BANGLADESH FRAMEWORK FOR MONITORING PROGRESS TOWARDS UNIVERSAL HEALTH COVERAGE 2020

MARCH 2021

USAID FROM THE AMERICAN PEOPLE

icddr,b

SPECIAL ACKNOWLEDGEMENT:

Dr Md Aminul Hasan, DGHS, Health Services Division, Ministry of Health and Family welfare (MOHFW)

Dr Kanta Jamil, USAID Contractor, Senior Monitoring, Evaluation and Research Advisor, IAP World Service for technical assistance at all steps.

Bangladesh Framework for Monitoring Progress Towards Universal Health Coverage 2020 was implemented under the authority of the Health Economics Unit of the Ministry of Health and Family Welfare (MOHFW). The Independent Reference Group (IRG) for tracking and monitoring progress towards universal health coverage in Bangladesh formed under USAID's Research for Decision Makers (RDM) Activity supported the initiative. The funding was provided by the Government of the People's Republic of Bangladesh, and the USAID/Bangladesh. The International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) provided technical assistance.

Information about the Bangladesh Framework for Monitoring Progress Towards Universal Health Coverage 2020 may be obtained from icddr,b, 68 Shaheed Tajuddin Ahmed Sarani, Mohakhali. Dhaka 1212, Bangladesh.

SUGGESTED CITATION:

Health Economics Unit (HEU), Ministry of Health and Family Welfare (MOHFW) and International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) (2021). Bangladesh Framework for Monitoring Progress Towards Universal Health Coverage 2020: *Final Report*. Dhaka, Bangladesh: HEU, MOHFW and icddr,b.

DISCLAIMER:

This publication was produced with the support of USAID under the terms of USAID's RDM Activity cooperative agreement no. AID-388-A-17-00006.

Views expressed herein do not necessarily reflect the views of the United States Government or USAID. icddr,b is also grateful to the Governments of Bangladesh, Canada, Sweden and the United Kingdom for providing unrestricted/institutional support.

ISBN: 978-984-551-388-3

Design: Mohammad Inamul Shahriar/Communications/icddr,b/2021

BANGLADESH FRAMEWORK FOR MONITORING PROGRESS TOWARDS UNIVERSAL HEALTH COVERAGE 2020

Health Economics Unit
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Supported by

United States Agency for International Development's Research for Decision Makers Activity independent reference group for tracking and monitoring progress towards universal health coverage in Bangladesh

March 2021

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ANC	Antenatal Care
ARI	Acute Respiratory Infection
BDHS	Bangladesh Demographic and Health Survey
BHFS	Bangladesh Health Facility Survey
BNHA	Bangladesh National Health Accounts
CC	Community Clinic
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
GoB	Government of Bangladesh
HCFS	Health Care Financing Strategy
HEU	Health Economics Unit
HIV	Human Immunodeficiency Virus
IRG	Independent Reference Group
MARP	Most At-Risk Population
MDG	Millennium Development Goal
MOHFW	Ministry of Health and Family Welfare
MOLGRD&C	Ministry of Local Government, Rural Development and Cooperatives
NGO	Non-governmental organization
OOP	Out of Pocket
PM	Program Manager
QIS	Quality Improvement Secretariat
RDM	Research for Decision Makers
RMNCH-FP	Reproductive, Maternal, Neonatal and Child Health, and Family planning
SDG	Sustainable Development Goal
SPA	Service Provision Assessment
SVRS	Sample Vital Registration Survey
TB	Tuberculosis
THE	Total Health Expenditure
UHC	Universal Health Coverage
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization
GHO	Global Health Organization
MICS	Multiple Indicator Cluster Survey
UNAIDS	United Nations Programme on HIV/AIDS
PPH	Postpartum Haemorrhage
HIS	Health Information Services
UPHCP	Union Primary Health Care Project
MCHD	Maternal and Child Health Division
ISRT	Institute of Statistical Research and Training
PPRC	Power and Participation Research Centre
A2i	Aspire to Innovate
HSPSD	Health System and Population Studies Division
NIPSOM	National Institute of Preventive and Social Medicine
HRM	Human Resource Management
CBHC	Community Based Health Care
CDC	Communicable Disease Control
MIS	Management Information System
HSM	Hospital Services Management
MNH	Maternal and Neonatal Health
OSD	Officer on Special Duty
NPO	Non-Profit Organization
NCSD	Nutrition and Child Services Division

EXECUTIVE SUMMARY

Universal health coverage (UHC) is a health system concept wherein everyone can access the healthcare services they need without risk of financial impoverishment. The World Health Organization (WHO) has proposed a widely accepted conceptual UHC framework that includes the three-dimensional UHC framework of the World Health Report 2010. Additionally, the WHO and World Bank have proposed a framework for tracking country and global progress towards UHC ('Monitoring progress towards UHC at country and global levels'). This encompasses a proposed set of indicators for tracking developments in financial risk protection and service coverage under UHC in the report 'Indicators for Measuring Universal Health Coverage: A Five-Country analysis'.

To monitor this progress, in 2014, the Health Economics Unit (HEU) of the Ministry of Health and Family Welfare of the Government of Bangladesh, with the technical support of the WHO country office, developed the 'Framework for Monitoring Progress towards Universal Health Coverage in Bangladesh', combining a set of 43 indicators during the Millennium Development Goal (MDG) era. Considering the transitional context from the MDG period to the Sustainable Development Goal period and acknowledging the gaps in the definition and data availability of the indicators in the framework, the HEU has revised the framework with the support of the United States Agency for International Development funded project 'Research for Decision Makers (RDM) Activity'. An independent reference group was formed with experts from the government, non-governmental organisations, development partner organisations, academia and research to monitor the progress towards UHC in Bangladesh. A gap analysis of the listed possible health indicators was performed to identify the strengths and weaknesses of the information system used to monitor this development. It reviewed the indicator matrix, covering the definitions, available data sources, estimates of the sources, methods of estimation, study design and sampling techniques, and sample sizes for measuring the estimates. Moreover, the independent reference group experts revised the framework in four domains, i.e. service coverage, health financing, impact and burden in Bangladesh, to track the UHC progress.

In total, 27 indicators were identified in the revised framework, of which 16 were on service coverage, 6 on health financing, 4 on impact and 1 on disease burden. All have since been prioritised as the most important with which to monitor the UHC indicators in Bangladesh.

Total 27 indicators were identified in the revised framework, of which 16 were on service coverage, 6 on health financing, 4 on impact and 1 on disease burden

FOREWORD

The 2020 'Framework for Monitoring Progress Towards Universal Health Coverage' is the second of its kind conducted in Bangladesh. The first such framework was developed in 2014 by the Health Economics Unit (HEU) of the Ministry of Health and Family Welfare (MOHFW) with the technical assistance of the World Health Organization (WHO) country office of Bangladesh. However, the present framework has been developed through the collaborative efforts of the Quality Improvement Secretariat of the HEU and icddr,b.

Interest in access to 'health for all' has been growing globally for some time now, but this slogan was adopted by the WHO for the first time in 1978 in the Alma-Ata Declaration. In 2015, healthcare covering the dimensions of population coverage, quality service and financial risk protection was adopted by the United Nations through incorporating UHC in the Sustainable Development Goals (SDGs). Note that the essence of UHC was adopted in Bangladesh much earlier than this via a provision to fulfil the basic necessities of medical care for all citizens as one of the fundamental responsibilities of the state in the Constitution of Bangladesh in 1972 (Article 15[A]).

I am delighted to mention that despite resource constraints, Bangladesh has made tremendous achievements regarding the Millennium Development Goals (MDGs) and aims to adopt the SDG agenda by 2030. It is essential to align the UHC monitoring indicators with the SDGs to monitor the progress towards UHC. The current framework has been produced to fulfil this need.

This report will provide a valuable window on information assurance as well as a comprehensive set of indicators to track the progress towards achieving UHC. It is expected that this report will be used by policymakers, program managers, academicians, researchers and program personnel to provide more in-depth knowledge for the future direction and effective implementation of UHC endeavours.

The members of the independent reference group formed, i.e. government experts, non-governmental and development partners, and researchers and professionals working in the health, nutrition and population sectors, provided their valuable opinions and expertise for all phases of the report. I would like to extend my gratitude and appreciation to them for their valuable contributions. Special thanks to the icddr,b for their efforts in conducting this venture. I also sincerely appreciate the United States Agency for International Development, Dhaka, for providing technical and financial assistance in this important undertaking.

DR MOHD. SHAHADT HOSSAIN MAHMUD
Director General
Health Economics Unit
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

PREAMBLE

Universal health coverage (UHC) is a major target of the Sustainable Development Goals (SDGs). The Government of Bangladesh (GoB) has a strong political commitment to achieving and ensuring UHC. Accomplishing this is a dynamic and continuous process that requires shifts in economic, epidemiological and technological trends. Countries need to integrate regular monitoring of this progress towards targets into their periodic plans.

To track the UHC indicators, in 2014, the Health Economics Unit (HEU) of the Ministry of Health and Family Welfare (MOHFW) of the GoB developed a framework to monitor this progress in Bangladesh, combining a set of indicators during the Millennium Development Goal (MDG) era. Recently, the HEU felt the need to revisit this framework, acknowledging several gaps in the indicators. Furthermore, it was necessary to align the country's national commitments with the SDGs. Thus, icddr,b collaborated with the HEU to revise the framework through an independent reference group (IRG).

The United States Agency for International Development's (USAID) 'Research for Decision Makers Activity' formed the IRG as an initiative for tracking health-related SDG indicators in Bangladesh. This group was an information hub designed to discuss and review data sources and estimates and undertake any required analyses to report on health goals. It included representatives and experts from the public, private and academic sectors, all of whom contributed significantly to the process of revising the monitoring framework.

The experts identified and listed all priority health-related indicators through several consultative meetings and workshops with relevant stakeholders. A detailed indicator matrix was developed to summarise the gaps, definitions, available data sources and estimates obtained from the sources of the listed indicators. I sincerely hope that this revised monitoring framework will assist in tracking the progress towards achieving UHC in Bangladesh. However, I would like to emphasise the need for a high-quality routine data system to regularly monitor these listed indicators.

I would like to express my gratitude to the HEU for its continuous support and guidance. I would also like to acknowledge all other partners, experts and stakeholders for their contributions to this framework. Lastly, I profoundly appreciate USAID for providing the financial assistance needed to complete this work.

DR SHAMS EL ARIFEEN
Senior Director and Senior Scientist
Maternal and Child Health Division
icddr,b

1 INTRODUCTION

Universal health coverage (UHC) as a goal of health policy development has gained wide acceptance at the country and global levels since the publication of the World Health Report 2010 and is now seen as a critical component of sustainable social development and a core goal (3.8) of the Sustainable Development Goal (SDG) agenda. The World Health Organization (WHO) has defined UHC as a system wherein all people who need health services receive them without incurring financial hardship (1). This definition entails two interrelated components: coverage with needed quality health services and access to financial risk protection for everyone (2). The United Nations adopted a resolution on 12 December 2012 that urges governments to move towards providing all people with affordable and quality healthcare services. It recognises the role of health in achieving international development goals and calls for countries, civil societies and international organisations to include UHC in their international development agendas. A global goal has been set by the World Bank (WB) to end extreme poverty by 2030. The UHC is critical to achieving this goal, as it will prevent impoverishment of hundreds of millions of families due to out-of-pocket (OOP) payments for health services. Securing the right to health and the highest levels of healthcare for all is the WHO's priority. Universal health coverage will secure universal entitlement to health services, improving the health status of the global population.

In May 2014, the WHO and WB jointly launched a monitoring framework as the first global assessment of the progress towards UHC. A significant number of countries have since endorsed this framework and its potential to improve the performance of their health systems in the main dimensions of UHC. The framework provides an opportunity to focus on strengthening countries' health information and research systems using an integrated and comprehensive approach based on each country's individual needs and identifies the necessity of an effective UHC tracking system for the achievement of UHC objectives.

The Government of Bangladesh (GoB) is committed to moving progressively towards UHC by 2032 (3). It envisions strengthening financial protection, extending services and providing population coverage for essential healthcare. This means every citizen who needs health services will be able to obtain them without undue financial hardship. To achieve this, three strategic objectives are proposed: generate more resources for health, improve equity (by pooling resources and allocating them equitably) and enhance efficiency.

The implementation of UHC must be adapted based on the country context. Some countries have good health systems and social setups whereby achieving the UHC goals will require little effort. In Bangladesh, however, the adaptation and implementation of the UHC will require a national human resource strategy and action plan, a national social health protection system, a good health information system, optimal stewardship, strong governance and accountability,

equity among different geographical regions, appropriate portfolio management of health budget allocation, a strong supply chain management system and a high capacity of the Ministry of Health and Family Welfare (MOHFW).

The level and distribution of effective healthcare interventions and financial risk protections have been proposed as the focus of monitoring UHC progress. To develop a path to UHC and closely track its advancement, it is necessary to measure Bangladesh's current healthcare coverage, services and costs. Developing a simple and sound framework to assess the country, regional and global situations and monitor progress towards UHC is essential, as UHC remains high on the global agenda and receives priority attention from policymakers. While the basic definition of UHC is conceptually straightforward, developing feasible metrics of it is less so. Variations in countries' epidemiology, health systems and financing and levels of socioeconomic development imply both different approaches to UHC implementation and a potential range of relevant metrics.

Countries working to achieve UHC already rely on locally specific and routinely collected service statistics to measure their health system's performance. In the absence of such data, some countries conduct standard demographic and economic surveys to measure their health status and economic development. In many cases, data produced by national and sub-national surveys are available but have gaps (4). Establishing new global goals, targets and indicators could have a critical impact on governments' commitment to successful implementation of global declarations. In this line, Bangladesh has developed UHC monitoring tools based on its own epidemiological and demographic profiles, health service system and financing, level of economic development and population's demands and expectations.

2

UHC INITIATIVES IN BANGLADESH

2.1 OVERVIEW OF THE SERVICE DELIVERY SYSTEM OF THE DIRECTORATE GENERAL OF FAMILY PLANNING (DGFP) AND DIRECTORATE GENERAL OF HEALTH SERVICES (DGHS)

Bangladesh has three tiers of health facilities – primary, secondary and tertiary. At the primary level, there are community clinics (CCs), union health and family welfare centres, union sub-centres and upazila health complexes. Each CC has a catchment population of approximately 6,000. The CCs are the lowest-level static health facilities located at the ward level. They have upward referral linkages, with health facilities located at the union and upazila levels. The health facilities work in two directorates: the DGHS under the Health Service Division and DGFP under the Medical Education and

Family Welfare Division of the MOHFW. Figure 1 shows the different levels of health service delivery institutions within Bangladesh's public health system (5).

Secondary and tertiary healthcare facilities are those that provide more advanced or specialised health services than the primary healthcare facilities at the ward, union and upazila levels (though many upazila health complexes have clinical specialists who provide specialty care). The district hospitals are the secondary-level hospitals, as these have fewer facilities for specialty health services compared to medical college hospitals. Tertiary hospitals include medical colleges and specialised hospitals at the national level that provide high-end health services in a specific field.

Most secondary and tertiary facilities, both governmental and private, are located in urban areas. In rural areas, essential service packages are mainly provided by the MOHFW, whereas the responsibility of primary health care (PHC) in urban areas rests with city corporations, municipalities, Pouroshovas and the Ministry of Local Government, Rural Development and Cooperatives (MOLGRD&C). A number of small to medium-sized hospitals and outdoor facilities are functioning in Dhaka, Chattogram, Khulna and Rajshahi City Corporations. The DGHS has several urban dispensaries (~ 30) that provide PHC in a few city corporations. However, the majority of urban PHC is provided by various donor-supported NGO clinics, including the Surjer Hashi Network Clinics supported by the United States Agency for International Development (USAID).

2.2 POLICIES IN BANGLADESH TO ACHIEVE UHC

The right to health and social equality is indicated in Bangladesh's constitution. Article 15(a) of the Constitution of the People's Republic of Bangladesh envisages that it is the fundamental responsibility of the state to achieve steady improvements in the citizens' standard of living by providing the basic necessities of life, including food, clothing, shelter, education and medical care. Moreover, according to Article 18(1), the state shall regard raising of the level of nutrition and improving public health among its primary duties. According to Article 19(1), the state shall endeavour to ensure equality of opportunity of all citizens and, via 19(2), shall adopt effective measures to remove social inequality. There are also directions towards health insurance and UHC in different policy papers, as follows:

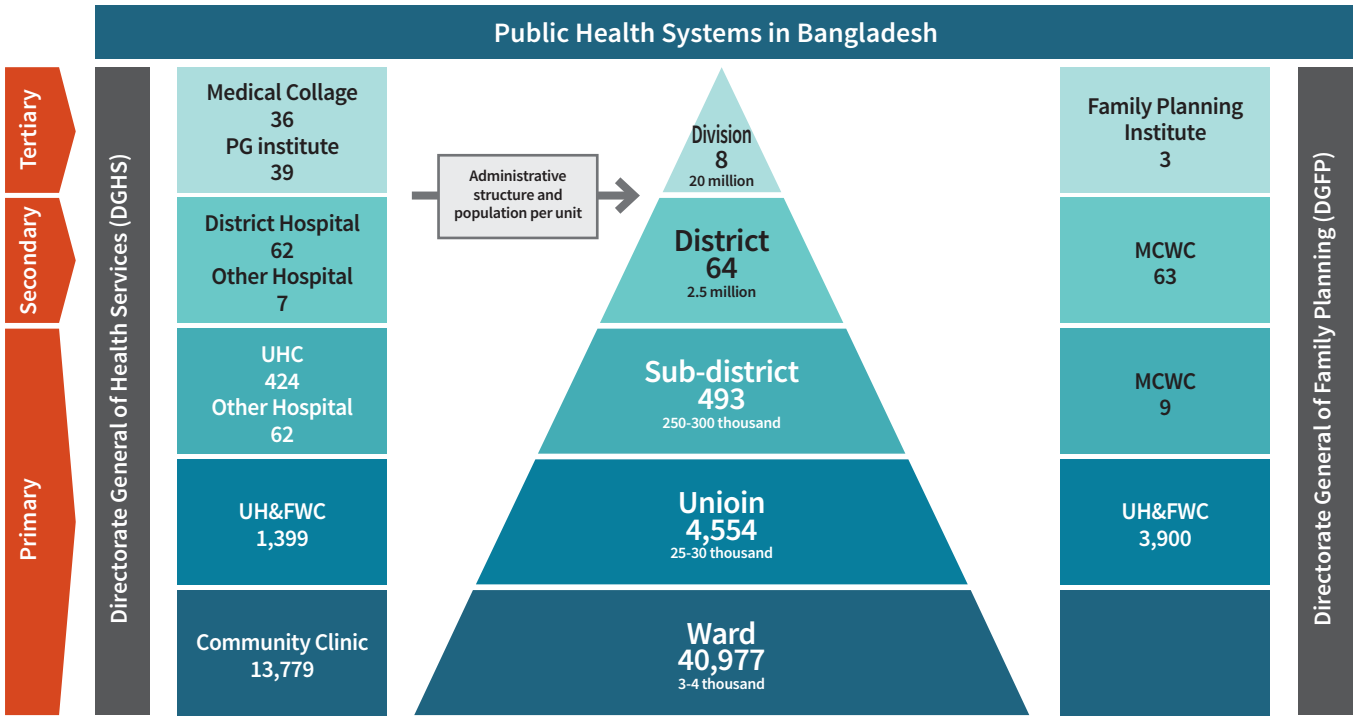

Figure 1: Distribution of public health facilities

Source: modified from the Bangladesh Health Facility Survey (BHFS), 2017

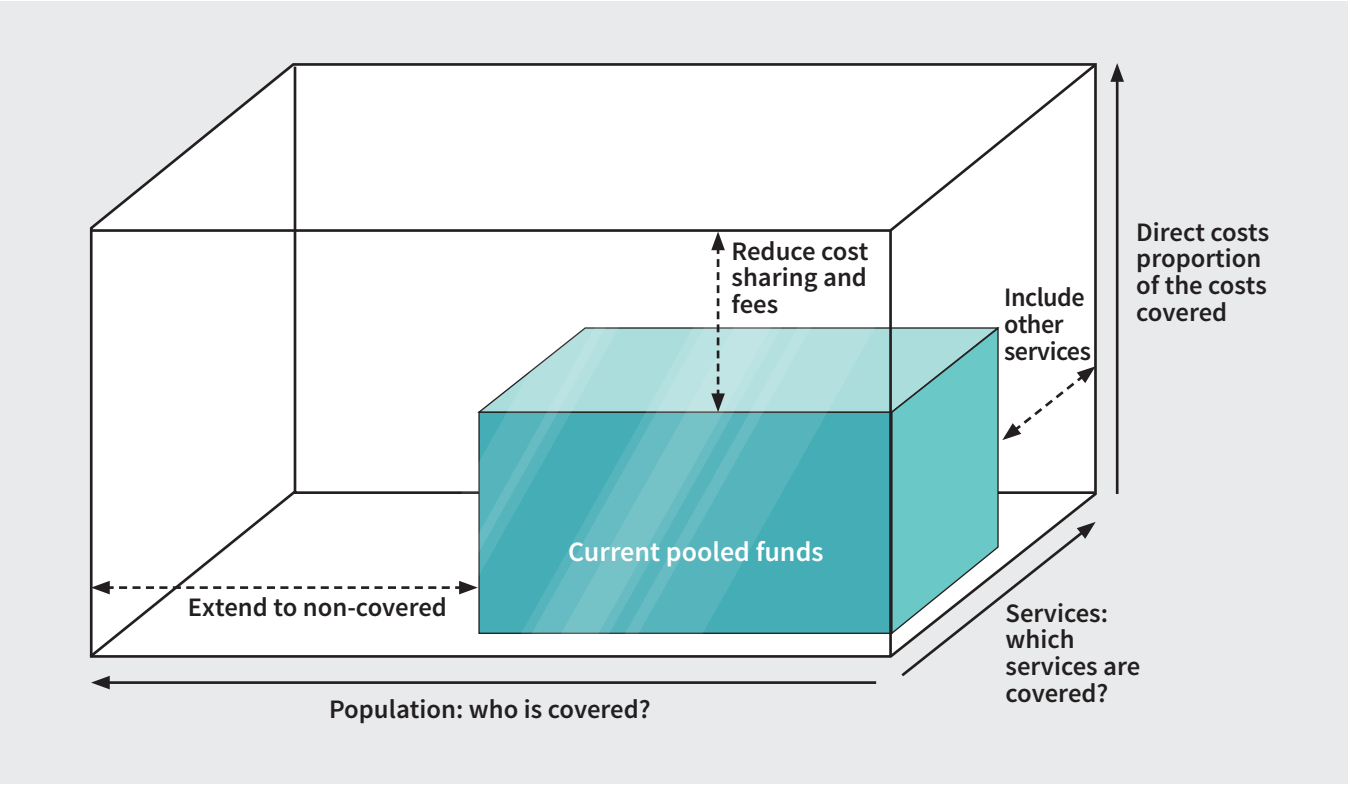

Figure 2: Three dimensions of UHC

2.2.1 The Seventh Five Year Plan (FY2016–FY2020)

To strengthen financial risk protection and extend health services and population coverage, the Seventh Five Year Plan strategy includes ensuring proper implementation of Health Care Financing Strategy (HCFS) 2012. Moreover, this strategy includes increasing public sectors' contributions to the health sector through appropriate initiatives to reduce the out of pocket (OOP) expenditures with prepayment initiatives such as health insurance.

2.2.2 The National Health Policy – 2011

Introduction of health insurance is needed in the formal sector to solve the financing problem in the health sector. In subsequent phases, the insurance program could be extended to other sections of the population, but currently, it is necessary to ensure free healthcare for the poorest and disadvantaged. The GoB could provide health cards for this population in an effective manner.

2.2.3 Vision 2021

The Vision 2021 strategy facilitates the growth of insurance programs targeted at poor and vulnerable groups. Modern and adequate social health insurance could mitigate the costs to individuals, families and society.

2.2.4 HCFS, 2012–2032

The HCFS outlines a path to achieve UHC by reducing the current high levels of OOP and catastrophic payments. This strategy has been adopted to ensure financial protection of healthcare for all citizens of Bangladesh by 2032.

2.2.5 The 4th Health Population and Nutrition Sector Program, 2017–2022

The 4th Health Population and Nutrition Sector Program (2017–2022) aims 'to provide sustainable financing for equitable access to healthcare for the population and accelerated progress towards universal health coverage'. Its primary components are governance and stewardship, health system strengthening and provision of quality health services, including financial protection schemes such as Shasthyo Surokhsha Karmasuchi, the maternal health voucher scheme of Bangladesh, and demand-side financing.

2.2.6 National Social Protection Strategy

The GoB will provide equitable healthcare to its citizens by implementing a health financing strategy focused on preventing health-related financial shocks for the poor and vulnerable populations.

2.3 MEASUREMENT FRAMEWORK OF UHC MONITORING

The UHC is a goal whereby all people who need health services (prevention, promotion, treatment, rehabilitation and palliative care) can receive them without undue financial hardship. It consists of three interrelated components:

- Full spectrum of quality health services according to need
- Financial protection from direct payments for health services received
- Coverage for the entire population

In the WHO's World Health Report 2010 (2), a UHC cube was used as a starting point for measurement. The service coverage dimension captures the aspiration that all people can obtain the health services they need, while the financial coverage dimension aims to ensure that they do not suffer financial hardship linked to paying for these services when they need them. The extent and distribution of coverage across various population groups are reflected in the third dimension, which highlights the importance of equity in coverage across income, gender, age, urban/rural, migrant and minority groups, with priority given to the poorest 40% of the population.

The WHO and WB have jointly proposed a framework titled 'Monitoring Progress Towards Universal Health Coverage at Country and Global Levels', from which Bangladesh has adapted its own country monitoring framework.

3 METHODS

The methodology involved reviewing different strategic documents, reports, policies and analyses of health information tools. Several discussions with different stakeholders were also used to develop this framework. The original framework's 43 indicators were adapted from the Millennium Development Goals before the SDG era. To align with the SDGs, it was necessary to revise this country monitoring framework developed by the Health Economics Unit (HEU) (6).

3.1 REVIEW OF THE 2014 UHC COUNTRY MONITORING FRAMEWORK

The HEU's 2014 UHC country monitoring framework was reviewed with the technical support of an independent reference group (IRG) formed under USAID to support the 'Research for Decision Makers (RDM) Activity' of icddr,b for tracking the progress towards UHC in Bangladesh. Through several consultative meetings and consultation exercises among the relevant stakeholders, the IRG identified 81 possible indicators from the HEU's monitoring framework, global UHC tracer and SDGs directly or indirectly related to health (Goals 2, 3, 4, 5, 6, 8 and 16) in Bangladesh's UHC context (Figure 3). The IRG reviewed all existing data sources, methodologies and estimates of the selected indicators (7–13). Then, a detailed indicator matrix was developed with the operational definitions, available data sources, estimate of the respective sources, methods of estimation, study design and sampling techniques, and sample size for measuring the estimates.

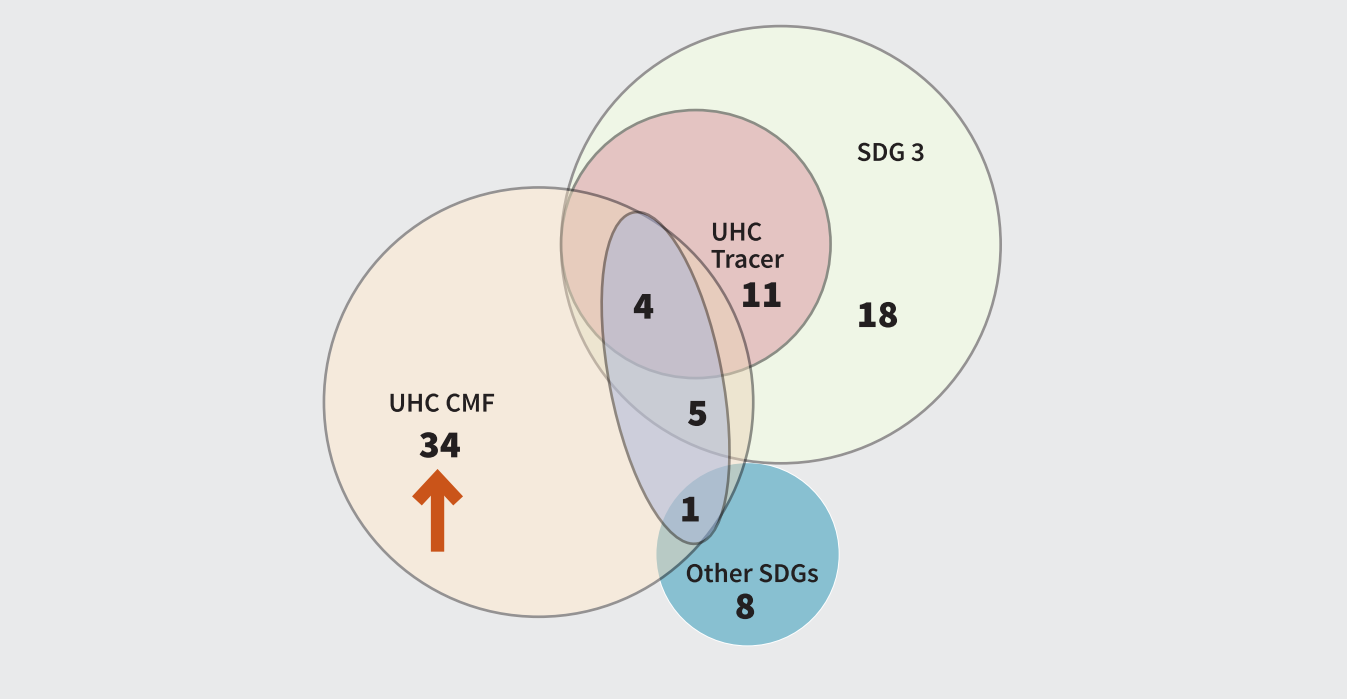

Figure 3: Distribution of the listed indicators by country UHC indicators, global UHC tracers and health-related SDGs

* CMF: country monitoring framework

4

GAP ANALYSIS

A gap analysis was performed for the 81 listed health indicators through a review of the indicator matrix. Overall, data unavailability, including that of recent data, appeared to be the most frequent bottleneck among the indicators. In addition, partially available data were often unusable, as they did not represent the UHC indicators appropriately.

Data were not available for several indicators, e.g. 'social health insurance contribution', to obtain a national-level estimate. Other indicators needed clarification in many areas. Lack of a standard definition was observed for a significant number of indicators, which should be redefined for the country context. For example, regarding the prevalence of HIV among the most at-risk population (MARP)[1], no standard definition of MARP was provided in the context of Bangladesh. Moreover, estimates were not available for prisoners in this country.

The threshold levels based on this country's context also needed to be clearly defined for many of the health financing–related indicators. The methodologies should be updated at the national level to track the indicators. Most of the discussed discrepancies were assumed to exist due to sample variation, but a detailed investigation is the key to addressing the gaps and making these indicators functional to efficiently track the progress towards UHC in Bangladesh.

Table 1: Summary of the identified gaps in the previous UHC Country Monitoring Framework (2014)

Gaps	Indicators	Observations	Steps taken
Need to redefine	Hospitals at or below the district/ upazila level have one obs/gyn + one anaesthesiologist Percentage of hypertensive and diabetic patients undergoing treatment	Facilities below upazila level do not have obs/gyn and anaesthetist Data source provides estimates separately for hypertension and diabetes	Dropped the word 'below' from the indicator Used two separate indicators for hypertension and diabetes
Clarification needed	Share of population (%) lacking adequate healthcare due to financial hardship Share of population (%) falling into poverty due to OOPS Share of households (%) facing catastrophic health spending Prevalence of HIV among MARP Case fatality rate among hospitalised ARI cases Tobacco prevalence rate	Threshold level not defined for all mentioned indicators No definition provided for MARP in Bangladesh's context Lack of clarity as to whether only pneumonia should be considered ARI or whether other ARI diseases, e.g. influenza, should be included Age range not mentioned for tobacco prevalence	Defined threshold for the indicators included in the revised framework Used the global definition for MARP, except for the group 'prisoner' Indicators related to pneumonia have been dropped due to measurability issue Age range defined in the indicator related to tobacco prevalence

[1] MARP: injecting drug users, men who have sex with men, and sex workers and their clients

Gaps	Indicators	Observations	Steps taken
Data source unavailable	Percentage of health facilities with electronic records Percentage of clients expressing satisfaction with health facilities Index of service readiness and availability Median drug price ratio for tracer drug	National data not found for private health facilities The indicators lack recent available data sources. Data cannot be tracked on a regular basis	Dropped this indicator due to data unavailability Revised indicator for RMNCH-FP specific service readiness
Others	Social health insurance contribution (per capita as % of total health expenditure [THE])	National data not available. According to HCFS 2012–2032, various short-, medium- and long-term social health protection schemes were supposed to be created, but no initiative has been taken yet	Used a separate list of six health financing indicators

4.1 REVISION OF THE UHC COUNTRY MONITORING FRAMEWORK

After identifying the gaps in the previous UHC country monitoring framework, to perform the gap analysis, a workshop titled 'Review of Universal Health Coverage Monitoring Framework' was held on 4 March 2019 and chaired by the director general of the HEU of the MOHFW, with active participation from the IRG and other stakeholders. The workshop was organised by the HEU in collaboration with USAID's RDM Activity of icddr,b.

During this workshop, the participants were divided into groups under four thematic areas: a) reproductive, maternal, neonatal and child health and family planning, b) health systems and health workforce, c) health financing and d) infectious and non-communicable diseases. The groups came up with specific recommendations for each of the existing indicators as well as suggestions for additional health-related indicators for the revised UHC country monitoring framework.

Afterwards, IRG, in collaboration with the HEU, listed 27 indicators taken from the SDG indicators and other national priority indicators for the revised framework. Another workshop titled 'Finalization of Universal Health Coverage Monitoring Framework for Bangladesh' on 13 May 2019 and a consultative meeting titled 'Expert group meeting on the proposed list of indicators for tracking Universal Health Coverage in Bangladesh by reviewing the Country Monitoring Framework of Health Economics Unit, MOHFW' on 27 June 2019 took place to reach a consensus on the listed 27 indicators.

After two workshops and one consultative meeting with the stakeholders hosted by the HEU and icddr,b, this set of 27 indicators was suggested for monitoring the progress towards UHC in Bangladesh. It addressed the

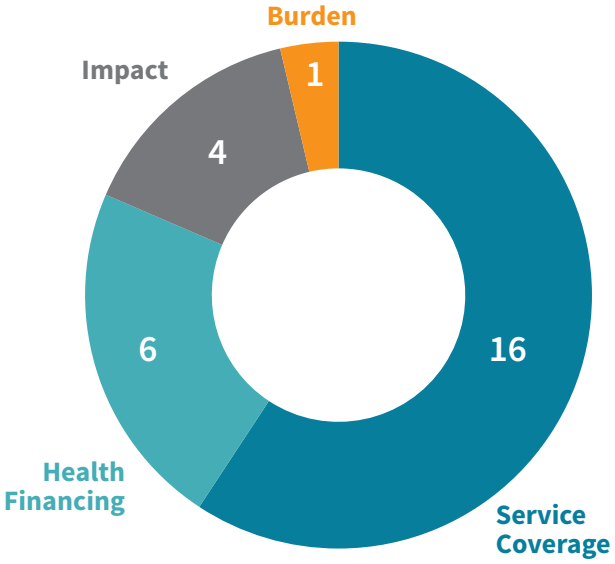

Figure 4: Number of indicators in each sub-category

gaps and issues identified in the previous framework. These indicators were selected based on the country's current priorities and needs as well as the data availability. If an indicator was deemed important for the country context but data were not readily available, the stakeholders still decided to keep it. The indicators in the revised list were further categorised into four different categories:

- **Service coverage indicators:** indicators that reflect the level to which people in need truly receive essential health interventions
- **Health financing indicators:** indicators that reflect people's financial hardship as well as financial interventions
- **Impact level indicators:** indicators that measure the long-term reflection of a country's performance in achieving UHC
- **Burden indicators:** indicators that quantify the total impact of health conditions on an individual at the population level in a comparable and consistent manner

Table 2: List of indictors for the revised monitoring framework for UHC in Bangladesh

Service coverage	Health financing	Impact	Burden
1. Registered doctors per capita relative to maximum thresholds for 10 per 10,000 population	1. Government health allocation as % of gross domestic product (MOHFW and other ministries)	1. Neonatal mortality rate	1. Prevalence of HIV among MARP
2. Number of currently registered nurses & midwives per 10,000 population	2. Share of population (%) falling into poverty due to OOP	2. Total fertility rate	
3. District and upazila hospitals with at least 1 obs/ gyn + one anaesthesiologist	3. Share of health in government budget allocation (MOHFW and other ministries)	3. Maternal mortality ratio	
4. Density of hospital beds, expressed as % of global threshold, 18/10,000	4. Health expenditure per capita	4. % of stunted among under-five children	
5. Proportion of public health facilities that have a core set of relevant essential medicines	5. OOPS for health (as % of THE)		
6. % of service provider positions functionally vacant in district- and upazila-level public facilities by category (physician, nurse/midwife)	6. Proportion of population with catastrophic expenditure on health as a share of total household expenditure or income (10% and 25% thresholds)		
7. Service readiness for RMNCH-FP			

[2] The definition of 'quality ANC' has been adopted from BDHS 17-18. According to Bangladesh Demographic and Health Survey (BDHS) 17–18: 'Quality care is defined as four or more antenatal visits, with at least one visit from a medical provider, measurement of weight and blood pressure, testing of blood and urine, and receipt of information on potential danger signs during pregnancy'.

Service coverage	Health financing	Impact	Burden
8. Percentage of women aged 15–49 years with a live birth in a given time period who received quality antenatal care (ANC) [2]			
9. Measles-rubella immunisation coverage among children under 12 months			
10. Contraceptive prevalence rate for modern method of women of reproductive age (15–49 years) who are married			
11. Percentage of households using improved sanitation facilities			
12. Tobacco: age-standardised prevalence of adults >=15 years who smoked tobacco in the last 30 days			
13. Proportion of births attended by skilled health personnel			
14. Percentage of diabetic patients aged 35 years and older aware, receiv ing treatment and under control			
15. Percentage of hypertensive patients (systolic blood pressure >140 mmHg or diastolic blood pressure >90 mmHg) aged 35 years and older aware, receiving treatment and under control			
16. Percentage of incident TB cases that are detected and successfully treated			

Detailed data availability mapping was conducted by the IRG. Table 3 presents the available data sources of the listed indicators as well as their current estimates from surveys and routine data sources. At this time, several of the listed UHC indicators do not have a routine data source. However, some proxy indicators may be considered in the next revision of the indicators.

These estimates will be periodically updated every six months by the IRG and reviewed by expert group members via consultative meetings. The IRG will jointly work on updating this indicator matrix with the Quality Improvement Secretariat (QIS) and HEU of the MOHFW, Bangladesh.

Table 3: Current estimates and available sources of the indicators to track UHC progress

Service coverage indicators

SL no.	Tracer indicator	Data source	Routine data source Y/N *= available only in public facility	Estimates	Year	Data availability	Research design/data collection methods
1	Registered doctors per capita relative to maximum threshold of 10 per 10,000 population	Health Bulletin	Y*	6.3	2018	Readily available	Records from health bulletin
		Human Resources in Health country profile (GHO)		5.8	2018		Records
2	Number of currently registered nurses & midwives per 10,000 population	Health Bulletin	Y*	3.0	2017	Readily available	Records
		Human Resources in Health country profile (GHO)		4.12	2018		Records
3	District and Upazilla hospital have at least one obs/gyn + one anaesthesiologist	BHFS	Y	31.02	2017	Readily available	Cross-sectional/ facility assessment using the Service Provision Assessment (SPA) tool
4	Density of hospital beds relative to a maximum threshold of 18 per 10,000 population	WHO	Y	43	2019	Readily available	Records
5	Proportion of public health facilities that have a core set of relevant essential medicines	BHFS	N	26% facilities have 75% or more essential medicines	2011	Partially available	Cross-sectional/ facility assessment using Service Availability and Readiness Assessment tool
6	% of service provider positions functionally vacant in district- and upazila-level public facilities by category (physician, nurse/ midwife)	BHFS	Y	Physicians: 44%	2017	Readily available	Cross-sectional/ facility assessment using SPA
				Nurses/ midwives: 20%	2017		Cross-sectional/ facility assessment using SPA

SL no.	Tracer indicator	Data source	Routine data source Y/N *= available only in public facility	Estimates	Year	Data availability	Research design/data collection methods
7	Service readiness for RMNCH-FP	BHFS	Y	Child curative care: 5.2% Family planning: 22.3% ANC services: 4.3% Normal delivery services: 0.4%	2017	Readily available	Cross-sectional/ facility assessment using Service Availability and Readiness Assessment tool
8	Percentage of women aged 15–49 years with a live birth in a given time period who received quality ANC	BDHS	Y	17.7%	2017-18	Readily available	Cross-sectional/ household surveys
9	Measles-rubella immunisation coverage among children under 12 months	BDHS	Y	87.9%	2017-18	Readily available	Cross-sectional/ household surveys
10	Contraceptive prevalence rate for modern method of women of reproductive age (15–49 years) who are married	BDHS	N	51.9%	2017-18	Readily available	Cross-sectional/ household surveys
		MICS		59.1%	2019		Surveillance/ household surveys
		Utilisation of Essential Service Delivery		55.6%	2016		Cross-sectional/ household surveys
11	Percentage of households using improved sanitation facilities	Sample Vital Registration Survey (SVRS)	N	81.5%	2020	Readily available	Surveillance/ household interviews
		Utilisation of Essential Service Delivery		61.4%	2016		Cross-sectional/ household interviews
		BDHS		43.0%	2017-18		Cross-sectional/ household surveys
		MICS		84.6%	2019		Cross-sectional/ household interviews

SL no.	Tracer indicator	Data source	Routine data source Y/N *= available only in public facility	Estimates	Year	Data availability	Research design/data collection methods
12	Tobacco: age-standardised prevalence of adults >=15 years who smoked tobacco in the last 30 days	WHO	N	44.7	2016	Readily available	Cross-sectional/ household interviews
		Global Adult Tobacco Survey		35.3	2017		
13	Proportion of births attended by skilled health personnel	BDHS	Y	52.7%	2017-18	Readily available	Cross-sectional/ household surveys
		MICS		59.0%	2019		Cross-sectional/ household surveys
14	Percentage of diabetic patients aged 35 years and older aware, receiving treatment and under control	BDHS	N	Female: 13% Male: 13%	2017-18	Readily available	Cross-sectional/ household interviews
15	Percentage of hypertensive patients (systolic blood pressure >140 mmHg or diastolic blood pressure >90 mmHg) aged 35 years and older aware, receiving treatment and under control	BDHS	N	Female: 15% Male: 9%	2017-18	Readily available	Cross-sectional/ household interviews
16	Percentage of incident TB cases that are detected and successfully treated	National Tuberculosis Prevalence Survey Bangladesh	N	93%	2016	Partially available	Cross-sectional survey

Health financing indicators

SL no.	Tracer indicator	Data source	Routine data source Y/N	Estimates	Year	Data availability	Research design/data collection methods
1	Share of population (%) falling into poverty due to OOP	Research study on Household Income and Expenditure Survey 2010	N	3.5%	2017	Partially available	Not applicable
2	Government health allocation as % of gross domestic product (MOHFW and other ministries)	National Budget FY 2019–2020	N	1.02%	2019	Readily available	Not applicable
3	Share of health in government budget allocation (MOHFW and other ministries)	National Budget FY 2019–2020	N	5.63%	2019	Readily available	Not applicable
4	THE per capita	Bangladesh National Health Account (BNHA) 1997–2015	N	$37	2015	Readily available	Not applicable
5	OOP for health (as % of THE)	BNHA 1997–2015	N	67%	2015	Readily available	Not applicable
6	Proportion of population with catastrophic expenditure on health (10% and 25% thresholds)	GHO	N	24.67% (for 10% threshold) 9.53% (for 25% threshold)	2016	Partially available	Not applicable

Impact indicators

SL no.	Tracer indicator	Data source	Routine data source Y/N	Estimates	Year	Data availability	Research design/data collection methods
1	Maternal mortality ratio	BMMS	Y	196	2016	Readily available	Cross-sectional/ household interviews
		SVRS		163	2020		Surveillance/ household surveys
2	Neonatal mortality rate	SVRS	Y	15	2020	Readily available	Surveillance/ household survey
		BDHS		30	2017–2018		Cross-sectional/ household interviews
		MICS		26	2019		Cross-sectional/ household interviews
		BMMS		30	2016		Cross-sectional/ household interviews
3	Total fertility rate	BDHS	N	2.3	2017–2018	Readily available	Cross-sectional/ household interviews
		SVRS		2.04	2020		Surveillance/ household surveys
		MICS		2.3	2019		Cross-sectional/ household interviews
4	Prevalence of stunting (height for age <-2 standard deviations from the median of the WHO Child Growth Standards) among children under five years of age	BDHS	N	30.8	2017–2018	Readily available	Cross-sectional/ household interviews
		MICS		28.0	2019		Cross-sectional/ household interviews

Burden indicators

SL no.	Tracer indicator	Data source	Routine data source Y/N	Estimates	Year	Data availability	Research design/data collection methods
1	Prevalence of HIV among MARP'	UNAIDS	N	Female sex workers: 0.2% Men who have sex with men: 0.2% People who inject drugs: 18.1% (2016) Transgender people: 1.4% Prisoners: NA	Female sex workers: Serological Survey (Unpublished), 2015 Men who have sex with men: Serological Survey (Unpublished), 2015 People who inject drugs: Serological Survey (Unpublished), 2016 Transgender people: icddr,b 2015 Serological Survey (Unpublished)	Partially available	1. Cross-sectional sentinel surveillance/ nationally representative population-based sample surveys 2. Behavioural surveillance surveys 3. Specially designed surveys and questionnaires, including surveys of specific population groups (e.g. specific service coverage surveys) 4. National HIV estimates from the Spectrum software.

* Here, burden indicates a disease burden

5

ADDITIONAL INDICATORS FOR FUTURE CONSIDERATION

An additional list of indicators was proposed and considered important by the HEU of the MOHFW of Bangladesh for inclusion in the current UHC monitoring framework. However, due to the unavailability of routine data sources at the moment, the experts decided to save these indicators for future revisions of the framework.

1. Number of deaths due to diabetes complications
2. Number of deaths due to cardiovascular diseases
3. Number of deaths due to cerebrovascular diseases
4. Number of deaths due to chronic obstructive pulmonary diseases

5. Number of deaths due to cervical cancer
6. Number of death due to breast cancer
7. Number of deaths due to road traffic accidents (rate)
8. Number of neonatal deaths
9. Number of infant deaths
10. Total number of maternal deaths (all causes)
11. Number of maternal deaths due to PPH
12. Number of maternal deaths due to eclampsia
13. Number of maternal deaths due to abortion
14. Number of maternal deaths due to uterine rupture
15. Number of surgical site infections
16. Number of death due to hepatitis (A/B/C)
17. Number of C-sections
18. Number of normal vaginal deliveries
19. Number of deaths due to kidney diseases
20. Number of deaths due to lung cancer

6

STRENGTHS AND WEAKNESSES OF INFORMATION SYSTEM FOR MONITORING PROGRESS TOWARDS UHC

6.1 STRENGTHS

- The government has exhibited strong political commitment to achieving and ensuring UHC.
- Bangladesh has developed a strong online system to transfer data from the field or hospital level to the central level.
- Good software has been established for proper data transfer and analysis.
- Demographic and health surveys are conducted routinely.
- Different surveys are conducted by different institutions for desired data collection.
- Well-established institutions have been developed for conducting surveys related to health and demographics.
- Central and local health bulletins are published yearly.

6.2 LIMITATIONS

- There is a scarcity of quality data in the routine data collection system.
- There is lack of complete and timely routine data.
- There are delays in compiling routine data.
- There are delays in publishing survey reports.
- There is a lack of coordination and interoperability between the different stakeholders collecting routine HIS, such as the DGHS and DGFP.
- Community health workers have yet to be fully sensitised.
- Incorporation of data from private and NGO health service providers.
- Data from PHC activities of urban settings conducted by MOLGRD&C have not been merged with HMIS.

7

RECOMMENDATIONS FOR MONITORING PROGRESS TOWARDS UHC

Bangladesh's revised UHC monitoring framework has adopted the indicators recommended by the global-level UHC framework and country experts, and the previously identified gaps have been addressed. This comprehensive set of indicators is expected to help Bangladesh track its progress towards achieving UHC. Several recommendations have been made by experts for monitoring this progress:

- Necessary arrangements, such as human resource support or technical assistance for the HEU of the MOHFW, should be made to enable the tracking of UHC indicators and analysis of national survey data.
- Equity analyses by gender, wealth status and geographical area on different indicators should be performed for the revised UHC monitoring tools.
- The GoB has established the web portal 'SDG Tracker' (www.sdg.gov.bd) to strengthen timely data collection and enhance SDG achievement and monitoring. Consultation with the SDG tracker team is imperative to identify mechanisms to feed UHC indicators to the SDG trackers.
- The HEU should develop a dashboard for monitoring the UHC indicators .
- The reference sheets for all listed indicators in this framework should be updated.
- Necessary steps need to be identified to improve the collection of quality epidemiological data from both public and private facilities and at the field level.
- Adequate and appropriate technical and financial resources need to be mobilised to institutionalise key monitoring studies on financial risk protection.
- The HEU of MOHFW should share data regularly to policymaker, subnational health managers and stakeholders to make decisions on new data generation and appropriate policy formation.
- The data of the DGHS, DGFP and private sectors/NGOs/ UPHCP-MOLGRD&C should be interoperable.

REFERENCES

1. Boerma T, AbouZahr C, Evans D, Evans T. Monitoring intervention coverage in the context of universal health coverage. PLoS medicine. 2014;11(9).
2. World Health Organization. The world health report: health systems financing: the path to universal coverage: executive summary. World Health Organization; 2010.
3. Datta SK, Rabbany H. Sustainable Development Goals and Bangladesh: the role of Parliament. International Journal of Development Research. 2016;6(7):8599-606.
4. General Economic Division Bangladesh. Monitoring and evaluation framework of Sustainable Development Goal: Bangladesh Perspective. Planning Commission, Ministry of Planning, Government of the People's Republic of Bangladesh; 2018.
5. Bangladesh Health Facility Survey; 2017.
6. Rahman MS, Rahman MM, Gilmour S, Swe KT, Abe SK, Shibuya K. Trends in, and projections of, indicators of universal health coverage in Bangladesh, 1995–2030: a Bayesian analysis of population-based household data. The Lancet Global Health. 2018;6(1):e84-e94.
7. World Health Organization. Global reference list of 100 core health indicators. World Health Organization; 2015.
8. World Health Organization. Monitoring progress on universal health coverage and the health-related sustainable development goals in the South-East Asia Region: 2019 update. 2019.
9. SDG Indicators Metadata Repository. United Nations; 2019.
10. World Health Organization. Investing to overcome the global impact of neglected tropical diseases: third WHO report on neglected tropical diseases 2015. World Health Organization; 2015.
11. Ng M, Fullman N, Dieleman JL, Flaxman AD, Murray CJ, Lim SS. Effective coverage: a metric for monitoring universal health coverage. PLoS medicine. 2014;11(9).
12. Mirelman AJ, Rose S, Khan JA, Ahmed S, Peters DH, Niessen LW, et al. The relationship between non-communicable disease occurrence and poverty—evidence from demographic surveillance in Matlab, Bangladesh. Health policy and planning. 2016;31(6):785-92.

ANNEXES

ANNEX 1: CONTRIBUTORS TO THE REVISED REPORT

Sl No.	Name	Designation	Organisation
1	Mohd. Shahadt Hossain Mahmud	Director General (Additional Secretary)	HEU
2	Md. Aminul Hasan	Director (Hospital)	DGHS
3	Shams El Arifeen	Senior Director and Senior Scientist	Maternal and Child Health Division, icddr,b
4	Hossain Zillur Rahman	Executive Chairman	Power and Participation Research Centre (PPRC)
5	Syed Shahadat Hossain	Professor	Dhaka University
6	Quamrun Nahar	Head of Research	MCHD, icddr,b
7	Kanta Jamil	USAID Contractor, Senior Monitoring, Evaluation and Research Advisor	IAP World Service
8	Ahmed Al-Sabir	Independent Health Consultant	
9	Dr Mizanur Rahman	Senior Research Advisor	D4I/MEASURE Evaluation
10	Md. Alamgir Hossen	Deputy Director	Bangladesh Bureau of Statistics
11	Shakil Ahmed	Senior Economist (Health)	WB
12	Zahidul Quayyum	Professor	BRAC University
13	Ramiz Uddin	Head of Results Management and Data	a2i, Prime Minister's Office
14	Riad Mahmud	Policy and Technical Advisor	USAID
15	Mahbub E Elahi Chowdhury	Scientist	Health Systems and Population Studies Division, icddr,b
16	Tazeen Tahsina	Associate Scientist	icddr,b
17	Anisuddin Ahmed	Project Coordinator	icddr,b
18	Ahmed Ehsanur Rahman	Associate Scientist	icddr,b
19	Aniqa Tasnim Hossain	Research Investigator	icddr,b
20	Ali Ahmed	Research Investigator	icddr,b
21	Tania Sultana Tanwi	Research Investigator	icddr,b
22	Nowrin Nusrat	Statistician Officer	icddr,b
23	Dr Md. Shah Alam	Project Coordinator	icddr,b
24	Md. Moinuddin Haider	Assistant Scientist	icddr,b

ANNEX 2: CONTRIBUTORS TO THE 2014 FRAMEWORK FOR MONITORING PROGRESS TOWARDS UHC IN BANGLADESH

Name	Organisation
Dr M Sabbir Haider	HEU
Mr Jahangir Khan	icddr,b
Prof. Meerjady Sabrina Flora	NIPSOM
Dr Shajedul Hasan	HRM, MOHFW
Md. Hafizur Rahman	HEU
Mr Abdul Hamid Moral	HEU
Ms Nahid Akhter Jahan	Institute of Health Economics, Dhaka University
Ms Rumana Haque	Dhaka University
Ms Tahmina Begum	WB
Dr Ahmed Mustafa	HEU
Dr Aminul Islam	HEU
Dr Shah Ali Akbar Ashrafi	DGHS
Dr Md. Jaynal Haque	DGFP

ANNEX 3: PARTICIPANT LIST OF THE WORKSHOP 'REVIEW OF UNIVERSAL HEALTH COVERAGE MONITORING FRAMEWORK' (13 MAY 2019)

Sl No.	Name	Designation	Organisation
1	Abul Kalam Azad	Director General	DGHS
2	Mohd. Shahadt Hossain Mahmud	Director General (Additional Secretary)	HEU
3	Md. Aminul Hasan	Director (Hospital)	DGHS
4	Masud Reza Kabir	Line Director, CBHC, DGHS	DGHS
5	Abdus Salam	Line Director, CDC, DGHS	DGHS
6	Shukhendu Shekhor Roy	System Analyst & Deputy Program Manager, MIS, DGHS	DGHS
7	Md. Khalilur Rahman	Deputy Director (Hospital 1) & Program Manager (PM) 2, HSM, DGHS	DGHS
8	Muhshairul Islam	PM, MNH, DGHS	DGHS

Sl No.	Name	Designation	Organisation
9	Nasmus Sadaf Salim	Line Director, MIS, DGFP	DGFP
10	Mehbub Morshed	PM, MIS, DGFP	DGFP
11	Golam Faruk	Deputy PM, MIS, DGFP	DGFP
12	Md. Zainal Haque	PM, Maternal, Child, Reproductive and Adolescent Health, DGFP	DGFP
13	Md. Humayun Kabir	PM, Planning Unit, DGFP	DGFP
14	Tripti Bala	Deputy Director	DGFP
15	Md. Jony Hossain	ACUITTS	MOHFW
16	Tanveer Ahmed	Deputy Director	DGHS
17	Md. Ali Khan		DGHS
18	Md. Shafiqul Islam	Assistant Director (Hospital 1), Hospital & Clinic	DGHS
19	Md. Masud Reza Khan	Assistant Director (Hospital 2), Hospital & Clinic	DGHS
20	Mohammed Eunus Ali	Assistant Director (Hospital 2), Hospital & Clinic	DGHS
21	Dewan Md. Mehedi Hasan	Medical Officer (MBPC)	DGHS
22	Emdadul Hoque		DGHS
23	Shaheen Sultana	Assistant Director (MBPC)	DGHS
24	Saiful Islam	Deputy Director	DGHS
25	Shahana Sharmin	Director (Admin), (DS)	HEU
26	Md. Rafiqul Islam	Attachment, HEU (OSD, DGHS)	HEU
27	Mohammad Abul Bashar Sarker	Attachment, HEU (OSD, DGHS)	HEU
28	Subrata Paul	Attachment, BNHA, HEU (OSD, DGHS)	HEU
29	Mohammad Nazmu lHaque	Attachment, QIS, HEU (OSD, DGHS)	HEU
30	Pranab Kumar Roy	Attachment, QIS, HEU (OSD, DGHS)	HEU
31	Mohammad Afzalur Rahman	Attachment, QIS, HEU (OSD, DGHS)	HEU
32	Md. Harun Or Rashid	Consultant, QIS, HEU	HEU
33	Md. Hafijul Islam	Medical Officer, QIS, HEU	HEU
34	Md. Azmal Kaysar	National Coordinator	HEU
35	Dilip Kumar Das	Director	
36	Laila Akhter	Deputy Director	HEU
37	Md. Nurul Amin	Deputy Director	HEU
38	Fatema Zohara	Deputy Director	HEU
39	Shahana Sharmin	Director	HEU

Sl No.	Name	Designation	Organisation
40	Nawrin Moni	Medical Officer	HEU
41	A.Y.M Ziauddin	Director	HEU
42	Md. Anwar Sadat	FP – BNHA	HEU
43	Md. Azmal Kabir	National Coordinator	HEU
44	Shah Alom Siddiqi	Medical Officer	Hospital
45	Kanta Jamil	Senior Monitoring, Evaluation and Research Advisor	USAID
46	Samina Choudhury	Project Management Specialist	USAID
47	Pushpita Samina	Clinical Services Lead	USAID
48	Shakil Ahmed	Sr Economist (Health)	WB
49	Tahmina Begum	Consultant	WB
50	Shayan Ahmed	Consultant	WB
51	Atia Hossain	Consultant	WB
52	Farzana Akter	National Consultant Planning, Monitoring and Reporting	WHO
53	Md. Touhidul Islam	NPO – Health Financing	WHO
54	Golam Kibria	Health Information System and Monitoring and Evaluation Advisor	Measure Evaluation
55	Zahidul Quayyum	Professor	BRAC James P Grant School of Public Health, BRAC University
56	Ahmed Al-Sabir	Independent Health Consultant	
57	Hossain Zillur Rahman	Executive Chairman	PPRC
58	Ramiz Uddin	Head of Results Management and Data	a2i, Prime Minister's Office
59	Jinia Alam	National Consultant	a2i, Prime Minister's Office
60	Nazmul Kabir	Deputy Director – MIS	Save the Children
61	Yukie Yoshimura	Expert	JICA
62	Zahirul Islam	Health Advisor	Embassy of Sweden
63	Mohammad Hussain		Marie Stopes
64	Momena Khan	Health Advisor	Canadian Field Survey
65	Md. Alamgir Hossen	Deputy Director	Bangladesh Bureau of Statistics
66	Syed Shahadat Hossain	Professor	ISRT, University of Dhaka
67	Syed Abdul Hamid	Professor	Institute of Health Economics, University of Dhaka
68	Peter Kim Streatfield	Emeritus Scientist	HSPSD, icddr,b
69	Shams El Arifeen	Senior Scientist & Senior Director	MCHD, icddr,b

Sl No.	Name	Designation	Organisation
70	Quamrun Nahar	Senior Director (Acting)	HSPSD, icddr,b
71	Mahbub E Elahi Chowdhury	Scientist	HSPSD, icddr,b
72	Anisuddin Ahmed	Assistant Scientist	MCHD, icddr,b
73	Md. Moinuddin Haider	Assistant Scientist	HSPSD, icddr,b
74	Md. Ashraful Alam	Statistician	NCSD, icddr,b
75	Ali Ahmed	Research Investigator	MCHD, icddr,b
76	Aniqa Tasnim Hossain	Research Investigator	MCHD, icddr,b
77	Fariha Tasnim	Senior Statistical Officer	MCHD, icddr,b
78	Tania Sultana Tanwi	Research Fellow	MCHD, icddr,b
79	Sonia Sultana	Research Investigator	MCHD, icddr,b

RDM Publication No. 001