



# The Surjer Hashi Network Journey to High-Quality Maternal and Newborn Healthcare in Bangladesh

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### Abstract

This technical brief examines the Surjer Hashi Network (SHN)'s work enhancing high-quality antenatal care and delivery services in Bangladesh, supported by the Chemonics-led USAID Advancing Universal Health Coverage (AUHC) activity. Building on the nation's successful attainment of the Millennium Development Goals and its commitment to the Sustainable Development Goals, SHN's Maternal and Newborn Health Quality Improvement (MNHQI) initiative focused

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on testing a systematic and strategic approach to quality, leveraging facilitybased quality improvement teams under the guidance of SHN supervisors. A robust four-step improvement model guided teams through gap identification, performance monitoring, innovative change idea generation, and iterative testing via a "Plan-Do-Check-Act" cycle. This comprehensive framework elevates current standards of care and serves as a testament to the feasibility and effectiveness of low-cost, health worker-driven improvement interventions and its contribution to universal health coverage (UHC).

### Introduction

The Millennium Declaration of 2000 tasked UN members with achieving eight development goals by 2015. Millenium Development Goals 4 and 5 challenged member states to reduce the under-five child mortality rate by two-thirds and cut the maternal mortality ratio by three-quarters. Bangladesh successfully achieved these goals, prompting its government to further reduce maternal, child, and newborn mortality rates in pursuit of Sustainable Development Goals (SDGs) 3.1 and 3.2. According to the most recent data from 2020, the maternal mortality ratio stands at 123 per 100,000 live births (SDG 3.1 aims to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030).<sup>1</sup> According to the 2022 Bangladesh Demographic and Health Survey, the neonatal mortality rate fell to 20 per 1,000 live births in 2022 (SDG 3.2 aims to reduce neonatal mortality to at least as low as 12 per 1,000 live births), while child mortality decreased to 31 per 1,000 live births in the same period (SDG 3.2 aims to reduce under-5 mortality to at least as low as 25 per 1,000 live births).<sup>2</sup>

These results were achieved in part through the expansion of universal health coverage (UHC),<sup>3</sup> whose progress is measured through two indicators: a service coverage index (Indicator 3.8.1)<sup>4</sup> and different measures of financial protection (Indicator 3.8.2).<sup>5</sup> In 2019, Bangladesh's service coverage index was measured at 51 on a scale from zero to 100.<sup>6</sup> In addition, in 2016, 24.4% of households spent more than 10% of their income on health expenditures, with 8.4% of households spending more than 25%.<sup>7</sup>

Despite these achievements, maternal and child health services are underutilized across Bangladesh. Although 88% of mothers received some form of antenatal care (ANC) in 2022, the percentage of mothers attending the recommended four ANC visits has declined from 46% to 41% since 2017. Among them, only one in five met Bangladesh's government criteria for highquality ANC — defined as four or more ANC visits to medically trained providers who perform all essential elements of a clinical evaluation.<sup>8</sup> In addition, although recent data from the 2022 Bangladesh Demographic and Health Survey estimated that 70% of births were attended by a "medically trained provider," these improvements continue to fall short of global and regional averages.<sup>9</sup>

# Surjer Hashi Network and the Advanced Universal Health Coverage Activity

UHC indicators track progress in accessing and using services but do not provide information on the quality of these services, which is one determinant of mortality. This fact prompted the Surjer Hashi Network (SHN), a private care network, to undertake an initiative to improve the quality of ANC and delivery services provided by its clinics. SHN operates 134 clinics that aim to provide affordable, high-quality maternal, child health, and family planning services to all people in Bangladesh, including the poor and marginalized.

Since October 2017, SHN has been supported by USAID's Advancing Universal Health Coverage (AUHC) activity, a Chemonics-led project, to become a gender-sensitive, financially sustainable social enterprise. Between October 2017 and September 2023, SHN clinics provided care through more than 2.2 million ANC visits and assisted more than 87,000 normal vaginal deliveries (VD). To improve the quality of ANC and VD, SHN launched its Maternal and Newborn Health Quality Improvement (MNHQI) initiative in June 2022.

# The Improvement Model

The MNHQI initiative aims to achieve specific objectives by establishing facility-based quality improvement (QI) teams coached by their SHN supervisors to go through the following steps of the improvement model.<sup>10</sup>

- Identifying gaps and improvement opportunities from a rapid assessment of performance and developing improvement objectives accordingly.
- 2) Developing a monitoring system through indicators of performance linked to each improvement objective.
- Generating change ideas as potential solutions to address quality performance issues.
- Testing the effects of the changes through a "Plan-Do-Check-Act" (PDCA) cycle of learning and improvement.

#### Figure 1. Improvement Model



### **MNHQI** Initiative Objectives

For SHN, delivering high-quality health services means providing personalized care that aligns with client needs and expectations while meeting evidence-based protocols. To address quality issues, SHN established a quality improvement team (QIT) for each clinic involved in the initiative, composed of the clinic manager and service providers. To monitor and support the initiative, SHN headquarters formed a quality management team, which was led by the chief executive officer and included the chief of clinical services, service delivery specialists (who are the supervisors of the clinics), and representatives from clinic teams.

In June 2022, to outline specific objectives and dive deeper into quality issues, SHN conducted baseline quality assessments for ANC and VD by having 15 clinics randomly sample and review their patients' medical records over a three-month period. AUHC assisted SHN in analyzing the data. Most standards of ANC services were met, with the exception of obstetrical examinations (7%) and screening tests (20%). Other components like history taking, general examinations, and counseling were inconsistently available in the records. For VD, documentation was only recorded for two standards — vital signs (44%) and pelvic/vaginal examination (45%). Performance was measured through the "all or none" method or as the percentage of clients for

which *all* standards were met. However, disaggregated data was available to identify the standards that were the least documented or met.

After determining baselines, AUHC trained the 15 clinics' service providers in the QI methodology. In July 2022, all clinics began collecting weekly data on their compliance with standards to track their progress. In October 2022, SHN added five new clinics to the existing 15 to join the MNHQI initiative. Each of the subsequent three quarters (January to March 2023, April to June 2023, and July to September 2023) saw the addition of 20 new clinics to the initiative, resulting in 80 total clinics participating, which includes all three categories of clinics (advanced, basic, and basic with normal vaginal delivery [NVD]).<sup>11</sup> Of this total, 62 focused on ANC and 18 on VD. A common issue across all clinics was a lack of proper documentation and recordkeeping, making it difficult to measure the quality of the services from record reviews.

After reviewing the baseline assessment, clinics formulated SMART (specific, measurable, actionable, realistic, and time-bound) goals and objectives and set quarterly targets to pursue changes to be tested through Plan-Do-Check-Act cycles. Clinics focused on improving quality ANC (Q-ANC) and quality VD (Q-VD) aimed to have at least 50% of ANC/VD visits meet all standards within the first three months of implementation.

### **QI** Measures and Monitoring System

The MNHQI initiative provides a comprehensive framework for standardizing routine maternal care across SHN. The service standards are based on the Maternal Health Standard Operating Procedures (SOP, Vol-1), which has been implemented in healthcare facilities across Bangladesh since the Ministry of Health and Family Welfare officially adopted the guidelines in July 2019.

Providers are responsible for documenting the relevant information about the client and the tasks they perform according to the standards presented in Table 1 on the following page.

Table 1. Quality-of-Care Standard Indicators of ANC and VD			
Standards of Care Informing Improvement Measures for the Q-ANC Sub-Initiative	Standards of Care Informing Improvement Measures for the Q-VD Sub-Initiative		
<b>Patient History:</b> This includes capturing information such as the (1) last menstrual period, (2) estimated delivery date, (3) parity, (4) gravida status, (5) tetanus toxoid vaccine history, and (6) any reported complications.	<b>Improvement Measures/Indicators:</b> The quality of the delivery process for any client of normal VD or assisted/instrumental delivery is evaluated across three phases: <i>upon admission, during delivery,</i> and <i>after delivery</i> .		
<b>General Examination:</b> Service providers will measure and document the client's (7) blood pressure and (8) weight and check for (9) anemia, (10) jaundice, and (11) edema as part of the general examination.	<ul> <li>Upon admission (28 weeks or more), quality-of-care standards include:</li> <li>(1) Vital signs for the mother and fetus (mother's blood pressure, pulse, fetal heart rate).</li> <li>(2) Per vaginal examination — cervical dilatation and membrane status (ruptured/intact).</li> <li>(3) Client's risk assessment/evaluation.</li> </ul>		
<b>Obstetric Examination</b> : Service providers will measure and document the (12) fundal height, (13) fetal presentation, and (14) fetal heart rate.	<ul> <li>During delivery, quality-of-care standards include:</li> <li>(4) Companionship and support for the mother during the first and second stages of labor.</li> <li>(5) Partograph use in the first stage of labor (from active labor while the cervix is 4+ cm dilated).</li> <li>(5) Support given to the mother in changing her position during the first and second stages of labor.</li> <li>(7) Active management during the third stage of labor.</li> </ul>		
<b>Screening test:</b> Essential screening tests are performed, including determining client (15) blood grouping and (16) hemoglobin (Hb%) level and checking for (17) albuminuria and (18) glucosuria.	<ul> <li>After delivery, quality-of-care standards include documentation of the following in 15-minute intervals for two hours following delivery: <ul> <li>(8) Mother's vital signs: blood pressure and pulse.</li> <li>(9) Assessing for per vaginal bleeding.</li> <li>(10) Evaluating uterine condition (contracted/soft/tender).</li> </ul> </li> </ul>		
<b>Management</b> : Service providers ensure appropriate management by prescribing and advising on the intake of (19) iron, (20) folic acid, and (21) IFA (iron-folic acid) supplements, as well as (22) calcium supplements.			
<b>Counseling:</b> Clients receive counseling on (23) creating a birth plan, (24) maternal nutrition, (25) recognizing maternal danger signs, and (26) identifying newborn danger signs.			

Every week, both Q-ANC and Q-VD indicators were measured by the providers as the percentage of clients who received each service separately (item by item) and the full range of service items (all or nothing) outlined in the respective record sheet developed for the MNHQI initiative. For instance, ANC record sheets consisted of a comprehensive list of 26 indicators across six categories, while VD records included 10 indicators across three categories, as listed in Table 1. Service providers entered the results into an online database that was validated by SHN headquarters staff. To validate the data report, a four-step verification process was established, engaging both SHN headquarters and clinics' QI team members:

- 1. Clinical service providers (medical officers, paramedics, or midwives) review all records at the end of each day for accuracy and completeness of documentation of the indicators.
- 2. Service providers use a service item checklist to assess the data at the end of each week.
- Clinic managers or, occasionally, service delivery specialists at SHN headquarters meet biweekly with the QIT to review the data, identify gaps, and address them accordingly.
- 4. Each month, the service delivery specialists, with the help of the management information system officer, verify the reported score/percentage by cross-checking it with the electronic medical record system.

# Change Ideas, Interventions, and Results

During implementation of the MNHQI initiative, AUHC supported the training of more than 160 service providers (clinic managers, medical specialists, midwives, and data entry officers) from 80 clinics and six service delivery specialists on the improvement model and conducted supportive supervision visits and hands-on orientation on monitoring and reporting. Tables 2 and 3 on the following pages list the changes tested and adopted by clinic QITs, and Figures 2 and 3 show their effects on the performance indicators.

Table 2. Change Ideas Tested for the Q-ANC Sub-Initiative			
No.	Causes of Variation	Change Ideas	
1	Insufficient information about clients and for tracking the results of laboratory tests to identify high-risk mothers.	A) Write/type the Unique Identification Code or registration number on all documents from different service providers to track client pathways within the clinic or other SHN clinics. B) Use stamps on the prescription that contain the names of basic laboratory tests with common recommendations and directions for each ANC client.	
2	No system for using any job aid containing ANC standard indicators.	Introduce an ANC service tracker containing a list of 26 indicators of ANC as a job aid, as well as track and eventually check the service quality.	
3	Lack of tracking of ANC clients.	Establish separate recordkeeping (prescription pad) sheets for ANC clients to track ANC visits as well as retrieve previous visit information.	
4	Poor counseling skills.	Provide effective counseling on the importance of basic laboratory tests, especially blood grouping, hemoglobin, and urine tests, and counseling on birth preparedness, nutrition, and danger signs.	
5	Monitoring and supervision gaps.	Convene QIT biweekly to measure progress and document the results of change ideas by interpreting run charts (see below).	
6	Lack of coordination between medical officers and laboratory technicians.	Increase coordination between medical specialists and laboratory technicians to get the results to monitor high-risk clients.	
7	Data discrepancies between different reporting forms (data entry errors).	Have the data entry officer enter the visit type after consulting with the medical specialists, aligning the number of actual ANC clients in the customer record sheets, electronic medical record system, prescription form, ANC tracker sheet, and eventually in the run chart of the storyboard.	
8	Knowledge gap in evidence-based care due to lack of training.	Have medical officers provide continuous on-the-job training on evidence-based care to paramedics, nurses, and midwives of outdoor and indoor departments.	
9	Insufficient human resources in high- coverage facilities.	Deploy paramedics from the nearest SHN clinic to ensure uninterrupted service quality during events like vaccination or other health campaigns.	
10	Poor client follow-up process.	Introduce ANC follow-up register to schedule the next visit for each client, make a list of monthly appointments, and remind them by phone calls.	

As illustrated in Figure 2 on the following page:

- At the beginning of the evaluation period, no ANC visit in the nine pilot clinics met all the criteria for service quality. By the end of the first week in July 2022, the Q-ANC score increased to 30%.
- There was a monitoring gap in August and September 2022.
- The number of clinics involved in Q-ANC sub-initiative increased to 62 over time, and the low starting score of the new clinics joining the sub-initiative in October 2022, January 2023, April 2023, and July 2023 explains the dips in the run chart.
- The numbers in the chart correspond to the introduction of the changes numbered in Table 2.
- Overall, the package of changes led to a positive trend from 0% to 70%.

Figure 2. Evolution of the "All-or-Nothing" Q-ANC Score over 15 Months



Quality of ANC Services Reaches 70% for the First Time

Table 3. Change Ideas Tested for the Q-VD Sub-Initiative			
Phase	Causes of Variation	Change Ideas	
1	<ul> <li>Scanty information of the clients in recordkeeping forms</li> </ul>	<ul> <li>Use the customized Patient Record Sheet for documentation to maintain the uniformity of data collection during admission, delivery, and after delivery.</li> <li>Document the presence of a companion supporting the mother during labor by introducing stamps in the medical record sheets</li> </ul>	
2	<ul> <li>Knowledge gap in evidence-based care</li> <li>Data errors</li> <li>QITs do not meet regularly to investigate issues and their causes.</li> <li>No system for service audit</li> <li>Less proper and timely documents in the medical record forms</li> </ul>	<ul> <li>Peer-to-peer knowledge sharing on the correct use of partographs for documenting the progression of labor and active management of the third stage of labor.</li> <li>Hands-on training on the non-lithotomy posture of delivery.</li> <li>Assisted two clinics that perform a high volume of normal delivery in preparing error-free reports.</li> <li>Ensure the functionality of the QIT by supervising, monitoring, and measuring the progress biweekly and documenting their own Plan-Do-Check-Act cycles to test changes.</li> <li>Service providers use checklists and make tallys to audit their service quality.</li> <li>QIT members are counting the percentages of the quality Q-VD at the end of each week.</li> <li>Plot data points on run charts to see their improvement and identify gaps.</li> <li>Document patient's vital signs (pulse, blood pressure, pervaginal bleeding, and uterine condition) every 15 minutes up to two hours after delivery of the placenta to evaluate post-partum risk.</li> </ul>	
3	Lack of laboratory service support on time	Lab technician on call and available during emergencies	

As illustrated in Figure 3 on page 13:

- At the beginning, no VD in the six clinics met all the service quality criteria. By the end of July 2022, the Q-VD score increased to 20%.
- There was a monitoring gap in August and September 2022.
- Another clinic joined the sub-initiative in October 2022, six more in February 2023, four more in April 2023, and one more in July 2023, for a total of 18.
- The dip in November 2022 was due to data errors from two high-volume clinics, which were addressed.

- The numbers in the chart correspond to the introduction of the changes numbered in Table 3. Most changes were implemented at the same time, a concept known as a "bundle."<sup>12</sup>
- Overall, the package of changes led to a positive trend from 0% to 85%.

### Interpretation of Results and Lessons Learned

#### **On the Measurement**

We chose to monitor the quality performance indicators as the percentage of clients who received all ANC or delivery service standards in Tables 2 and 3. If a pregnant woman receives all but one of the 26 standards of ANC visits or the 10 VD standards, she would not be counted in the quality score. This method raises the bar on quality and is known as "all-or-none" measurement.<sup>13</sup> However, the disaggregated data is available to measure performance for each separate standard, a method known as "item-by-item," allowing one to identify which standards are the most challenging to meet and which bring down the all-or-none score. It is thus unsurprising that both teams using these methods started with a zero score, which could be demotivating if interpreted without additional information, such as the percentage of standards being met.

We observed a well-known phenomenon — the effect of measurement alone on performance — before introducing any changes in the system. Because the QI journey started with a baseline assessment and learning how to monitor performance, QITs reacted to their self-assessment by paying attention to their clinical practice, with the measurement serving as a reminder of things to do. The measurement itself is a change.

Measurement systems can be complicated and cumbersome, especially when quality is defined through 26 (for ANC) and 10 (for VD) standards, each being the focus of a specific indicator, and performance is calculated on all patients and not a sample. The QITs were late in reporting their data, made measurement errors, and did not report any data for two months (August/September 2022). This is not unusual and was addressed with the support of SHN supervisors, acting as QIT coaches, and the QI advisor of AUHC, acting as a mentor for the coaches.



#### Figure 3. Evolution of the "All-or-Nothing" Q-VD Score over 15 Months

Quality VD Reaches 85% for the First Time

#### **On the Improvement Process**

After starting their monitoring, using item-by-item calculations, QITs quickly learned about the most challenging standards affecting their scores, which enabled them to focus on solutions.

For ANC visits, the most challenging standards to meet were laboratory tests for urine, for both sugar and albumin (65%), along with blood hemoglobin (71%) and blood grouping (79%) tests due to some clients refusing to pay for them. All other standards were above 90%.

"When I joined this clinic, I found most of the ANC clients were very unwilling to do the blood tests," Dr. Anika Sattar, a medical specialist at Pahartoli clinic, said. "It was a big challenge for us to motivate them to check their hemoglobin level and conduct routine urine tests. But through effective and continuous counseling, we were able to mitigate this problem a lot."

Following the same calculation method (item-by-item) for the VD clients, the most challenging standards to meet were post-delivery surveillance every 15 minutes (checking uterus contraction was 60%), ensuring and documenting maternal companionship (65%), active management of the third stage of labor (67%), and proper documentation of pelvic examination during admission (69%). All other standards were above 80%.

"We faced a lot of challenges to document the client's information properly," Keya Das, a medical assistant from Patiya Urban Clinic, said. "As we had human resources constraints, all staff who conduct NVD did not get QI training, only two staff got training. Most of the indoor staff couldn't do partograph properly. A major challenge was to check and keep the documents of all vital signs after delivery 15 minutes apart for up to two hours. Then we sat together once a week every month for knowledge sharing — our medical officer helped us a lot during that time. After having frequent meetings and on-the-job training, we improved a lot, and now we know how to ensure the quality of care in a more synchronized way."

A significant challenge was the documentation of services. Staff usually do not spend time writing extensive medical records. The absence of information is always difficult to interpret, as it could be that the service was not provided or simply not recorded. Digital spreadsheet templates were implemented to facilitate the documentation process for providers and the calculation of the quality scores. One of the benefits of the MNHQI initiative is that it contributed to improved patient medical records. Other challenges include staff turnover and the need to orient new staff on the QI approach, which also affected the dynamic of QITs.

QITs identified many factors that affected the performance of their system of care, and therefore the responses/solutions were comprehensive and implemented as a bundle.

Clinics have overcome many challenges from both the provider and patient sides while implementing QI sub-initiatives. For service providers, knowledge gaps about service quality went in tandem with a lack of motivation for proper and timely documentation. On the patient side, a high frequency of no-shows for appointments paralleled a lack of desire to participate in any investigative measures beyond ultrasonograms. One of the important changes was the positive attitude of the service providers, which led to a change in clients' behavior and satisfaction levels. Service providers realized that following the QI process made their clinical work more structured and manageable. Moreover, regular monitoring and follow-up in biweekly meetings made clinic teams more engaged with the overall initiative and created a culture of data-driven planning. In addition, creating greater scope and an emphasis on proper and timely documentation by service providers enabled them to track high-risk patients. In addition, creating opportunities for continuous in-house education by peer-to-peer knowledge sharing effectively mitigated the knowledge gap. Furthermore, service providers can visualize their progress through the "run chart," making them more enthusiastic to achieve their targets. An essential step was creating a local pool of coaches for close monitoring and supervisory support (see below). SHN has already been capturing these lessons to scale up the MNHQI initiative among the rest of the clinics to refine the processes and enhance overall service quality systematically.

#### **On the Results**

Both sub-initiatives achieved significant results, but the pace of each was influenced by the team dynamics (regular meetings, identifying issues and their root causes, suggesting ideas of change, capacity to execute the changes) and the support they received from their clinic leadership and coaches.

The variations observed in the run charts are common and do not require a specific investigation unless a drop in performance is significant, such as in November 2022 for the Q-VD teams. Otherwise, the dips in the Q-ANC teams' performance are explained by new clinics joining the initiative and starting their journey from scratch.

From patient and demand perspectives, QITs noticed an increase in their client satisfaction satisfaction, as expressed by Dr. Sadia Afrin: "Clients are very satisfied with our service. It reflects when the clinic manager takes the exit interview, they show satisfaction after receiving the service. Even now, they have become interested in doing mandatory blood and urine tests alongside ultrasonograms. Since we split the investigation package into two or three tests, whereas we used to ask clients to do nine investigations previously, it is now more affordable for clients to do those. Then we offer another two or three lab tests when they are coming on their next visit. It strikes a lot in their psychology that we are not putting any financial burden on them.

I think it's a huge change." She added: "This initiative has a long-term impact, I believe. After getting one ANC, they are coming back again to get the next screening service. Moreover, they are referring other pregnant women to our clinic as well. So, I want to say that this is such a strong approach, and by following this method of improvement, we were able to build trust in [patients]."

# The Way Forward

#### Sustaining the QI Structure and Dynamic

A common challenge for QI initiatives is the sustainability of results. As a part of continuous education, in Q4 of 2023, SHN's senior management organized a refresher training on QI methodology to enhance subject matter knowledge and problem-solving skills. Before the training, SHN divided the 80 clinics into 11 clusters based on their geographic locations to form small groups of clinics that are close to one another and selected two or three clinic members as local-level coaches from each cluster with a demonstrated, in-depth knowledge of the QI model who could coach other cluster members. Coaches will, in turn, support clinic teams in introducing new change ideas and guiding them through the testing process using the Plan-Do-Check-Act model. Figure 4 below shows the task and communication modality of local-level coaches with their assigned clinic's QIT and SHN headquarters' senior leadership. A total of 30 clinic members from 26 clinics were selected as local-level coaches, and each group of local coaches consists of one or two medical officers and one or two clinic managers, with service delivery specialists acting as their mentors.



#### Expanding and Institutionalizing QI

The experience acquired by all involved in the MNHQI initiative serves as a platform for expanding the results to all clinics and to institutionalize a QI dynamic beyond ANC visits and deliveries. It is an essential component of the comprehensive quality management system that SHN developed with the support of AUHC and is described in a forthcoming technical brief.

### Conclusion

This structured QI initiative, the first for SHN, demonstrated the feasibility of low-cost, health worker-driven improvement interventions and complemented a more traditional approach to quality: supervision and training. It also provided a unique learning opportunity that has the potential, if integrated into the daily work of SHN and its clinics, to achieve its vision to become a sustainable private enterprise delivering affordable, high-quality care for all.

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#### CONTACT

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For questions about this technical brief, please contact <u>healthteam@chemonics.com</u>.

<sup>&</sup>lt;sup>1</sup> <u>Maternal mortality ratio (modeled estimate, per 100,000 live births) | Data (worldbank.org)</u>

<sup>&</sup>lt;sup>2</sup> The DHS Program - Bangladesh DHS 2022 - Key Indicators Report (English), page 51

<sup>&</sup>lt;sup>3</sup> UHC means that all people have access to the full range of high-quality health services they need, when and where they need them, without financial hardship.

<sup>&</sup>lt;sup>4</sup> SDG 3.8.1 Coverage of essential health services (who.int)

<sup>&</sup>lt;sup>5</sup> SDG 3.8.2 Catastrophic health spending (and related indicators) (who.int)

<sup>&</sup>lt;sup>6</sup> Sustainable Development Report 2023 (sdgindex.org)

<sup>&</sup>lt;sup>7</sup> GHO | Global Health Observatory Data Repository (South-East Asia Region) | Catastrophic out-of-pocket health spending (SDG Indicator 3.8.2 and regional indicators where available) - Data by country (who.int)

<sup>&</sup>lt;sup>8</sup> Bangladesh DHS 2022 - Key Indicators Report [PR148] (dgfp.gov.bd), page 35

<sup>&</sup>lt;sup>9</sup> Bangladesh DHS 2022 - Key Indicators Report [PR148] (dgfp.gov.bd), page 43; Births attended by skilled health personnel (%) (who.int)

<sup>&</sup>lt;sup>10</sup> How to Improve: Model for Improvement | Institute for Healthcare Improvement (ihi.org)

<sup>&</sup>lt;sup>11</sup> Advanced clinics have a higher level of providers and a wider range of services, such as 24/7 service provision, emergency obstetric services including cesarean section-specialized doctors, registered medical officers, and paramedics, comprehensive laboratory facilities, and registered pharmacies. Basic with NVD clinics have 24/7 service provision, emergency obstetric services, which include only normal delivery service, registered medical officers and paramedics, laboratory facilities, and registered pharmacies. Basic without NVD clinics do not perform deliveries.

<sup>12 &</sup>quot;What are Bundles?" | BirthTOOLS.org

<sup>&</sup>lt;sup>13</sup> Nolan, Thomas and Donald M. Berwick. "All-or-None Measurement Raises the Bar on Performance." JAMA 295, no. 10 (2006).