Door to door salesperson Code 5243	Religious/Faith Healer
Personal care workers Code 53	Personal care workers in health services Code 532	Personal care workers in health services not elsewhere classified Code 5321	Mobile Drug Seller (Feriwala)
			Caregiver (e.g. Old aged home/day care giver)
			Attendant (with below three years academic training)
		Pharmacy aide Code 5329	Health Volunteer
			Patient Care Attendant
Unqualified	Unqualified	Non-qualified /Unrecognized	Drug/Medicine Store Worker
			Physiotherapist untrained (with no academic degree)
			Drug/Medicine Seller
			Unani care provider (with no formal education/training)
			Ayurveda care provider (with no formal education/training)
			Kaviraj
			Traditional Birth Attendant
			Palli Chikitschok (Village doctor) – Untrained
			Totka
Dental Technicians (Without formal education or training)			
Lab Technicians (without formal education or training)			

Annex Five: Skills/Occupation Title-Wise Number of Health Workers

Skills/Occupation Title (as mentioned by the Health Worker)	Number Identified	Government	Non-Government
Acupuncture care provider	3		3
NGO Health Worker	84		84
FWA	65	65	0
HA	78	78	0
FPI	22	22	0
Female Welfare Visitor (Working in NGO)	2		2
CHCP	51	51	0
AFPI	10	10	0
AHI	18	18	0
HI	9	9	0
Community Paramedic	38		38
Palli Chikitschok (Village doctor) - Trained	894		894
Specialist Dentist (BDS with at least one year specialized training)	23	5	18
Dental Surgeon (BDS)	109	22	87
Dental Technologist (Diploma)	53	12	41
Dental Technician (with short term training)	42	22	20
Nutritionist	5	1	4
General Doctor/Physician (MBBS)	408	97	311
Doctors (MBBS) working in NGOs	10		10
Specialist/Consultant Physicians (MBBS with at least one year specialized training) including those in academic professions	217	71	146
Medical Technologist (Diploma)	241	70	171
Medical Technologist (B Sc.)	12		12
Medical Technologist (Short Course)	4		4
SACMO	36	36	0
Midwife	59	59	0
NGO Midwife	8		8
SBA/CSBA	47		47
FWV	29	29	0
NGO Nurse	13		13
Nurse (B.Sc)	43	23	20
Nurse (Diploma)	261	127	134
Associate Nursing workforce (with below three years academic training)	29	12	17
Nursing Assistant (with below three years academic training)	12	3	9
Junior Nurse (with below three years academic training)	72	7	65

Skills/Occupation Title (as mentioned by the Health Worker)	Number Identified	Government	Non-Government
Nursing Attendant (with below three years academic training)	17	11	6
Caregiver	8		8
Pharmacist (Diploma)	98	35	63
Pharmacist (Graduate)	11		11
Pharmacist (short training Certificate)	370	169	201
Physiotherapist trained	37	6	31
Religious/Faith Healer	99		99
Assistant Social Services Officer	9		9
Social Worker	2		2
Health Educator	6		6
Health Counselor	4		4
Homeo Bachelor	43	7	36
Unani Bachelor	6	2	4
Homeo Diploma	186	85	101
Unani Diploma	15	4	11
Ayurveda Diploma	1		1
Hekim (Unani or Ayurveda providers)	23	9	14
Homeo Short course	74		74
Unani Short course	13		13
Ayurveda Short course	15		15
Health service managers (Hospital/Clinic)	4		4
Physiotherapist untrained (with no academic degree)	19		19
Drug/Medicine Seller (Owner/Partner)	1077		1077
Patient Care Attendant	70		70
Drug/Medicine Store Worker	376		376
Homeopathy care provider (with no formal education/training)	85		85
Unani care provider (with no formal education/training)	27		27
Ayurveda care provider (with no formal education/training)	19		19
Kaviraj	233		233
Mobile Drug Seller	20		20
Travelling Service Provider	4		4
Traditional Birth Attendant	402		402
Palli Chikitschok (Village doctor) – Untrained	88		88
Totka	158		158
Jhar/Funk	53		53
Attendant (with below three years academic training)	21		21
Total	6700	1177	5523

Annex Six: Mapping of ISCO-08 Major Groups to Skill Levels

ISCO-08 major groups	Skill level
1 Managers	3+4
2 Professionals	4
3 Technicians and Associate Professionals	3
4 Clerical Support Workers	2
5 Services and Sales Workers	
6 Skilled Agricultural, Forestry and Fishery Workers	
7 Craft and Related Trades Workers	
8 Plant and Machine Operators, and Assemblers	
9 Elementary Occupations	1
0 Armed Forces Occupations	1+2+4

Each major group is denoted by a 1-digit code. Each sub-major group is denoted by a 2-digit code, comprising the major group code plus one digit. In the same way, minor groups are denoted by 3-digit codes and unit groups by 4-digit codes comprising the higher-level code plus one digit in each case. This convention is illustrated by the following example:

Major Group	2	Professionals
Sub-major Group	22	Health professionals
<i>Minor Group</i>	<i>221</i>	<i>Medical doctors</i>
Unit Groups	2211	Generalist medical Practitioners
	2212	Specialist medical Practitioners

Source: International Labour Organization. 2012. *International Standard of Classification of Occupations Structure, group definitions, and correspondence tables*. ISCO-08. Volume 1. pp. 14-17.

Annex Seven: List of PSU with Weight

Division	District	Upzila/Thana	Union/Ward	Village /PSU	PSU Weight
Chattogram	Chattogram	Lohagara	Adhunagar	Adhunagar / PSU 18	516.9724731
Rangpur	Dinajpur	Nawabganj	Putimara	Ahmadnagar / PSU 131	4398.328125
Khulna	Magura	Sreepur	Amalsar	Amalsar / PSU 101	542.1140137
Dhaka	Kishoregonj	Mithamain	Dhaki	Atpasha / PSU 61	763.5471191
Sylhet	Habiganj	Madhabpur	Bahara	Auliabad / PSU 148	5304.162109
Dhaka	Dhaka	Badda Thana	Badda	Badda / PSU 49	31.3155632
Rangpur	Rangpur	Rangpur Sadar	Pashuram	Bahadur Singha / PSU 143	1456.092407
Dhaka	Dhaka	Savar	Ashulia	Bara Ashulia / PSU 46	109.6044693
Chattogram	Lakshmipur	Ramgati	Bara Kheri	Bara Kheri / PSU 33	343.7316895
Dhaka	Narayanganj	Araihazar	Satgram	Bara Naogaon / PSU 75	371.181488
Mymensingh	Netrakona	Netrokona Sadar	Dakshin Bishiura	Basati / PSU 80	4540.295898
Sylhet	Sylhet	Sylhet Sadar	Khadim Para	Bateswar Chuabahaar / PSU 155	2459.591309
Chattogram	Cumilla	Nangalkot	Dhalua	Bayra / PSU 27	1822.052979
Dhaka	Munshiganj	Munshiganj Sadar	Adhara	Bhasan Char / PSU 66	614.7981567
Khulna	Chuadanga	Chuadanga Sadar	Chuadanga Sadar, Ward No-01	Bhimrulla / PSU 89	2159.551514
Rajshahi	Naogaon	Mahadebpur	Safapur	Binodpur / PSU 113	1421.047119
Mymensingh	Jamalpur	Melandaha	Fulkocho	Brahman Para / PSU 58	1156.373169
Chattogram	Chattogram	Anowara	Burumchhara	Burumchhara / PSU 22	358.5809021
Rajshahi	Chapai Nawabganj	Chapai Nawabganj, Shibganj	Chak Kirti	Chak Kirti / PSU 118	683.5074463
Khulna	Bagerhat	Morreiganj	Chingrakhali	Chandipur / PSU 106	1202.078735
Mymensingh	Netrakona	Kalmakanda	Kalmakanda	Chandpur / PSU 79	598.6798706
Dhaka	Dhaka	Savar	Tetuljhora	Chandulia / PSU 47	2197.615723
Rajshahi	Sirajganj	Shahjadpur	Beltail	Char Betkandi / PSU 126	892.4319458
Mymensingh	Sherpur	Sherpur Sadar	Char Pakshimari	Char Pakshimari / PSU 84	139.0779419
Dhaka	Shariatpur	Bhedarganj	Tarabunia	Char Tarabunia / PSU 82	256.5112915
Rajshahi	Pabna	Bhangura	Ward No-07	Chaubaria Uttar Para / PSU 119	4794.007324

Division	District	Upzila/Thana	Union/Ward	Village /PSU	PSU Weight
Sylhet	Sunamganj	Sulla	Sulla	Chhabbisha / PSU 152	2557.36377
Chattogram	Chattogram	Hathazari	Chhibatali	Chhibatali / PSU 17	867.303833
Barishal	Bhola	Bhola Sadar	Char Samaia	Chhota Char Samaia / PSU 8	6337.291992
Rajshahi	Bogura	Shajahanpur	Chopinagar	Chopinagar / PSU 109	1629.521362
Dhaka	Narayanganj	Narayanganj Sadar	Ward No-05	D.N.Road / PSU 74	431.9705505
Rajshahi	Sirajganj	Chauhali	Sadia Chandpur	Dakshin Barbayla / PSU 125	5340.183105
Chattogram	Brahmanbaria	Banchharampur	Saifullakandi	Dakshin Bhelelanagar / PSU 12	1563.016846
Barishal	Patuakhali	Dumki	Pangashia	Dakshin Pangasia / PSU 2	653.4466553
Chattogram	Brahmanbaria	Nasimagar	Goalnagar	Dakshindia / PSU 11	2365.424072
Dhaka	Dhaka	Dakshinkhan Thana	Dakshinkhan(Part)	Dakshinkhan (Part) / PSU 37	29.01294899
Rajshahi	Chapai Nawabganj	Gomastapur	Boalia	Darbarpur / PSU 117	1267.505493
Dhaka	Tangail	Madhupur	Ausnara	Darihati / PSU 87	2424.65332
Rangpur	Rangpur	Gangachara	Betgari	Dondara / PSU 142	2445.488525
Dhaka	Kishoregonj	Bajitpur	Pirijpur	Duaigaon / PSU 62	1197.820313
Rajshahi	Sirajganj	Sirajganj Sadar	Saidabad	Dukhiabari / PSU 127	2468.371582
Mymensingh	Mymensingh	Fulbaria	Enayetpur	Enayetpur / PSU 68	310.3925171
Rajshahi	Bogura	Bogura, Shhibganj	Saidpur	Gangnagar Majh Para / PSU 110	2544.016357
Mymensingh	Mymensingh	Mukttagachha	Kumarghata	Garaikuti / PSU 71	1099.728882
Dhaka	Rajbari	Kalukhali	Madapur	Gariana / PSU 81	3605.43457
Dhaka	Dhaka	Hazaribagh Thana	Ward No-48	Gazmahal (Tenmery) / PSU 39	362.8921204
Mymensingh	Sherpur	Jhenaigati	Hatibandha Malijhikanda	Ghagra Laskar / PSU 83	442.5625916
Dhaka	Tangail	Sakhipur	Baheratal	Ghateshwari / PSU 88	1644.067017
Chattogram	Chattogram	Raozan	Ward No-03	Gohira (Part) / PSU 20	1378.226685
Rajshahi	Naogaon	Patnitala	Krishnapur	Gopinagar / PSU 114	2136.073242
Khulna	Kushtia	Bheramara	Juniadaha	Haripur / PSU 98	2980.317383
Rangpur	Panchagarh	Debiganj	Pamuli	Hasanpur / PSU 141	4039.996338
Chattogram	Chattogram	Double Mooring Thana	Ward No-24 (Part)	Hazi Para / PSU 16	507.072998

Division	District	Upzila/Thana	Union/Ward	Village /PSU	PSU Weight
Rajshahi	Rajshahi	Godagari	Gogram	Huzrapur Kursana / PSU 123	4649.47168
Chattogram	Cumilla	Laksam	Kandirpar	Iruain / PSU 26	1250.083496
Chattogram	Khagrachhari	Khagrachhari Sadar	Kamalchhari	Itchhari / PSU 31	2291.178223
Rangpur	Rangpur	Pirgachha	Annadanagar	Jagjiban / PSU 144	1252.111938
Mymensingh	Jamalpur	Jamalpur Sadar	Banshchara	Jamira / PSU 57	1304.20105
Rajshahi	Natore	Baraigram	Gopalpur	Kachua / PSU 115	2136.073242
Barishal	Pirojpur	Pirojpur Sadar	Kadamtala Union	Kadamtala / PSU 4	886.4713745
Rangpur	Lalmonirhat	Lalmonirhat Sadar	Mogalhat	Kekeya / PSU 137	2235.133789
Chattogram	Noakhali	Senbagh	Kesharpar	Kalaraita / PSU 35	1634.513062
Sylhet	Sylhet	Bishwanath	Deokalas	Kalijuri / PSU 153	3049.79126
Sylhet	Habiganj	Baniachong	Baraiuri	Kalinjura / PSU 147	1762.96167
Dhaka	Dhaka	Pallabi Thana	Ward No-02	Kalshi / PSU 44	539.2723999
Khulna	Shatkhara	Satkhira Sadar	Agardari	Kashimpur / PSU 103	518.5438232
Dhaka	Munshiganj	Tongibari	Kathadia Shimulia	Kathadia / PSU 67	1086.834229
Barishal	Barishal	Barisal Sadar	Char Kowa	Kauar Char / PSU 6	644.8916016
Khulna	Jashore	Sharsha	Nizampur	Keralkhali / PSU 92	3505.146729
Rajshahi	Pabna	Santhia	Khatu Para	Khetu Para / PSU 121	624.9725342
Rangpur	Gaibandha	Palashbari	Kishoregari	Kishoregari / PSU 133	1592.231201
Sylhet	Sylhet	Zakiganj	Manikpur	Konagram / PSU 156	11090.05762
Rajshahi	Natore	Natore Sadar	Brahmapur	Kumarpur / PSU 116	2556.173828
Sylhet	Maulvibazar	Kamalganj	Kamalganj	Kumra Kapan (Part) / PSU 149	715.9804077
Dhaka	Dhaka	Dhamrai	Kushura	Kunikushira / PSU 38	9042.829102
Khulna	Kushtia	Mirpur	Kursha	Kursha / PSU 100	834.9078369
Chattogram	Lakshmipur	Lakshmipur Sadar	Dalal Bazar	Lakshmipur / PSU 32	302.4838867
Dhaka	Faridpur	Bhanga	Manikdaha	Lakshmipur / PSU 50	2050.70874
Chattogram	Cox's Bazar	Cox's Bazar Sadar	Ward No-12	Light House Para / PSU 28	2303.277344
Rajshahi	Rajshahi	Puthia	Jeopara	Madhukhali / PSU 124	1252.646851
Dhaka	Dhaka	Keraniganj	Zinjira	Mandail / PSU 42	99.01244354

Division	District	Upzila/Thana	Union/Ward	Village/PSU	PSU Weight
Mymensingh	Mymensingh	Phulpur	Rahimganj	Matchapur / PSU 72	1131.504883
Khulna	Norail	Kalia	Ward No-04	Mirzapur / PSU 102	3921.029053
Chattogram	Chandpur	Kachua	Kadla	Muradpur / PSU 14	4934.337891
Dhaka	Dhaka	Khilgaon Thana	Dakshingaon (Part)	Nandi Para(Part) / PSU 41	124.3412018
Rajshahi	Joypurhat	Kalai	Udaypur	Nimer Para / PSU 111	13317.13867
Rangpur	Kurigram	Phulbari Sadar	Bara Bhita	Nowdabas / PSU 135	1080.003418
Barishal	Barguna	Barguna Sadar	M.Baliatali	Orbania / PSU 5	787.0692139
Barishal	Bhola	Char Fasson	Osmanganj	Osmanganj(Part) / PSU 9	586.635437
Rangpur	Nilphamari	Nilphamari Sadar	Palashbari	Palashbari / PSU 140	1529.853271
Barishal	Barishal	Bakerganj	Padri Shibpur	Par Shibpur / PSU 7	2351.837646
Dhaka	Narsingdi	Shibpur	Baghaba	Paschim Gobindapur / PSU 77	4395.231445
Rangpur	Gaibandha	Gaibandha Sadar	Kholahati	Paschim Komamai(Part) / PSU 132	966.1751099
Dhaka	Dhaka	Mirpur Thana	Ward No-14 (Part)	Paschim Shewrapara (Part-1) / PSU 43	100.8545303
Dhaka	Gazipur	Kaliakair	Ward No-08	Purba Chandara / PSU 54	139.5384521
Khulna	Jashore	Abhaynagar	Ward No-06	Purba Goakhola / PSU 93	349.3623352
Rangpur	Dinajpur	Birampur	Birampur, Ward No-04	Purba Jagannathpur(Dakshin) / PSU 128	1615.907349
Barishal	Patuakhali	Patuakhali Sadar	Jainkati	Purba Jainkati / PSU 3	976.0961914
Dhaka	Dhaka	Tejgaon Thana	Ward No-38	Purba Nakhhal Para / PSU 48	128.9464264
Dhaka	Dhaka	Rampura Thana	Ward No-22	Purba Rampura(Part-1) / PSU 45	127.5648651
Rajshahi	Pabna	Pabna Sadar	Pabna Sadar, Ward No-02	Ramchandrapur (Part) / PSU 120	2324.73584
Dhaka	Manikganj	Daulatpur	Chak Mirpur	Ramchandrapur / PSU 64	634.600647
Chattogram	Noakhali	Noakhali Sadar	Kaladaraf	Ramhari Taluk / PSU 36	941.5498657
Chattogram	Feni Zila	Feni Sadar	Ward No-16	Rampur (Part-4) / PSU 30	647.3155518
Rangpur	Kurigram	Rajarhat	Bidyanda	Rati / PSU 136	3217.700195
Dhaka	Tangail	Bhuapur	Gobindasi	Ruhili / PSU 85	1617.817139
Khulna	Khulna	Dumuria	Sahas	Sahas / PSU 96	776.2443237

Division	District	Upzila/Thana	Union/Ward	Village /PSU	PSU Weight
Khulna	Jashore	Jessore Sadar	Kashimpur	Santala / PSU 91	2535.103027
Rangpur	Thakurgaon	Thakurgaon Sadar	Thakurgaon Sadar, Ward No-04	Sarkar Para / PSU 146	2054.374268
Rangpur	Nilphamari	Jaldhaka	Jaldhaka, Ward No-07	Satighat / PSU 139	4525.81543
Rangpur	Dinajpur	Bochaganj	Nafanagar	Senihari / PSU 129	3530.044922
Khulna	Shatkhara	Tala	Sarulia	Shan Kdaha / PSU 104	516.4486694
Khulna	Jashore	Jhikargachha	Nabharan	Sharippur / PSU 90	3160.498535
Chattogram	Chandpur	Faridganj	Purba Baluthupa	Shasair Char / PSU 13	3764.549561
Dhaka	Faridpur	Madhukhali	Jahapur	Shibrampur Aruakandi / PSU 51	6852.582031
Rangpur	Gaibandha	Sundarganj	Chandipur	Sicha / PSU 134	321.4512939
Dhaka	Gazipur	Kapasia	Singasree	Singasree / PSU 55	207.6958466
Sylhet	Maulvibazar	Sreemangal	Sreemangal, Ward No-08	Sona Miah Road / PSU 150	2735.085938
Dhaka	Gazipur	Gazipur Sadar	Ward No-25	Sonda / PSU 53	167.6303711
Chattogram	Cumilla	Comilla Sadar Dakshin	Ward No-07	Sreeballabhpur / PSU 24	1400.225586
Dhaka	Narsingdi	Narsingdi Sadar	Meher Para	Sreenagar / PSU 76	1417.950195
Dhaka	Gopalganj	Gopalganj Sadar	Suktail	Suktail / PSU 56	828.9413452
Dhaka	Madaripur	Madaripur Sadar	Ward No-01	Sukuni (Part-1) / PSU 63	1166.044189
Rajshahi	Rajshahi	Baghmara	Maria	Surjya Para / PSU 122	3278.854492
Mymensingh	Jamalpur	Bakshiganj	Bakshiganj	Surjyanagar / PSU 59	723.9421387
Khulna	Jhenaidah	Kaliganj	Jamal	Tailkupi / PSU 94	2698.523193
Rangpur	Lalmonirhat	Aditmari	Bhelabari	Taluk Dulali / PSU 138	572.7843628
Dhaka	Manikganj	Saturia	Tilli	Tilli / PSU 65	775.9812012
Rajshahi	Bogura	Kahaloo	Bir Kedar	Titia / PSU 108	5236.171387
Chattogram	Cox's Bazar	Ramu	Rashid Nagar	Ultakhali / PSU 29	8033.972656
Dhaka	Kishoregonj	Karimganj	Noabad	Ulukhala / PSU 60	1523.870483
Barishal	Jhalokati	Kanthalia	Awrabunia	Uttar Charail / PSU 1	4855.630371
Dhaka	Dhaka	Kafrul Thana	Ward No-16 (Part)	Uttar Ibrahimpur / PSU 40	101.3150558

Selected photographs of technical group meetings and field data collection



Technical Support Group Meeting on 04 March 2020



Stakeholders' consultation on the finalization of the report on 28 February 2021



Stakeholders' consultation on the finalization of the report 28 February 2021



Stakeholders' consultation on the finalization of the report 28 February 2021



Technical Support Group Meeting on 04 March 2020



GOB & WHO Officials in data collection monitoring in Dhamrai Upazila, Dhaka

Published by
Human Resources Branch, Health Services Division
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh and
World Health Organization (WHO) Bangladesh