Maternal and Perinatal Death Surveillance and Response (MPDSR) in Bangladesh

Progress and Highlights in 2020

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Abbreviations

AHI	Assistant Health Inspector
ANC	Antenatal Care
CG	Community Group
CHCP	Community Health Care Provider
CSG	Community Support Group
EmONC	Emergency Obstetric and Newborn Care
FDR	Facility Death Review
FP	Family Planning
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
HA	Health Assistant
HI	Health Inspector
HMIS	Health Management Information System
HNPSP	Health, Nutrition and Population Sector Programme
IMCI	Integrated Management of Childhood Illness
MCWC	Mother and Child Welfare Center
MDGs	Millennium Development Goals
MIS	Management Information System
MMR	Maternal Mortality Ratio
MNH	Maternal and Neonatal Health
MNHI	Maternal and Neonatal Health Initiative
MoHFW	Ministry of Health and Family Welfare
MPDR	Maternal and Perinatal Death Review
MPDSR	Maternal and Perinatal Death Surveillance and Response
NGO	Non-Government Organization
NMR	Neonatal Mortality Rate
PNC	Postnatal Care
RCH	Reproductive and Child Health
RMO	Resident Medical Officer
SA	Social Autopsy
SBA	Skilled Birth Attendant
ToT	Training of Trainers
UFPO	Upazila Family Planning Officer
UHC	Upazila Health Complex
UH&FPO	Upazila Health and Family Planning Officer
UH&FWC	Union Health and Family Welfare Center
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
VA	Verbal Autopsy
WHO	World Health Organization

Message

Government of Bangladesh have been implementing the Maternal and Perinatal Death Surveillance and Response (MPDSR) Programme to identify and investigate the causes of maternal and perinatal death both at the household and health facility level. The process of MPDSR begins with the death of a mother or a newborn by notifying the case with a summary of the cause/s of death. Under this programme, we also undertake response activities to prevent maternal and newborn death.

In the last regional workshop on MDPSR, held in 2018, the overarching finding from the participants was that notification of death at the community level and the lack of comprehensive reviews are two of the biggest challenges in MPDSR. The approach of the MPDSR Programme is world class in that it underpins global good practices on notification of death at the facility level, review and response. facility death notification, review and response.

The Sustainable development goal three envisions a significant reduction in maternal mortality by 2030 (70 per 100,000 live births). Effective implementation of the programme will translate into a significant reduction in MMR, which will put us well on track in the achievement of the SDG goal. We have come a long way, yet the current status of maternal mortality in Bangladesh reflects the need to accelerate actions for the achievement of the set target. Moreover, proper utilization of the quality data on maternal death stemming from the programme can significantly improve the quality of maternal health services.

This report helps us better understand the state of MPDSR in Bangladesh and the prevalent challenges.

Nasima

Prof. Dr. Nasima Sultana
Additional Director General (Admin)
DGHS

Message

Bangladesh has adopted the global Maternal Death Surveillance and Response model developed by World Health Organization (WHO) to instill a national death review system. The progress in reducing maternal mortality and thereby achieving the target for Millennium Development Goal 4 over the past decade have resulted in plaudits from the global community for the Government of Bangladesh. The Sustainable Development Goals (SDG) to be achieved by 2030 urges us to reduce MMR to 70 or less per 100,000 live births, and neonatal mortality rate to 12 or less per 1000 live births, respectively. Maternal and Perinatal Death Surveillance and Response (MPDSR) is one of the key approaches, which works towards the goal by making quality improvement in maternal and newborn health services.

The Maternal and Perinatal Death Review (MPDR) programme, following its piloting in 2010 in Thakurgaon district, has made substantive improvements in terms of response to maternal and newborn mortality, both at the institutional and community level. Thanks to the efforts made by DGHS and its partners- UNICEF, UNFPA and WHO. Owing to its success, the Government scaled up the programme to a total of 14 districts by 2015, which was ultimately expanded to 50 districts around the country.

The COVID-19 pandemic, however, has created major challenges in the notifying and review of maternal and neonatal death both at community and facility level. It has somewhat halted the progress made. The Annual Report 2020 shows progress, opportunities and barriers pertaining to different components of MPDSR, including death notification, verbal autopsy, social autopsy, facility death review, data entry and analysis, monitoring and supervision system.

I believe with the full cooperation of all stakeholders, the implementation of maternal and perinatal surveillance and response will be accelerated and further strengthened with the goal of reducing maternal and perinatal deaths to achieve the SDGs.

Dr. Md. Shamsul Haque
Line Director, MNC&AH
DGHS

Message

Over the last decades, maternal deaths has reduced significantly around the world. From 2000 to 2017, the global maternal mortality ratio declined by 38 per cent – from 342 deaths to 211 deaths per 100,000 live births, according to UN inter-agency estimates. Bangladesh is among the leading countries to have reduced MMR significantly. However, still now, Bangladesh loses approximately 7,660 women each year from preventable causes related to pregnancy and childbirth. Almost all of (99%) deaths are occurring in low income and lower-middle-income economic cohorts of the population.

The Maternal and Perinatal Death Surveillance and Response (MPDSR) system enables us to measure the maternal and perinatal mortality in real time, involving the community in the process. Through this system, we produce quality information and case analyses with a view to undertake timely and evidence-based measures to prevent preventable maternal and neonatal deaths. Given the effectiveness of the Programme, MPDSR has been scaled up 50 districts to date by the Ministry of Health and Family Welfare (MoH&FW) with the technical and implementation support from UNFPA, UNICEF, WHO, and other development partners and donors.

The COVID-19 pandemic has forced a significant number of mothers to deliver at home without the provision of quality care, leaving them at the highest risk of maternal complications and death. The current systems therefore need to take the changed context in account and revitalize actions to save mothers and newborns.

MPDSR is one of the vital tools for improving quality of care for maternal and neonatal health, and strengthening the identification of maternal deaths in the community. At the same time, this is also serving as an evidence-base for advocacy, policy, planning, service delivery and accountability for accelerating progress towards ending preventable maternal deaths.

Dr. Md. Azizul Alim
Program Manager
Maternal Health Program
Directorate General of Health Services

Background

A woman's journey through pregnancy and childbirth, in Bangladesh is typically a story of suffering and challenges. A mother who dies during childbirth, is unable to see her child and the beautiful world. Moreover, she does not live to tell her own story. However, she leaves critical information which could save thousands of lives in this world. Knowing the answer to where, when, how and why the mother or newborn died could be the key to prevent future deaths. Using such vital information, specific interventions can be designed and addressed to reduce the burden of maternal and neonatal deaths. In this context, the World Health organization (WHO) in 2004 published "Beyond the Numbers", which reflected the quest to know in detail, the reason of maternal deaths and the ways to prevent such deaths.

Maternal Death Review provides a rare opportunity for policymakers, health staff and community members to learn from a tragic – and often preventable - event. The purpose of having a maternal and perinatal death review is to improve the quality of safe motherhood programming to prevent future maternal and neonatal morbidity and mortality. In Bangladesh, a comprehensive death review system for maternal death was non-existent in the health system until 2010. In addition, adequate registration and notification of deaths was lacking until 2010. Therefore, Bangladesh has adopted the MPDR from "Beyond the Numbers," and started piloting in one district of the country to investigate if the death surveillance and response can help to reduce maternal and perinatal deaths. Based on the lesson learnt from the piloted district, Directorate General of Health Services (DGHS) gradually scaled up the MPDSR to four districts in 2011 and to ten districts by 2013 with the technical support from UNFPA and UNICEF. This was further scaled up to 14 districts by 2015. The number of district under coverage now stands at 50.

The recent report from Bangladesh Sample Vital Statistics estimated that the maternal mortality ratio (MMR) of Bangladesh in 2020 was 163 per 100,000 livebirths. According to United Nations Inter-agency Group for Child Mortality Estimation Bangladesh's neonatal mortality rate (NMR) in 2018 is 23 deaths per 1,000 live births. The new Sustainable Development Goal (SDG) 3 has set a universal targe in this regards, which means Bangladesh should reduce MMR to less than 70 per 100,00 live births and neonatal deaths to <12 per 1000 livebirths by 2030.

To achieve the SDG targets, Ministry of Health and Family Welfare (MoH&FW) has put forward the maternal and perinatal death review system for national scale up in 2016. The country has revised the maternal and perinatal death review system to make it more action oriented and updated the name to Maternal and Perinatal Death Surveillance and Response (MPDSR). Ministry of Health and Family Welfare (MoH&FW) then rolled out MPDSR throughout the country.

In line with WHO's Maternal Death Surveillance and Response (MDSR) Technical Guidance, the MPDR system was updated to ensure an increased focus on surveillance and response. MoH&FW developed the national guidelines for MPDSR, National ToT manual, and Pocket handbook for the health workers as well as other MPDSR tools to strengthen capacity of stakeholders and key actors. By the end of 2020, MoH&FW has scaled up the initiative to 50 districts with technical support from UNFPA, UNICEF, WHO and other development and implementation partners.

The COVID19 pandemic has severely disrupted maternal health care services around the world and in Bangladesh too. This has, at the same time, brought the MPDSR system to a standstill. The lockdown imposed to contain the pandemic barred many mothers from taking services from health facilities, jeopardizing their lives in many cases. Restriction on movement also resulted in fewer visits of health workers in the community, which ultimately led to a major decline in the proper identification, review and responses under the MPDSR programme. However, the DGHS given its best efforts to continue MPDSR implementation despite of COVID challenges and continued virtually capacity developments, workshops and meeting on MPDSR in 2020.

Under the context, this report emphasizes on the progress made over the year despite the pandemic. It also notes the key achievements and highlights of major activities held under the MPDSR programme in 2020.

At a Glance: Maternal and Perinatal Death Surveillance and Response (MPDSR) in Bangladesh

The MPDSR programme in Bangladesh is a comprehensive system encompassing maternal and perinatal death both at the community and facility level. Any maternal, neonatal death or stillbirth is notified by the field level government health care providers at the community level, and by the senior staff nurses at the facility level. The death is usually notified and reported using a datasheet. Data from the reports are then uploaded on the DHIS-2 data-base from community clinics, UHCs and government district hospitals. All the cases of maternal deaths and 10% of neonatal deaths are reviewed by the health supervisors at the community level using a verbal autopsy form.

Similarly, for all the maternal deaths and 10% of neonatal deaths, the health supervisors also perform community based social autopsy as a community response to deaths to explore the underlying social causes and build awareness among the community to prevent future deaths. On the other hand, at the facility level, nurses perform the facility death review with the support from doctors and consultants, using facility death review forms.

Cause assignment from the community verbal autopsy is then performed at the divisional level under the leadership of MIS of DGHS, which is then uploaded to DHIS-2. For facility deaths, causes of deaths are uploaded to the DHIS-2 by the nurses. There are Quality Improvement Committees at the sub-district, district and divisional levels, which are responsible to conduct periodic discussion on the MDPSR findings and progress, and prepare action plan as per the death analysis, and translate them into actions to be undertaken at the field level. MPDSR focal persons are assigned at the sub-district, district levels for the overall management of MDPSR in their working areas. At the facility level, MPDSR sub-committees are functional at the UHC and district hospitals, who review facility deaths and prepare action for improvement of the facility and quality of care. The MPDSR National Committee is the core platform for reviewing, discussing and undertaking national action plans for the implementation of MPDSR across the country. The Quality Improvement Secretariat of MoHFW also works to ensure the quality aspect of MPDSR, including monitoring [Figure-01].

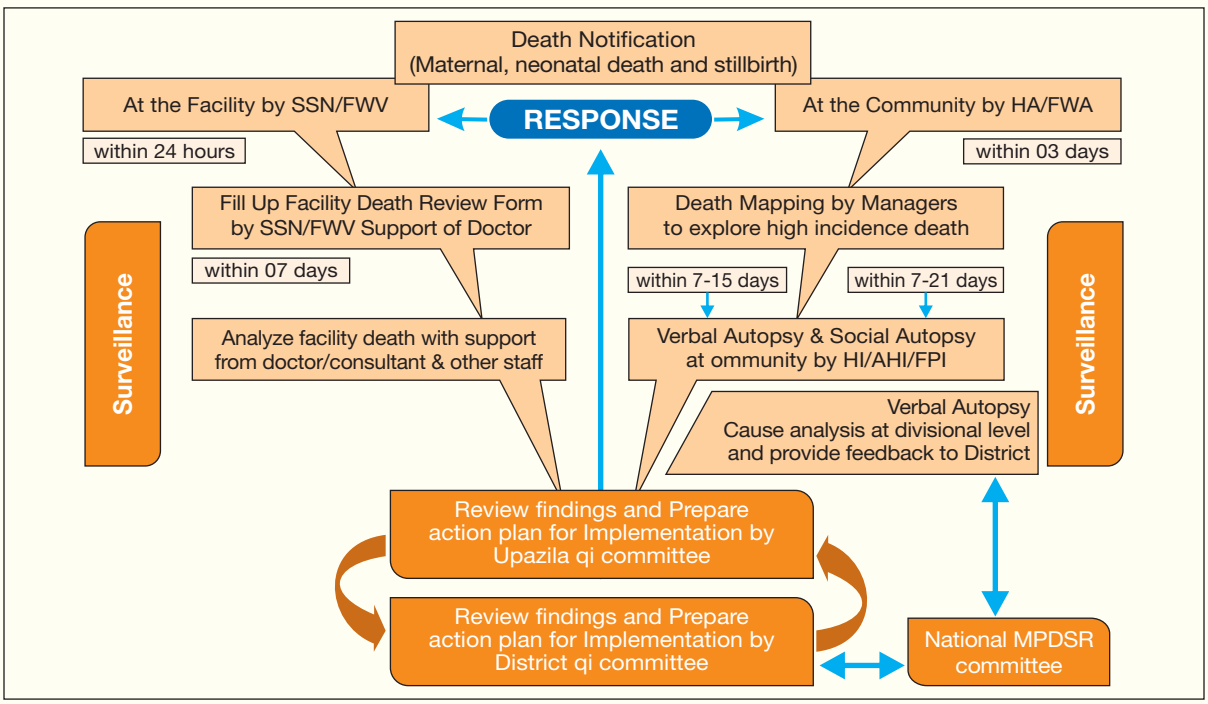


Figure 1: MPDSR Implementation Framework

Scaling-up of MPDSR in Bangladesh: 2020

Bangladesh has scaled up MPDSR by different phases based on the experiences gathered since the piloting in 2010.

The piloting was held in Thakurgaon district and gradually scaled up to 50 districts by 2020, including Faridpur and Madaripur at the latest. The MPDSR Programme now covers over two third of the population of the country with the support of UNICEF, UNFPA, WHO, and other development partners.

UNFPA is currently providing technical support in 18 districts to MPDSR under the 9th country programme (2016- 2020). UNICEF, on the other hand, is providing support to the programme in a total of 22 districts, working jointly with UNFPA in 10 Districts. [Figure-02]

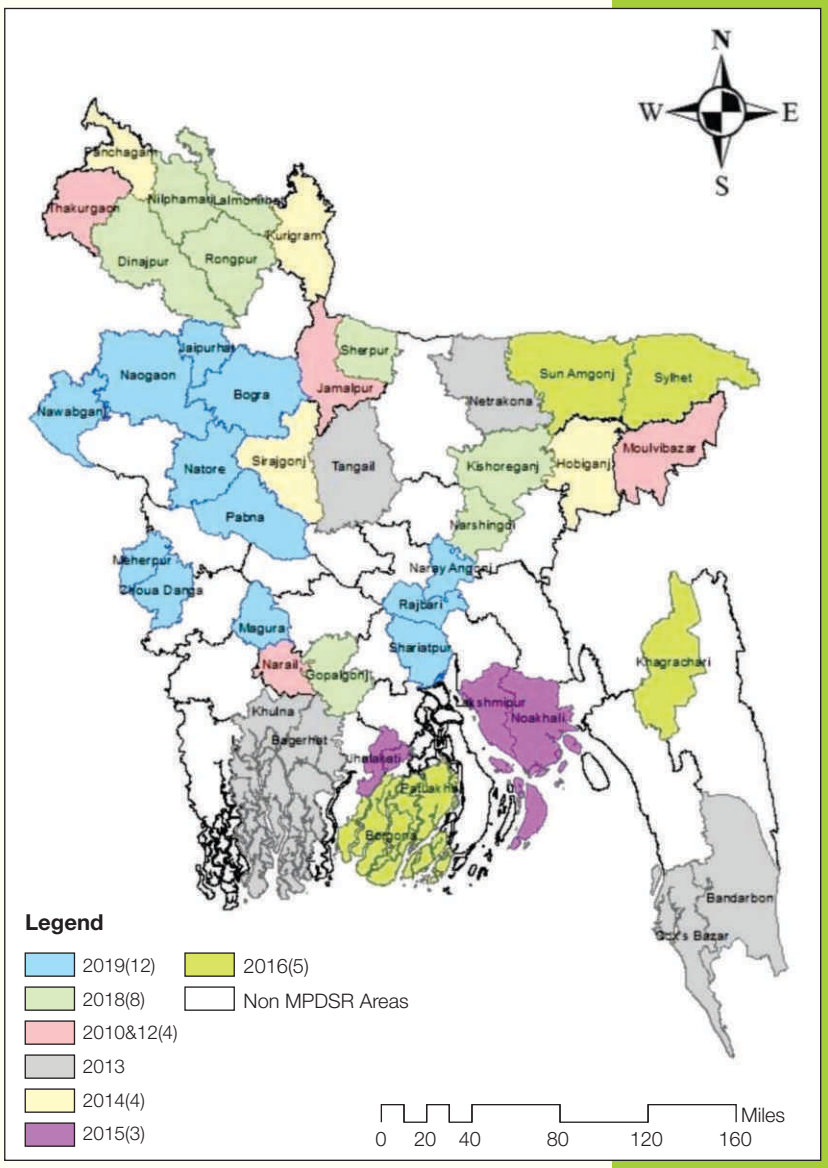


Figure 2: MPDSR Implementation Districts by Year

Capacity Development

National Training of Trainers (ToT) on MPDSR

In 2020, the MPDSR programme has been initiated in 2 districts- Faridpur and Madaripur. To capacitate health stuff, two workshops on MPDSR were organized in the district and upazila level facilities. UNFPA provided both technical and financial support to the workshop, which was participated by more than 40 health managers from the region, including the Civil Surgeon, Deputy Director of Family Planning, Superintendent, Consultant Obs-Gyane, Paediatrics, medical officers, senior staff nurses, and statisticians. Participants were provided with an orientation on the MPDSR programme, followed by a brief on community level death notification and review, facility death notification and review as well as responses to maternal and perinatal deaths in the district and upazila level facilities. Following the workshop, a plan was developed to provide more district and sub-district level trainings for the health managers and health workers to implement MPDSR at the district level. An action plan was developed for each district outlining the plan of implementation of the programme.

Divisional workshops

Three divisional workshops were organized in Sylhet, Rangpur and Barishal, which was chaired by the Director of Health of the respective districts. Divisional and district level health managers, and health service providers were present in these workshops. The technical officer of UNFPA presented an overview of the MPDSR progress and highlights of 2020, which was followed by the main technical session in the workshops including group works.

The causes of maternal and neonatal deaths at the community and facility level were discussed and discussed on urban death capturing, reporting and reviewing process.

District level MPDSR workshops

Bandarban

On 20 October 2020, a day long technical workshop on MPDSR was organized at the Civil Surgeon Office in Bandarban with 20 participants, including the district and upazila level health managers and service providers. Dr. Aung Swi Pure Marma, Civil Surgeon-Bandarban, chaired the workshop and shared an overview of MPDSR. A causal analysis of the maternal and neonatal death at community and facility level was also conducted in the workshop.

Key decisions undertaken in the workshop included forming MPDSR subcommittees for facility death review in UHCs/ DHs; assigning focal persons at the Upazila and District levels; incorporating MPDSR in the monthly coordination meetings; sharing updates using the QIS monitoring tool; organizing upazila level orientations on MPDSR for all health staff, and engaging midwives in verbal and social autopsies of MPDSR.

Barishal

On 8 September 2020, a day-long MPDSR workshop was conducted at the Conference Room of Civil Surgeon Office in Barishal. Dr. Basudev Kumar Das, Divisional Director of Health was the Chief Guest in the session. Dr. Mahmud Hassan, Deputy Civil Surgeon, chaired the workshop. At the outset of the meeting, participants were provided with a brief on the implementation of MPDSR in the area. The process of identification of the bottlenecks including gaps & challenges and way forward to corrective action to avert such death in future was also discussed. Moreover, district and upazila focal persons for MPDSR were selected during the meeting along with the formation of District Hospital MPDSR Sub Committees. Participants emphasized on the importance to organize regular quarterly MPDSR meeting, and ensuring proper monitoring and supervision of the implementation both at community and facility levels.

Noakhali

On 5 November 2020, the MPDSR District level Review Workshop was conducted at the Conference Room of the Civil Surgeon office in Noakhali. Dr. Masum Iftekhar, Civil Surgeon, Noakhali, chaired the session. Additional Superintendent, 250 Bedded Hospital of DDFP, Technical Officer and Field Officer of UNFPA, Medical Officer- Civil Surgeon Office, District MPDSR focal person, District Public Health Nurse, District Statisticians, and Health & Family Planning Staffs from Noakhali District were present in the workshop. The technical session was conducted by the technical officer of UNFPA. Decisions made at the workshop included the incorporation of MPDSR agenda in the monthly coordination meeting of health department and family planning department; timely notification and review of maternal and neonatal deaths at community and facility level; and better coordination between the two departments before sharing MPDSR related monthly reports.

Netrakona

On 13 March 2020, the district level workshop on MPDSR was organized at the EPI Hall Room, Netrakona district. Civil surgeon, Netrakona, Dr. Md. Tajul Islam Khan chaired the workshop, while Md. Anisur Rahman, DCS, Dr. Nilutphal Taluker and Superintendent, District Hospital, Netrakoan Dr. Md. A. M.M Mahbubur Rahman were present in the workshop. A number of 48 participants, including all UHFPO, all UFPO, statisticians, SSNs and midwives, participated in the workshop. The discussion and decisions of the workshop included the formation of MPDSR sub-committees at district and upazila level to monitor the activities; selection of MPDSR focal persons at every upazila; including MPDSR as an agenda in every monthly meeting at district and Upazila levels; and regularly uploading the MPDSR data in the DHIS-2 software.

Habiganj

On August 19 and 20, 2020, two MPDSR workshops were organized in the Civil Surgeon Office, Habiganj. Civil surgeon Habiganj, Dr. Md. Mustafijur Rahman chaired the workshop on both days. The technical officer of UNFPA presented on the progress and highlights of MPDSR. MPDSR sub-committees for the district and upazila levels were also formed during the workshop along with the selection of focal person for each upazila. Participants decided to ensure regular updates on the DHIS-2 by the statistician at upazila and district levels.

Sunamganj

On 12 November 2020, a MPDSR technical workshop was held at the conference room of Civil Surgeon Office in Sunamganj. The Civil Surgeon chaired the meeting. Among other participants, the DCS, Consultant- Gynea and Paeadia, UHFPOs, Midwives, SSN, Health Inspectors, Statisticians, SRHR Officer, and DRC were present in the workshop. At the workshop, experts were divided in two groups to conduct a cause analysis of deaths based on the verbal autopsy and facility death review forms. participants highlighted the need to provide MPDSR training for newly recruited staffs and refresher training for others as well as the involvement of midwives in the process. The documentation process of MPDSR of Sunamganj was praised at the workshop.

MPDSR Community Death Notification and Review of Community Verbal Autopsies

Field level health care providers, including health assistants and family welfare assistants, serve as the cornerstone of the maternal and perinatal deaths notification and reporting system through the DHIS-2 platform. In the newly launched programme districts in 2020, implementation of MPDSR is still at the initial stage compared to the other districts whereas the implementation has become routine.

Maternal death (MD) notification and review at community

A total number of 515 maternal deaths were reported, and 451 maternal deaths were reviewed from selected 21 districts in 2020. As per the below table, in 2020, the highest number of (58) maternal deaths were reported in Sunamganj, 51 deaths were reported in Moulvibazar. On the other hand, the lowest number of deaths (2) was reported in Bandarban [Table 1].

Table 1: Distribution of maternal deaths reported and reviewed by districts

District	No of MD reported	No of MD reviewed	% of MD reviewed
Sherpur	23	22	95.7
Jamalpur	42	37	88.1
Bandarban	2	2	100.0
Barguna	16	16	100.0
Patuakhali	32	32	100.0
Sylhet	51	45	88.2
Sunamganj	58	58	100.0
Natore	6	6	100.0
Habiganj	19	0	0.0
Bogura	24	0	0.0
Moulvibazar	52	47	90.4
Sirajganj	76	76	100.0
Noakhali	69	69	100.0
Cox's bazar	24	24	100.0
Netrokona	39	39	100.0
Rangamati	8	8	100.0
Khagrachari	8	8	100.0
Thakurgaon	14	13	92.9
Nilphamari	18	15	83.3
Kurigram	26	26	100.0
Rangpur	47	47	100.0
Total	515	451	73.3

Neonatal death (ND) notification and review at community

A total of 3598 neonatal deaths were notified in 2020 whereas 1631 cases were reviewed. In case of neonatal deaths, 797 were reported in Habiganj, 558 in Sirajganj, and 189 cases were reported in Moulvibazar. The lowest number of neonatal deaths were reported in Rangamati and Khagrachari- 13 and 11 respectively [Table 2].

Table 2: Distribution of neonatal deaths reported and reviewed by districts

District	No of ND reported	No of ND reviewed	% of ND reviewed
Sherpur	79	30	38.0
Jamalpur	218	67	30.7
Barguna	86	86	100.0
Patuakhali	59	50	84.7
Sylhet	143	68	47.6
Sunamganj	112	51	45.5
Natore	25	0	0.0
Habiganj	797	0	0.0
Bogura	249	0	0.0
Moulvibazar	189	37	19.6
Sirajganj	558	453	81.2
Noakhali	167	0	0.0
Cox's bazar	112	112	100.0
Netrokona	111	100	90.1
Rangamati	13	13	100.0
Khagrachari	11	0	0.0
Thakurgaon	65	65	100.0
Nilphamari	81	8	9.9
Kurigram	205	205	100.0
Rangpur	318	286	89.9
Total	**3598**	**1631**	**51.9**

Review findings of maternal and neonatal deaths

Among total 515 maternal deaths reported in 2020 of 21 districts, 451 were reviewed through verbal autopsy at community level. Whereas, 1,631 neonatal deaths were reviewed at community, out of 3,598 neonatal deaths reported in 2020 from 21 districts. Among these reviewed cases 265 maternal deaths and 268 neonatal cases, which were considered for causal analysis, were selected randomly for presenting detail findings of the review.

Cause assignment of maternal death

Out of the 515 maternal deaths reported, 451 cases were reviewed from 21 districts in 2020. Among them, a number of 265 maternal death cases were reviewed and analyzed to identify the prevalent underlying causes, place of death, time of death, gestational week, status of antenatal care and postnatal care, mode of delivery, delivery outcome and period of death.

Among the 265 cases reviewed, 29 were from Jamalpur, 46 from Moulvibazar, 32 from Netrakona, 12 from Patuakhali, 52 from Sirajganj, 52 from Sunamganj, and 42 from Sylhet districts.

Cause of maternal death (MD)

Post Partum Haemorrhage (PPH) (34%) was found as the main cause of maternal death. About 21% maternal deaths have occurred due to pre-eclampsia and eclampsia, and 6% occurred due to obstructed labour. About 7% of the deaths occurred due to anaemia [Figure 3].

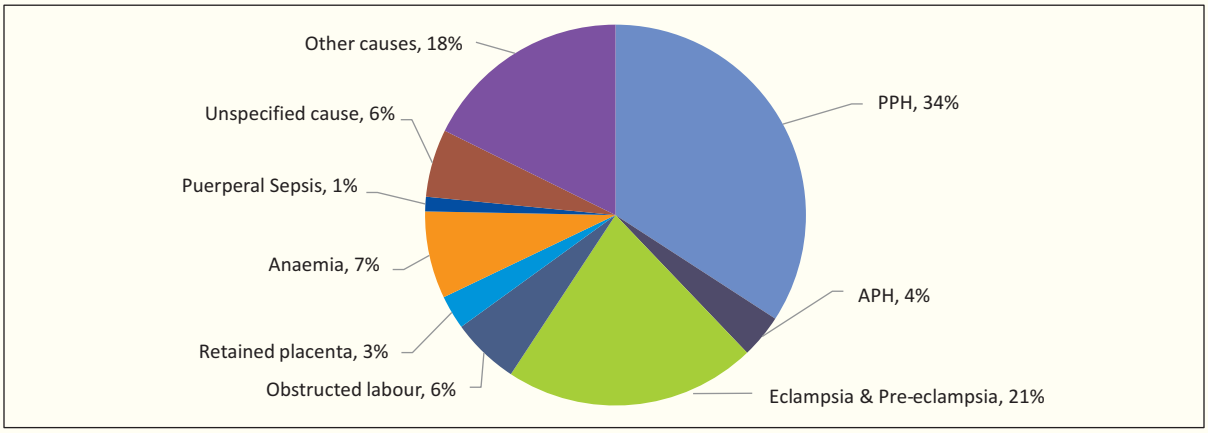


Figure 3: Causes of maternal deaths

Place of death

About 25.5% maternal deaths occurred at home and 22.8% occurred on the road towards health facilities. The remaining cases occurred at health facilities [Figure 4].

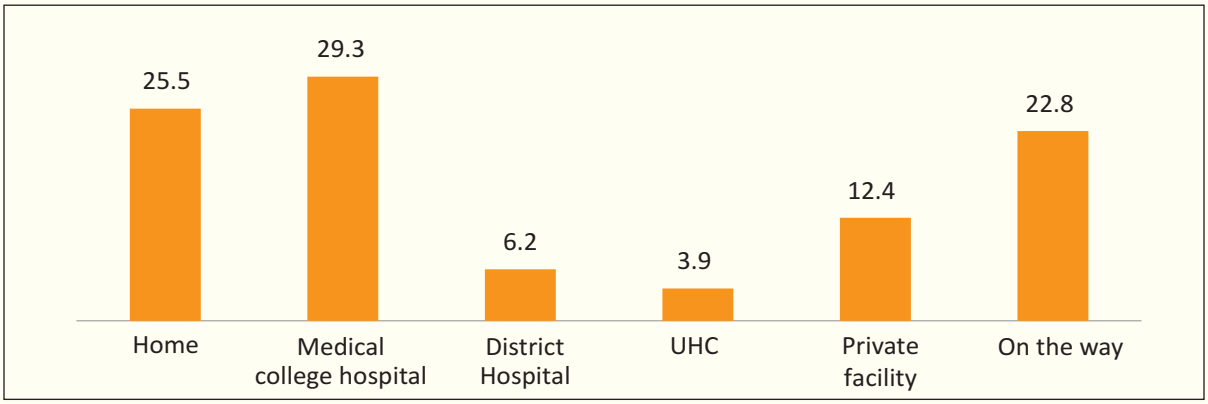


Figure 4: Places of maternal deaths

Time of deaths

About 60% of the maternal deaths occurred within 42 days after delivery and 24.7% deaths occurred during delivery. About 14.3% of the deaths occurred during pregnancy [Figure 5].

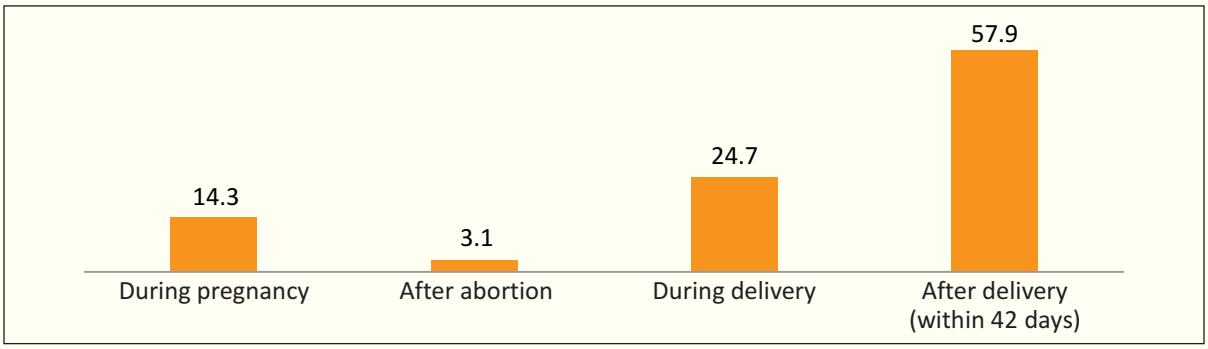


Figure 5: Time of maternal deaths

Gestational week

Above 40% maternal deaths took place between the 37-39 weeks of pregnancy. 27.4% happened between the 33-36 weeks of pregnancy. 11% of the cases occurred within 28 weeks of pregnancy [Figure 6].

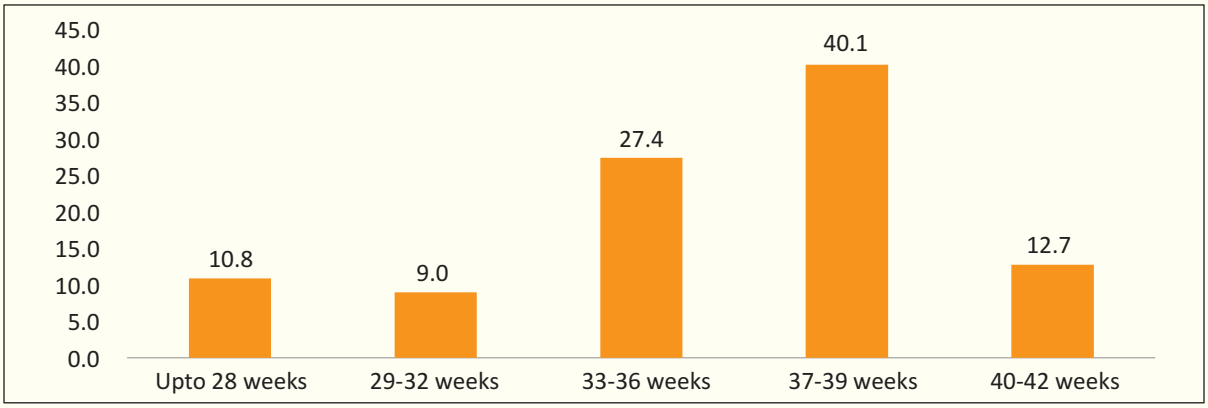


Figure 6: Gestational week

Antenatal Care

Above 42% mothers had four or more ANC visits before death. While 90.5% of them made at least one ANC visit, 83.2% made two visit, and 60.3% received three. About 9.5% of the mothers did not pay any ANC visit before death [Figure 7].

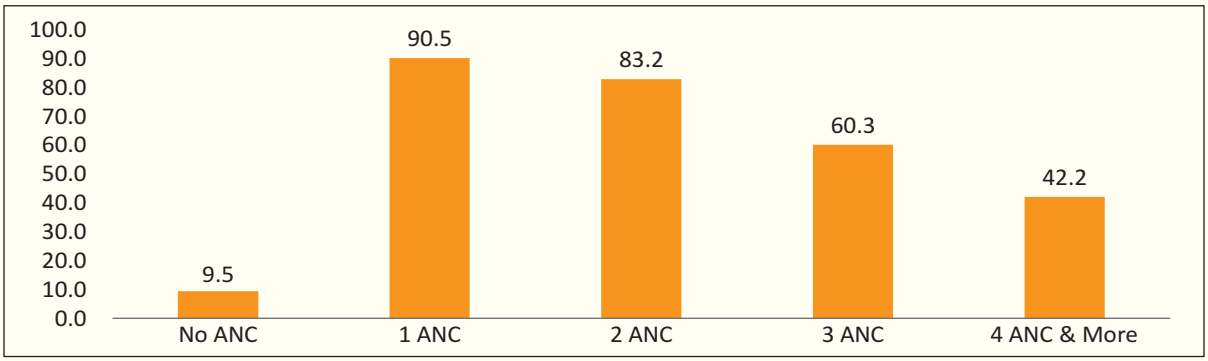


Figure 7: Antenatal care status

Postnatal care

About 40% of the mothers did not take any PNC before death. Above 26% of them received only one PNC and 18.7% received two PNC before death [Figure 8].

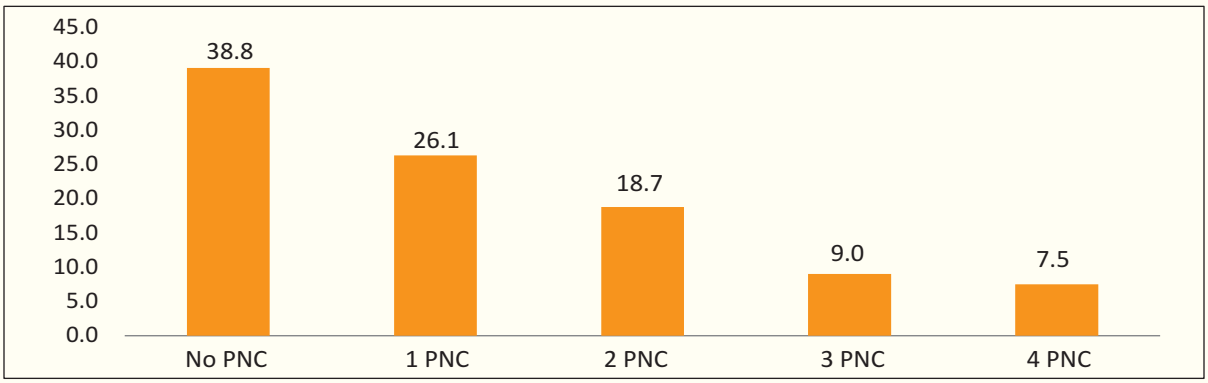


Figure 8: Postnatal care status

Mode of delivery

About 67% of the deliveries were conducted through normal vaginal delivery (NVD). C-section was conducted in 31% of the cases [Figure 9].

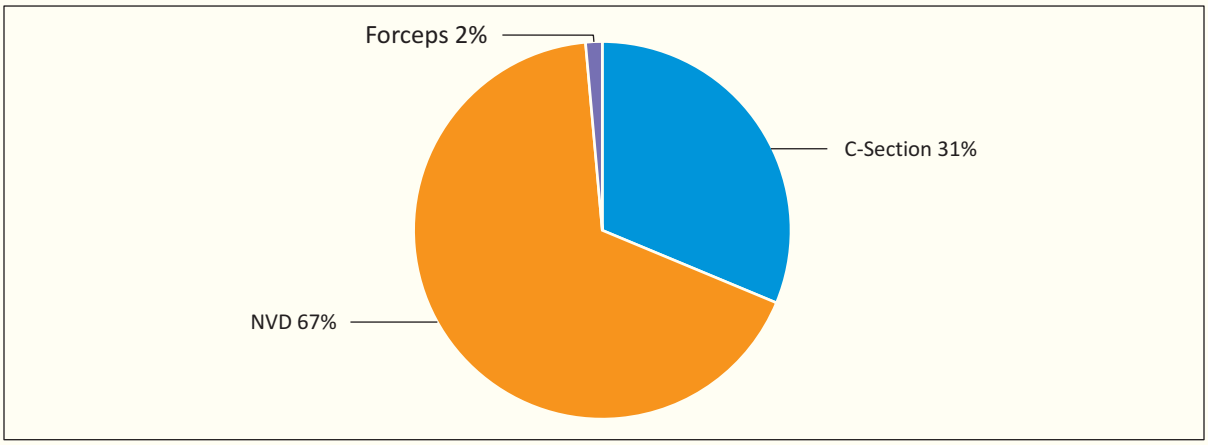


Figure 9: Mode of delivery

Delivery outcome

Among the maternal death cases, 66.1% of the mothers delivered a live-birth, while 19% of them delivered a stillbirth [Figure 10].

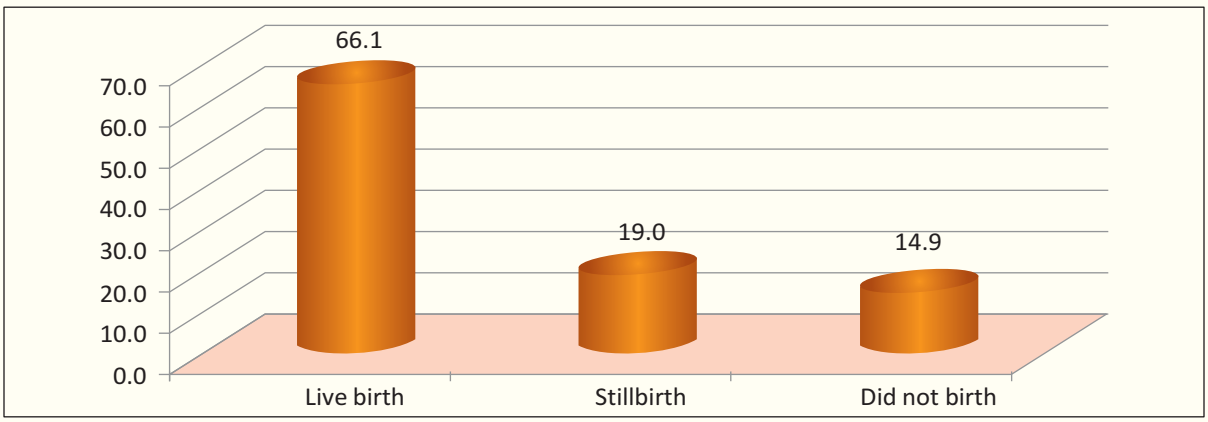


Figure 10: Delivery outcomes

Place of delivery

Above 39% deliveries were conducted at home and 23.3% deliveries were conducted at private clinic and hospital. About 19.5% deliveries were conducted in medical college hospitals [Figure 11].

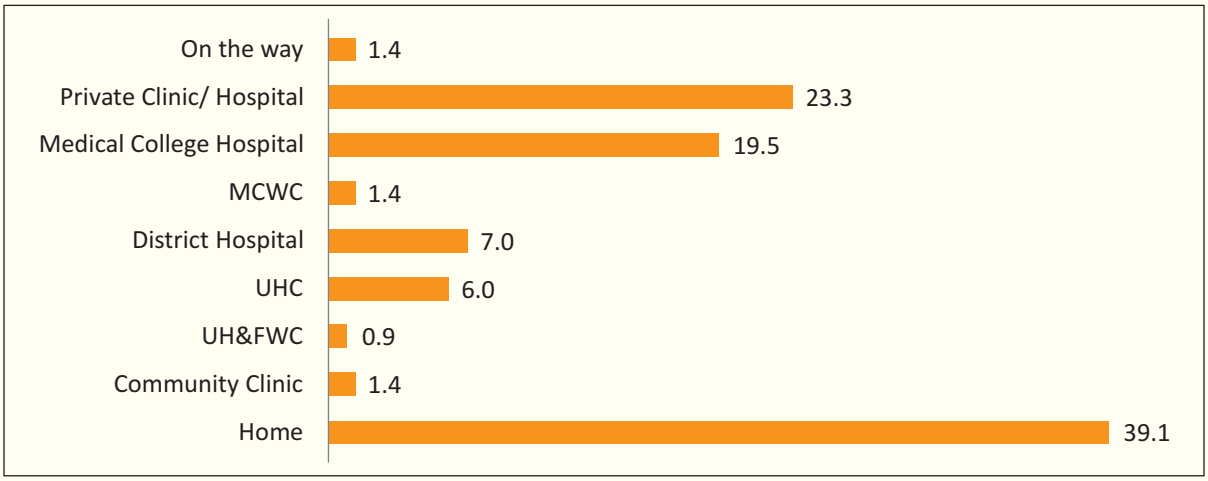


Figure 11: Place of delivery

Person assisted delivery

Among the cases of maternal deaths after deliveries, 38.4% deliveries were assisted by traditional birth attendants (TBAs), 39.3% by MBBS doctors and 15.1% were assisted by nurses [Figure 12].

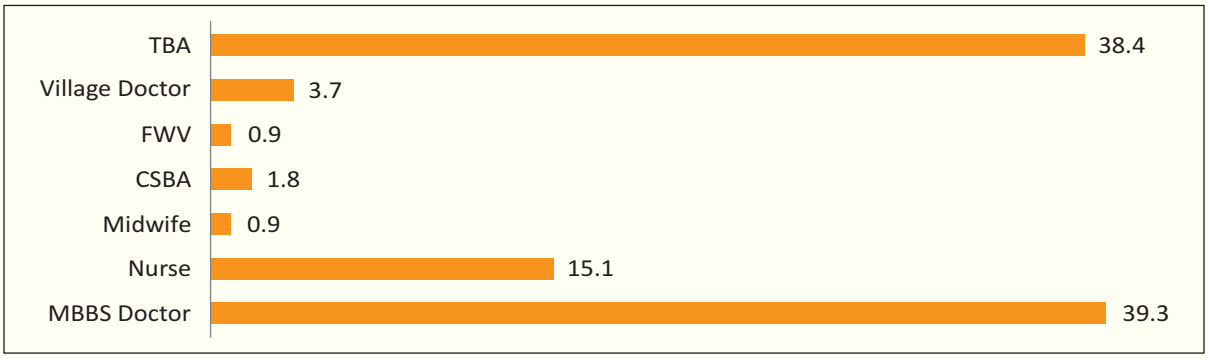


Figure 12: Person assisted delivery of deceased mothers

Maternal age

Above 54% of the maternal deaths occurred at 20-29 years of age of the mothers, while about 38% occurred at the 30-39 years range. 5.7% of the deaths happened at adolescence [Figure 13].

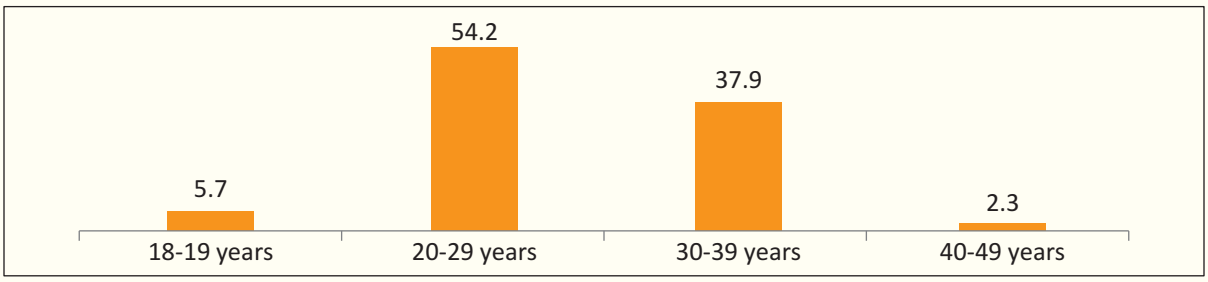


Figure 13: Maternal age distribution

Time of death after delivery

More than 33% deaths occurred within 6 hours after delivery, while 17.3% occurred from 7-12 hours after the delivery. About 77.1% maternal deaths occurred within 7 days after delivery [Figure 14].

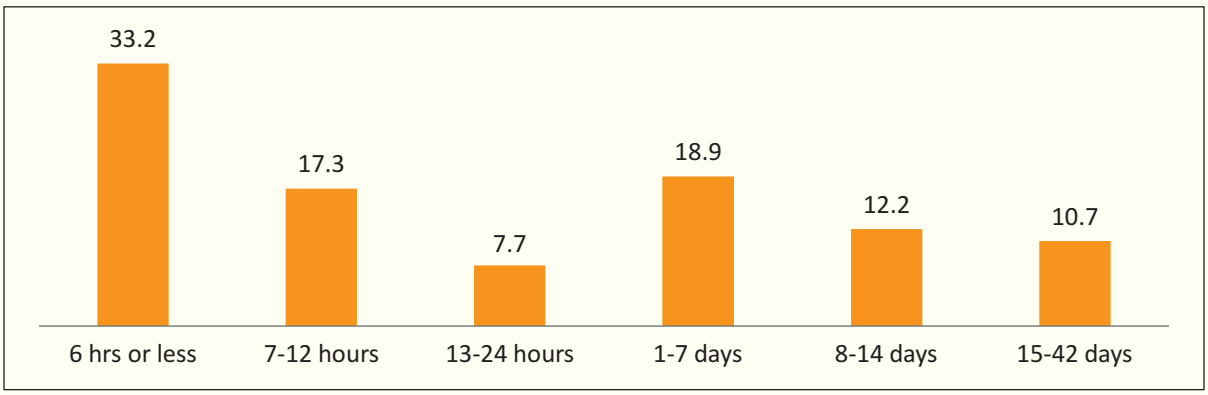


Figure 14: Time of maternal deaths occurred after delivery

Cause assignment of Neonatal deaths

Out of the 3,598 neonatal deaths reported in 2020 from 21 districts, 1,631 cases were reviewed. Among the reviewed cases, 268 neonatal cases were considered for causal analysis. Among the 268 reviewed cases, 24 were from Jamalpur, 37 from Moulvibazar, 18 from Netrakona, 9 from Patuakhali, 59 from Sirajganj, 53 from Sunamganj and 68 from Sylhet district. In the analysis, cause of death, place of death, antenatal care, mothers age, neonatal danger sign, congenital anomalies were sought and analayzed.

Cause of Neonatal deaths (ND)

Respiratory distress (36%) has been identified as the main cause of neonatal death. About 21% neonatal deaths occurred due to bacterial sepsis of newborn, and 20% occurred due to low birth weight [Figure 15].

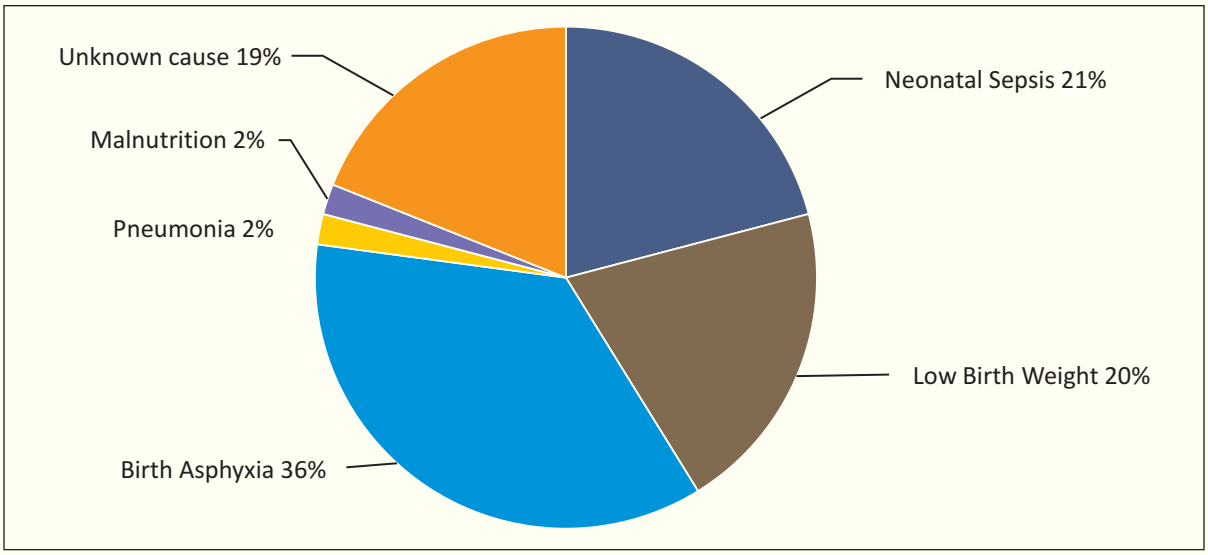


Figure 15: Causes of neonatal deaths

Place of death

About 38.4% of the neonatal death occurred at home and 16.4% occurred at private clinics/ hospitals, whereas 22.8% of the deaths took place at medical college hospitals. 9.7% of the death occurred at district hospitals [Figure 16].

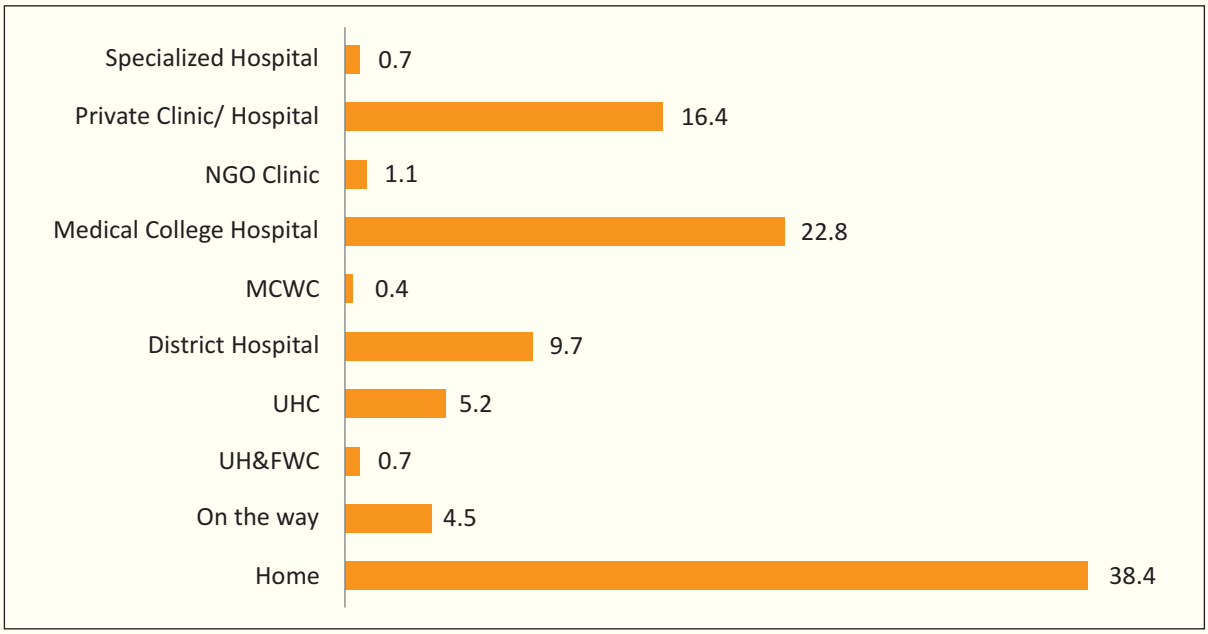


Figure 16: Place of neonatal deaths

Antenatal Care

For the neonatal death, 37.5% of the mothers made four or more ANC visits, 66.7% made three, 90% made two, and 98.1% made at least one ANC visit. About 2% of the mothers did not received any ANC [Figure 17].

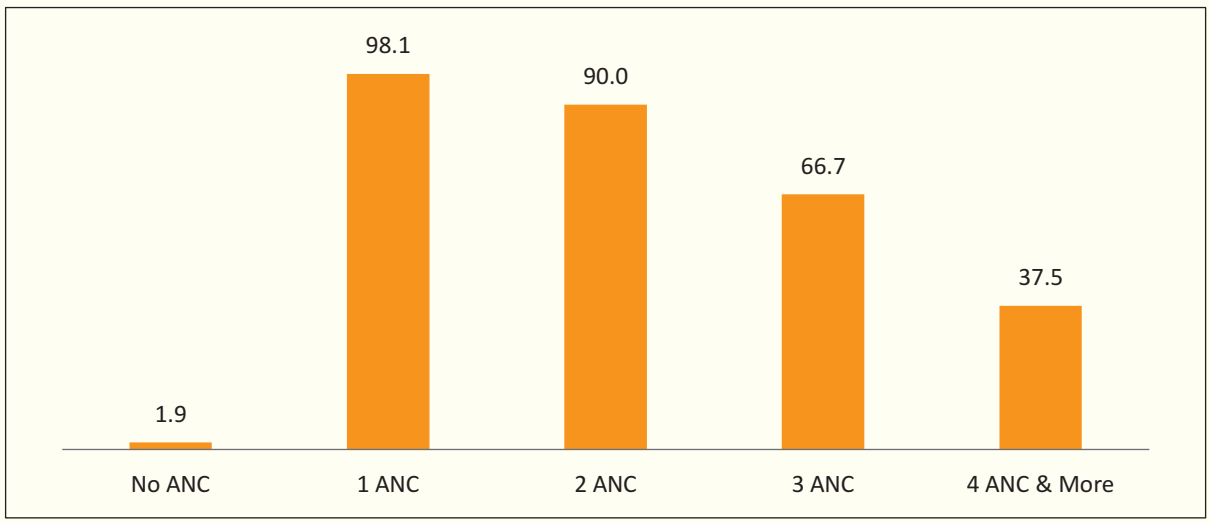


Figure 17: Antenatal care received by mothers

Newborn danger sign

46% of the newborn did not receive food or faced reluctance to feeding by mothers before death. About 26% showed a lack of movement or no movement, and 27.1% had fast breathing [Figure 18].

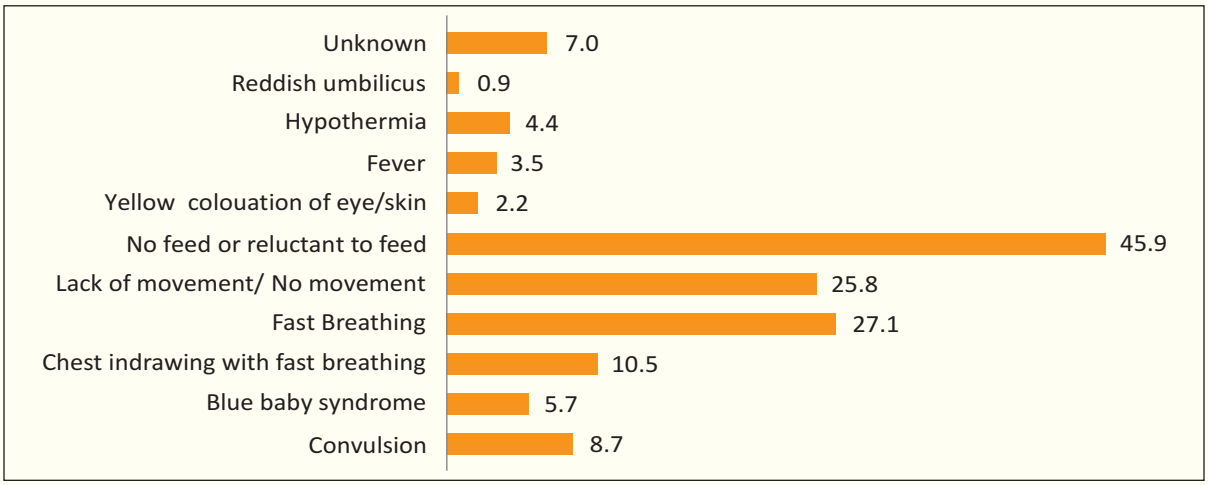


Figure 18: Newborn danger sign

Mothers' Age

Women from the age range of 20-29 constituted 75.3% of the mothers, whereas 19% of the mothers were between 30-39 years of age [Figure 19].

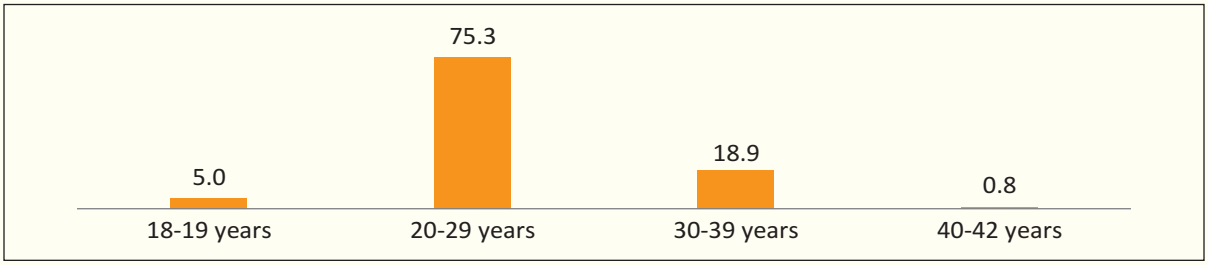


Figure 19: Mothers' age

Congenital anomalies

77.2% of the newborn was born without any congenital anomalies at birth. However, 4.3% of the newborn had some form of defect in head, 0.4% had defect in either abdomen, anus, cleft palate or hand. About 1% had defect in leg [Figure 20].

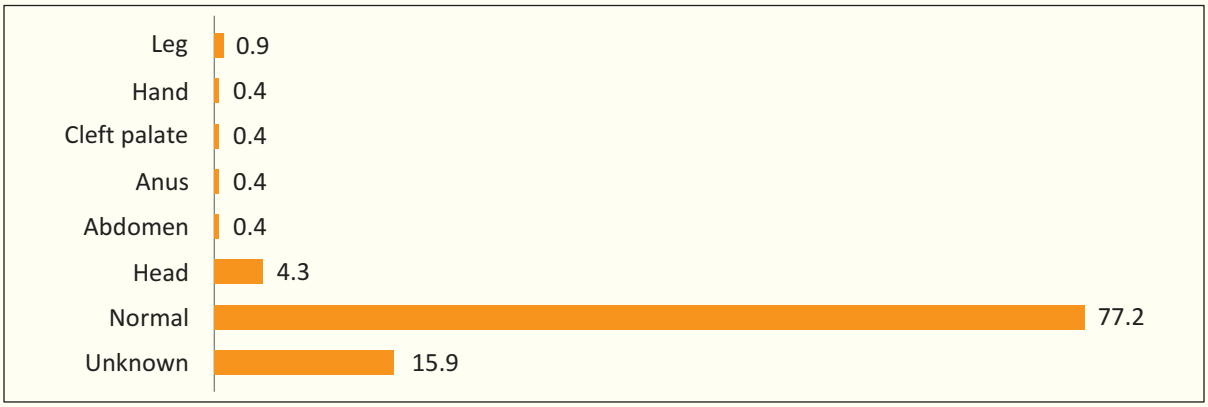


Figure 20: Congenital anomalies

Facility Death Review

As per the data gathered from DHIS-2 in 2020, the overview of maternal and neonatal deaths notification at the facility level is discussed in this chapter. Results are presented according to the division and month the cases were reported in.

Division wise maternal death notify at facility in 2020

Out of the 1027 maternal deaths notified in 2020 at health facilities, the highest number of death (n=215) were notified in Dhaka division, followed by Rajshahi division (n=200). The lowest number of maternal death at facility level was notified in Khulna (n=50) and Sylhet (n=70) division [Figure 21].

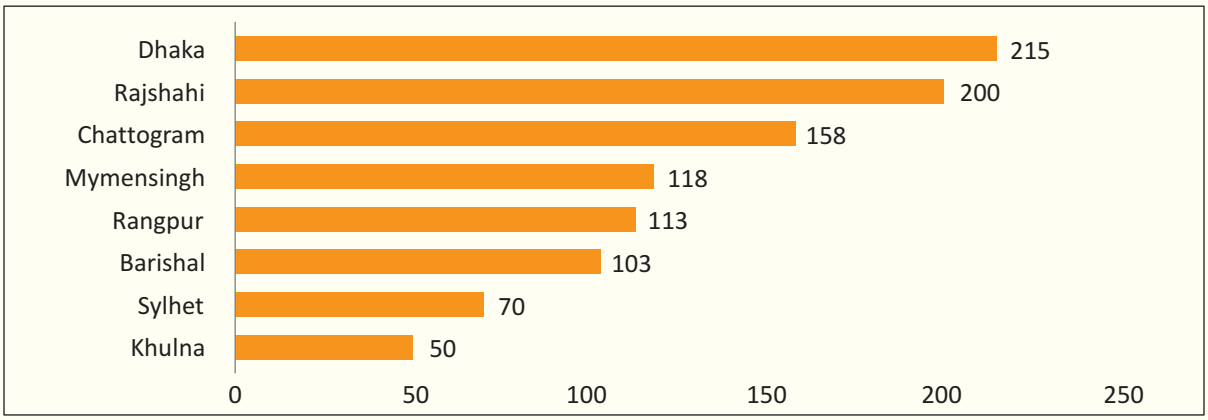


Figure 21: Maternal deaths reported at facilities by division

Month wise maternal death notify in facilities 2020

The highest number of maternal death at facility level was notified in October (n=109), followed by December (n=108) and November (n=100), whereas the lowest number of maternal death notified in the month of September (n=12) [Figure 22].

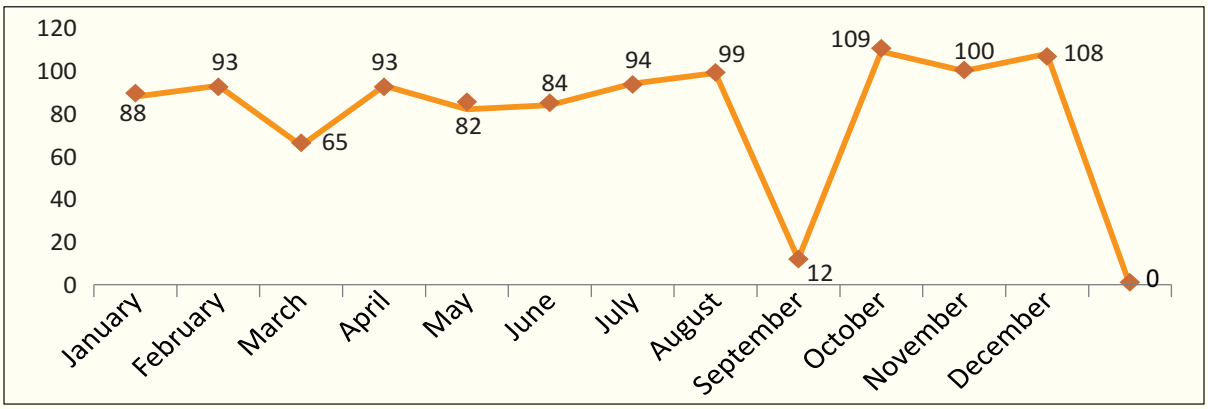


Figure 22: Maternal deaths reported at facilities by months in 2020

Notification of neonatal death at facility by division in 2020

Out of the 5335 neonatal death at facility level reported in 2020, the highest number of death was reported in Rajshahi division (1699) and Chattogram division ((n=1622), whereas the lowest number of death was reported in Barishal (n=77) and Khulna (n=109) division [Figure 23].

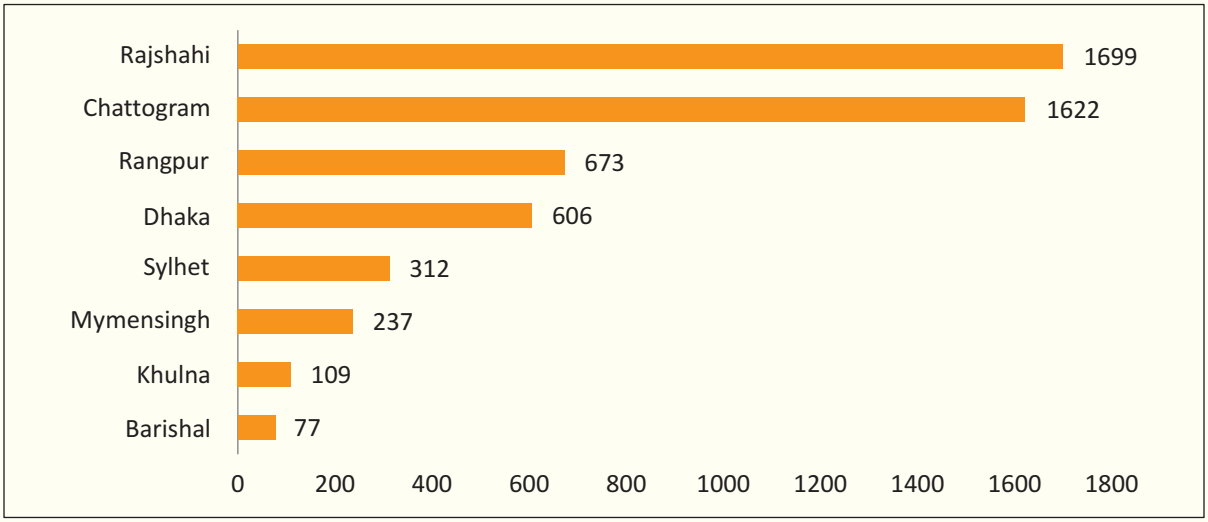


Figure 23: Neonatal deaths reported at facilities by division

Neonatal death notify at facility by months n in 2020

The highest number of neonatal death was reported in the month of December (n=651), followed by November (n=600) and October (n=528). The lowest number of neonatal death was reported in September (n=170) [Figure 24].

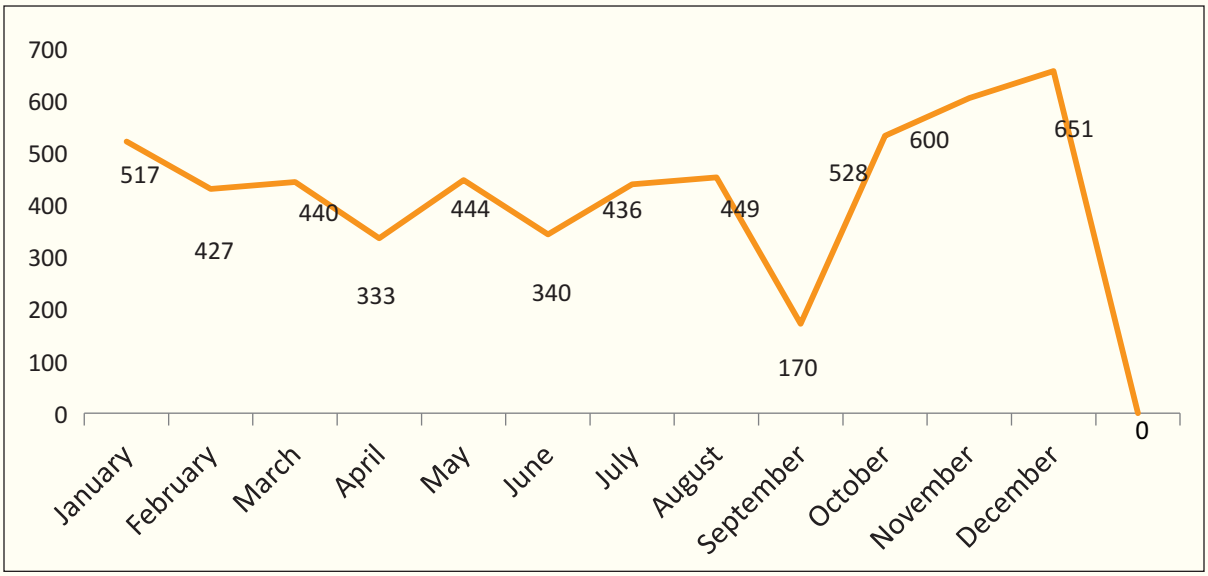


Figure 24: Neonatal deaths reported at facilities by months in 2020

Respond to MPDSR Findings

Findings from MPDSR are shared in the district monthly coordination meetings as well as in the upazila monthly coordination meetings. These are also discussed in the Quality Improvement Committee meetings. These committees also develop action plans based on local and national evidence and implement them. In 2020 too, programme districts used the gathered data for planning and adjusting their routine programme, and monitor the overall maternal and newborn health situation and interventions in the respective districts.

Health managers use the death mapping of their relevant districts to better understand the prevalence and forms of maternal and neonatal mortality in the region, and identify the potential areas of intervention. Previously, the death mapping was used to be performed manually by plotting coloured pin in the map. However, the DHIS-2 platform now provides an online live district death map to help the managers better understand the local context at any point of time.

Social Autopsy

Social Autopsy (SA) is a unique innovation of MPDSR, which facilitates an effective dialogue between community and government frontline workers to identify bottlenecks in the family and community to seek timely care, and help increase response by the community. SA is a non-blaming approach, which focusses on social factors and dilemma related maternal and newborn death occurred at community by discussing with community groups, community support groups, neighbors of the deceased, and often with deceased's family members about the death, digging out the preventable causes to find out effective solutions to prevent maternal and neonatal death from the community.

The SA sessions are usually conducted by local Health Inspectors/Assistant Health Inspectors and Family Planning Inspectors in coordination between the Department of Health, and Family Planning. Around 40-50 participants from adjacent 20-30 households close to the deceased's home are the primary participants of SA. Members of respective community groups and community support groups also attend the sessions. Local teachers, religious leaders/Imams, union Parishad members, health workers and volunteers, including both male and female members, are also consulted during SA. Adolescent boys and girls and pregnant mothers or newly married women are specially encouraged to participate. SA is usually conducted within 15-30 days after a death is reported. The average duration of a SA session is 45 minutes to one hour.

The primary objective of SA is to find out the specific social barriers/ factors that contribute to maternal and neonatal health in a given community without putting any blame on any individual or institution. Health workers try their best to identify social factors/barriers associated with a maternal or neonatal death from the description given. The facilitator shows a set of social behavioral change communication (SBCC) materials on maternal and neonatal health to the participants during the sessions, and seeks support and commitment from the society, especially from the Community Groups / Community Support Group, to inspire them to adopt essential measures to avert such deaths in the future. Commitments from local leaders are emphasized given their role and position in society and communities. They are inspired to act as the ambassadors of change and role models for their communities by undertaking actions to prevent maternal and neonatal death. After the completion of the sessions, facilitators fill up the 'social autopsy reporting form and return it to the Statistician or MPDSR focal person at the UHC, which is later entered into DHIS2 as per the monthly Health Workers Form. A semi- structured reporting form is filled up at the end of every SA session.

Social autopsy has been used in the community since 2010 in Bangladesh as a community response and social intervention towards maternal or perinatal death. In 2020, social autopsies were performed in the programme districts to develop evidence-based action plans fostering community dialogues and decision making. In districts like Sunamganj, the presence of diploma midwives in the social autopsy sessions helped create more room for community based in depth discussions on a range of maternal mortality and morbidity issues, including maternal health complications, birth planning, antenatal care, delivery care, postnatal care, and postpartum family planning. Midwives also participated in the social autopsies session in the marginalized teagarden communities in Moulvibazar districts with an aim to leave no one behind.

Monitoring of MPDSR

Monitoring and evaluation are the key to ensure the quality of the intervention and improvement of overall activities. At the national level, the Ministry of Health and Family Welfare is responsible for the oversight of the MPDSR program. At different tiers, MPDSR focal persons and MPDSR committees are established for coordination, and to have an effective linkage with the QI committees at different tiers formed by the MoH&FW. The committees include upazila QI, district QI, divisional QI and the national MPDSR committee. At the facility level, there are subcommittees and the MPDSR focal person at each tier are co-opted in the QI committee. The MPDSR subcommittees conduct monthly coordination meetings, whereas the national core committee meets biannually.

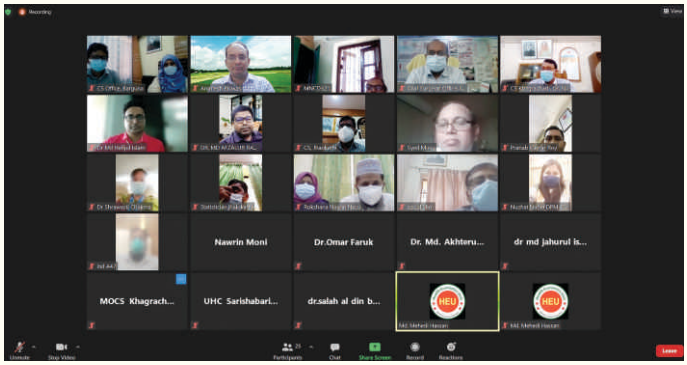
At the district level, the Civil Surgeon and Deputy Director, Family Planning play an overall role in monitoring and evaluating the progress of MPDSR. At the upazila level, the focal persons are UHFPOs and UFPOs, who take on the most important role in the implementation of local action plan, check for the death validation, quality of data in verbal autopsy and facility death review. Finally, they also evaluate the feedback and responses in the SAs at the community level.

It is important to ensure the quality of the death data and validate the deaths as per definition (ICD-10 coding). This also require ensuring actual number of deaths and information obtained from VAs and SAs.

Key monitoring areas are focused:

- Validating community death notification
- Monitoring the quality verbal autopsy and social autopsy
- Monitoring the facility level death review
- Monitoring the responses and action plans.

MPDSR Monitoring at the National Level by the Video Conference



The Directorate General of Health Services (DGHS) routinely organizes online video conference with the districts and communicates with the district Civil Surgeon and MPDSR committees and focal persons to discuss the quarterly progress of MPDSR implementation in the districts. In every video conference, four to five districts are invited to participate a three hours' discussion session. Each district present their findings based on the given quarterly monitoring checklist. At the national level, Director, Hospital and Clinics and/ or Line Director, MNC&AH of DGHS lead the conference. Programme Managers of maternal health services under DGHS collaborates with UNFPA, UNICEF, and other develop partners. In 2020, a video conference was organized by the Quality Improvement secretariat and DGHS jointly which was joined by relevant stakeholders from 7 programme districts.

MPDSR Monitoring Performance Data of 2020

The Quarterly monitoring report of the districts provide an overview on the status of MPDSR implementation and overall performance of the programme. Monitoring reports from the selected 21 districts in 2020 showed that all districts reported facility based maternal and perinatal deaths within the first 24 hours to the system. Most of them reviewed the deaths within seven days at the facilities.

Whereas in the community level, overall reporting of maternal and neonatal deaths and stillbirths is 70% compared to the total number of death in a year. District wise status of reporting and reviewing as well as the overall district performance of MPDSR responses are discussed hereafter.

District status on reporting and reviewing of maternal death, neonatal death and stillbirth

The implementation status and overall performance of MPDSR is reflected in the district wise quarterly monitoring reports. Reports from the Selected 21 districts in 2020 indicates that 71.4% of the districts reported maternal deaths and still birth, whereas 76.2% districts reported neonatal deaths at the community level. It was also found that 61.9% districts reported maternal death at the facility level, whereas 71.4% reported of neonatal death and stillbirth. Social autopsies in the case of maternal and neonatal deaths were conducted in 47.6% districts. The major causes of maternal deaths and neonatal deaths were identified in 61.9% districts [Figure 25].

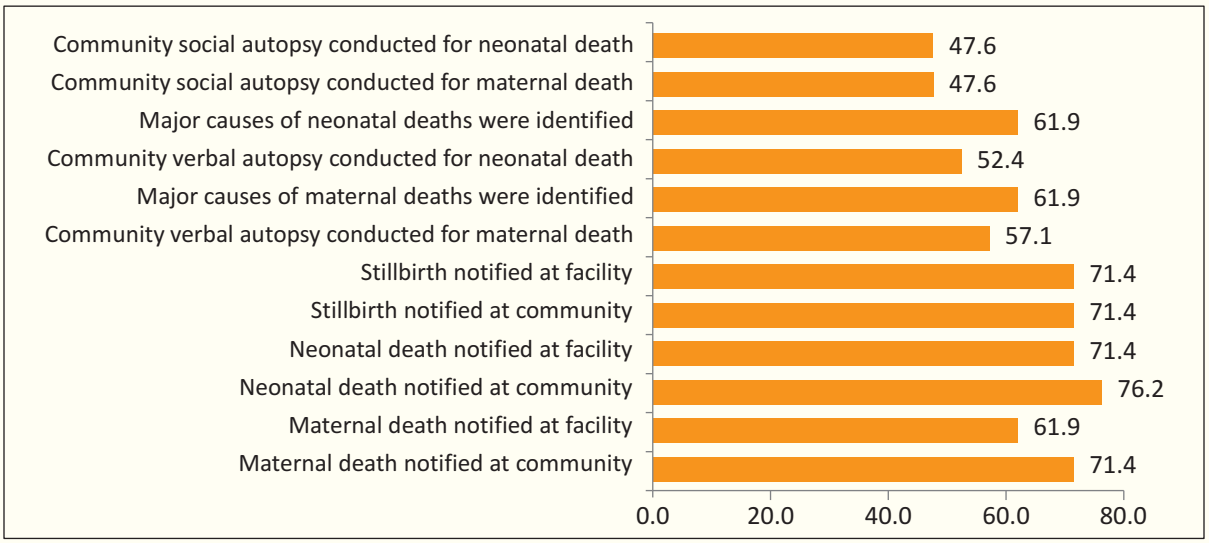


Figure 25- Notification and review of maternal death, neonatal death and stillbirth

District performance of MPDSR responses

An MPDSR focal person was assigned in 71.4% districts and MPDSR sub-committee was reported functional in 61.9% districts. Based on the verbal autopsy findings, 47.6% districts reported to take remedial action, 42.9% of whom took remedial action based on the number of maternal and neonatal death. 38.1% districts reported to take remedial action based on social autopsy findings and 23.8% based on facility death reviews [Figure 26].

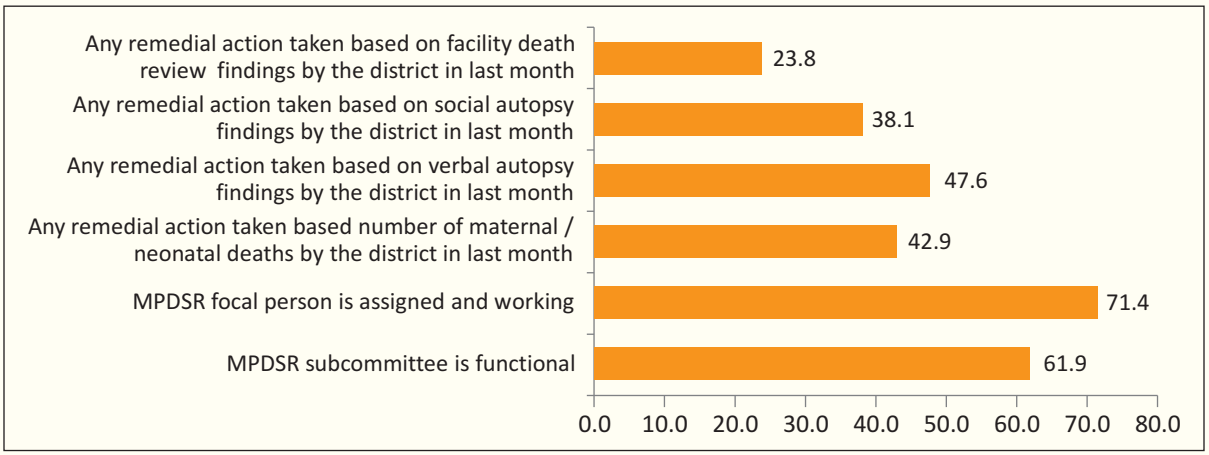


Figure 26- Percentages of MPDSR responses in the districts

MPDSR Case Stories

Midwife engagement in MPDSR

Midwives can play an active role in the reporting and reviewing of maternal deaths. They are better able to build awareness at the community level on emergency maternal health care given their close engagement with the community people. They can play a leading role in the reduction of maternal and neonatal death. Counseling of pregnant women to motivate them in seeking maternal health care services has been proven to be more effective when given by midwives. With their knowledge and understanding of antenatal care, delivery care, postnatal care and safe delivery services, they can easily reach out to pregnant mothers and convey the importance of seeking necessary health care services during childbirth. Their intense engagement with the community people also enables them to conduct effective MPDSR (verbal and social autopsy) processes.

It has been observed that community people are generally more interested in receiving knowledge related to maternal and neonatal health care from midwives than health staffs. As midwives in Bangladesh are female, pregnant mothers feel more comfortable discussing their issues with midwives.

When conducting a social autopsy, a midwife can provide pregnant mothers with valuable information on maternal and neonatal health care. At the same time, they will also be able to provide first-hand guidance and referral to pregnant mothers during the sessions. It will also enable them to learn about potential danger signs for mothers and newborns at the community, and thereby provide proper guidance and information.

In Sunamganj, Noakhali and Bandarban districts the special initiatives were taken in involving the midwives in MPDSR process specially in conducting social autopsies at community level. Besides this, in all MPDSR districts the midwives are also involved in capacity development and facility death review process.

- Social autopsy is a platform for sharing the skilled knowledge by the midwives among the community
- The continuum of midwifery care will be enhanced among the community through midwives' participation in social autopsy
- Facility delivery by skilled service providers can be better ensured through midwife led MPDSR
- Community people are better informed about midwives and their roles in providing maternal health care services through social autopsy
- Community people are more interested to gather the knowledge in preventing maternal deaths in the communities
- Policy actions are needed to involve midwives in the MPDSR for better effectiveness of the programme

With appropriate policy and programmatic measures to enhance the engagement of midwives in MPDSR, midwives can bring about transformative perceptional and behavioural changes at the community level for the prevention of maternal and neonatal mortality.

MPDSR in the marginalized community

A number of 10 maternal deaths occurred in marginalized community, 10 teagarden areas of Moulvibazar districts in 2020. Among them, four occurred in Kamalganj, 5 in Sreemongol and 1 in Rajnagar upazila. Among the 10 cases of maternal deaths, 5 of the mothers were between 20-25 years of age. Two deaths occurred during pregnancy and 8 after delivery. Three deaths occurred at home, 2 at roads towards facilities and 5 at facilities [Table 3].

Table 3: Distribution of maternal deaths in teagardens areas

Upazilla	Mother age	Period of death	Place of death	Place of birth	Birth attendant
Kamalganj (4 teagardens)	22	During pregnancy	Dist hospital		
	20	After delivery	Private Hospital	Private Hospital	Doctor
	35	After delivery	Home	Home	Bagan Midwife
	26	After delivery	Home	Home	TBA
Sreemongol (5 teagardens)	26	After delivery	Home	Home	TBA
	25	After delivery	On the Road	Home	TBA
	28	After delivery	Medical college Hospital	Medical college Hospital	Doctor
	20	After delivery	Dist hospital	UHC	Nurse
	32	During pregnancy	On the way		
Rajnagar (1 teagarden)	22	After delivery	Private Hospital	Private Hospital	Doctor

Based on the findings of death review at community the social autopsies were conducted for every maternal deaths at teagarden community. The community people, pregnant women and their guardian, elite people and community leaders were participated. The detail discussion on the deaths and the social barriers were focused in these social autopsy sessions. Based on the discussion the action plan were prepared to prevent further maternal deaths in those marginalized community [Table 4].

Table 4: Social Autopsy of maternal deaths in teagardens

No of social autopsies conduction	Numbers and types of participants (n=162)	Social Autopsy conduction by (n=10)	Discussion Issues	Major decisions
10 social autopsies of maternal deaths (4:00 pm-6:00 pm) at the courtyard near to the deceased house	Panchayat members (14) Union Parisad member (4) Religious leader (5) Pregnant women (21) Eligible women (18) Male guardian (27) Female guardian (32) Volunteer (Bagan Sebika) (25) Health Assistant (3) Family Welfare Assistant (3) Teagarden Paramedic/ Midwives (10)	Professional midwives of project (05) Assistant Health Inspector (04) Family Planning Inspector (02)	• Myths and social stigma and barriers enhance the maternal deaths • Causes of deaths in teagardens • Maternal complication/ danger sign • Birth planning of the pregnant women • ANC of the pregnant women • Safe delivery at facility by professional midwife • Pregnant women's care at home • Role of community in preventing deaths	• Ensuring 04 ANC of every pregnant women by professional midwives at facilities • Arrange blood grouping of every pregnant women in the teagardens • Special care of the pregnant women at home • Ensure the proper birth planning of every pregnant women • Ensure safe delivery of every pregnant women at facility by professional midwife • Quick referral of complicated women identified during ANC/ delivery/ PNC

Community participation and engagement in margailized teagarden on MPDSR

In the marginalized teagarden community, members from Bangladesh Cha Sromic Union and panchayet members played significant role in reduction of maternal and perinatal deaths in their gardens. Their active participation in the social autopsy sessions, moreover, it helped them to better understand the issues around maternal and neonatal health. Besides the social stigma and misinformation on maternal and neonatal deaths were removed by a large part. In The sessions, members of BCSU reflected on the issues, discussed the underlying social causes of deaths, and prepared an action plan to prevent future preventable maternal and neonatal deaths in their community. Due to their active involvement of the community support groups, it was possible to get commitment form the local leaders to take immediate steps for the reduction of maternal and neonatal mortality.

Continued Support of Development Partners

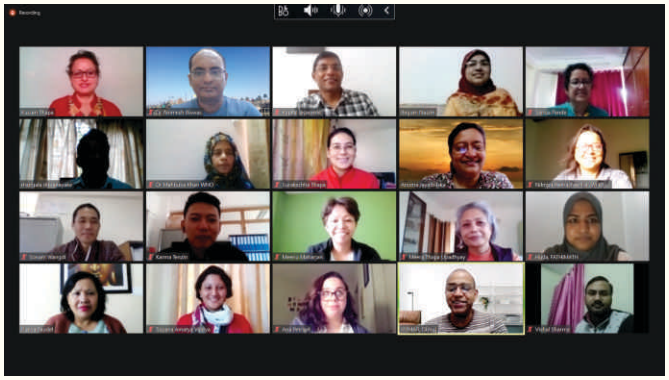
It was observed that verbal autopsies and social autopsies had not been taking place in Khagrachari even after the orientation session. Therefore, with the technical support of UNICEF and UNFPA, a days-long action plane development workshop on MPDSR took place at the district. Several important decisions were made at the meeting, including the timely organization of VA and SAs, and the development of an evidence based action plan with the support of both UNICEF and UNFPA.

MPDSR workshops continued virtually during COVID-19 pandemic

The series of workshops on MPDSR programme were continued virtually in 2020 despite the pandemic situation with the participation of national level technical experts and focal persons. These virtual workshops were organized in Barishal, Habiganj and Sherpur districts. The progress and highlights of MPDSR activities in these districts were presented and discussed during the workshops. The Civil Surgeon of the respective districts chaired the workshops. Key decisions to prevent maternal and neonatal death as well as the way forward based on the discussion were generated through these workshop.

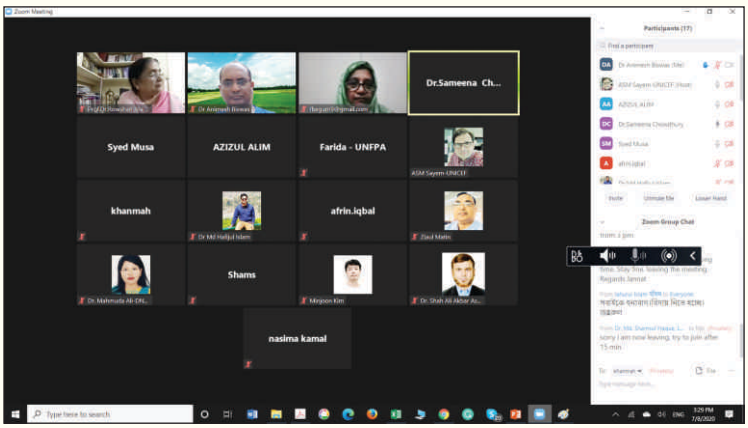
WHO, South East Asia Regional Office organized virtual training on MDSR

WHO, South East Asia Regional Office organized a virtual capacity building programme on Maternal Death Surveillance and Response (MDSR) from 10-13 November 2020. The training was focused on assigning causes of maternal death, preparing response plans based on findings and roles of different committees and stakeholders. From SEAR, participants from the Ministry of Health, Development partners and Obs-Gynaecologists from Sri Lanka, Bhutan, Maldives, Nepal and Bangladesh joined. On behalf of the Directorate General of Health Services (DGHS), Dr Azizul Alim, Programme Manager, Maternal Health lead Bangladesh team.



MPDSR National Guideline revision starts

In 2020, MoH&FW took initiatives to update the existing MPDSR guideline. The Maternal Health Program leaded the guideline revision with the support from development partners and professional societies. A small technical group was formed at the national level leaded by the Program Manager, Maternal Health, DGHS who is also focal of MPDSR in Bangladesh. This technical working group joined in two virtual meetings to discuss on the guideline revision and worked in group to update the content of the guideline in context of need for the country.



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