Universal health coverage in Bangladesh: current status and policy implications

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Report by

USAID's Research for Decision Makers (RDM)

icddr,b

Acronyms

BDHS	Bangladesh Demographic and Health Survey
SVRS	Sample Vital Registration Survey
BMMS	Bangladesh Maternal Mortality Survey
MICS	Multiple Indicator Cluster Surveys
UHC	Universal health coverage
HEU	Health economics unit
SDG	Sustainable Development Goal
WHO	World Health Organization
RDM	Research for Decision Makers
IRG	Independent Reference Group
MoHFW	Ministry of Health and Family Welfare
NIPORT	National Institute of Population Research and Training
BBS	Bangladesh Bureau of Statistics
HIES	Household Income and Expenditure Survey
MCH	Maternal and child health
ANC	Antenatal care
CPR	Contraceptive prevalence rate
TFR	Total fertility rate
MMR	Maternal mortality ratio
NMR	Neonatal mortality rate
CAARR	Current average annual rate of reduction
RAARR	Required average annual rate of reduction
TB	Tuberculosis
RMNCH-FP	Reproductive, maternal, neonatal, child health and family planning
THE	Total health expenditure
MARP	Most at risk populations

Introduction

Universal health coverage (UHC) is one of the prime targets of the Sustainable Development Goals, as outlined in Goal 3.8: 'Achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all' (1). According to the World Health Organization (WHO), UHC includes providing an effective health system from which all people receive quality health services as per their needs and ensuring that the services do not create financial hardship for the users (2). UHC thus consists of three broad dimensions: (i) coverage of quality health services as per needs, (ii) financial coverage for all users when receiving health services and (iii) population coverage.

To monitor the progress towards UHC, the Health Economics Unit (HEU) of the Ministry of Health and Family Welfare (MoHFW) of the Government of Bangladesh developed and revised a monitoring framework including a set of health indicators, with technical assistance from the Independent Reference Group under USAID's Research for Decision Makers (RDM) (3). The methodology involved reviewing strategic documents, reports and policies as well as an analysis of health information tools. Several discussions with various stakeholders were also used to develop this framework. After two workshops and one consultative meeting with stakeholders hosted by the HEU and icddr,b, 27 indicators were proposed for monitoring the progress towards UHC in Bangladesh, addressing the 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 but data were not readily available, the stakeholders still chose to keep it. The indicators in the revised list were further sorted into four 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 level of financial hardship and the associated financial interventions
- **Impact level indicators:** indicators that measure a country's long-term performance in achieving UHC
- **Burden indicators:** indicators that quantify the total impact of health conditions on an individual at the population level in a consistent manner

The revised framework for monitoring UHC contains 16 service coverage indicators, 6 financial risk protection indicators, 4 impact indicators, and 1 burden indicator, together covering basic information, including estimates. The Independent Reference Group (IRG) is currently working to update information on the indicators as per the availability of data from various national surveys and surveillance programs. However, there is a need to track these 27 indicators at a national level and explain the current situation in Bangladesh in terms of these indicators and the resulting policy implications.

The overall objective of this work is to review the revised UHC monitoring framework and report on the overall situation regarding the 27 indicators at a national level, then to present policy implications based on the current situation.

Method

The methodology used in this study involved reviewing the revised UHC monitoring framework along with various other strategic documents, reports and policies (4-8). All the existing data sources, methodologies and estimates regarding the selected indicators were also rigorously reviewed (9-13). Several stakeholder meetings were organised to gather recommendations and comments on the current status of these indicators in program monitoring and their availability in routine data sources. We also revised the data availability map created earlier and updated the available data sources for the listed indicators as well as their current estimates according to surveys and routine data sources. Further, we categorised the 27 indicators based on their availability in surveys and routine data sources. Indicator-specific recommendations were established according to the availability and quality of the data sources.

Findings

The data availability mapping was reviewed and updated by the IRG. Table 1 presents the available data sources for the listed indicators as well as current estimates based on surveys and routine data sources. At this time, several of the listed UHC indicators do not have an associated routine data source. Indicators on which information could be obtained from available data sources through data, reports or records were classified as readily available. In contrast, indicators on which information differed from the definition but could be obtained from available data sources were classified as partially available.

Table 1. Current estimates and available sources of the indicators used to track UHC

Service Coverage Indicators

SL no.	Tracer indicator	Data source	Routine data source Y/N * = available only in public facilities	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*	6.7	2019	Readily available	Records from health bulletin
		Human Resources for Health Country Profile (GHO)		6.4	2019		Records
2	Number of currently registered nurses and midwives per 10,000 population	Health Bulletin	Y*	3.0	2017	Readily available	Records
		Human Resources for Health Country Profile (GHO)		3.9	2019		Records
3	District and upazila hospitals 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% of facilities have 75% or more of essential medicines	2011	Partially available	Cross-sectional/facility assessment using Service Availability and Readiness Assessment tool
6	Percentage 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
7	Service readiness for reproductive, maternal, newborn and child health and family planning (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

SL no.	Tracer indicator	Data source	Routine data source Y/N * = available only in public facilities	Estimates	Year	Data availability	Research design/data collection methods
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	91.0%	2017-18	Readily available	Cross-sectional/household surveys
10	Contraceptive prevalence rate using modern method among 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	N	81.5%	2019	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		64.4%	2019		Cross-sectional/household interviews
12	Tobacco: age-standardised prevalence of adults ≥15 years who smoked tobacco in the last 30 days	WHO	N	44.7	2016	Readily available	
		Global Adult Tobacco Survey		35.3	2017		Cross-sectional/household interviews
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	BDHS	N	Female: 13%; Male: 13%	2017-18	Readily available	Cross-sectional/household interviews

SL no.	Tracer indicator	Data source	Routine data source Y/N * = available only in public facilities	Estimates	Year	Data availability	Research design/data collection methods
	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	BDHS	N	Female: 15% Male: 9%	2017-18	Readily available	Cross-sectional/household interviews
16	Percentage of incident TB cases 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	Percentage of population falling into poverty due to OOP expenses	Research study on Household Income and Expenditure Survey 2016	N	4.5%	2021	Partially available	Not applicable
2	Government health allocation as % of GDP (MOHFW and other ministries)	National Budget FY 2020–2021	N	1.3%	2020	Readily available	Not applicable
3	Share of health in government budget allocation (MOHFW and other ministries)	National Budget FY 2020–2021	N	7.2%	2020	Readily available	Not applicable
4	Total health expenditure per capita	Bangladesh National Health Account (BNHA) 1997–2015	N	$37	2015	Readily available	Not applicable

5	OOP expenses 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		165	2019		Surveillance/household surveys
2	Neonatal mortality rate	SVRS	Y	15	2019	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	2019		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 most-at-risk populations (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.

The updated information on the UHC indicators is being collated according to the availability of the data from population-based household surveys. However, global initiatives, including the SDGs and Countdown to 2030, emphasise the contribution of routine health information systems to keep track of progress (14). The Government of Bangladesh has also taken initiatives to ensure that health data is routinely available for better planning, program monitoring and the development of policy implications. The classification of each indicator's availability through routine data and survey data is presented in Table 2. Information on seven of the service coverage indicators were available yearly through routine data sources, and that on eight others could be obtained occasionally through survey data. Information on two of the health financing indicators could not be obtained yearly through routine data sources. Instead, the estimated value of these two indicators could be produced using data from the occasionally implemented Household Income and Expenditure Survey. In addition, two-thirds of the health financing indicators could be routinely traced. All four impact and one burden indicator could be traced occasionally through survey data.

Table 2. Availability of indicator information from national surveys and routine data sources

Service coverage	Health financing	Impact	Burden
1. Registered doctors per capita relative to maximum threshold of 10 per 10,000 population	**1. Government health allocation as % of GDP (MoHFW and other ministries)**	**1. Neonatal mortality rate**	**1.Prevalence of HIV among MARP**
2. Number of currently registered nurses and midwives per 10,000 population	**2. Percentage of population falling into poverty due to OOP expenses**	**2. Total fertility rate**	
3. District and upazila hospitals with at least one 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 of 18/10,000	**4. Total health expenditure per capita**	**4. Prevalence (%) of stunting among children under five**	
5. Proportion of public health facilities that have a core set of relevant essential medicines	**5. OOP expenses for health (as % of THE)**		
6. Percentage 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			
8. Percentage of women aged 15–49 years with a live birth in a given time period who received quality ANC			
9. Measles -rubella immunisation coverage among children under 12 months			
10. Contraceptive prevalence rate using modern method among 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, receiving 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			

Current status of the indicators used to achieve UHC

Service coverage indicators

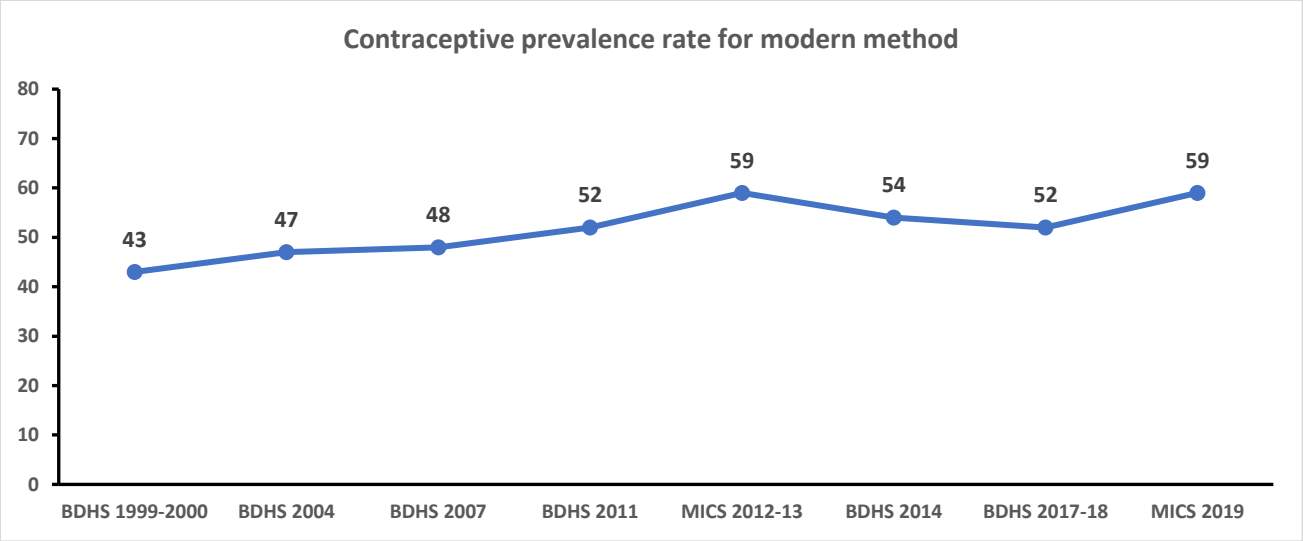
For service coverage indicators, no specific targets were set globally other than to achieve the maximum possible coverage. We can generate rough results by exploring the trend of the estimated indicator values available from several rounds of data collection. We do not show any reported Sample Vital Registration Survey (SVRS) values in the trend analysis due to quality issues identified in one of our previous works.

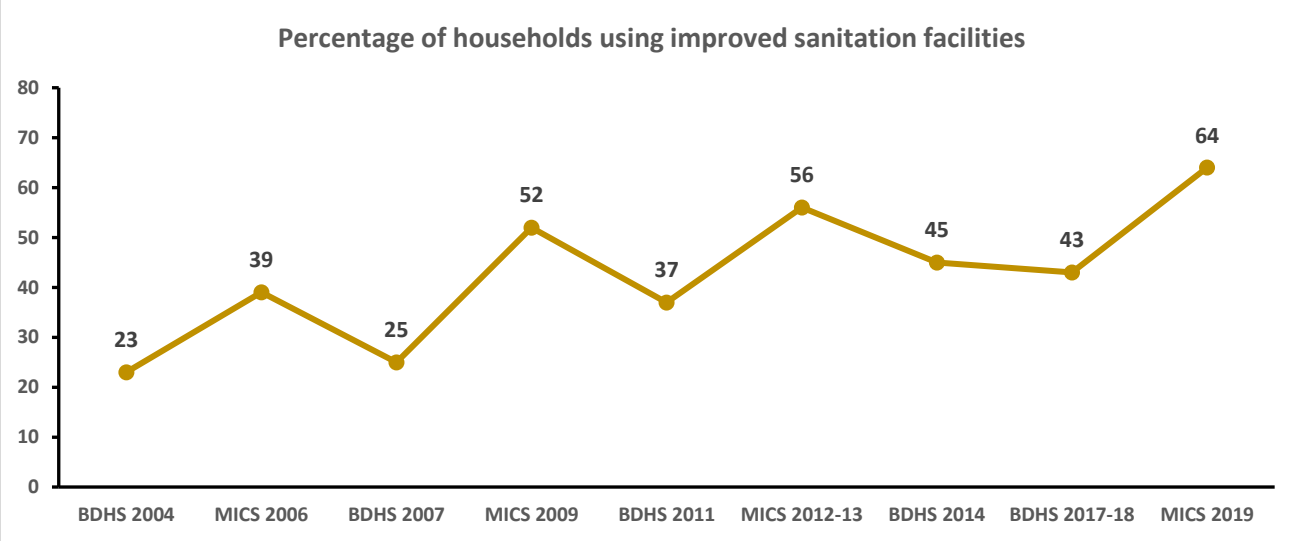
The definition of three service coverage indicators (Service readiness for RMNCH-FP; Percentage of women aged 15–49 years with a live birth in a given time period who received quality ANC; Tobacco: age-standardised prevalence of adults ≥ 15 years who smoked tobacco in the last 30 days) differed between the latest round of the survey and the one previous. At the same time, for three other indicators (Percentage of diabetic patients aged 35 years and older aware, receiving treatment and under control; Percentage of hypertensive patients aged 35 years and older aware, receiving treatment and under control; Percentage of incident tuberculosis (TB) cases that are detected and successfully treated), only two rounds of the recommended data sources have reported values up to this point. The trends of the other three indicators on which information was available over several rounds of survey data are depicted in Figure 1.

Over the past two decades, the use of modern methods of contraception by married women has increased steadily, resulting in reduction of the total fertility rate (TFR). In particular, the prevalence increased from 43% in 2000 to 52% in 2011 and 59% in 2019. Awareness and program implementation need to be increased to reduce the discontinuation rate of contraceptive use.

We can also observe an increasing pattern in the percentage of households using improved sanitation facilities and the proportion of births attended by skill health personnel. The percentage of households using improved sanitation facilities increased from 23% in 2004 to 37% in 2011 and 64% in 2019. The use of improved sanitation facilities prevents people from coming into contact with human waste and helps to reduce the transmission of many communicable diseases. In order to achieve full coverage by 2030, adequate and appropriate interventions need to be implemented to accelerate the increase. The proportion of births attended by skilled health personnel increased from 12% in 1999–2000 to 27% in 2010 and 59% in 2019. The number of deliveries attended by

skilled health personnel is one of the main indicators affecting maternal and neonatal death. Hence, routine monitoring and updating of this indicator need to be ensured for better policy formation.





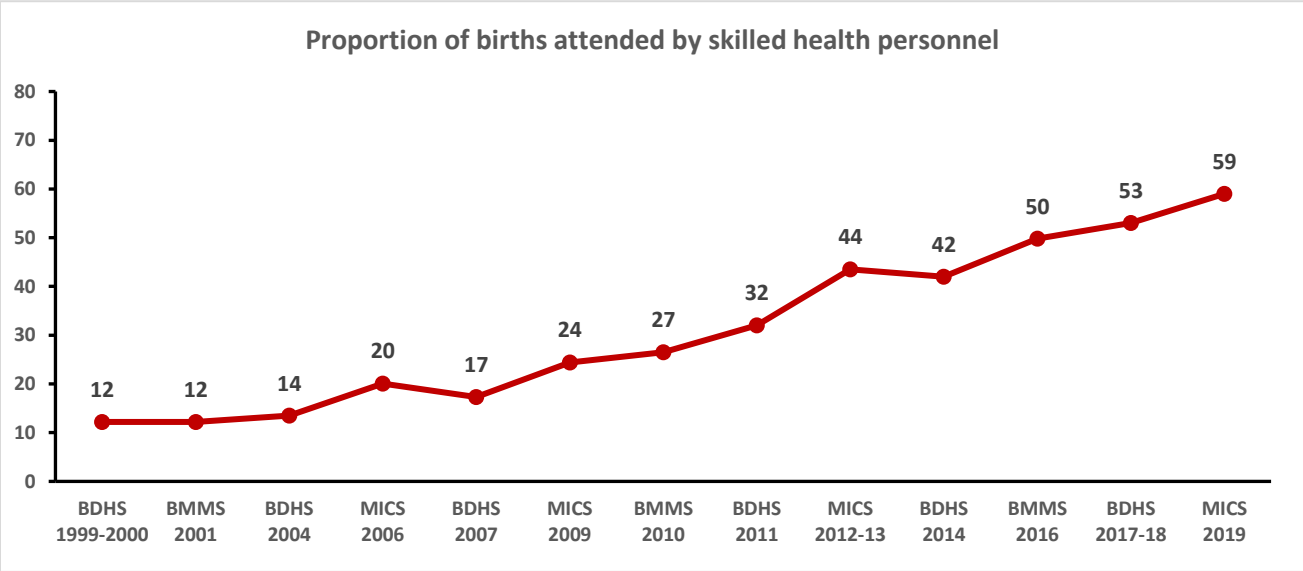


Figure 1. Trends of selected service coverage indicators

Health financing indicators

The trends regarding the health financing indicators available yearly through routine data sources are presented in Figure 2. Government health allocation as a percentage of gross domestic product (GDP) has slowly increased over the years, from 0.7% in 2002 to 0.9% in 2012 and 1.3% in 2020. We can also observe an up-and-down trend in the share of health in government budget allocation, from 6.7% in 2002 to 4.9% in 2021 and 7.2% in 2020. In addition, there is discontinuity in the information from 2008 and 2009, as these estimates are not mentioned in the budget.

The total health expenditure per capita has increased rapidly over the past two decades, from $9 in 1997 to $16 in 2007 and $37 in 2015. The out-of-pocket (OOP) expenditure on health as a percentage of total health expenditure also increased from 55% in 1997 to 67% in 2015. This increasing pattern indicates that more people fall below the poverty line due to OOP expenses, hindering progress towards UHC.

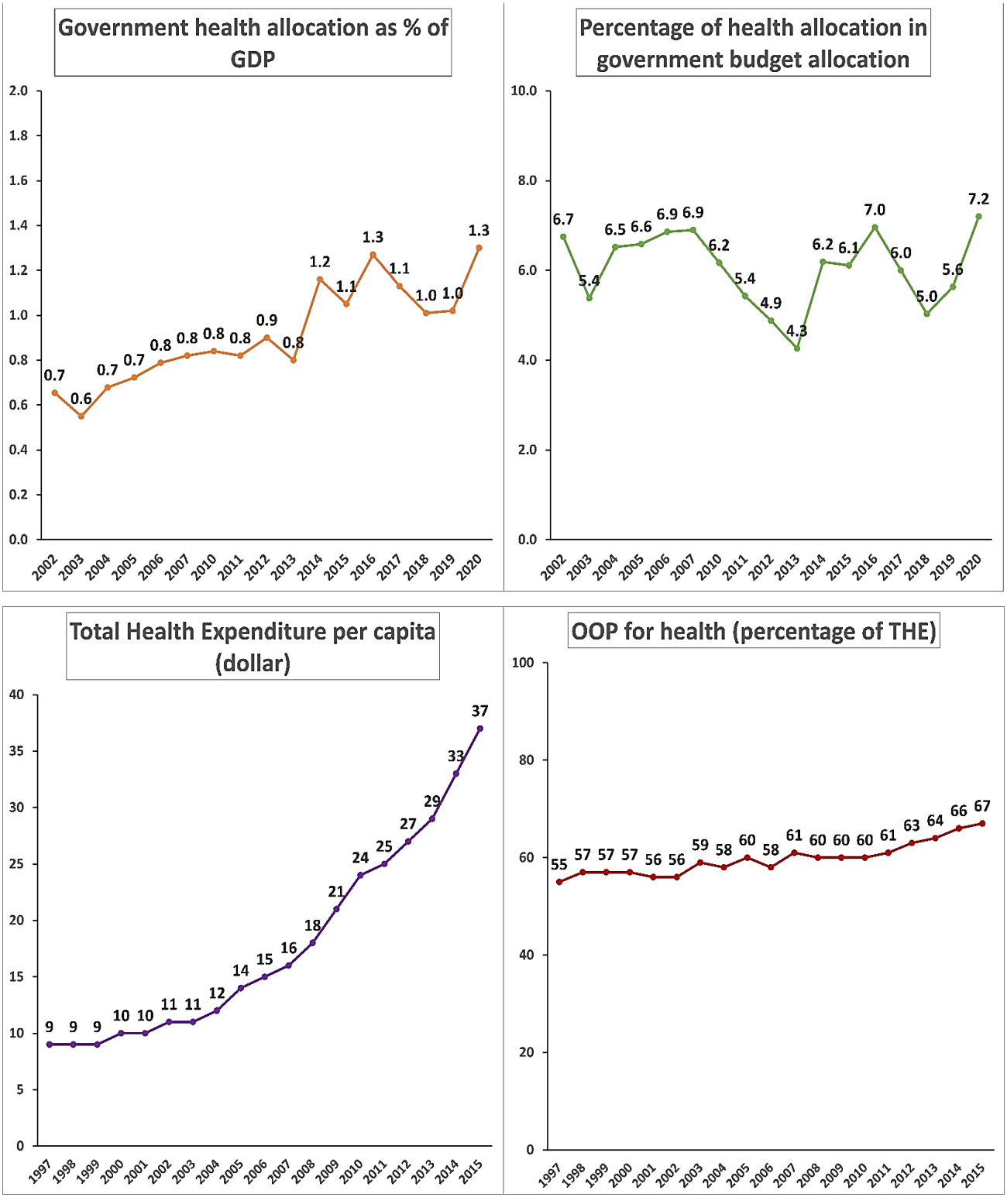


Figure 2. Trends of selected health financing indicators

Impact indicators

The estimated values of all four impact indicators were available through survey data sources. For the two indicators regarding the (i) TFR and (ii) prevalence of stunting among under-five children, no specific target is mentioned in the SDG. We observed the trend of these two indicators over the past two decades to understand their current status, as depicted in Figure 3. The trend in TFS obtained from the Bangladesh Demographic and Health Survey (BDHS) and other comparable sample surveys since 2000 reflect an overall decline in fertility. In particular, the TFR declined sharply from 3.3 births per woman in 1999–2000 to 2.3 births in 2019, though the rate has remained stable since 2011.

The prevalence of stunting among children under five has decreased steadily over the past two decades. In particular, it declined from 51% in 1999-2000 to 41% in 2011 and 28% in 2019.

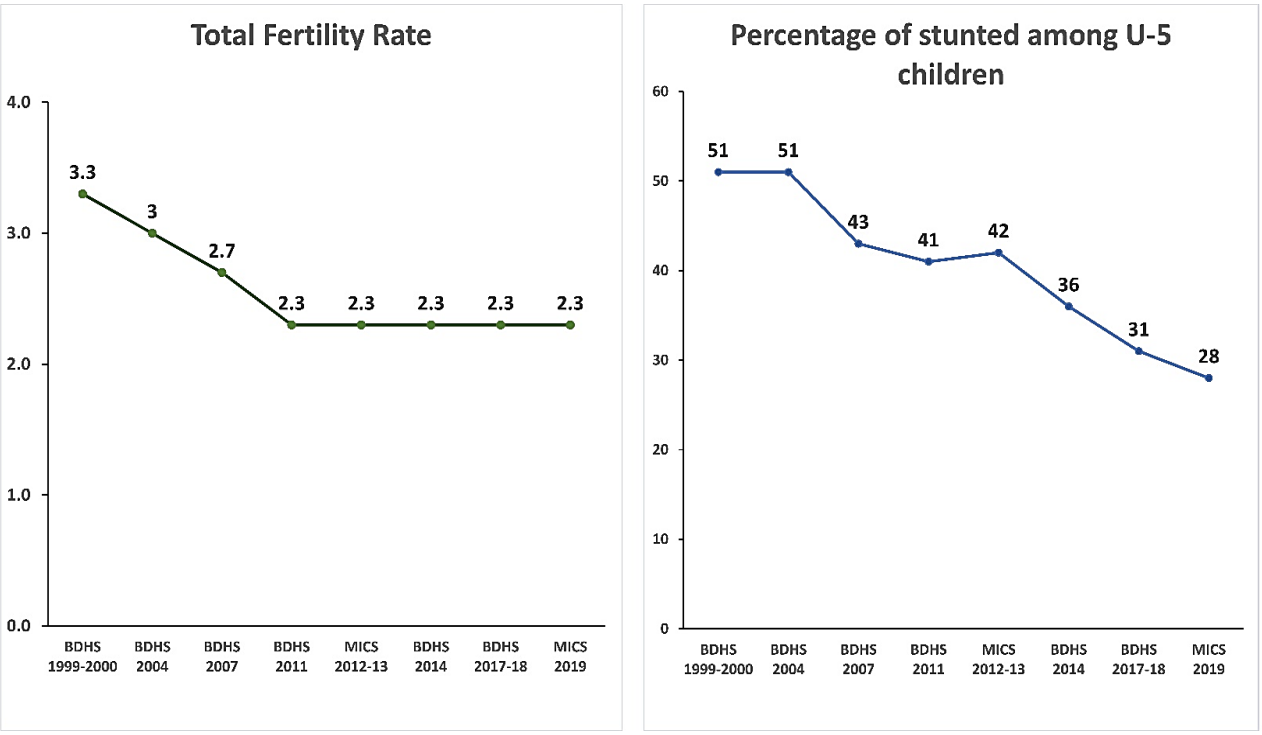


Figure 3. Trend of selected impact indicators

SDG 3 sets a global target to reduce the maternal mortality ratio (MMR) to less than 70 per 100,000 live births and reduce the neonatal mortality rate (NMR) to at least as low as 12 per 1,000 live births by 2030. For the MMR and NMR, we calculated the current average annual rate of reduction (CAARR) and required average annual rate of reduction (RAARR) to achieve SDG 3. The CAARR for MMR and NMR was calculated based on the available survey data between the year 2000 and the latest year using an exponential growth model. From the latest year of the estimate, the RAARR was calculated to reach the target rate for the year 2030.

The baseline estimated value of the MMR is 322 per 100,000 live births (BMMS 2011), and that of the NMR is 42 per 1,000 live births (BDHS 1999–2000). The latest estimated value of the MMR is 196 per 100,000 live births (BMMS 2016), and that of the NMR is 26 per 1,000 live births (MICS 2019). The CAARR of the MMR over the 15 years between 2001 and 2016 was 3.3%, and the NMR over the 19 years between 2000 and 2019 was 2.5% (Table 3). However, to achieve the SDG target by 2030, yearly relative reduction rates of 7.4% for MMR and 7.0% for NMR are required.

Table 3. Current estimates, current AARR and required AARR for the MMR and NMR

Indicator	*Current estimate*	*Current AARR*	*Required AARR*
Maternal mortality ratio	196 (2016)	3.3% (2001–2016)	7.4% (2016–2030)
Neonatal mortality rate	26 (2019)	2.5% (2000–2019)	7.0% (2019–2030)

Recommendations

- Approximately 25% of the indicators are ready to be reported on yearly. No immediate intervention is needed for these indicators, but the reporting mechanisms need to be updated to ensure high-quality data is obtained.
- Authorities should take initiatives to conduct surveys at fixed intervals to report the occasionally available indicators through surveys more frequently. Further, initiatives can be taken to add additional indicators in the national record-keeping system to ensure the availability of these indicators yearly.
- To generate better policy implications, data quality needs to be ensured in terms of relevance, sound collection methodology, consistency and reliability.
- Among the 27 indicators, only 8 indicator targets can be specified through the SDG indicators. One expert group meeting can be arranged to set specific targets related to the indicators.
- The Government of Bangladesh needs to strengthen its capacity to effectively implement monitoring and regulatory activities and ensure quality of care in health services in the public, private and non-governmental sectors.
- The governmental and non-governmental organizations working on water, sanitation and hygiene (WASH) should introduce a new policy strategy to increase the use of improved sanitation in both urban and rural areas.
- Appropriate insurance policies and yearly reporting and monitoring of all health financing indicators need to be ensured to generate better policy implications.
- Apart from ensuring all essential maternal health services are provided to achieve the RRARR for MMR (7.4%), immediate evidence-based intervention needs to be implemented to address the two major causes of maternal death: postpartum haemorrhage and eclampsia. A quickly rolled out action plan on postpartum haemorrhage and eclampsia along with the corresponding logistics as well as human and other resources is required.
- The existing programs and interventions to address the major causes of neonatal death need to be scaled up quickly to achieve the desired level of neonatal mortality. The availability and application of chlorhexidine for cord care, bag and mask, severe infection management, kangaroo mother care and antenatal corticosteroids must be ensured in all public and private facilities.

- The routine data system needs to be strengthened to track how the country is progressing towards these targets.
- Health emergencies, such as COVID-19, pose a global risk and have revealed a critical need for preparedness. Hence, routine monitoring of all the health indicators needs to be ensured for decision making and appropriate policy formation.

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