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NATIONAL HEALTH MISSION
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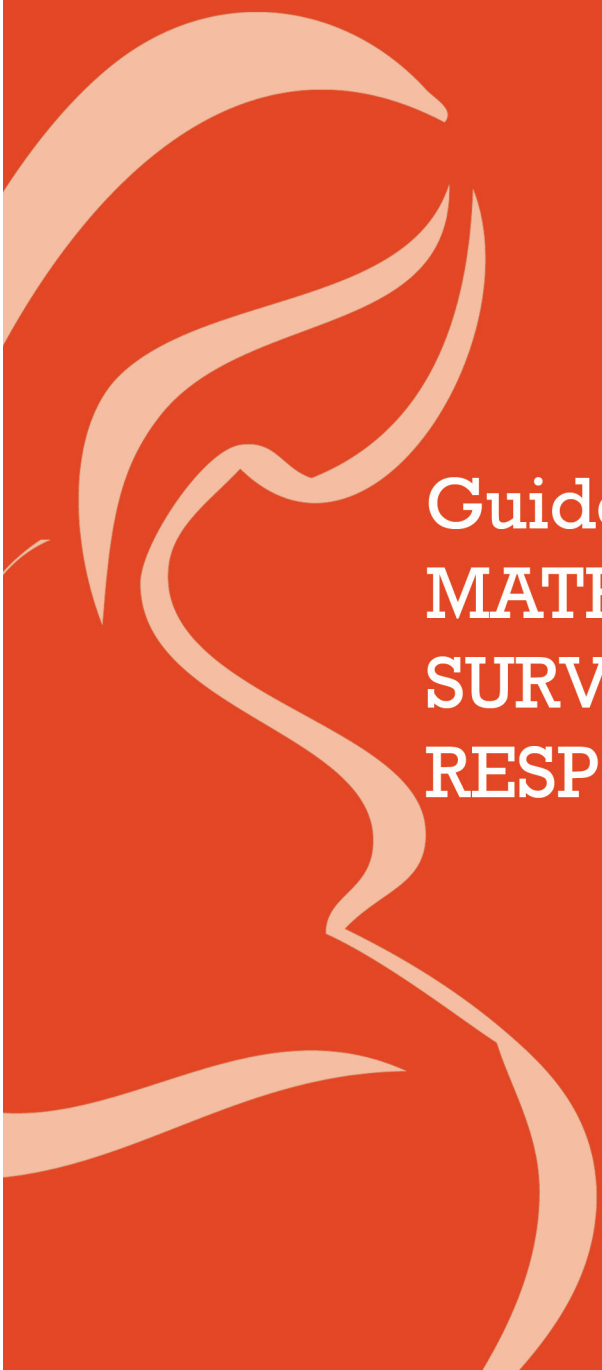

Guidelines for MATERNAL DEATH SURVEILLANCE & RESPONSE

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Guidelines for MATERNAL DEATH SURVEILLANCE & RESPONSE

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MINISTRY OF HEALTH & FAMILY WELFARE
DEPARTMENT OF HEALTH & FAMILY WELFARE
NIRMAN BHAVAN, NEW DELHI - 110011

31st March, 2017

Message

Approximately 44000 women die across India every year due to causes related to pregnancy. It is also critical to note at this juncture that India accounts for approximately 15% of the maternal deaths across the world. Under the National Health Mission, we have achieved a significant reduction in the number of maternal deaths across the country. However, there is a long way to go.

In order to understand and consequently act upon the causes of maternal deaths, it is important to collect accurate information on ***how many*** women died, ***where*** they died and ***why*** they died. ***Maternal Death Surveillance and Response*** is a mechanism to collect and ascertain such information and also to take action on the findings of the review. MDSR system is a continuous cycle of identification, notification, and review of maternal deaths followed by actions to improve quality of care and prevent future deaths.

A system for Maternal Death Reviews has already been introduced under NHM and maternal deaths are reviewed across States/ UTs. However, secondary data analysis, findings from studies by Development Partners and academic institutions, findings from monitoring visits etc have identified large lacunae in implementation and have also pointed to the need for completing the MDR cycle by taking action on the findings. Guidelines for Maternal Death Review have, thus, been revised with a focus on surveillance and response. A system for confidential review of a sample of maternal deaths at the State level has also been introduced in these guidelines.

I am sure, States/ UTs recognize the criticality and importance of Maternal Death Surveillance & Response and will take special steps to ensure that each and every maternal death is tracked, reviewed and acted upon so that no pregnant woman loses her life due to preventable causes of maternal deaths.

(Dr.Arun K Panda)
Additional Secretary & Mission Director (NHM)

Healthy Village, Healthy Nation

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Preface

Maternal Death Review (MDR) as a strategy has been spelt out clearly in the RCH – II, National Programme Implementation Plan document. Subsequently based on the guidelines for Maternal Death Reviews, a system for review of maternal deaths has been institutionalized across States/ UTs. However significant gaps in implementation have been identified such as lack of action on findings of reviews, poor reporting of deaths of migrant population etc. It was thus felt that a comprehensive guidance note highlighting the importance and mechanisms for action on these areas is the need of the hour.

Guidelines for ***Maternal Death Surveillance and Response*** have thus been prepared to bring in a focus on timely and complete notification of maternal deaths and underline the need for action/ response on the findings of the reviews. Based on learnings from Kerala, the guidelines also introduce a new mechanism for correcting the line of management in institutions offering secondary/ tertiary care namely 'Confidential Review'. In order to strengthen processes; mechanisms for reporting and review of deaths of migrant population have been stipulated and tools such as templates for recording minutes of meetings, supportive supervision checklists and templates for annual reports have been included in the current guidelines based on experiences from various States.

WHO states that the sole purpose of the review process is to save lives and not to apportion blame and emphasizes that 'No name, no blame' is a key principle of MDSR. The guidelines thus reiterate the importance of not initiating punitive action based on the findings of the review.

I urge States/ UTs to strive to record each and every maternal death and ensure that action is initiated based on the local causes identified during review so that we can together achieve the Sustainable Development Goal for reduction of Maternal Mortality Ratio of India.

(Vandana Gurnani)
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PROGRAMME OFFICER'S MESSAGE

The Maternal Mortality Ratio (MMR) in India has declined from 556 in 1990 to 167 per 100,000 live births in 2011-13 (RGI 2011-13). The maternal death review (MDR) process initiated by Government of India in 2010 attempted to improve the quality of obstetric care and reduce maternal mortality and morbidity by exploring the lacunae in the health system. The gap analysis of last five years of MDR have shown varying degree of reporting, lack of capacity of the established institutions to undertake quality review at various levels and the delayed translation of key findings into action.

Based on the learning's and feedback from the States, the new guidelines focus on strengthening the mechanisms and processes for Maternal Death Surveillance and Response (MDSR) to improve reporting, analysis and action planning. The guidelines introduce confidential review of maternal deaths and precise mechanisms for review of deaths of migrant population. Other focus areas like analysis of data, training of medical officers on medical certification of cause of death and improving reporting of deaths from tertiary institutions are also a part of the new MDSR guidelines. For simpler monitoring of the programme, the guidelines include tools and templates for minutes of meeting, annual report and supportive supervision checklists.

The key principle of the new MDSR programme is iterative identification, notification, review and action on maternal deaths. The new guidelines try to realize this principle through the discussions in this document. I urge to the State and District level policy makers, Programme Managers and Members of State/District level MDSR committees to use these guidelines to identify gaps at different levels, take appropriate corrective measures and to sensitize the service providers to improve the accountability.

It is hoped that these guidelines will help identify the factors that contribute to maternal deaths at various levels and the information is used to adopt measures to fill the gaps in service delivery.

(Dr. Dinesh Baswal)

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Abbreviations

ACMO	Additional Chief Medical Officer
ANM	Auxiliary Nurse Midwife
APGAR	Activity Pulse Grimace Appearance Respiration
APH	Ante Partum Haemorrhage
AWW	Anganwadi Worker
BMNO	Block Medical Nodal Officer
BMO	Block Medical Officer
BPHN	Block Public Health Nurse
CBMDSR	Community Based Maternal Death Review
CMO	Chief Medical Officer
CPD	Cephalo Pelvic Disproportion
CR	Confidential Review
CCR	Committee for Confidential Review
CS	Civil Surgeon
CVA	Cardio Vascular Accidents
DHS	District Health Society
DNO	District Nodal Officer
EDD	Expected Date of Delivery
EmOC	Emergency Obstetric Care
FBMDSR	Facility Based Maternal Death Review
FMDSRC	Facility Maternal Death Review Committee
FNO	Facility Nodal Officer
FOGSI	Federation of Obstetric and Gynaecological Societies of India
GA	General Anaesthesia
GDM	Gestational Diabetes Mellitus
GoI	Government of India
GO	Government Order

HFWTC	Health & Family Welfare Training Centre
HMIS	Health Management Information System
ICDS	Integrated Child Development Scheme
IEC	Information Education Communication
IP	Intra Partum
LHV	Lady Health Visitor
MAS	Meconium Aspiration Syndrome
MCCD	Medical Certification of Cause of Death
MDSR	Maternal Death Surveillance & Response Review Process
MO I/C	Medical Officer In-charge
MTP	Medical Termination of Pregnancy
MVA	Manual Vacuum Aspiration
NGO	Non-Governmental Organisation
NICU	Neonatal Intensive Care Unit
NRHM	National Rural Health Mission
OB/GYN	Obstetrics & Gynaecology
OBC	Other Backward Class
P&RD	Panchayat & Rural Development
PE	Pulmonary Embolism
PHC	Primary Health Centre
PHN	Public Health Nurse
PIH	Pregnancy Induced Hypertension
POC	Product of Conception
PP	Post-Partum
PPH	Post-Partum Haemorrhage
PPROM	Preterm Premature Rupture of Membranes
PROM	Premature Rupture of Membranes
QA	Quality Assurance
SC	Schedule Caste
SDH	Sub District Hospital
SHC	Sub Health Centre
SHS	State Health Society
SIHFW	State Institute of Health & Family Welfare
SNO	State Nodal Officer

Definitions

- Maternal Death - Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.
- Maternal Mortality Ratio (MMR) - Ratio of the number of maternal deaths during a given time period per 100,000 live births during the same time-period. The MMR is used as a measure of the quality of a health care system.
- Maternal Death Surveillance & Response[1]: The MDSR system is a continuous cycle of identification, notification, and review of maternal deaths followed by actions to improve quality of care and prevent future deaths.
- Confidential Review (CR): Multi-disciplinary anonymous investigation into all or a sample of maternal deaths, to critically observe the line of management adopted in instances of maternal morbidities & mortalities and to identify the avoidable or remediable factors associated with them, so that the same could be corrected in the future.

1 http://www.who.int/maternal_child_adolescent/epidemiology/maternal-death-surveillance/en/

CHAPTER 1
BACKGROUND AND PURPOSE

CHAPTER-1

Background and Purpose

1.1 Introduction

Under the Millennium Development Goal (MDG) 5, the target for India was to reduce Maternal Mortality Ratio (MMR) by three quarters between 1990 & 2015. Maternal Mortality Ratio (MMR) in India in the year 1990 was 556, which meant approximately 1.4 lakh women dying every year. The target for India was hence estimated at 139 per 1,00,000 live births by the year 2015. Globally MMR at that time was 385, which translated into about 5.32 lakh women dying every year. As per the latest report of the Registrar General of India, Sample Registration System (RGI-SRS), Maternal Mortality Ratio (MMR) of India was 167 per 100,000 live births in the period 2011-13. In terms of numbers, this translates into approximately 44,000 maternal deaths in India (303,000 maternal deaths during the same period globally). Despite a one third reduction, India remains one of the major contributors to maternal deaths in the world. For every death, there are many more who suffer varying degrees of morbid conditions. And in many cases of maternal deaths, the newborns also die for want of care due to causes such as preterm birth complications and intrapartum-related complications[2]. Pregnancy-related mortality and morbidity continues to have a huge impact on the lives of Indian women and their newborns. As per the recent Sustainable Development Goals, India is committed to reducing its MMR to less than 70/ lakh live births.

Levels of maternal mortality vary greatly across the regions, due to variations in underlying access to emergency obstetric care, antenatal care, anemia rates among women, education levels of women, and other factors. Approximately 65% -75% of the total estimated maternal deaths in India occur in a handful of states – Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Assam; all these states are part of the 18 high focus states under National Health

2 Levels & Trends in Child Mortality: Report 2015; Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation

Mission (NHM). Uttar Pradesh alone contributes to more than 30% of the maternal deaths in India.

The Maternal Death Review (MDR) process initiated by Government of India in 2010 attempted to improve the quality of obstetric care and reduce maternal mortality and morbidity by exploring the lacunae in the health system towards the requirements of pregnancy and child birth. The importance of MDR lies in the fact that it provides detailed analysis on various factors at community, facility, district, regional and national level that are required to be addressed to reduce maternal deaths. Analysis of these deaths can identify the delays that contribute to maternal deaths at various levels and the information used to adopt measures to fill the gaps in service delivery.

1.2 Need for New Guidelines

In the last 5 years, states have instituted the Maternal Death Review process with varying degree of reporting, review and action planning. An analysis of the progress till date[3] brings forward key gaps – first that less than 50% of the estimated maternal deaths in India get reported under the health management information systems and second that while the institutional mechanisms for reviews have been established, the capacity to undertake quality review at various levels are weak and thirdly, the translation of key findings into action, in other words the 'mechanism for response' lagged behind. Based on the learnings and feedback from the States the guideline is being revised with a focus on surveillance (for improving reporting) & response (for improving analysis and action planning) and a component of Confidential Review has been incorporated based on learning from Kerala. The guideline also has laid down precise mechanisms for review of deaths of migrant population. Current guidelines have used ICD 10 instead of ICD 9 for classification of maternal deaths.

Improving reporting of deaths from private sector and tertiary institutions are other areas that have received focus. Another key area of concern is that an analysis of the data on Maternal Death Reviews submitted by States/ Union Territories (UTs) in the health management information system shows that more the 60% of the maternal deaths have been classified as others. Training of Medical officers on MCCD is also now part of the MDSR guidelines.

3 Health Management Information System – 2015-16 & observations from field visits

The guidelines include simple tools for helping States monitor the MDSR processes such as templates for minutes of meeting, template for annual report as well as supportive supervision checklists. There was also a felt need for establishment of National level review mechanisms as well as National and State level monitoring mechanisms and systems for filling these lacunae. National and State MDSR monitoring teams are thus being introduced under these guidelines.

MDSR is a continuous cycle of identification, notification and review of maternal deaths followed by actions to improve quality of care and prevent future deaths.

Most importantly, the guidelines reiterate that based on the findings of the maternal death reviews, no disciplinary action is to be initiated against any of the service providers. The key principle to be adopted during the entire process of reviewing is not to blame or find fault with anybody. The purpose of the discussion is to identify gaps at different levels and to take appropriate corrective measures and to sensitize the service providers to improve the accountability. This primary premise (non-punitive nature) must be clearly stated in the G.O issued on MDSR at State level.

1.3 Purpose of the guidelines

The objectives of the guidelines are:

1. To strengthen the mechanisms and processes for Maternal Death Surveillance & Response.
2. To institute a system of conducting Confidential Review into maternal deaths.

In the coming chapters the guidelines focus on four key areas, namely, the Maternal Death Surveillance & Response process, details of various committees and nodal persons for MDSR, analysis and action planning to enable appropriate response and an outline of the trainings required by various health personnel to institutionalize the systems for MDSR.

These guidelines are intended for state and district level policy makers, programme managers, members of state/ district level MDSR committees etc. and enclose various forms and questionnaires for maternal death surveillance and response, templates for annual reports and minutes of review meetings along with the details of budget required for establishing these systems.

CHAPTER 2

MATERNAL DEATH REVIEW SURVEILLANCE & RESPONSE

CHAPTER-2

Maternal Death Review Surveillance & Response

The first and foremost step of the Maternal Death Review process is preparing a line list of all the maternal deaths in the area following which Facility and/or Community based maternal death reviews are to be undertaken. Currently approximately 50% of the estimated Maternal Deaths across the country are being reported by States/ UTs. Improving the surveillance and reporting of maternal deaths is thus critical. State level MDSR Committees (details described later) must take the following key steps to improve the same:

- Monitor whether Maternal Deaths are being reported by all high delivery facilities (facilities conducting more than 1000 deliveries/ year).
- Monitor the district-wise number of deaths reported against estimated - identify the number of districts that have zero/ poor reporting and focus on improving reporting from these districts.
- Analysis of reported maternal death data indicates that approximately 20% of the maternal deaths occur at medical colleges and approximately 15% occur at private hospitals. This would obviously differ across States. However data highlights an urgent need to conduct a mapping of the medical colleges and tertiary institutes in the State and monitor whether they are reporting and reviewing maternal deaths. States must also focus on improving reporting from private tertiary level institutions with the help of regulatory mechanisms such as the Clinical Establishment Act.
- Analysis of available data also highlights that approximately 20% of the maternal deaths could happen during transit. States must thus monitor the number of deaths occurring during transit and the mechanism for reporting of deaths occurring during transits (both for private and government vehicles).
- Identify areas of high home delivery and monitor whether maternal deaths are being reported from these areas.

Most importantly, States must focus on strengthening the Civil Registration System (CRS). States which have around 90% registration of deaths must focus on improving the registration to 100%. Mechanisms must be introduced for triangulation of data reported under the CRS and the data reported by the health department with the ultimate aim of strengthening the CRS such that it proves to be a single, reliable and robust source of data for maternal deaths in the State as this data can be extrapolated to calculate the Maternal Mortality Ratio especially for small States/ UTs where MMR is unavailable from the Sample Registration System. The level of registration of deaths across States/ UTs as per report 'Vital Statistics of India based on the Civil Registration System 2013' by Office of RGI, Ministry of Home Affairs is available at http://crsorgi.gov.in

All the maternal deaths reported will be investigated, irrespective of the place of death i.e. at home, in facility or in transit; area of death i.e. rural or urban. Maternal death review process will be undertaken at two levels:

1. Community level
2. Facility level

In addition, confidential review of cases of maternal deaths occurred at facility will be conducted at state level by the expert members of Committee for Confidential Review (CCR) to review the clinical line of management of cases.

2.1 Community Based MDSR (CBMDSR)

Community based MDSR is a method of identifying personal, family or community factors that may have contributed to the death by interviewing people such as family members or neighbors who are knowledgeable about the events leading to the death. Interview is done by using a verbal autopsy format.

Community based reviews must be taken up for all deaths that occur in the specified geographical area, irrespective of the place of death, be it at home, facility or in transit. District Nodal Officer (DNO) will ensure that all the maternal deaths reported by facilities will be investigated at community level also.

District Maternal Death Surveillance & Response Committee (DMDSRC)

The Chief Medical Officer (CMO) is mainly responsible for the Maternal Death Reviews at the District level. Both facility and community based reviews from rural and urban areas would be taken up at this level. DNO will brief the members on community and facility reports, action taken on action points of last meeting etc. The committee will meet once a month. The monthly meetings at Block and District level should also be used as a platform for sensitization of frontline workers and other health functionaries on the objectives of the MDSR process and also for reviewing the implementation of the process in the District/ Block. Details of Members and Terms of reference are outlined at annexure III.

Steps for Community Based MDSR

A. Notification of maternal death

B. Investigation

C. Data transmission

D. Analysis

E. Review

Pregnancy surveillance through MCTS/RCH Portal, if strengthened, would improve reporting of maternal deaths. All maternal deaths must ultimately get reported through CRS.

A. Notification of maternal death:

- All deaths of women in the age group of 15 to 49 years irrespective of the cause i.e. maternal or non-maternal will be notified by the ***primary informant*** to the ANM and Block Medical Officer/Health Officer-In-charge of a Zonal area/equivalent, (for urban areas) within 24 hours of death. The ASHA will be designated as the ***Primary informant*** for reporting deaths of women in her village/coverage area. In urban area, urban ASHA/Link worker will be the primary informant. She will notify the deaths of all women in the age group of 15 to 49 years by telephone to the ANM/Urban Health Worker/urban ANM. VHSNC members/ local panchayats/ward counselor and any other person/ groups are encouraged to inform about women deaths in their area. States would clearly specify the primary informants for reporting of women deaths in rural and urban areas respectively.
- ***Reporting:*** ASHA/primary informant will report the death to ANM by filling up the format (Form 1) for all such deaths. The complete form should be submitted to ANM within 24 hours. State has to develop an

appropriate mechanism (automatic uptake of SMS by an online system, call center etc.) for ensuring death reporting is not missed.

- ***Incentive:*** ASHAs are entitled to an incentive amount Rs. 200 for reporting within 24 hours of occurrence of death of any women in age group 15-49 years to Block Medical Officer and ANM. State to ensure appropriate mechanism to record reporting time by primary informant at block level.

After receipt of Form 1 from primary informant/ASHA, LHV/ANM/urban health worker/urban ANM will discuss with the primary informant and make visit, if need be, to verify whether the reported death has occurred during pregnancy or in post-natal period (within 42 days). After verification, ANM will counter sign the format before onward submission to BMO office within first week of receiving death information.

In-transit deaths: Deaths occurring during pregnancy or in post-natal period (within 42 days) in ambulance/any recognized patient transport system will be reported by ambulance technician to the DNO. The DNO will further inform the respective BMO for conducting community based investigation. In case the woman has been referred from a facility and dies during transit, facility based review must be conducted at the facility from where the woman was referred as well. In case the woman is a migrant, report will go to respective DNO/SNO.

B. Investigation

- All the maternal deaths will be investigated using Verbal Autopsy Format (Form 5) within three weeks of reporting maternal death.
- Verbal autopsy technique is used wherein family members, relatives, neighbors or other informants and care providers are interviewed to elicit information on the events leading to the death of the mother during pregnancy/ abortion/ delivery / after delivery and record / document in their own words, to identify the medical and non-medical (including socio-economic) factors involved in the death of the mother.
- Verbal autopsy will be conducted by investigation team constituted by BMO/Equivalent Urban Health Officer.
- The ASHA or AWW/ANM to give advance information about the purpose of visit to the family/relatives of the deceased who were with the mother from the onset of complications till the death, and obtain their consent.

- ASHA or AWW/ANM should ensure the availability of the respondents during the visit of the investigation team and also facilitate the interview process.
- Approaching the bereaved family for eliciting information on maternal death requires skills sets and empathy. Annexure 9 details information on the critical skills and techniques that would come handy to the investigating team.

Investigators for Verbal autopsy

The investigating team should ideally comprise of 3 persons:

- Block Medical Officer (BMO)/Health Officer In-charge in urban area would constitute a 3 member team for conducting verbal autopsy.
- Members could be Lady Health Visitor (LHV), Block Public Health Nurse (BPHN), Sector Health Nurse, Health supervisor and Nurse Tutor or Auxiliary Nurse Midwife (ANM). BMO can nominate a Medical officer to be part of the team depending on availability of MOs and type of case.
- It should also be ensured that of the three, at least one would be a woman.
- In case of facility level death, no service providers of that facility should be included in the team to avoid conflict of interest.
- One member would conduct the interview, one would record and the third would coordinate the process. The investigators must be properly trained to communicate with bereaved families and be sympathetic while asking questions.
- If Medical officer is part of the team, the portion on 'cause of death' can be filled, else this portion will be filled by BMO.

Responsibilities of the Investigating Team:

- To investigate the maternal death using the format for Verbal Autopsy (Form 5) within three weeks of reporting of death and hand over the filled up format to the BMO for onward transmission to the District Nodal Officer (DNO).
- Make sure all relevant information is captured during interview in entirety. If not, a follow up interview should be conducted.
- Assist the BMO in preparation of Case Summary (Form 6)- *See the figure (1) for flow of information.*

- ***Incentive:*** Each member of investigation team is entitled to an incentive of Rs. 150 for conducting the verbal autopsy and a sum of Rs. 200/- is available for transport support for the team.

The BMO is overall responsible for the MDSR process at the block. BMO must report all suspected maternal deaths as reported by primary informant to the DNO by telephone within 24 hours of receiving this information (from primary informant) and will provide Supportive Supervision to the investigation team.

C. Data transmission

- BMO office will receive notification of death telephonically through primary informant/ASHA/ANM within 24 hours of death of woman aged 15-49 years.
- The primary informant will fill Form 1 for each reported death which ANM will verify whether reported death has occurred or not during pregnancy or in post-natal period (within 42 days) and then submit the duly filled Form 1 to BMO office within one week of notification of death.
- BMO office will prepare the line list of all women deaths (Form 2) and maternal deaths (Form 3) reported by ANM every month.
- BMO Office will send the reported deaths to DNO by the 5thof every month in Form 3. In case of no death, NIL reporting will be done for the month.
- Block office should ensure that data of all the maternal deaths reported in Form 3 should also be entered in HMIS.
- BMO will constitute an investigating team for conducting verbal autopsy as per the details in Form 5 which should be filled within 3 weeks of reporting of death.
- The team will also assist BMO in filling Form 6.
- Copy of formats of all the investigated deaths (form 5, 6) will be sent to DNO office every month.
- All the formats filled for notification, detailed investigation and line listing will be entered in MDSR software, wherever available.

Reporting time for various informants will be estimated from the time information about the death has come to his/her knowledge.

Figure1: Flow of Information to District

Primary informant (Form 1)

- Within 24 hours inform BMO/ Equivalent urban health officer and ANM telephonically/SMS
- Fill the Form and submit to ANM

Verbal Autopsy (Form 5)

- To be conducted within 3 weeks of reporting of death
- Investigating team will conduct the interview and fill the Form 5
- Check the Form for completion and hand over to BMO

Summary (Form 6)

- Within 24 hours after completing CBMDR
- To be filled by BMO with assistance of investigating team

Submit complete file- BMO office to District

- Form 5,6 along with:
- Line List of women deaths (Form 2)
- Monthly Line List of maternal deaths (Form 3) to be submitted to District level

VHSNCs can also play an important role in maternal death review at community level. VHSNC should maintain a death register (compilation from Form 1) where all deaths that take place in the village are recorded on a monthly basis. VHSNC members should discuss all maternal deaths that take place in their area/village during the monthly VHSNC meeting. The death register, description by family members and ASHA may help the VHSNC in identifying gaps and take corrective action at their level or follow up with the authorities, to prevent maternal deaths. VHSNC members are also encouraged to be present at the time when verbal autopsy is conducted by the investigation team.

D. Analysis

BMO will do the analysis of the data collected and present the findings in the District level Review being conducted by CMO. BMO will also share the

findings in the block level monthly meeting for sensitization of the workers and initiating necessary corrective measures at this level. Details of methods and key indicators are described in detail in Chapter 4- Analysis and Action Planning.

E. Review

Review of maternal deaths is the most essential component of this process. Data collected from the community will be reviewed at district level by District MDSR Committee chaired by CMO and then a few selected cases by the District Collector.

MDSR meetings with the District Collector

All the Maternal Death Reports compiled by the District MDSR Committee will be put up to the District Collector, who will have the option of reviewing a sample of these deaths, which will be representative of deaths occurring at home, at facilities or in transit. In the urban areas, District Collector/Commissioner, MC/CEO, Zilla Parishad/Deputy Commissioner will conduct the maternal death review. The CMO with support from DNO would identify the sample of cases to be reviewed by DC. While selecting cases, the preference could be to choose those instances where deficiencies correctable by interdepartmental coordination are required. The MDSR meetings with the District Collector would happen on a quarterly basis.

The close relatives/friends who were with the deceased mother during the time (onset of complication to death) should be invited for the meeting, as well as the service providers who had attended to these women if she was admitted to a facility. This mechanism will ensure direct interaction of grieved relatives of the mother with the administrative head of the district in presence of health care professionals and providers. This brings into operation an accountability framework which will prevent maternal deaths from similar causes/delays identified. Details of members, process and outcome are at annex III.

2.2 Facility Based MDSR (FBMDSR)

Facility Based Maternal Deaths Reviews are undertaken with the objective of improving the quality of services and responsiveness of the facility in the emergency situations by assessing the details of services provided with the help of format filled from the case sheet and by interviewing the close

family members if needed. It is a process of learning lessons from the events happened in the past to prevent similar incidences in future. FBMDSR will be taken up for all Government teaching hospitals, referral hospitals and secondary level hospitals under other departments like Corporation, Railway, ESIC etc., district hospital, sub-district and CHCs conducting more than 1000 deliveries/ year. If regulatory mechanisms exist, States would instruct private tertiary care institutions to undertake maternal death reviews.

Facility Based Maternal Death Review Committee (FBMDSRC)

FBMDSR committees will be constituted in Government teaching hospitals, referral hospitals, district hospital, sub-district and CHCs and secondary level hospitals with other departments like Corporation, Railway, ESIC etc. where more than 1000 deliveries are conducted in a year. Such identified facilities need to notified by the State.

Institutions under other departments will also form the Facility based MDSR committee and review the cases and will send the monthly report to SNO. Formal communication will be sent from Departments of Health and Family Welfare to the other convergent departments for constitution of committees and undertaking the review process. The committee is expected to meet once a month. Meeting should be conducted every month even when there are no deaths in that particular facility to review the pending actions to be taken for reducing Maternal Deaths. Details of Members and Terms of reference are outlined at annexure III.

Steps of Facility Based MDSR

A. Notification of maternal death
B. Investigation
C. Data transmission
D. Analysis
E. Review

Community Based MDR must also be conducted for all maternal deaths that take place in health care facilities. The District MDR Committee must collate the findings of both facility as well as community based reviews to draw a comprehensive understanding on the cause of maternal death and initiate appropriate corrective measures.

A. Notification

All Maternal deaths occurring in the hospital, including abortions or within 42 days after termination of pregnancy irrespective of duration or site of

pregnancy, should be informed immediately by the Medical officer who has treated the mother and was on duty at the time of death to the Facility Nodal Officer (FNO) of the institution. Each health facilities reporting maternal death should maintain a register (Form 3) for all deaths in their facility.

The FNO of the hospital should inform the maternal death to the District Nodal Officer (DNO) by telephone within 24 hours of the occurrence of death. The FNO should ensure completion of the Form for primary informant (Form 1) by MO and send it to the DNO within 24 hrs of the occurrence of maternal death.

All Maternal deaths occurring in the hospital must be reported irrespective of the department in which it takes place. The death log maintained by the hospital would be a reference check for the FNO to ensure that no maternal deaths gets unreported.

B. Investigation

Any maternal death which occurred in the hospital should be investigated within 24hrs by the Medical Officer who had treated the mother and was on duty at the time of occurrence of death using the Facility Based Maternal Death Review (FBMDSR) Format (Form 4). Duly filled form would be submitted under the guidance and approval of the FNO. The format should be copied in three, one copy would be retained by the FNO, one would be sent by the FNO to the DNO within 24hrs and the other will be submitted to the Medical Record Department of the facility.

C. Data transmission

At district level:

- Office of DNO will receive the notification form (Form 1) from FNO within 24 hours of maternal death.
- Office of DNO will receive the investigation form (Form 4) from FNO within 48 hours of maternal death.
- FNO will also send the line list of maternal deaths (Form 3) electronically to DNO every month.
- In case there is no death in a month, the facility should report that there was no death in that month (NIL death report).
- DNO will prepare the line list of all the maternal deaths (Form 3) received from all the facilities conducting MDSR including facilities in urban area.

- By the 7th of every month, line list of maternal deaths (Form 3) will be updated and submitted to SNO.
- All the data will be entered in the MDSR software.

D. Analysis

All the deaths reported and investigated will be analyzed every month. The focus of analysis would be to discuss the line of management followed in particular instances. If problems with medical care are identified, a clinical audit may be required to provide additional information. Data analysis is described in detail in Chapter 4- Analysis and Action Planning.

E. Review

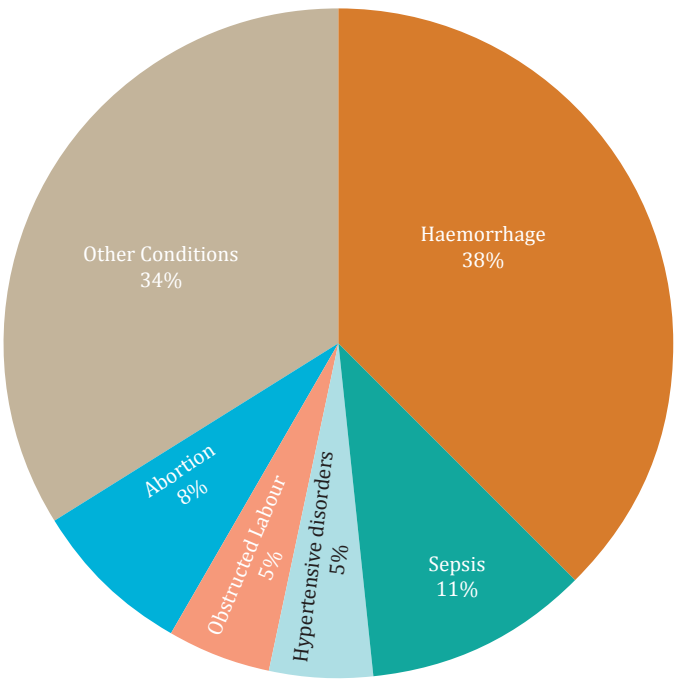
Facility level review will be conducted every month by the FBMDSR committee constituted at facility level. FNO will fix the date for the meeting and will conduct the review of all the maternal deaths occurred in the previous month. Committee will suggest the corrective measures to be taken to improve the services in the facility. Actions taken for the suggestions made in the last meeting will also be reviewed for their completion. Minutes of the meeting will be recorded and forwarded to DNO.

Classification of Cause of Death

Appropriate assessment and classification of cause of death is critical to maternal death reviews. A key area of concern is that an analysis of the data on Maternal Death Reviews submitted by States/ UTs in the health management information system for 2015-16 shows that more the 60% of the maternal deaths have been classified as others. Medical Officers/ Facility Nodal Officers for MDSR must thus ensure that maternal deaths are appropriately classified to enable programme managers and district/ State level authorities to take the necessary corrective actions based on the findings of the maternal death reviews.

As per the report of RGI in 2001-03 (refer graph alongside), haemorrhage (38%), hypertensive disorders (5%), Sepsis (11%), abortion (8%), obstructed labor (5%) and other conditions (34%) are the major causes of maternal mortality in India. In view of the fact that no further reports are available from the RGI, the following is an analysis of data available in MDSR software for 2015-16 to help programme managers/ medical officers understand the common causes of maternal deaths in our country.

It may however be noted that the list and percentages are only indicative and vary substantially across States depending on their MMR (refer section on obstetric transition in chapter 4). Post-partum hemorrhage, ante-partum hemorrhage and hypertensive disorders of pregnancy together continue to contribute to more than 30% of the total maternal deaths. Thromboembolism (4-5%), sepsis (3-4%),abortion (3-4%) and obstructed labour (around 2%) are other key direct obstetric causes of maternal death. Apart from these, ***severe anemia (25%),***hepatic disorders (4%), respiratory disorders (2-3%), Infectious diseases-Liver/ Jaundice (2-3%), Congenital Heart Disease (1-2%), cardiomyopathy (1-2%), renal disorders (1-2%) and malaria (1%)/ tuberculosis (1%) are the key indirect obstetric causes of maternal deaths. Non- obstetric surgical causes account for nearly 3.5% of the maternal deaths. Strategies for reduction of MMR are to be designed based on the analysis of the cause of death and it is thus crucial that adequate attention is given to identification of the cause of maternal death.



Source- RGI-SRS 2001-03

It is recommended that maternal deaths must be classified on the basis of ICD- 10 and accordingly the following 9 categories for classification of maternal deaths have been included in the FBMDSR formats:

M01- Pregnancies with abortive outcome (Maternal death: Direct)

M02- Hypertensive disorders in pregnancy, childbirth and puerperium (Maternal death: Direct)

M03- Obstetric hemorrhage (Maternal death: Direct)

M04- Pregnancy related infections (Maternal death: Direct)

M05- Other obstetric complications (Maternal death: Direct)

M06- Unanticipated complications of Management (Maternal death: Direct)

M07 - Non obstetric complications (Maternal death: Indirect)

M08- Unknown/ undetermined (Maternal death: unspecified)

M09- Co-incidental causes (Death during pregnancy, child birth and puerperium)

Annexure II provides a detailed enumeration of causes for each of the above categories which must be referred to while filling up the MDSR formats.

All medical officers/faculties in the facility must be trained on MCCD, MDSR guidelines and use of FBMDSR form.

2.3 MDSR process for migrant death

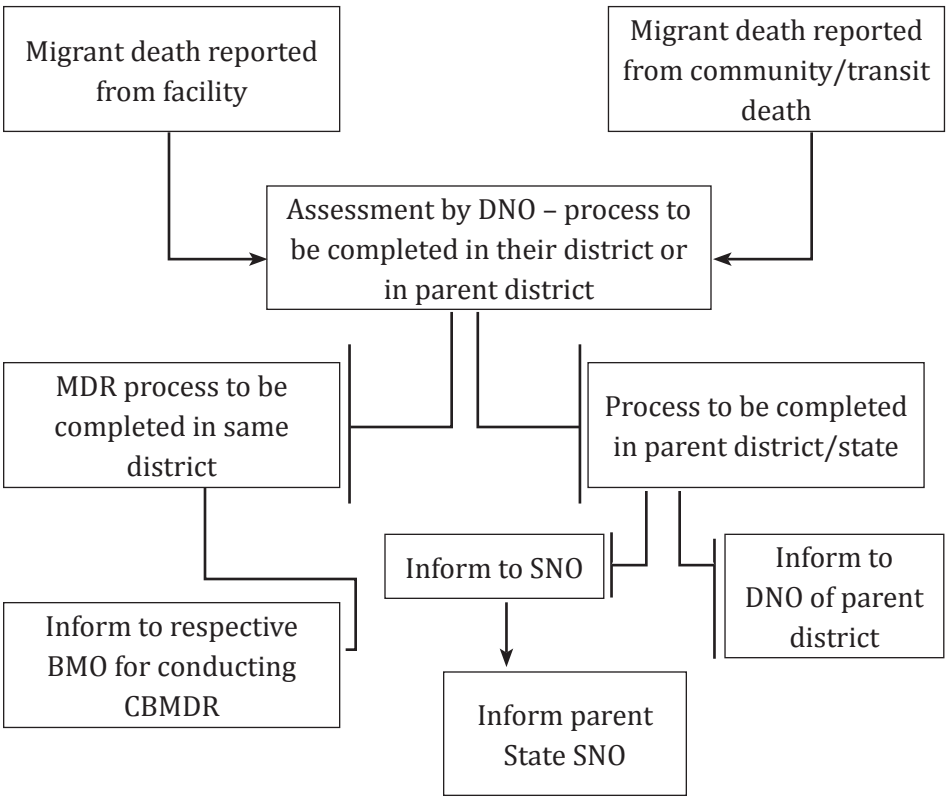
Many times stakeholders find themselves in dilemma as to the process to be followed for the review of maternal deaths in case deceased is a migrant to the respective district/state i.e. from another district or state.

A. Death in the facility: If a facility reports maternal death, FBMDSR of the death will be conducted in the same facility, which reported the death irrespective of her migrant status. FNO will report this migrant death to DNO and also submit the filled in FBMDSR formats. The DNO will inform the respective DNO (if migration is within the State) from where the mother actually belongs to, for initiating CBMDSR, through the BMO. DNO of the parent district will determine the place where community based investigation should be conducted. In case, deceased had developed complications in the parent district before proceeding to any other place, CBMDSR need to be conducted in the parent district and respective BMO will be directed to carry the investigation. In case the mother is from another State, the SNO, upon receiving information from DNO, would communicate the same to the SNO of the parent state for further action. SNO of the parent state will inform the DNO along with the original formats of FBMDSR received from the SNO of the State

from where case was referred to (copy to be retained at both districts) to complete the process of MDSR.

B. Death at home or in transit: Maternal death of migrant from other district/state reported from community or through ambulance in a transit death; DNO will assess where MDSR process have to be initiated. If transit death has occurred in an ambulance, the ambulance technician is mandated to report the death to DNO of the district, where ambulance is located. If a migrant death is reported from community, DNO will inform the parent district (if in same State) or SNO (if another State) about the maternal death for information and records. BMO will collect the information and send it to the DNO to share it further with DNO of other district (if same state) to carry out the detailed investigation or share it with SNO to further share it with SNO of respective state to initiate the MDSR process in the parent state.

Figure: MDSR Flow Process for migrant death



In a situation, FBMDSR and CBMDSR is conducted in the migrant district/state, information should be shared with the parent district/state to feed the information in the MCTS.

2.4 Confidential Review of Maternal Deaths

Confidential Review is a multi-disciplinary anonymous investigation into all or a sample of maternal deaths, to critically observe the line of management adopted in instances of maternal morbidities & mortalities and to identify the avoidable or remediable factors associated with them, so that the same could be corrected in the future. The objective of CR will be to check adherence to protocols and line of management adopted for a particular case.

It is recommended that all the states conduct the confidential review of the facility deaths but states with low MMR should compulsorily conduct it because in these states, cause of maternal death is usually due to indirect causes including systemic diseases.

However, States/ UTs must understand that completely filled case-sheets are essential for a detailed confidential review. States must introduce/ strengthen the use of case-sheets as circulated by MoHFW.

Committee for Confidential Review of Maternal Deaths (CCR-MD)

This committee will be constituted at state level. SNO will chair the committee and a senior level obstetrician will be the co-chair. Minimum of 15-20 specialists in gynaecology and other areas from all the medical colleges of state will be the members of this committee along with member from FOGSI. Committee will meet quarterly and will conduct the confidential review of randomly or purposively selected cases of maternal deaths occurred in the facility.

In order to start CR in a State the following steps would be undertaken;

A. Notification of Committee for CR

a. Notify a Confidential Review committee consisting of 15-20 members with expertise in the field. Larger states may nominate more members to the committee.

b. Committee would be constituted from government and private medical colleges in the state.

c. The Committee would consist of Obstetricians, Physicians, Surgeons, other specialties who would be invited based on the type of input required during review based on women's morbid condition. Seventy percent of the expert members would be Obstetricians.

d. The SNO for MDSR will be the nodal for confidential review.

e. The frequency of meeting will be quarterly. It is advisable to announce the day of this meeting in advance (e.g. first Monday of the last month in a quarter). The meeting will be chaired by SNO and co-chaired by a senior obstetrician.

f. In the meeting, cases will be presented briefly with the set of observations by each expert to whom the case has been assigned. Remarks from other experts would then be invited and after discussion, comments are minuted. If no expert is available to participate (to whom case has been assigned) and present the case, the observations communicated in writing by the expert to whom case was assigned, would be read out by the co-chair and comments on the same would be invited from experts.

B. Process of CR

Steps of Confidential Review

1. A sample of deaths reported to the State level will be selected by SNO for confidential review.
2. The criteria of selection will either be by random method or purposeful, based on cause of death or a new line of management that can be debated for academic purpose. While selecting the case, SNO has to make sure that the selected case of maternal death is not reviewed by an expert from the same Medical College from where it was reported.
3. The case sheets will then be anonimized (removing details like name, registration number and hospital where treated) by FNO and send to the Committee for Confidential Review (CCR) for review in a sealed cover. Before sending the records, the case will be allotted a CR number for future reference.
4. For every case a set of two experts are identified, one will be an obstetrician and the 2nd expert could be an obstetrician or from other specialty area, depending upon the case. In the review meeting, atleast one of these experts is expected to participate.
5. Not more than 2 cases should be sent to an expert at a time for the review. The committee will co-opt additional members from other specialties, if there is a requirement to get their opinion for the review meeting, at the discretion of SNO.

6. FNO of the institution where facility based review is conducted will be responsible for collection of relevant documents (BHT, LR register copy, referral slip, etc.) and other resource materials required for conduct of CR at State level.
7. If post mortem is conducted, the report should be made available to review committee by FNO.
8. If the case is referred from peripheral institutions, case sheets and referral notes from all the institutions should be made available.
9. Upon receiving the case sheets and filled in format, the expert is expected to study and prepare the report/observations within a week.
10. At the meeting all experts are invited / expected to participate irrespective of whether a case has been assigned to them.
11. If the committee arrives at a 'cause of death' different from what is given in the case sheet, appropriate explanations have to be given.
12. The minutes of the meeting with the set of recommendations should be communicated to all DNO/FNO with copy to chairman of State Task Force.
13. Experts who are routinely absent in expert group meetings (consecutively 3) would be replaced with new members.
14. The formats required for CR would be the same used for FBMDSR (Form 4).

CHAPTER 3

COMMITTEES AND NODAL PERSONS FOR MDSR

CHAPTER-3

Committees and Nodal Persons for MDSR

Implementation of MDSR involves a set of processes and review mechanisms. These functions are performed by nodal officers notified at various levels. The review process also proposes/constitutes a set of committees at facility, district and state level who will guide the process of analysis of data collected to find the gaps and plug those by taking appropriate corrective measures to prevent further maternal deaths in future. These committees include:

1. National Level Maternal Death Surveillance & Response Committee (NMDSRC)

National MDSR Committee will be set up for focused monitoring of maternal death review system, maternal near miss review systems and systems for confidential review in States/ UTs. Committee should provide a broad policy direction to the Maternal Death Surveillance and Response System at the National level and provide mentorship support for strengthening the implementation of MDSR in States/ UTs. Committee is expected to meet twice a year for strategic/ policy decisions. Details of members and terms of reference are at annexure III.

2. State Level Taskforce (SLF)

The State level task force will be headed by Principal Secretary, Health and Family Welfare. The task force will meet once a year for strategic/ policy decisions based on the findings of the reviews. Details of members and terms of reference are at annexure III.

3. State level Monitoring and Review Committee for MDSR (SMRC- MDSR)

This committee will be the sub-committee of State level Task Force. This committee will be chaired by Mission Director. Mandate of the committee will be to review the MDSR process and initiatives undertaken. The committee

is expected to meet on a quarterly basis. Details of members, process and responsibilities are at annexure III.

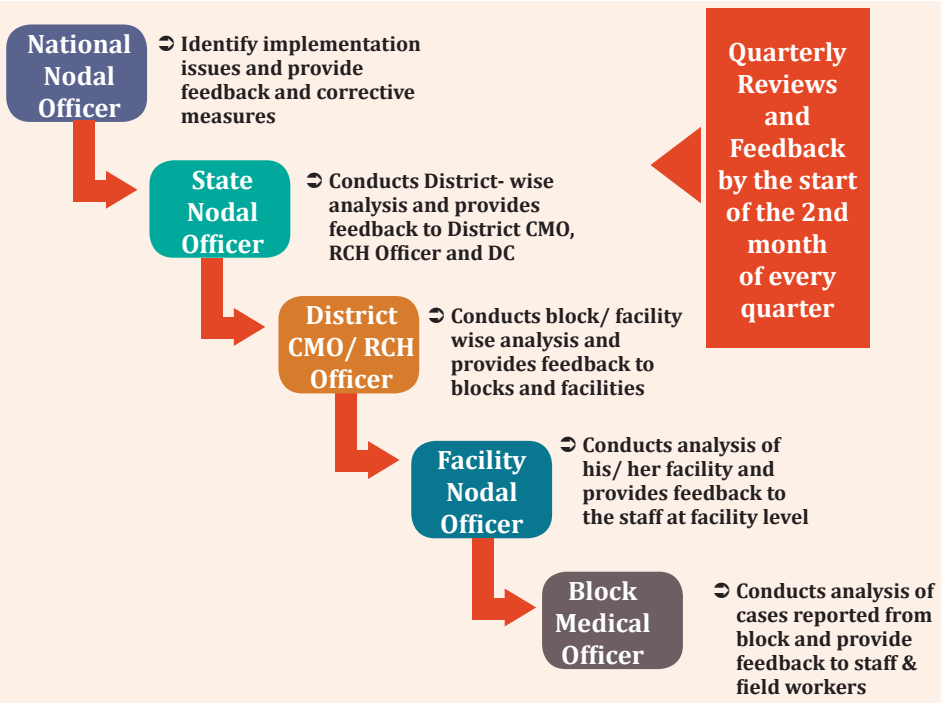
3.2 Nodal Persons for implementing MDSR at various levels:

To implement the maternal death review process, nodal persons will be identified and nominated to initiate and implement the MDSR process. They will be responsible for coordination and communication required at various levels. Responsibilities of nodal officers at various levels have been described at annexure III.

Monitoring and Supportive Supervision

Monitoring of MDSR process in the state will be as per the defined timelines and carried out by the committee and nodal officers defined in this guidelines.

- *States will identify institutions which will be providing technical support in implementation of MDSR.*
- *Medical colleges are encouraged to hand hold the districts in terms of:*
  - *Conducting maternal death investigation*
  - *Analysis of MDR data*



Supportive Supervision and Evaluation of Maternal Death Review Systems

- A national level support team will be visiting states yearly (5 high burden states, quarterly) to review progress and provide/initiate local capacity building.
- SNO/State officials- visit at least one district per month.
- For larger states with formal regional/divisional level structure, a hand holding support to the districts on a continuous basis and a supportive supervision visit scheduled quarterly to cover all the districts.
- DNO- quarterly to all notified FBMDSR institutions.
- Team from medical colleges- to all high priority districts yearly.

CB-MDSR process indicators

1. Proportion of maternal deaths investigated in the district
   A. Percentage of maternal deaths reported out of the total estimated maternal deaths (based on the MMR of the district (if available)/ MMR of the State).
   B. Percentage of maternal deaths reviewed out of the total maternal deaths reported.

FBMDSR process indicators

1. Percentage of institutions that conducted FBMDSR meetings out of total number of facilities where FBMDSR committees have been set up.

   [Ex: If there are 5 identified facilities in the district, 5 meetings should be conducted every month. Even when there is no death, meetings should be held to discuss quality issues and action taken on previous minutes of meeting].
2. Percentage of maternal deaths notified within 24 hours out of total maternal deaths reported.
3. Percentage of maternal deaths reviewed out of total maternal deaths reported.

District Level process indicators

1. Percentage of MDSR meetings conducted by the District MDSR Committee (Out of one meeting per month).

2. Percentage of cases reviewed vs total number of maternal deaths reported.
3. Percentage of maternal deaths notified versus total number of estimated maternal deaths.

State Level process indicators

1. Total number of CR (cases) conducted.
2. Total number of review findings with implications for STGs.

An indicative supportive supervision checklist is placed at annexure IV to help States monitor progress, analyze gaps in implementation and take appropriate corrective action.

CHAPTER 4

FOCUSING ON RESPONSE–ANALYSIS AND ACTION PLANNING

CHAPTER-4

Focusing on Response – Analysis and Action Planning

Action-oriented review mechanisms are the key to health systems improvement. Reviewing the MDSR data and using it for improved planning and instituting corrective measures is the most important aspect of the Maternal Death Review.

While a biological complication is assigned as a cause of death, in fact most maternal deaths result from a chain of events that include many social, cultural and medical factors. Some of these can be prevented by taking action at one or more of the links in the chain of events that result in death, with a focus on the three delays in a mother receiving care for a complication. Social and cultural factors that may contribute to delay include; (A) First delay - decision making process, not recognizing or understanding the danger signs, using traditional home care or informal service providers. Low education and poverty could aggravate this. B) Second Delay – lack of transport, poor roads, long commute to the nearest health facility, or delay in organizing funds if they have to pay for it. (C) Third Delay – lack of medicines, blood, consumables, skilled manpower, etc.

Analysis involves circumstances of each death, identification of avoidable factors and action to improve care at all levels of the health system, from home to hospital. Many of the findings will reflect upon the strength and functioning of the public healthcare delivery system. This will help the district machinery to find out / introspect as to why this happened; especially if repeated death reviews point towards the deficiency in the health system response. Within a district, comparison can be made between different blocks and population groups, if the health administrator has reason to believe that certain vulnerable groups have not been able to access health care due to various reasons. Much of the responsibility for follow-up actions could lie with local health authorities, but there could be initiatives that should be undertaken across the state as well. An analysis of trend over a period of time regarding the causes of death should be undertaken in order to capture change over time and to see if the corrective measures have had a positive effect. The analysis of causes of death will facilitate fine-tuning of programs locally in the district. For this to happen, findings of Maternal Death Review must result in action planning.

Two types of data are generated from MDSR analysis; quantitative and qualitative. The indicators (process and outcome etc.) that commonly involved are:

Table 1

Quantitative Indicators e.g.		Qualitative Indicators e.g.
Process Indicators	**Programme Indicators**	
a) No. of maternal deaths reported vs apprehended deaths	a) Place of delivery	a) Identification of complications during ANC
b) No. of maternal deaths investigated in district	b) Place of death	b) Care provided in the referred facilities
	c) Out of pocket expenditure	c) Money spent in seeking care
c) No. of facilities conducting FBMDSR	d) Number of cases received three ANCs	d) Delay in identification of danger signs and decision making
d) % of maternal deaths reviewed by CMO committee	e) Number of cases received PNC	e) Delay in reaching at appropriate facility
e) % of maternal deaths reviewed by DC	f) Mode of transport used and time taken to reach the facility	f) Delay in initiating treatment at the health facility

Qualitative analysis provides deep insight into the maternal death and suggests the program officers at block and district level and service providers at each facility where maternal death has happened, to take immediate corrective actions. Quantitative indicators are required to have a glimpse on implementation of the maternal death review system/program in the district/state. The quantitative indicators also provide information on whether the issue identified by qualitative analysis in a particular block or district is a general issue for the state that requires a policy change or not.

Qualitative data is generated from the case studies (refer Box 1). Each case investigated at community and facility levels together completes the case and give in-depth understanding of circumstances which lead to death. The data available at each level of MD review is different and this will define the type of analysis possible at those levels.

4.2 Levels of analysis

The process of MDSR involves the following structures formed / notified at the level of Institution, Block, District and State level. The guidelines envisage analysis

and action planning at district level which gets consolidated and reported to the State. Since monthly meetings are organised at block and institutional level, which gives an opportunity for discussion related to facility performance and quality of service delivery, the feedback and learnings from death reviews can be discussed for corrective actions. A brief description of the data available for analysis at each level and the approach to analysis is given below.

A. **Block –** very few cases occur at block level. It is also possible that a block does not have a single maternal death reported in a month. In case a death is reported, after filling up of Form 5, and arriving at the cause of death and contributory factors that have played a role in that particular case, the formats are sent to district level. In the monthly meeting of the block, the analysis/ discussion on the death focus on gaps at the level of Family/ Community, ASHA, ANM, transport/referral, availability of services and possibly the care given at institutional level. The common problems that can happen at Family/ Community involves late detection of danger signs, not choosing appropriate facility for treatment, which contributes largely by way of no ANC or poor quality ANC etc. Gaps at ASHA/ANM level involves birth preparedness, conveying health schemes, services and benefits available at public institutions.

B. **Institution –** since a health professional has taken care of the mother an analysis into the detailed clinical causes and gaps in providing appropriate care after the mother has reached health institution is possible. Though delay 1 and delay 2 can be one of the contributory factors leading to death of mother, the institutional review prioritize in identifying delay 3. It is also possible that gaps exist at the time of initiation of treatment or the line of management adopted for care of mother.

   Data flow from private sector can be ensured only if some form of registration & regulation system for private hospitals are in place (e.g. Clinical Establishments Act). States which do not have a system in place must progress towards implementation.

   Meanwhile engagement with private sector through awareness programs can be attempted by bringing appropriate agencies on board (e.g. FOGSI).

C. **District –** at the district level, both reviews one under the chairmanship of district health officer as well as a 3rd party review by the District Collector is crucial. The review by the DHO should focus on the technical issues and the action points relating to all healthcare providers / community structures. At the district level, comparison of functionality across various

blocks is available for analysis. If an issue is common across many blocks, probably the action is required at district level. Since resources for the entire district and allocation across various blocks is decided at the DHO/ CMO level, rational allocation of resources along with linkages for effecting changes for preventing maternal deaths in future would be undertaken at this level. For example, high fertility in a few blocks or a tribal block with limited access could be playing a role, where priority action is required. The DNO should undertake a case wise analysis focusing on detailed narration with an objective to arrive at action points for the district.

The review by the District Collector should prioritize action on social determinants of health where mandate is not limited to health department and where interdepartmental coordination is required. Resources to be mobilized for effecting reforms in the district and any policy recommendation for the State would be essential in the report generated by the district. For example, if customs and beliefs (like, restriction of certain food during pregnancy) of mother had been found as a major determinant for maternal mortality, the District Collector could review with the department of Education and Panchayati Raj for taking appropriate actions. The DC should also review whether the action points identified in the previous meetings have been complied with by the appropriate authorities/ person responsible.

D. State – at State level, monthly review by SNO, Quarterly review State Monitoring & Review (MDSR) Committee and annual review by the State Task Force resulting in publication of annual report is envisaged. Monthly review by SNO should focus on the process of MDSR in the district (e.g. reporting of maternal deaths, regular review by DHO/Institutions, preparation of minutes of meeting and action points identified and follow up). Review under chairmanship of Mission Director would focus whether regular review meetings are being held at DC level as well as the follow up to the action plan at district level along with the process of MDSR implementation at district level are undertaken or not. The State MDSR Committee should arrive at priority action points for the State level and State Task Force would come up with the policy decisions having impact across many districts or specific to vulnerable areas like a LWE/Tribal district etc. The policy directions and action points must find place in the Programme Implementation Plan (PIP) of the State.

The Chief Secretary (or Principal Secretary, H&FW) should do review of all district collectors on the MDSR process annually. Considering the feasibility, video conferencing can be a viable option.

4.3 Analysis of Maternal Deaths Investigated

Analysis should be holistic (which captures the big picture), focused (only events directly contributing to death is discussed), normative (care provided is compared with standards / GOI guidelines) and synthetic (groups problems into general categories).

A. Qualitative Analysis

Each maternal death has a story to tell. The particular case discussed here is an instance referring to a developed block of a developed district of a developed State (refer Box 1).

Box 1: Case Study

A state with population of 6 crores has CBR and MMR of 21 and 122 respectively. Apprehended number of maternal deaths in this state is 1435 per year. The apprehended number of maternal deaths came out to be 1435 maternal deaths per year. In the reference year, the state reported 600 deaths, out of which the verbal autopsy was conducted for 550 deaths. One of the reported case is presented below:

"A mother of age 28 years having completed secondary school belongs to general category and APL family. She was a housewife and had 2 living children. She became pregnant for the third time. First time she delivered at her home taluka in a Private Hospital. Second time she delivered in a Private Medical College Hospital. This was her third pregnancy. For current pregnancy, first ANC was done at 6th month of pregnancy at CHC (FRU) followed by 2nd ANC check up at 8th month of pregnancy during which she had a hemoglobin of 7.8. She was prescribed IFA tablets to be taken 2 times a day. As she completed 9 months of pregnancy, she experienced labor pains at 4.30 am. A senior lady (dai) in the village conducted the delivery by 7.30 am. The placenta was not expelled completely. Mother started bleeding. Ambulance (108) was called for and she was taken to Taluk hospital (FRU) by 8.00 am. Manual removal of the placenta was done and Mother was further referred to Government Medical College Hospital by 9.00 am. Mother died at 9.30am in the 108 ambulance in front of the medical college hospital. The deceased mother was taken back home and on the way back the newborn also had its last breath".

The case was presented to District MDSR Committee as, a Gravida 3 Para 2 and 2 Living Children, mother had home delivery with postpartum bleeding and died before reaching the medical college hospital. The Doctor had no doubt about the diagnosis as Post-Partum Hemorrhage due to retained placenta. The community based maternal death review (verbal autopsy) identified home delivery as major predisposing factor for this particular maternal death and Facility based MDSR pointed out delayed referral resulting in reaching the facility, with complications difficult to manage. The recommendation submitted to the district MDSR committee was health education to increase awareness among the community to go for institutional deliveries. The State team revisited the case and various issues raised are mentioned below.

Discussion: At the outset it can be viewed as home delivery by untrained personnel causing maternal death. But there are several clues left behind which can lead district program managers/policy makers to take necessary corrective actions with an intention to strengthen the system and not for initiating punitive action against any individuals. This case raised many questions which need discussion and definite actions to prevent these kinds of instances at every level of service provision.

1. Why mother had to go for 3rd pregnancy even though she had 2 living children?
2. Why the first ANC was done at 6th month? Why not early? Why only 2 Antenatal checkups in spite of mother having moderate anemia?
3. Why 7.8% Hb, one month before EDD not corrected at CHC?
4. What circumstances made the family to decide to go for home delivery by Dai after 2 institutional deliveries with one in medical college hospital?
5. Why hospitals always attribute death to a late referral?
6. After Manual Removal of Placenta at CHC, was Inj. Oxytocin or Tab Misoprostol given? Was Fluid Management done? Why Blood Transfusion was not done? Is Blood Storage Unit (BSU) functional?
7. Why was the condition of the baby not looked after?
8. Why was the designated FRU unable to manage PPH and was compelled to refer to tertiary care center? Is the functionality of FRUs being monitored by the state?

One can observe how a single maternal death can throw light into various issues at community level, facility level, district and state level and also provide an opportunity to act upon. All such issues identified and areas of action agreed

upon should be documented in the minutes of meeting and followed up for implementation in subsequent maternal death review meetings.

B. Quantitative Indicators:

We have seen how qualitative analysis can provide deep insight into the maternal death and suggest the program officers at block and district level and service providers at each facility where maternal death has happened, to take immediate corrective actions. But quantitative indicators are required to have a glimpse on implementation of the maternal death review system/program in the district/state. The quantitative indicators also provide information on whether the issue identified by qualitative analysis in a particular block or district is a general issue for the state that requires a policy change or not?

In order to understand how interpretations of indicators are done, we will take up instance of a sample state (refer Box 1). In the reference year, the state reported 600 deaths, out of which the verbal autopsy was conducted for 550 deaths and review at DHO and DC level was 460 and 120 respectively. Among reporting and review, the state showed huge variations across its 22 districts. Out of total, 6 districts reported more than estimated number of deaths, 12 reported 40% of estimated deaths, and 4 reported 60% of estimated deaths. Block wise bifurcation of data indicated that a few (20 out of 200) have not reported any maternal deaths and 3 blocks have reported 4 times estimated maternal deaths, one of which was a tribal block. Some of the indicators with their percent contributions are presented in the table below for interpretation.

Table 2

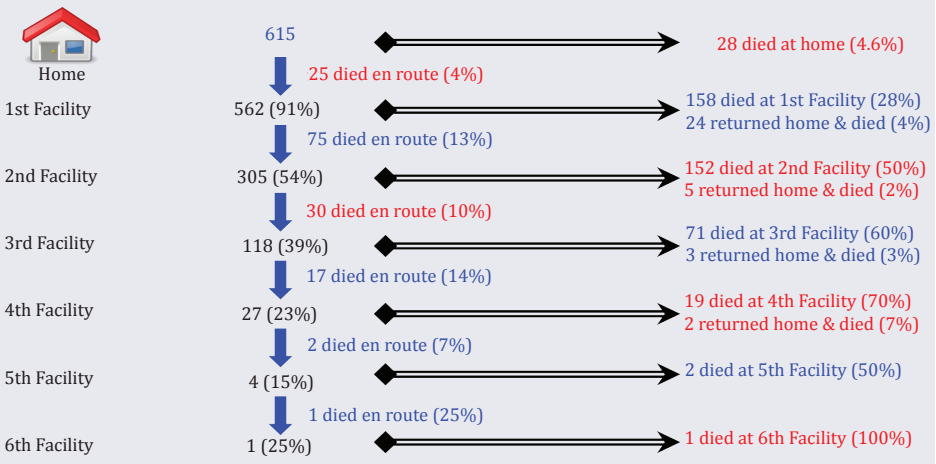
Place of delivery		Place of death		Time of death		Cause of death	
	%		%		%		%
Private hospital	41	During transit	23	Post-partum	69	Post-Partum Haemorrhage	33
At home	14	In Medical College	23	Ante partum	24	Sepsis	13
At DH	13	In DH	22.6	Intra partum	7	Pregnancy induced Hypertension	11
At CHC	12	In Pvt. Hospital	11	Day of delivery	27	Ante Partum Haemorrhage	4
At General Hospital	9	In General Hosp.	8.6	Within 48 hrs of delivery	59	Obstructed Labour	3

Place of delivery		Place of death		Time of death		Cause of death	
	%		%		%		%
At PHC	5	At home	6.6	2-5th week of delivery	14	Other causes (Severe Anaemia, sickle cell anaemia, pulmonary embolism)	36
During transit	3	In CHC	5				
At Sub-centre	3	In PHC	0.2				

Another way of looking at these deaths with respect to treatment sought and number of facilities visited is to map the events from onset of symptoms (at home) to finally receiving treatment (with desired quality & otherwise). A typical pathway analysis is depicted below:

Pathway analysis: The pathway analysis is an important analytic tool for policy makers, as it depicts the entire spectrum of movement of pregnant women to a number of health facilities for want of care before they succumbed to fatality (Box 2). Data for the above presented state was used to show the analysis.

Box 2: Pathway analysis depicting multiple referrals with place of death



From the above box, reference could be drawn about number of referral facilities visited by the pregnant women and their fate. It is clear that while seeking facility care, 91 % women could reach to first facility. Almost 50% of pregnant women who reached to first facility were further referred to other facilities. Out of this 50% about 28% died in the facility and 13% while

returning back and 4% after returning home. This clearly indicates about the quality of care being rendered at the facilities and multiple referrals being made in actual. Based on similar findings a state might want to relook the referral protocols and its implementation.

Issues for discussion

1. Why large amount of private sector delivery in the state?
2. How to address the issue of home delivery?
3. How to explain 33% of transit deaths? How to prevent such deaths in future?
4. Despite 90% seeking healthcare, the mothers could not be saved. What is the quality of services provided in public health institutions?
5. Why multiple referrals happened and what is the functional status of designated FRUs?
6. Despite 48hrs stay mandated post-delivery, why nearly 70% died post-partum?
7. 99% of mothers had atleast one ANC. What is the quality of ANC services provided, esp. at SC level?
8. 36% of deaths are classified under 'other causes'. Is it that the proportion of other causes is actually increasing or are the deaths getting misclassified? If that is the case, how to address this problem?

Availability of MDSR Software makes quantitative analysis of data easy. But it is important to note that data entry is possible only if an MCTS number is available or generated. In case, MCTS number is not issued, it will be generated at the time of data entry. District should also make sure that all the deaths are being reported in HMIS.

4.4 Action Planning

After 5 years of implementation of MDSR, achievements made by states were varied. While some states have achieved the MDG 5 target while other are still struggling to overcome the challenges. In this varied situation, states have to adopt different approaches to reduce the MMR. Dynamic planning focusing on immediate priorities and projecting future needs will allow utilization of resources in more effective decentralized way.

Adopting a 'one size fits all' approach would be quite unwise for a country as large and diverse. This is particularly true at this juncture when on one hand high focus States such as Assam and Uttar Pradesh struggle with an MMR of more than 280/ lakh live births and on the other hand States such as Kerala, Maharashtra, Tamil Nadu and Andhra Pradesh have achieved the MMR level of below 100.

Considering this, it is important for us to learn from a large Multi-country Survey on Maternal and Newborn Health, conducted by the World Health Organization and its partners, which reflects a phenomenon called '***Obstetric Transition'***. As per the survey, "there is a change in the causes of Maternal Deaths as countries gradually shift from high maternal mortality to low maternal mortality. There is transition from predominance of direct obstetric causes of maternal mortality to an increasing proportion of indirect causes, non-communicable causes. Additionally ageing of the maternal population, moving from the natural history of pregnancy and childbirth towards institutionalization of maternity care, increasing rates of obstetric intervention and eventual over-medicalization were also observed". Overall five stages of obstetric transition have been defined as follows:

- Stage I (MMR >1000 maternal deaths per 100 000 live births)
- Stage II (MMR 999–300 maternal deaths per 100 000 live births)
- Stage III (MMR299–50 maternal deaths per 100 000 live births)
- Stage IV (MMR <50 maternal deaths per 100 000 live births)
- Stage V (MMR lower than five maternal deaths per 100 000 live births)

This phenomenon has implications for strategies that different States should adopt for reduction of maternal mortality. India falls in Stage III of the transition which is basically a complex stage characterized by variable fertility and predominance of direct causes of mortality. "While access remains an issue for much of the population, a greater proportion of pregnant women start reaching health facilities. As a result, quality of care becomes a major determinant of health outcomes, especially with regard to overloaded health facilities. At this stage primary prevention is not enough and secondary and tertiary prevention require specific attention if maternal mortality is to be reduced. In essence, quality of care, with skilled birth attendance and appropriate management of complications and disabilities, is essential to reduce maternal mortality. At this stage, the role of intra-hospital issues (i.e. third delay) in maternal mortality becomes gradually more important[1]."

In line with the principle of "Obstetric Transition" Indian States can be further classified into three categories namely

i. States with high MMR,

ii. States with moderately high MMR (predicted to achieve the target within 5 years at the current progress) and

iii. States with low MMR (MMR below national average)

Each category must adopt a different strategy if it has to achieve its goal. All the states need to assess the current status and prepare the action plan.

States with High MMR

- Ensure quality ANC, timely detection, basic management and timely referral of complicated cases, assured transport with wide awareness to the people on toll free number.
- Identify areas with high home deliveries and focus on increasing institutional deliveries and skilled attendance at birth in these areas. Introduce home based distribution of misoprostol in these areas and simultaneously focus on strengthening health facilities in the nearby areas to provision of basic obstetric care.
- Focus on quality 'care at birth' including skilled attendance at birth. Plan for training/hand hold the health workers for improving intra-partum care at health facilities.
- Labour room protocols have to be in place, adherence to infection prevention measures and protocols must be a priority. Labour room staff must be trained and not rotated.
- Focus on ensuring availability of CEmOC services. States must monitor the functionality of identified FRUs to ensure that there is at least one FRU/ 5 lakh population. States may however need additional FRUs in hard to reach areas and hilly areas with sparse population based on time to care approach.
- Good quality PNC both at facility and at home ensured.
- Focus on availability of PPIUCD services in these areas.
- Focus on action on social determinants such as age at marriage in collaboration with concerned departments of the government.

In the context of Maternal Death Reviews, these States must first focus on

- Tracking of Maternal Deaths (which in itself is currently a cause of concern).

- Institutionalizing the facility and community based MDSR processes in their districts.
- More importantly the MDSR process must reveal gaps such as lack of availability of BEmOC/ CEmOC services in facilities/ gaps in timely referral so that these avoidable causes of maternal deaths can be instantly addressed.

States with Moderately High MMR

In addition to the above mentioned areas, States with moderately high MMR (predicted to achieve the target within 5 years at the current progress) have to focus on risk factors and health system challenges.

- Strategies must shift to address non-communicable diseases and other indirect causes and social determinants of poor health.
- Ensure 100% MDSR at all EmOC facilities ensuring population coverage of at least one EmOC center for 5 lakh population and ensuring reaching to EmOC center within one hour by vehicle from any location.
- For assessing any irregularity in the treatment leading to death-prescription audit need to be conducted.

In the context of Maternal Death Reviews, these States must follow a dual approach.

- For high priority areas in the State, the focus of MDSR process must be to identify gaps (similar to focus in High MMR States).
- In other areas these States must deliberate on identification of causes of death in the 'Others' category so that appropriate facilities to manage indirect causes of maternal deaths can be developed.

States with Low MMR

In addition to focusing on the above mentioned areas, States with low MMR (MMR below national average), must focus on:

- Addressing indirect causes of maternal deaths with timely identification and management of infectious and non-communicable conditions, along with continuous focus on direct causes of maternal deaths.
- Ensuring implementation of MDSR and Maternal Near Miss (MNM) at tertiary hospitals and district hospitals.

- All institutional audits and reviews should be accompanied with community based reviews.
- Such States can also introduce perinatal death reviews.
- There should be obstetric HDU in all District hospitals and obstetric ICU in MCH wings.

It is of utmost importance that States take action on the gaps identified in the review process. States must formulate an action plan for responding to the causes of maternal deaths. The following guiding principles would help States formulate the action plan:

- Start with avoidable factors identified during review.
- Use evidence based approaches.
- Prioritize actions (based on feasibility, resources and health system readiness).
- Establishing a time line (immediate, short, medium and long term).
- Deciding how to monitor progress, effectiveness and impact.
- Integrating recommendation with annual health plan and health- system packages.
- Monitoring- to ensure recommendations are implemented.

The MDSR guidelines must be viewed against this backdrop of obstetric transition to enable States to gain maximum out of the Maternal Death Review process.

Things required at facility level for complete information for MDSR

- Register- Bed head tickets (Format for case sheets have been circulated for reference), referral-in/out register.
- Labour Room register.
- Partograph etc.

(All formats are given in MNH Toolkit/ formats for case sheets recently circulated)

Apart from health system interventions, inter-sectoral coordination is a critical element of action planning especially in states with very high MMR. Improvement in basic infrastructure including water and sanitation hygiene, roads and health care facilities, workforce planning and education for girls are the key areas for inter-sectoral linkages with maternal health program planning.

Reporting: In the state report sent to national level, state will present the findings on identified critical elements. Report should have an overview on key indicators and trends:

A. IMR, MMR, TFR, population density.

B. District wise- data and trends (including mapping).

C. Major findings (Analysis of MDSR data- cause of death, three delays, referrals etc.).

D. Interventions/recommendations.

E. Initiatives under process of implementation/implemented.

F. Impact

Progress and accountability

To improve the progress and outcomes of maternal health interventions increased reporting, data availability and data quality, convergence with other reporting systems like MCTS and HMIS will be imperative with specific attention to Civil Registration System that can provide reliable information on reported deaths and on cause of death. Also there need to develop participatory mechanism at every level of health system across public and private sector.

Dissemination Plan

Ensuring accountability for improving maternal health requires that periodic and transparent dissemination and discussion of key findings of reviews are held. The reports generated (State/National) must necessarily deal with two things; one, an analysis of maternal deaths with a set of recommendations and second, an evaluation on the functioning of MDSR process within the State/Country as applicable. An executive summary on the report can be published as a newsletter and disseminated widely (Annexure VI).

CHAPTER 5
/ TRAININGS

CHAPTER-5

Trainings

Training is a key step for building the capacity of the human resources involved in implementation, good quality monitoring and review for taking corrective actions with ultimate objective of reducing the burden of maternal death in the states and UTs.

Implementation of MDSR, its monitoring and review for corrective action is a specialized job which requires involvement of not only the clinical staff but also various non clinical personnel like program managers, community mobilizers and workers, administrators and bureaucrats etc. So, the training need will differ and as such design of the training is to meet the requirements of both categories. The two days training program at each level has inbuilt component of sensitization and knowledge about MDSR in the first half of first day, where everybody can participate and post lunch it is mostly technical where trainers, mentors and monitors and those involved in implementing, needs to be trained.

For initiating MDSR training following critical steps are to be followed:

Levels

1. Organizing National TOT: Creating master trainers for the state.
2. Organizing State level training: Following activities to be under taken
   A. Identifying number of government medical colleges which can be a potential resource both for conducting training and also monitoring its implementation.
   B. Identifying training sites fulfilling predefined criteria.
   C. Training faculty and program officers of government medical colleges, SIHFWs, SHSRCs and state program officers in phases.
   D. Organizing trainings for district program officers and OBGYNs of district hospitals and FRUs.
3. Organizing District level training: For block medical officers, clinical staff and Investigating team.

Duration

Trainings at each level will be for two days' duration. First half of first day training will have topics for sensitization and understanding of MDSR, benefits of doing MDSR, its implementation, monitoring, review and corrective actions etc. This session will be attended by the trainers/trainees and also other stakeholders who needs sensitization only. The group needing sensitization will attend the session only up to lunch and thereafter the technical session will begin.

Training Need Assessment

Line listing of district wise health facilities conducting MDSR, identifying type of relevant staff to be trained and type of staff or other stake holders who only needs to be sensitized.

Training load and batch size

The batch size is 30 with an additional 5 participants expected for the first half of first day for sensitization session.

The potential trainer and monitor will be from identified government medical colleges and selected district hospitals.

At state level not only the master trainers but also clinicians and stakeholders from district hospitals/FRUs will need to be oriented and trained.

At district level block medical officers, clinical staff and investigating team will be trained.

Training site

1. Government medical colleges participating in National Programs, conducting various trainings particularly skill based trainings, having skills lab, enough space for teaching and training, seminar room and lecture halls.
2. District hospitals notified by state for conducting MDSR and MNM.
3. Willingness to spare time for such trainings besides their committed teaching and training load of under graduate and post graduate students of MBBS, nursing, para-medicals etc.
4. Have minimum testing facilities as defined by various GoI/state guidelines
5. In house facility for X-ray, ultra sound ECG and other diagnostics.

While selecting training institute or faculty, take into consideration their willingness and whether they can be spared for training purpose.

The training matrix for ensuring training/sensitization of all relevant officers is given below:

TRAINING MATRIX

	Type	Duration	Resource persons	Participants	Training Materials	Training Procedures
National level	1. To train and develop State level master Trainers and monitors 2. To Sensitize national stakeholders	2 days	National Core Group Members	**Larger States:** (6 persons) 1 State Program Manager/ Nodal Officer, MH nodal officer from DHS of the state, 2 OBGYN from Medical College, 2 faculties from Community Medicine **Smaller States& UTs:** (3 persons) 1 State Program Manager/ Nodal Officer, 1 OBGYN from Medical College/ DH, 1 official with Public Health background	1. Guidelines for MDSR 2. Case studies on MDSR & MNM based on real time field visit 3. Bed head tickets or case sheets for recent maternal death or maternal near miss at selected field facility 4. Copy of CBMDR at selected field facility	Power-point presentations on the background: maternal mortality causes, current status, rationale of MDSR, process of MDSR, roles and responsibilities, data flow and analysis, monitoring & supervision, case studies, Best practices from other states/ districts, field visits

	Type	Duration	Resource persons	Participants	Training Materials	Training Procedures
State level	1. To train and expand State level Trainers and monitors 2. To Sensitize state stakeholders 3. To train OBGYN & MOs from DH and designated FRUs	2 days	National and State trainers and experts	1. From all government medical colleges: All OBGYN faculties and 2 faculties from community medicine department 2. All faculty from SIHFW and Program Officers from SHSRC, DRCHO 3. From district hospitals and FRUs MS and all OBGYN from DH MO i/c and all OBGYN from FRU 4. Sensitization to various state program officers and convergent department representatives	Same as above	Same as above
District Level	1. To train and expand district and block level implementers& monitors 2. To Sensitize block stakeholders	2 days	State experts	1. All clinical and para medical staff involved in providing maternal health services at facility/ block level, District and block nodal officers, program managers, community mobilizers, selected senior nurses and ANMs 2. Sensitization at block level during monthly meetings by BMO/BPM 3. Any other personnel from Panchayat, Education, Women child development	Interview format for CB-MDSR, Case studies, Instructions or Guidebook on MDSR	Power-point presentations on the background: maternal mortality causes, current status, rationale of MDSR, process of CB-MDSR, roles and responsibilities, data flow and analysis, monitoring & supervision, review process; How to approach the household/sensitivity issues Question by question training on filling up of the formats with help of the reference manuals; interpreting the filled up questionnaire to develop the case summaries, field visits

ESTIMATING TRAINING LOAD

While estimating training load, the following assumptions (Box.1) are used.

BOX. 1 ASSUMPTIONS:

At National Level: Training of total 180 persons in 6 batches of 30 each. 3 personnel from 12 small states and 6 personnel from 24 states (12*3 + 24*6= 180).

At state level: Training of total 60 persons in 2 batches of 30 each.

Considering 5 medical colleges: 10 OBGYN and 2 Community medicine faculty from each college, a total of 60 trainees from 5 colleges). All faculties of SIHFW and Program Officers of SHSRC are to be considered.

Considering 2 OBGYN from 60 FRUs, a total 120 OBGYN.

2 OBGYN from district hospital, 1 MS, 1 DNO, 2 OBGYN from FRU, 2 MO I/c. This is 8 personnel from one district therefore a total 240 from 30 districts.

Hence total training load (60 + 240 + 120= 420; Hence, 14 batches of 30 each).

Creating batches for state level training: - example

Batch 1	Batch 2	Batch 3	Batch 4	Batch 5
6 OBGYN from 5 medical college, 10 community medicine from 5 medical college, 3 MS, 3 DNO, 12 from FRU, 6 MO	6 OBGYN from 5 medical college, 10 community medicine from 5 medical college, 3 MS, 3 DNO, 12 from FRU, 6 MO	6 OBGYN from 5 medical college, 10 community medicine from 5 medical college, 3 MS, 3 DNO, 12 from FRU, 6 MO	6 OBGYN from 5 medical college, 10 community medicine from 5 medical college, 3 MS, 3 DNO, 12 from FRU, 6 MO	6 OBGYN from 5 medical college, 10 community medicine from 5 medical college, 3 MS, 3 DNO, 12 from FRU, 6 MO

At District level: Considering 30 districts in a state: 240 personnel will be trained in 8 batches of 30 each in following manner: 2 OBGYN from District Hospital, 1 M.S., 1DNO, 2 OBGYN from FRU and 2 MO i/c from FRU (considering 60 FRUs per State).

Facility level training: All the potential or identified trainers will be pooled and batches prepared by taking one of them at a time from each institution.

An indicative budget, including Training component, for the MDSR process is provided at the end of this guideline.

Budget: Allocate to host state.

ANNEXURES

ANNEXURE 1

MDSR Formats

Form 1

Notification form

Format to be filled by Primary informant for all Women's Death (15-49) years

S. No.		Place of Current Residence	Native Place
1	**Name of State**		
2	**Name of District**		
3	**Name of Block**		
4	**Name of village/ Description of location**		
5	**Name of the deceased woman**		
6	**Name of Husband**		
7	**Name of Father**		
8	**Age of the woman**		
9	**MCTS ID**		
10	**Mobile No**		
11	**Date and time of death**	Date .....DD/ MM/ YYYY Time _____:_____am/pm	
12	**Place of death**	Yes	No (tick)
	I. Home		
	II. Health Facility		
	III. Transit		
	IV. Others		
13	**When did death occur**	Yes	No (tick)
	a. During pregnancy		
	b. During delivery		
	c. Within 42 days after delivery		
	d. During abortion or within 6 weeks after abortion		

If either a, b, c, d, =yes in Q 13: ***Suspected maternal death***
If all- a, b, c, d, =no in Q13 ; ***Non- maternal death***

Name of reporting Person: _____

Designation: _____

Signature of reporting person:

Date:

Verification by ANM of the respective Sub-center that death of women occurred during pregnancy or within 42 days of delivery/abortion:

Name of the sub center:

Signature: _____

Name: _____

Date: _____

Form 2

Block Level MDR Register for All Women's Death (15-49 years)

(Fill in one form for every month)

Name of Block _____

District _____ State_____

Month_____ Year_____

S. No.	Name of deceased	Age	Date of death	Address	Husband's name	Cause of death (tick √)		Name/ designation of Primary informant (Annex 6)	Date of field investigation	If died due to maternal causes, specify reasons	Action Taken
						Maternal	Non-maternal				
1.											
2.											
3.											
4.											
5.											

Signature of MO I/C of the block with date:

Form 3

MDR Line Listing Form for All Cases of Maternal Deaths

Line listing for use by ANM, BMO, FNO and DNO

District_____ **State**_____

FB MDR: Name of facility: _____ **or** **CB MDR:**

SHC/Block_____

S. No.	Date of death	Name of deceased	Place of death			When did the death occur				Probable cause of death	Status of newborn (Delivery outcome)	Name of investigator/ date of interview
			Home	Health facility	In transit	During pregnancy	During delivery	During abortion or within 6 weeks after the abortion	Within 42 days after delivery			

Name of reporting person: _____ ***Signature:*** _____

Designation: _____ ***Date of reporting:*** _____

Form 4

Confidential

Facility Based Maternal Death Review Form

Name and Type of Health Facility (specify)_____

Address_____

Name of Nodal Person _____ Contact No_____

FOR OFFICE USE ONLY

FBMDR No. (Specific to the Place) ☐☐☐ MCTS No ☐☐☐☐☐☐☐☐☐☐☐☐ Month ☐☐ Year ☐☐☐☐

Please fill up the Performa given below

NOTE:

- **MDR Number must be put serially 0001 & so on.**
- **This form must be filled for all Maternal Deaths.**
- **Mark with √ wherever applicable.**
- **For Date use Day/Month/Year format. For time use 24 hours clock format.**
- **Complete within 24 hrs.**
- **Make 2 photocopies & send original to MRD, a copy to DNO, and one retained with Nodal Officer for further action0**

Background information of deceased Mother

Full Name_____ Age _____ Inpatient No_____

Medico-legal admission: Yes ☐ No ☐

Complete Address _____

Contact/ Mobile No_____

Education: Illiterate ☐ Upto 5th class ☐ 6th to 12th class ☐ Beyond 12th class ☐

Below Poverty Line: BPL Certified ☐ Self certified BPL ☐ Not BPL ☐

1. a. Date and Time of admission: Day☐☐ Month☐☐ Yr.☐☐ at Hours☐☐ Min.☐☐

b. Date and time of Death: Day☐☐ Month☐☐ Yr.☐☐ at Hours☐☐ Min.☐☐

c. Duration of Hospital stay: ☐☐ Days ☐☐ Hours

d. Duration of ICU stay: Days ☐☐ Hours ☐☐ if any

	Days	Hrs.	N.A.	DNK
e. Admission- delivery interval:	☐☐	☐☐	☐☐	☐
f. Admission – death interval	☐☐	☐☐	☐☐	☐

g. Outcome of pregnancy:

1) Abortion ☐	2) Ectopic ☐	3) Live birth ☐
4) Still birth ☐	5) Undelivered ☐	

2. On Admission

a. Complaints at time of admission: _____

b. Obstetric formula on admission **M F**

1. Gravida ☐☐ 2. Para ☐☐ 3. Abortions ☐☐ 4. No. of Living children ☐☐

c. Period of gestation:

1) Before 22 weeks ☐	2) Antenatal 22-34 weeks ☐	3) Antenatal ≥34 weeks ☐	4) Intrapartum ☐
5) Post- Partum up to 24hrs ☐	6) Post-natal 24hrs- 1 week ☐	7) Post-natal- More than 1 week to 42 d ays ☐	

3. Condition on Admission: 1) Stable ☐ 2) Semi conscious responds to verbal commands ☐ 3) Semi conscious responds to painful stimuli ☐ 4) Unconscious ☐ 5) Brought dead ☐

a. **Referral**: If referred from outside: i. No. of places visited prior ☐

b. Please fill the table below for the details on transport, referral and type of care given

Place	Home/ Village	Facility 1	Facility 2	Facility 3
Date (DD/MM/YY)				
Time of onset of complication or onset of labour				
Time of calling/ arrival of transport				
Transport used/type				
Time to reach				
Money spent on transport (Rs.)				
Name of Facility/ Level of referral				
Attended by Doctor/ nurse/ other staff/none				

Place	Home/ Village	Facility 1	Facility 2	Facility 3
Reason for referral				
Referral slip (given or not, if yes, attach)				
Treatment given				
Money spent on treatment/ medicine/ Diagnostics				
Time spent in facility				

4. Diagnosis at time of admission:

(Please make sure to fill the table with underlying cause given for each condition)

S. No.	Diagnosis → Underlying Cause		
1.	**Hemorrhage** ☐	**I. Abortion** ☐ **II. Ectopic Pregnancy** ☐ **III. Gestational Trophoblastic Disease** ☐	
		IV. Antepartum Bleeding	**a) Placental causes-** Placenta Previa ☐ - Placental abruption ☐ **b) Late pregnancy Bleeding other than placental causes-** - Scar dehiscence ☐ - Rupture uterus ☐ - Others, ☐ Specify_____
		V. Intrapartum Bleeding	
		VI. Postpartum bleeding- Atonic ☐ Traumatic ☐ Mixed ☐	
2.	**Hypertensive disorders of pregnancy** ☐	i. Gestational Hypertension ☐ ii. Pre-eclampsia ☐ iii. Eclampsia ☐ iv. Others ☐	
3.	**Labour related Disorders** ☐	i. Normal labour ☐ ii Prolonged / Obstructed labour ☐ iii. Inversion of Uterus ☐ iv. Retained placenta ☐ v. Any other ☐	
4.	**Medical Disorders** ☐	i. Anaemia ☐ ii. Heart disease ☐ iii. TB ☐ iv. Diabetes ☐ v. Others ☐	

S. No.	Diagnosis → Underlying Cause		
5.	**Infection** ☐	I. Post abortal ☐ II. Antepartum ☐ III. Intrapartum ☐ IV. Post-partum ☐	a) Viral such as Hepatitis/HIV AIDS/ Others, ☐ b) Malaria, ☐ c) Dengue, ☐ d) Lower Respiratory Tract Infection, ☐ e) Other infections, ☐ Specify_____
6.	**Incidental/ Accidental Disorders E.g. Surgical including Iatrogenic, Trauma, Violence, Anaesthetic complications,** ☐		**Specify**
7.	**Any other,** ☐		**Specify**

2. Abortion (to be filled if applicable)

a. Spontaneous ☐ Induced ☐
i. If spontaneous, - Complete ☐ Incomplete ☐
ii. If induced -Legal ☐ Illegal ☐
b. What was the procedure adopted? Medical methods ☐ MVA ☐ D&E/ S&E ☐
Extra Amniotic Installation ☐ Hysterotomy ☐ Others ☐
c. Post Abortal Period Uneventful ☐ Sepsis ☐ Hemorrhage ☐ Others ☐
d. Was the termination procedure done in more than one center Yes ☐ No ☐
(If yes, specify the centres visited before coming to this facility)……
……

3. Antenatal Care

a. Did she receive ANC? Yes ☐ No ☐ Don't know ☐
b. If Yes, Type of Facility: SC ☐ PHC ☐ CHC ☐ SDH ☐ DH ☐ Medical College ☐
Private hospital ☐ Others ☐ specify_____
c. Services provided by: ANM ☐ MO ☐ Obstetrician ☐ AYUSH ☐
Nurse ☐ Other specialists,☐ specify_____
d. If yes, was she told about any disorder/complication? Yes ☐ No ☐ Don't know ☐
e. If yes, what was the risk factor identified?

1. Abortion ☐	2. Ectopic pregnancy ☐	3. Vesicular Mole ☐	4. APH ☐
5. Hydramnios / Oligohydramnios ☐	6. Short stature ☐	7. PIH/PE ☐	8. Previous C section ☐

9. Multiple pregnancy ☐	10. Grand multi ☐	11. Abnormal presentation/ position ☐	12. Big baby ☐
13. Anemia ☐	14. Diabetes/ GDM ☐	15. Medical conditions (Specify_____) ☐	16. Others (Specify___) ☐

4. DELIVERY, PUERPERIUM AND NEONATAL INFORMATION **If applicable**

a. **Did she have labour pains**? Yes ☐ No ☐

b. **If yes, was a partograph used to monitor labour** ?

i.) Past facility: Yes ☐ No ☐ Don't know ☐

ii.) Current facility: Yes ☐ No ☐

c. **Complications during labour**:

1. Eclampsia/ pre-ecclampsia ☐	2. Prolonged labour ☐	3. Obstructed labour /Rupture Uterus ☐	4. Intra partum Hge ☐
5. Inversion of Uterus ☐	6. IP sepsis ☐	7. Others ☐ Specify _____	

d. Mode of Delivery

1. Undelivered		☐
2. Vaginal	a. Normal - With episiotomy b. Assisted - Forceps - Vacuum c. Breech d. Multiple Pregnancy	☐ ☐ ☐ ☐ ☐ ☐ ☐
3. Caesarean Section	Elective	☐
	Emergency	☐
4. Laparotomy	Rupture uterus	☐
	*Ectopic Pregnancy	☐
5. Indication (CS/Instrumental)		☐

* Although in Ectopic pregnancy woman does not deliver but fetus may be removed during Laparotomy

e. Anaesthesia (any adverse reaction):

a) General Anaesthesia ☐	b) Reg- Epidural / Spinal ☐	c) Local ☐

f. In which phase of labor did she develop complications?

a) First stage ☐	b)Second stage ☐	c) Third stage ☐	d) Post Birth ☐		
			a. Within ≤ 6 hrs. of birth ☐	b. > 6 - ≤ 24 hrs. of birth ☐	c. > 24 hrs. after birth ☐

g. Neonatal Outcome: Alive ☐ Fresh Still birth ☐
Macerated still birth Neonatal death ☐

h. If baby died, probable cause of death:

1. Birth Asphxia ☐	2. Respiratory distress ☐	3. Aspiration including MAS ☐	4. Sepsis ☐
5. Cong Anomalies ☐	6. Preterm ☐	7. Others ☐ Specify_____	

i. Postnatal period: - Uneventful Eventful ☐

- If Eventful, specify probable cause of death: ☐

1. PPH ☐	2. PE / Eclampsia ☐	3. CVA/Pulmonary Embolism ☐	4. Sepsis/ ARDS ☐
5. Anemia ☐	6. Post op complication ☐	7. Medical conditions Specify_____ ☐	8. Others Specify_____ ☐

5. INTERVENTIONS (Tick appropriate box), Specify other in the last row

Early pregnancy	Antenatal	Intrapartum	Postpartum	Anaesthesia/ ICU
1. Evacuation ☐	1. Trans-fusion ☐	1. Instrumental del. ☐	1. Removal of retained POC ☐	1. Anaesthesia -GA ☐
2. Trans-fusion ☐	2. Version ☐	2. Caesarean section ☐	2. Laparo-tomy ☐	2. Spinal ☐
3. Laparotomy/ laparo-scopy ☐	3. Other surgeries ☐	3. Hyster-ectomy ☐	3. Hyster-ectomy ☐	3. Local ☐
4. Hyster-ectomy ☐		4. Manual removal of placenta ☐	4. Trans-fusion ☐	4. Epidural ☐
		5. Conservative surgery ☐		5. ICU monitoring ☐
		6. Trans-fusion ☐		

a. Blood transfusion given? Yes ☐ **No** ☐

b. If yes, No of units——☐☐☐☐ Whole Blood ☐ /PRBC ☐ /FFP ☐/Platelets /Cryo ☐

c. Specify if any transfusion reaction occurred?: Yes ☐ **No** ☐

6. Primary diagnosis/condition leading to death_____

7. CAUSE OF DEATH:_____

Part 1: Antecedent causes (Please mention the cause of death from Box below)

a. Due to or as a consequence of _____

b. Due to or as a consequence of _____

c. Due to or as a consequence of _____

8. IN YOUR OPINION WERE ANY OF THESE FACTORS PRESENT?

System	Example	Y	N	Not known
Personal/ Family	Delay in woman seeking help			
	Refusal of treatment or admission			
	Refusal of admission in previous facility			
Logistical Problems	Lack of transport from home to health care facility			
	Lack of transport between health care facilities			
	Lack of assured referral system			
Facilities	Lack of facilities, equipment or consumable			
	Lack of blood/ blood products Lack of OT availability			
Health personnel problems	Lack of human resources Lack of Anesthetist Lack of Obstetricians			
	Lack of expertise, training or education			

9. AUTOPSY: Performed ☐ Not performed ☐

- If performed please report the final diagnosis and send the detailed report later

_____

_____

10. CASE SUMMARY (please supply a short summary of the events surrounding hospital stay and the death of the patient)

Form filled by the MO on duty

Name & Signature

Designation

Stamp & Date:

Nodal Officer of the Hospital:

Name& Signature

Address of the Institution

Form 5

Verbal Autopsy Questionnaire

FOR INVESTIGATION OF MATERNAL DEATHS

NAME OF THE STATE	
NAME OF THE DISTRICT	
NAME OF THE BLOCK	
NAME OF THE PHC	
NAME FO THE SHC	
NAME OF THE VILLAGE	
NAME OF THE PREGNANT WOMAN/ MOTHER	
NAME OF THE HUSBAND/OTHER (FATHER/MOTHER)	
DATE OF DEATH	
NAME & DESIGNATION OF THE INVESTIGATOR(S)	
NAME & DESIGNATION OF THE INVESTIGATOR(S)	
DATE OF INVESTIGATION	
PROBABLE CAUSE OF DEATH	

(For investigation of maternal deaths at community level)

General Instructions

1. **CONFIDENTIALITY:** After the formal introduction to the respondents, the investigating official should give assurance that the information will be kept **confidential**.
2. Throughout the interview, the interviewer should be very polite and sensitive questions should be avoided.
3. Make all the respondents seated comfortably and explain to them that the information that they are going to provide will help to prevent such deaths of mothers in future.
4. Allow the respondents to narrate the events leading to the death of the mother in their own words. Keep prompting until the respondent says there was nothing more to say.
5. Do not ask questions which are not in the interview schedule.
6. Wherever needed, the investigating official should encourage the respondents to bring out all information related to the event.
7. Please also write information in a **narrative form.**

8. **NEUTRALITY AND IMPARTIALITY:** The interviewer should not be influenced by the information provided by the field health functionaries, doctors or by the information available in the mother care register, case sheets etc.

The format is divided into three modules:

MODULE - I

This form will be used for collection of general information about the deceased woman in case of all maternal deaths

MODULE - II

This form should be used to collect details about maternal death during antenatal period or due to abortion

MODULE - III

This form should be used to collect details about deaths during delivery or postnatal period

VERBAL CONSENT FORM

Instructions to Interviewer: Please ask the respondent to acknowledge her/his consent to be interviewed by checking the response below. The interviewer should sign and put date below. If the respondent does not consent to the interview, thank her/him for their time and terminate the conversation.

My name is [say your name]. I am a _____/____ at the ____ center/hospital, and an interviewer for Maternal Death Review. I have been informed that a woman (name) in your household has died recently. I am very sorry to hear this. Please accept my condolences.

The purpose of our visit is to collect information about causes of death of the woman (name) so that we can work on improving health care services which will help prevent death of other women because of similar reasons/ circumstances.

Your participation will help to improve maternal and newborn care services for women and babies in your area. We would like to talk to the person in your house who took care of [say the woman's name] before death.

We will ask questions about the woman (name) who recently died. We will ask about her background, pregnancy history and events during her most recent pregnancy. We assure you that any information you or your family provide will be kept confidential and your name will not be used in any way.

Your participation in this interview is voluntary and refusal to participate will not affect you in any manner. You may discontinue participation at any time or choose to not answer any question.

The interview will take approximately one hour.

At this time do you want to ask me anything about the interview?

Answer any questions and address respondents concerns

Do you agree to participate in this interview? YES NO

Respondent

Name _____ Signature _____

Interviewer

Name _____ Signature _____

Date _____

Respondent's relationship with the deceased woman

General Information

(Enclose the Primary informant form with this format)

NAME & DESIGNATION OF THE INVESTIGATOR 1	
NAME & DESIGNATION OF THE INVESTIGATOR 2	
NAME & DESIGNATION OF THE INVESTIGATOR 3	
DATE OF INVESTIGATION	

Signature of reporting person:

Designation:

Date:

MODULE I

The form is intended to capture general information and information about previous pregnancy history, wherever applicable. It should be used for all the maternal deaths irrespective whether the death occurred during antenatal, delivery or postnatal period including abortion)

I	**BACKGROUND INFORMATION**			
1.	Name of the respondent			
2.	Name of the deceased woman			
3.	Relationship of the respondent/s with the deceased woman			
4.	Age of the deceased woman at the time of death	_____**yrs**		
5.	***Period of Death***	**Yes**	**No (tick)**	
	a) During pregnancy	☐	☐	
	b) During delivery	☐	☐	
	c) Within 42 days after delivery	☐	☐	
	d) During abortion or within 6 weeks after abortion	☐	☐	
6.	Place of Death **(tick)**			
	a) Home.....1	b) Sub-District Hospital.....2		
	c) Sub-Health Centre.....3	d) District Hospital.....4		
	e) PHC.....5	f) Private Hospital.....6		
	g) CHC.....7	h) In-transit.....8		
	i) Others, (Specify_____).....9			
7.	Specify the name and place of the institution or village /urban area where death occurred			
8.	Date & Time of Death	Date:___DD/__MM/____YYYY Time: _____:_____ am/ pm		
9.	Did the doctor or nurse at the health facility tell you the cause of death?	Yes.....1 No.....2 Not applicable.....3		**Go to sec II**
10.	If yes, what was the cause of death?			
II	**Profile of deceased woman**			
	Age at marriage	_____years/ Not married		
	Religion	a) Hindu.....1		
		b) Muslim.....2		
		c) Christian.....3		
		d) Others (Specify.....).....4		

	Caste	a) SC.....1		
		b) ST.....2		
		c) OBC.....3		
		d) General.....4		
	BPL Status	a) BPL.....1		
		b) Non-BPL.....2		
	Education status			
	a) Illiterate.....1	b) Completed 5th std.....2		
	c) Completed 8th std.....3	d) Completed 12th std.....4		
	e) Graduate.....5	f) Others (Specify___).....6		
III	**Availability of health facilities, services and transport**			
	Name and location of the nearest government / private facility providing Emergency Obstetric Care Services			
	Distance of this facility from the residence			
	Mode of transport available to reach this facility			
IV	**Write 'GPLA-Gravida, Para, Live Births, Abortions)**			
1.	Gravida			
2.	Para			
3.	Live Births			
4.	Abortions			
V	**Current pregnancy** (To be filled from the information given by the respondents and MCP Card)			
1.	Infant Survival			
	a) Alive.....1	b) New born death.....2		
	c) Still birth.....3	d) Not applicable.....4		
	Antenatal care received	Yes.....1 No.....2 Do not know.....3		Go to Q6
3.	If yes, write number of antenatal checkups received	_____		
4.	Place of antenatal check-ups (Multiple responses possible)			
	a) VHND.....1	b) Sub Health Centre.....2		
	c) PHC.....3	d) CHC.....4		
	e) District Hospital.....5	f) Pvt. Hospital/clinic.....6		
	g) 7	h) Don't know.....8		
	i) Not applicable.....9	j) Others, (specify_____)..10		

<table>
<tr><td>5.</td><td>Services received during ANC (multiple response possible)</td><td>a) Tetanus Toxoid Injection.....1
b) Blood Pressure measurement...2
c) Hemoglobin test.....3
d) Abdominal Examination.....4
e) Iron Folic Acid provided.....5
f) Don't know .....6</td><td></td></tr>
<tr><td>6.</td><td>Did the deceased woman have any problem during the antenatal period?</td><td>Yes.....1
No.....2
Not known.....3</td><td>Go to Module II</td></tr>
<tr><td>7.</td><td colspan="2">What were the symptoms she had?<table><tr><td>a) Head ache.....1</td><td>b) Edema.....2</td></tr><tr><td>c) Anemia.....3</td><td>d) High blood pressure.....4</td></tr><tr><td>e) Bleeding p/v.....5</td><td>f) No foetal movements.....6</td></tr><tr><td>g) Fits.....7</td><td>h) Sudden excruciating pain.....8</td></tr><tr><td>i) High fever with rigor .....9</td><td>j) Others (specify_____).....10</td></tr></table></td><td></td></tr>
<tr><td>8.</td><td>Did she seek care for these symptoms?</td><td>Yes.....1
No.....2</td><td>Go to Q 10</td></tr>
<tr><td>9.</td><td colspan="2">Where did she seek care?<table><tr><td>a) Sub Health Centre.....1</td><td>b) PHC.....2</td></tr><tr><td>c) CHC.....3</td><td>d) District Hospital.....4</td></tr><tr><td>e) Pvt. Hospital/clinic.....5</td><td>f) Quack.....6</td></tr><tr><td>g) Don't know.....7</td><td>h) Not applicable.....8</td></tr><tr><td colspan="2">i) Others, (specify_____).....9</td></tr></table></td><td>Go to Module II</td></tr>
<tr><td>10.</td><td colspan="2">What were the reasons for not seeking care? (Multiple responses possible)<table><tr><td>a) Severity of complication not known.....1</td><td>b) Health facility was very far.....2</td></tr><tr><td>c) Lack of transport.....3</td><td>d) Financial reasons.....4</td></tr><tr><td>e) Family reasons .....5</td><td>f) Faith in local healers / dai.....6</td></tr><tr><td>g) Disrespectful behaviour of the providers.....7</td><td>h) Beliefs and customs.....8</td></tr><tr><td colspan="2">i) Others (Specify_____).....9</td></tr></table></td><td></td></tr>
</table>

Note: Education status categories may be as: a. Illiterate b. up to 5thst c. 5th to 8thst d. 8th to 12thst e. completed 12thst f. Graduate g. Others (Specify.....)

MODULE - II

This module is to be filled for the maternal deaths that occurred during the antenatal period or if the deaths due to abortion related causes.

VI	**No. of weeks of pregnancy completed at the time of death?** *(Help the respondent in estimating weeks of pregnancy)*	_____**weeks**	***If less than 6 weeks go to sub section VIII***
VII	**Death during Antenatal Period**		
1.	What was the problem that the deceased woman had at the time of death?		
2.	What were the symptoms?		
	a) Head ache.....1	b) Edema.....2	
	c) Anemia.....3	d) High blood pressure.....4	
	e) Bleeding p/v.....5	f) No foetal movements.....6	
	g) Fits.....7	h) Sudden excruciating pain.....8	
	i) High fever with rigor 9	j) Others (specify_____).....10	
3.	Was she referred at that time?	Yes.....1 No.....2 Not known.....3	Go to Q 6
4.	Did she seek care for these complications?	Yes.....1 No.....2	If yes, fill the table no. 1 for referral transport If no skip to Q 6
5.	If yes, where did she seek care?		
	a) PHC.....1	b) CHC.....2	Go to Sec VIII
	c) District Hospital.....3	d) Pvt. Hospital/clinic.....4	
	e) Quack.....5	f) Don't know.....6	
	g) Others, (specify_____).....7		

6.	In case of not seeking care from the hospital, what were the reasons for not seeking care *(Multiple responses possible)*		
	a) Severity of complication not known.....1	b) Health facility was very far.....2	
	c) Lack of transport.....3	d) Financial reasons.....4	
	e) Family reasons.....5	f) Faith in local healers / dai.....6	
	g) Beliefs and customs.....7	h) Disrespectful behaviour of the providers.....8	
	i) Others (Specify_____).....9		
VIII	**Abortion related Death**		
1	Did the deceased woman (name) die while having an abortion or within 6 weeks after having an abortion?	Yes.....1 No.....2 Not known.....3	
2	Type of abortion	a) Spontaneous.....1 b) Induced .....2 c) Don't know.....3	If induced Go to Q. 5
3	Date of spontaneous abortion/ date of termination of pregnancy	DD___/ MM_____/ _____YYYY	
4	If the abortion was spontaneous, where was the abortion completed?		Go to Q 9
	a) Home.....1	b) PHC.....2	
	c) CHC.....3	d) DH.....4	
	e) Private hospital/clinic.....5	f) Don't know.....6	
	g) Others (Specify_____).....7		
5	If the abortion was induced, how was it induced?	a) Oral Medicine.....1 b) Traditional Vaginal Herbal Medication.....2 c) Instrumentation.....3 d) Don't know.....4	
6	If the abortion was induced, where did she have the abortion?		
	a) Home.....1	b) PHC.....2	
	c) CHC.....3	d) DH.....4	
	e) Private hospital/clinic.....5	f) Don't know.....6 g) Others (Specify------) 7	
7	If the abortion was induced, who performed the abortion?		
	a) Allopathic Doctor.....1	b) AYUSH doctor.....2	
	c) Nurse.....3	d) Quack.....4	
	e) Dai.....5	f) Don't know.....6	
	g) Other (Specify_____).....7		

<table>
<tr><td>8a</td><td>What was the reason for inducing abortion?</td><td>a) Medical Condition/Bleeding started spontaneously.....1
b) Wanted to terminate the pregnancy.....2
c) Don't know.....3</td><td></td></tr>
<tr><td>8b</td><td>Describe the reasons for inducing the abortion</td><td></td><td></td></tr>
<tr><td rowspan="4">9</td><td colspan="2">What were the complications/ symptoms that the woman had after abortion?</td><td rowspan="4"></td></tr>
<tr><td>a) High fever.....1</td><td>b) Foul smelling discharge.....2</td></tr>
<tr><td>c) Bleeding.....3</td><td>d) Shock.....4</td></tr>
<tr><td>e) None.....5</td><td>f) Don't know.....6</td></tr>
<tr><td>10</td><td>After developing complications following abortion, did she seek care?</td><td>Yes.....1
No.....2
Not applicable.....3</td><td>Go to Q 12</td></tr>
<tr><td rowspan="5">11</td><td colspan="2">If yes, where did she seek care?</td><td rowspan="5">If the answer is any facility, also fill the table 1below for referral transport</td></tr>
<tr><td>a) SHC.....1</td><td>b) PHC.....2</td></tr>
<tr><td>c) CHC.....3</td><td>d) DH.....4</td></tr>
<tr><td>e) Private hospital/clinic.....5</td><td>f) Quack.....6</td></tr>
<tr><td>g) Don't know.....7</td><td>h) Others (Specify_____).....8</td></tr>
<tr><td rowspan="6">12</td><td colspan="2">In case of not seeking care from the hospital, what were the reasons for not seeking care</td><td rowspan="6"></td></tr>
<tr><td>j) Severity of complication not known.....1</td><td>k) Health facility was very far.....2</td></tr>
<tr><td>l) Lack of transport.....3</td><td>m) Financial reasons.....4</td></tr>
<tr><td>n) Family reasons.....5</td><td>o) Faith in local healers / dai.....6</td></tr>
<tr><td>p) Beliefs and customs.....7</td><td>q) Disrespectful behaviour of the providers.....8</td></tr>
<tr><td colspan="2">r) Others (Specify_____).....9</td></tr>
</table>

Please fill the table below for the details on transport, referral and type of care given				
Table 1				
Place	**Home/ Village**	**Facility 1**	**Facility 2**	**Facility 3**
Date (DD/MM/YY)				
Time of onset of complication or onset of labour				
Time of calling/ arrival of transport				
Transport used				
Name of Facility/ Level of referral		**Facility 1**	**Facility 2**	**Facility 3**
Time to reach				
Money spent on transport				
Reason for referral				
Referral slip (given or not)				
Treatment given				
Money spent on treatment/ medicine/ diagnostics				
Time spent in facility				

MODULE - III

This module is to be filled for the maternal deaths that occurred during delivery or if the death occurred during postnatal period (after delivery of placenta)

IX	INTRANATAL SERVICES		
1	Place of delivery		In case of institution delivery also fill table 2 after completion of this form
	a) Home……1	b) SHC……2	
	c) PHC……3	d) CHC……4	
	e) DH……5	f) Private hospital……6	
	g) Transit……7	h) Don't know……8	
	i) Others (Specify_____)……9		
2	In case of home delivery, what were the reasons for home delivery?		Skip in case of non-home delivery
	a) Family's preference……1	b) Village Dai is good……2	
	c) No transport facilities……3	d) Cost of transport is high..4	
	e) No information given about need for institutional delivery……5	f) Services not available at the nearest health facility……6	
	g) High expenses……7	h) Bad experience at institution……8	
	i) No complication so no need……9	j) Home is more comfortable……10	
	k) Others (Specify_____)……11		
3	No. of completed pregnancy weeks at time of delivery	_____weeks	
4	Date and Time of delivery	Date : Time __ __:__ __ __ am/pm	
5	Date and Time of death	Date: Time __ __:__ __ __ am/pm	
6	Who conducted the delivery?		
	a) Allopathic doctor……1	b) AYUSH doctor……2	
	c) ANM……3	d) Staff nurse……4	
	e) Dai……5	f) Quack……6	
	g) Relatives……7	h) Don't know……8	
	i) Others (specify_____)……9		
7	Type of delivery		
	a) Normal……1	b) C- section……2	
	c) Assisted……3	d) Unattended……4	
	e) Don't know……5		

8	Outcome of the delivery (write numbers in each column) Or not applicable if not delivered but died in labour	Live births	Still births	
9	What were the complications that the deceased woman (name) had during labour/ delivery?			
	a) Prolonged labour (Primi>12 hrs / Subsequent deliveries >8 hrs).....1	b) Severe bleeding/ bleeding with clots- (one saree/in skirt soaked =500ml).....2		
	c) Labour pain which disappeared suddenly.....3	d) Inversion of the uterus.....4		
	e) Retained placenta.....5	f) Convulsions.....6		
	g) Severe breathlessness /cyanosis/ edema.....7	h) Unconsciousness.....8		
	i) High fever.....9	j) Not applicable.....10		
	k) Other (specify_____).....11			
10a	***In case of institutional delivery,*** what was the treatment provided at the health facility?	a) Received IV drip.....1 b) Blood transfusion.....2 c) Oxygen was given.....3 d) Don't know.....4 e) Others (specify_____)....5		
10b	See the hospital records if available and fill details of treatment received.			
10c	Any information given to the relatives about the nature of complication from the hospital	Yes.....1 No.....2		If no, Go to Q 10e
10d	If yes, please describe			
10e	Was there any delay in initiating treatment	Yes.....1 No.....2 Not known.....3 Not Applicable.....4		Go to Q 12
10f	If yes, please describe			Go to Q 12
11a	In case of home delivery, did the woman seek care?	Yes.....1 No.....2		If yes, Go to Q11c

11b	In case of not seeking care, what were the reasons for not seeking care		Go to Sec X
	a) Severity of complication not known.....1	b) Health facility was very far.....2	
	c) Lack of transport.....3	d) Financial reasons	
	e) Family reasons.....5	f) Faith in local healers / dai.....6	
	g) Beliefs and customs.....7	h) Disrespectful behaviour of the providers.....8	
	i) Others (Specify_____).....9		
11c	Where did she seek care?		
	a) SHC.....1	b) PHC.....2	
	c) CHC.....3	d) DH.....4	
	e) Private hospital.....5	f) Quack.....6	
	g) Don't know.....7	h) Others (Specify_____).....8	
11d	Any information given to the relatives about the nature of complication by the care provider?	Yes.....1 No.....2	If no, Go to Q 11f
11e	If yes, please describe		
11f	Was there any delay in initiating treatment	Yes.....1 No.....2 Don't know.....3 Not applicable.....4	Go to Q 12
11g	If yes, please describe		
12	Was the deceased woman referred – from the place of delivery in case of institutional delivery	Yes.....1 No.....2 Not known.....3	
13	In case of home delivery, was the deceased woman referred from first point of seeking care for complication?	Yes.....1 No.....2 Not known.....3	
14	Did she attend the referral centre?	Yes.....1 No.....2 Not known.....3	Also fill table 2 given below for information on referrals

15	In case of not seeking care from the hospital, what were the reasons for not seeking care		
	s) Severity of complication not known.....1	t) Health facility was very far.....2	
	u) Lack of transport.....3	v) Financial reasons.....4	
	w) Family reasons.....5	x) Faith in local healers / dai.....6	
	y) Beliefs and customs.....7	z) Disrespectful behaviour of the providers.....8	
	aa) Others (Specify_____).....9		
16	Any information given to the relatives about the nature of complication from the hospital	Yes.....1 No.....2	If no, Go to Q.18
17	If yes, please describe		
18	Was there any delay in initiating treatment	Yes.....1 No.....2 Don't know.....3 Not Applicable.....4	Go to Sec XI
19	If yes, please describe		
	If the death happened after delivery of placenta then fill section X also- as it would be classified as death during post natal period		
X	**POST NATAL PERIOD**		
1	Did the deceased woman (name) have any problem following delivery	Yes.....1 No.....2 Don't know.....3	Go to Q 10
2a	Date and time of onset of the problem	Date – DD __/MM__ / YYYY__ Time __ __:__ __ _ _	
2b	Duration of onset of problem after delivery	_____hrs _____days	

3	What was the problem during post natal period?		
	a) Severe bleeding.....1	b) High fever and foul smelling discharge.....2	
	c) Unconsciousness/ visual disturbance.....3	d) Bleeding from multiple sites 4	
	e) Severe leg pain, swelling 5	f) Abnormal behaviour.....6	
	g) Severe anemia.....7	h) Sudden chest pain & collapse.....8	
	i) Don't know.....9	j) Others (Specify_____).....10	
4	Did she seek treatment	Yes.....1 No.....2	If yes, also fill table 2 If no Go to Q No. 7
5	If yes, where did she seek treatment		
	a) SHC.....1	b) PHC.....2	
	c) CHC.....3	d) DH.....4	
	e) Private hospital/clinic.....5	f) Quack.....6	
	g) Don't know.....7	h) Others (Specify_____).....8	
6a	What was the treatment provided at the health facility?	a) Received IV drip.....1 b) Blood transfusion.....2 c) Oxygen was given.....3 d) Don't know.....4 e) Others (specify_____).....5	
6b	See the hospital records if available and fill details of treatment received.		
7	Was she referred?	Yes.....1 No.....2	If no, Go to Q.10
8	Did she attend the referral center?	Yes.....1 No.....2	If yes, also fill table 2
9	In case of not seeking care from the hospital, what were the reasons for not seeking care		
	a) Severity of complication not known.....1	b) Health facility was very far.....2	
	c) Lack of transport.....3	d) Financial reasons.....4	
	e) Family reasons.....5	f) Faith in local healers / dai.....6	
	g) Beliefs and customs.....7	h) Disrespectful behaviour of the providers.....8	
	i) Others (Specify_____).....9		

10	Did she receive any postnatal check ups	Yes.....1 No.....2	If no, *end of the questionnaire*
11	No. of post natal check ups received	_____	
12	Who did the post natal check ups		
	a) Doctor.....1	b) ANM.....2	
	c) ASHA.....3	d) Dai.....4	
	e) Quack.....5	f) Don't know.....6 g) Others (Specify-----) 7	

Please fill the table below for the details on transport, referral and type of care given

Table 2

Place	**Home/ Village**	**Facility 1**	**Facility 2**	**Facility 3**
Date (DD/MM/YY)				
Time of onset of complication or onset of labour				
Time of calling/ arrival of transport				
Transport used				
Name of Facility/ Level of referral		**Facility 1**	**Facility 2**	**Facility 3**
Time to reach				
Money spent on transport				
Reason for referral				
Referral slip (given or not)				
Treatment given				
Money spent on treatment/ medicine/ diagnostics				
Time spent in facility				

XI. Open history (Narrative format) (explore)

XII. According to you, what could have been done to prevent the death of the deceased mother?

Form 6

MDR Case Summary

<table>
<tr><td>Name of the Block/PHC/District OR/Name of facility</td><td colspan="6"></td></tr>
<tr><td>Particulars of the Deceased Woman</td><td colspan="2">MCTS ID _____</td><td colspan="2">Name _____
Age:</td><td>Religion:</td><td>Caste:</td></tr>
<tr><td>Address (when death occurred)</td><td colspan="3">Place of Residence:</td><td colspan="3">Native Place:</td></tr>
<tr><td>Place of Death</td><td colspan="6"></td></tr>
<tr><td>Date and Time of death</td><td colspan="6">D D M M Y Y Y Y At H H : M M AM/PM</td></tr>
<tr><td rowspan="2">Timing of Death</td><td>Pregnancy</td><td>During or within 6 weeks of abortion</td><td colspan="2">In labour or during Delivery</td><td>Within 1 week after delivery</td><td>7- 42 days after Delivery</td></tr>
<tr><td rowspan="2">Obstetric History</td><td rowspan="2">Gravida</td><td rowspan="2">Para</td><td colspan="2">Previous Abortions</td><td>Infant outcome</td><td>Number of alive children</td></tr>
<tr><td>Spontaneous</td><td>Induced</td><td></td><td></td></tr>
<tr><td>Investigation</td><td>Date of interview</td><td>Date of Interview-2 (if second visit made)</td><td colspan="4">Name and contact details of main respondents:</td></tr>
</table>

1. Delay in seeking care

- Unawareness of danger signs
- Illiteracy & Ignorance
- Delay in decision making
- No birth preparedness
- Beliefs and customs
- Lack of assured services
- Unawareness about services available in nearby facility
- Any other, specify_____

2. Delay in reaching health facility

- Delay in getting transport for first facility
- Delay in mobilizing funds
- Not reaching appropriate/ referral facility in time
- Difficult terrain
- Any other, specify_____

3. Delay in receiving adequate care in facility

- Delay in initiating treatment
- Substandard treatment in hospital
- Lack of blood, equipments and drugs
- Lack of adequate funds
- Any other, specify_____

Probable direct obstetric cause of death: _____

_____

_____

Indirect obstetric cause of death: _____

_____

_____

Contributory causes of death: _____

_____

_____

Initiatives suggested: _____

_____

Name and designation of investigation team:

1. Name:_____ Designation: _____

2. Name:_____ Designation: _____

3. Name:_____ Designation: _____

Signatures and Name of Block Medical Officer/Facility Nodal Officer (with stamp)

ANNEXURE II

The Who Application of ICD-10 to Deaths During Pregnancy, Childbirth and the Puerperium: ICD-MM

For Filling in MDR Tool ICD-MM

Groups of underlying causes of death during pregnancy, childbirth and the puerperium in mutually exclusive, totally inclusive groups.

Type	Group name/number	From the comprehensive list of causes of deaths which can be put in the respective ICD-MM Category
A. Maternal death – I. Direct causes	**1. Pregnancies with abortive outcome**	**Abortions related-** 1.1 Abortion → Spontaneous / Induced Abortion (Safe/Unsafe) 1.2 Ectopic Pregnancy 1.3 Gestational Trophoblastic Disease
	2. Hypertensive disorders in pregnancy, birth and puerperium	2.1 Hypertensive disorders of pregnancy induced hypertension, 2.2 Pre eclampsia, 2.3 Eclampsia, 2.4 HELLP Syndrome 2.5 Essential Hypertension
	3. Obstetric Haemmorhage (except haemorrage)	Excluding abortive outcome 1.1 to 1.3 1.4 Antepartum hemorrhage -Placenta previa -Placental abruption -Unclassified 1.5 Scar dehiscence 1.6 Rupture uterus after obstructed labour or otherwise 1.7 Surgical injury during labour, Caesarean Section/ Forceps or Vacuum delivery Cervical / Vaginal tears, others 1.8 Third Stage haemorrhage with/without Retained placenta, with/without Inversion of uterus. 1.9 Postpartum haemorrhage - Atonic - Traumatic - Mixed Labour and delivery complicated by intrapartum haemmorhage, not elsewhere classified

Type	Group name/number	From the comprehensive list of causes of deaths which can be put in the respective ICD-MM Category
	4. Pregnancy related infection	3.1 Excluding abortive outcome 3.2 Chorioamnionitis without or with obstructed labour / prolonged labour 3.3 Puerperal sepsis 3.4 Post surgical procedures (E.g. evacuation, Cesarean section, laparotomy, manual removal of placenta , others) Infections of genito urinary tract Infection of obstetric surgical wound following delivery Infections of breast associated with child birth Pyrexia of unknown origin following delivery 3.5 Others like breast abscess 3.6 Unknown
	5. Other Obstetric complications	4.1 Amniotic Fluid Embolism 4.2 Uterine Inversion 4.3 Hepatorenal failure due to vomiting during pregnancy 4.4 Unexplained
	6. Unanticipated complications of management	**Unanticipated complications of management**
A . Maternal death **II. Indirect causes**	**7. Non obstetric complications**	**1. Anaemia** 1.1 Iron/Folic Acid Deficiency 1.2 Sickle cell Disease 1.3 Thallasemia 1.4 Aplastic Anaemia **2. Cardiac disorders** 2.1 Cardiomyopathy (antepartum, peripartum postpartum) 2.2 Rheumatic heart disease 2.3 Congenital heart disease 2.4 Aortic aneurysm 2.5 Myocardial infarction 2.6 Others **3. Liver Disorders** 3.1 Acute fatty liver of pregnancy 3.2 Acute hepatic failure 3.3 Cirrhosis of liver with portal hypertension 3.4 Infective hepatitis (A,B,C,E) 3.5 Others **4. Respiratory Disorders** 4.1 Tuberculosis 4.2 Pneumonia 4.3 Asthma 4.4 Adult respiratory distress syndrome 4.5 Pulmonary embolism

Type	Group name/number	From the comprehensive list of causes of deaths which can be put in the respective ICD-MM Category
		5. Renal disorders 5.1 Acute renal failure 5.2 Nephritis 5.3 Medico renal disease e.g chronic/acute renal failure 5.4 Renal artery stenosis 5.5 Collagen disorder 5.6 Transplant complications **6. Endocrinal Disorders** 6.1 **Diabetes** Gestational diabetes mellitus Diabetes mellitus 6.2 **Thyroid Disorder** Thyrotoxicosis **6.3 Pheochromocytoma** **7. Neurological Disorders** 7.1 Epilepsy 7.2 Cortical vein thrombosis 7.3 Cerebral embolism (stroke) 7.4 Meningitis 7.5 Enhephalitis **8. Infections/ Infestations** 8.1 Malaria 8.2 Dengue 8.3 H1N1 viral Disease 8.4 HIV/AIDS 8.5 Scrub typhus 8.6 Other
A. Maternal death **III. Unspecified**	**8. Unknown causes-**	**8. Maternal death during** Pregnancy, childbirth and the puerperium where the underlying cause is unknown or was not determined.
B. Death during pregnancy, child birth and puerperium	**9. Coincidental /Incidental causes**	**B Death during pregnancy, child birth and the puerperium due to external causes**

ANNEXURE III

Committees and Nodal Persons for MDR

1. Facility Based Maternal Death Review Committee (FBMDRC)

Members of the FBMDRC may be the following:

A. Teaching hospital:

- Superintendent of the Hospital/ Other Administrative Head of the Institution (Chairman)
- Head of the Department of Obstetrics and Gynaecology (OBG dept)
- FNO (Obstetrician from the department) (Convener/Secretary)
- At least three members should be OBG specialists from the Dept
- One Anaesthetist
- Nodal Officer, Blood Bank
- Nursing Superintendent/representative
- One physician

A. District/Other hospitals:

- Hospital superintendent
- FNO (Obstetrician from the Dept)
- At least two obstetricians/MO in OBG department as members
- One Anaesthetist
- Nodal Officer, Blood Bank/BSC
- Nursing representative
- One physician

Frequency of meeting: Once in a month

The FNO will fix the monthly meeting in discussion with the superintendent of the hospital and communicate the date of meeting to all the members at least a week before to ensure the availability of all the members. Meeting should be conducted every month even when there are no deaths in that particular facility to review the pending actions to be taken for reducing MD.

ToR for the committee:

- Review all the maternal death cases reported for the last month.
- Identify circumstances under which the death took place.
- Identify cause of maternal death.
- Discuss whether SOP/line of management followed requires updation.
- Suggests corrective measures and steps to be taken to prevent such deaths in future and to improve quality of care at the hospital (Annexure V- Template1).
  a. Actions related to infrastructure strengthening.
  b. Actions required to augment human resource availability.
  c. Actions required to strengthen the protocols and competence of staff.
  d. Supplies and equipments.
  e. Demand side interventions to address first and second delay.
  f. Management interventions.
  g. Other interventions based on the findings of MDR.
- Suggests steps to be taken at the District level and State level.
- Follow up the actions taken for the corrective measures suggested in the last meeting.
- Send minutes of the meeting to the DNO along with the case summary prepared.
- Circulate the minutes of the last meeting to all the members of committee before the meeting day.

2. District Maternal Death Review Committee

Members of the committee:

- Chief Medical Officer (CMO)/Civil Surgeon (CS) (Chairman)
- DNO (Member Secretary)
- Additional Chief Medical Officer (ACMO)
- FNOs of all notified facilities
- BMOs of all blocks
- Anesthetist
- Nodal Officer of blood bank/blood storage center
- Senior nurse nominated by the CMO/CS/DPHNO

- MO's who had attended the case in the facility (special invitees)
- Social scientist (nominated by CMO)

Frequency: Once in a month

The district level nodal officer will fix the date for the meeting after consultation with CMO and other members and communicate the same to all at least one week before to ensure the presence of members.

ToR for the committee:

- Committee will review all the maternal death reports received in the last month.
- Suggests corrective measures and steps to be taken to improve quality of care at various level of service provision (Annexure V- Template 2). The corrective measures will be grouped into 3 categories with time lines:
  - **Corrective measures at the community level**
  - **Corrective measures needed at the facility level**
  - **Corrective measures for which state support is needed**
- Identify specific activities, persons responsible for implementation and supervision and timelines for each activity and importantly expected measurable outputs from each activity.
- Indicate the level of efforts and resources required for each activity such as human resource and funding.
- Follow up the actions taken for the corrective measures suggested in the last meeting.
- Select the cases to be presented for the review at District Collector level.
- Record minutes of the meeting and sends minutes to the SNO along with the case summary prepared.
- Also circulate the minutes of the meeting to all the members of committee.

3. MDR review meetings with the District Collector

In this meeting, the following members should be invited:

Chair: District Collector/Commissioner, MC/CEO, Zilla Parishad/Deputy Commissioner

- CMO
- DNO

- FNOs
- Representatives from FOGSI
- Representatives from IMA
- PRIs/Ward members of areas of selected maternal death cases

The close relatives/friends who were with the deceased mother during the time would be invited for the meeting, as well as the service providers who had attended to these women if admitted to a facility. This mechanism will ensure direct interaction of grieved relatives of the mother with the health care professionals and providers in presence of the administrative head of the district this operationalizes an accountability framework which will prevent maternal deaths from similar causes/delays identified.

Frequency: *Quarterly*

CMO will fix the meeting after consultation with District Collector and communicate the date to all the members and other relevant people who are required to be present in the meeting. Relatives of the deceased mother should be communicated well before time to ensure their presence in the meeting.

Process of the meeting

- Cases selected for DC review will be presented by CMO.
- The case history of each of the selected maternal deaths will be heard separately.
- The relatives of the deceased will first narrate the events leading to the death of the mother in front of the DC followed by the service providers who attended the deceased mother;
- After the deposition and getting clarifications from the relatives they will be sent back.
- Detailed discussion will be held to find out the various delays happened in each case- the decision making at the family level, delays in getting the transport and at institutional level would be discussed in detail.
- The outcome of the meeting will be recorded as minutes and corrective actions will be listed with time line to prevent similar delays in future (Annexure V- Template 3).
- Minutes of the meeting will be circulated to the concerned stakeholders like CMO/CS, Dept. of Zilla Panchayat, Dept. having secondary level care institutions (e.g. Railways, ESIC) in the district.

Outcome

- To institute measures to prevent maternal deaths due to similar reasons in the district in future.
- To sensitize the service providers to improve their accountability.
- To find out the system gaps including the facility level gaps to take appropriate corrective measures with time-line.
- To allocate funds from the district health society for the interventions.
- Take necessary actions both with health and other allied departments and review action taken.
- Liaise with the state on the recommendation made by the District level committees.

4. State level Monitoring and Review Committee for MDR (SMRC- MDR)

This committee will be the sub-committee of State level Task Force. This committee will be chaired by Mission Director. Mandate of the committee will be to review the MDR process and initiatives undertaken.

Members:

- Mission Director (Chairman)
- SNO (Member Secretary)
- Representatives of DPH/DHS, SIHFW, SHSRC
- Director- Maternal Health/RCH
- SPM
- SNO Quality Assurance
- SNO Blood Bank
- SNO Nursing
- DNOs of all districts
- Divisional Nodal Officers
- Representative of FOGSI
- Public health experts from civil society organisations of good standing and repute (2)

Frequency of meeting: Quarterly

Process of meeting and responsibilities:

- SNO will present the reports submitted by the districts.
- Review the sample of cases selected randomly to review the process of MDR.
- Review the recommendations of confidential review committee and give feedback.
- Give recommendations and feedback to the districts for the presented cases and corrective measures to be taken by the districts.
- Identify policy decisions or measures to be taken at state level.
- Share operational issues/feedback with State Level Task Force and National Level Monitoring and Review Committee for MDR.
- Share the minutes of the meeting with all concerned stakeholders.
- Prepare the State annual report on MDR and disseminate the same.

5. State Level Taskforce (SLF)

The State level task force will be headed by Principal Secretary, Health and Family Welfare. Mission Director (SHS), Director (Public Health), Director (SIHFW), Director (SHSRC), SNO for MDR, SNO for Blood Bank, SNO for Nursing, Senior Obstetrician of the Medical College Hospital, Head/ Chairperson of State level CR committee, representatives from FOGSI and any other expert members nominated by Government.

Frequency: Yearly

Terms of Reference:

- The State Level Task Force will meet under the chairmanship of Principal Secretary Health and Family Welfare to review implementation of MDR in the State.
- Discuss the action points generated by MDR process and make recommendations to Government for policy and strategy formulations.
- Share operational issues /feedback with GOI.

6. National Level Maternal Death Surveillance & Response Committee (NMDSRC)

Terms of Reference:

- To review the State level reports of the high MMR States for policy directions and to advocate for appropriate policy changes at the State/ National Level.

- To facilitate the bridging of gaps identified in States/ UTs during the field visits.
- To facilitate sharing of best practices among States.
- To review the Maternal Death Surveillance and Response System in the country and to publish a report on the same on a yearly basis.
- To undertake field visits to monitor the implementation of Maternal Death Surveillance and Response Systems in States/ UTs in States having high MMR at least once every quarter.
- To undertake annual field visits to monitor the implementation of Maternal Death Surveillance and Response Systems in non-high burden States.
- To analyze the findings of the field visits.
- To attend at least one State level Task force meeting in high burden States in a year.
- To identify gaps and prepare an action plan to bridge those gaps (short term & long term).
- To facilitate the bridging of gaps by involving State Lead Partners for RMNCH+A.
- Hand hold the high MMR States in preparing annual reports (the State Lead Partner would be providing all support for preparing the annual State MDSR report).

Members of committee:

- Joint Secretary, RCH (Chairperson)
- Deputy Commissioner- MH (National Nodal Officer)
- Deputy Commissioners/ representatives of various divisions in the Ministry of Health & Family Welfare/ representatives from other Convergent Ministries and representatives from various organizations.

Frequency of meeting: Six monthly

Process of meeting and responsibilities:

- National Nodal officer for MDSR will present the status of all the states regarding implementation of MDSR.
- Discuss major issues/hurdles being faced by states in implementing MDSR and give feedback and provide corrective measures.
- Identify issues requiring consideration at national level and suggest possible solutions.

- Prepare National level MDSR Report and disseminate the same.

Nodal Persons for implementing MDR at various levels:

1. Block Medical Officer/Health Officer-In-charge of a Zonal area/equivalent Urban Officer

The Block Medical Officer (BMO) will be designated as nodal officer for implementing MDR in their block by an office order by the District CMO. The BMO will be responsible for line listing of all the maternal deaths, getting deaths investigated and submit the reports to district. In urban area, Health Officer In-charge of his/her zonal area will be responsible for the implementation of maternal death review process.

Responsibilities of the BMO/ Health Officer-In-charge of Zonal area/ equivalent Urban Officer:

- Ensure reporting of all women deaths of age 15-49yrs occurring in the block/zone/urban area.
- Maintain the line list of all women deaths (Form No. 5) and maternal deaths (Form No. 4).
- Constitute and supervise the investigation team for conducting verbal autopsy.
- Assigns interview team to investigate and fill the Format for Verbal Autopsy (Form 2).
- Prepare Case summary (Form 3) for all the maternal deaths in consultation with the team which investigated and send it to the DNO along with the filled in investigation format (Form 2), within a month of the date of notification. *See Annexure II for cause of death.*
- Scrutinize completed forms to ensure completion and accuracy.
- Conduct monthly meetings to review the whole process and take corrective actions at his/her level. Reporting system should be reviewed even if there are no cases in his block.
- Ensure that all ASHAs, ANM and investigation team in the block are trained in community based maternal death review.
- Ensure timely payment of incentive to the primary informant (only ASHA is eligible) and investigating team.
- Ensure the data entry and analysis at the block level (including HMIS).

2. Facility Nodal Officer (FNO)

Facility Nodal Officer will be designated by the CMO of the district. FNO would be head of department of Obstetrics &Gynaecology in the medical college/ medical superintendent of district hospital/MOIC of the notified facility. FNO will be responsible for detailed investigation of all maternal deaths occurring in the facility, review of all maternal deaths and timely reporting to the district.

Responsibilities of FNO:

- Nodal persons for organizing the FBMDR at the hospital.
- Inform the DNO on the occurrence of maternal death in the hospital within 24 hours and maintain the line list (Form 4).
- Reviews the FBMDR formats (Form 1) for its completeness, filled by the medical officer and approve it.
- Ensure referral slips and case sheets from referral institutions if the mother has been brought dead to the notified institution.
- Prepare the case summary (Form 3) and send it to the DNO along with a copy of the case sheet.
- Will maintain the minutes of the facility based maternal death review meeting and take appropriate corrective measures on the recommendations of the meeting.
- Will attend the district level maternal death review conducted by CMO and also the Review conducted by the District (DC) and follow up appropriate measures.

3. District Nodal Officer (DNO)

At district level, ACMO/RCHO will be designated as District Nodal Officer. DNO is responsible for taking up the review process of all the maternal deaths reported by block and notified facilities and follow up at the district level. The CMO has to provide necessary support to the District Nodal Officer for taking up the process.

Responsibilities of DNO:

- Supervise MDR implementation in the district - both at facility and community level.
- Receive notification of all suspected maternal deaths from the BMO and maternal deaths from the nodal officer of the facilities (by phone and in Form 6).

- Receive investigation format and case summary of CBMDR from the blocks and FBMDR from the facilities.
- Ensure the community based investigation for all the maternal deaths reported by facilities.
- Create a combined Line-listing of Maternal deaths (Form4) based on the case summary formats from both facility and community from all blocks/urban areas.
- Prepare a compiled case summary for deaths investigated by both CBMDR and FBMDR.
- Coordinate the District MDR committee meeting and the review meeting with the District Collector (DC).
- Arrange to bring two relatives of the deceased to attend the review meeting with DC. Only relatives who were with the mother during the treatment of complications may be invited for the meeting.
- Prepare the minutes of the District MDR committee meeting and the meeting with the DC.
- Follow up the recommendations/corrective actions at district, block and facility level.
- Share the recommendations/corrective actions taken with state.
- Represent the district in state level review meetings.
- Ensure payment of Rs. 200/- per person to the relative of the deceased person who attends the DCs meeting (subject to a maximum of 2 persons only).
- Ensure that the training of the block level investigation team and the BMO have taken place.
- Ensure the data entry and analysis at the district level (including HMIS).
- Orientation to the Medical Officers of the hospitals on use of FBMDR format.
- Ensure availability of funds for payment of incentives.
- Facilitate the printing of formats by the District Health Society (DHS) (forms used at all levels) and ensure its availability at blocks and facilities.

4. State Nodal Officer (SNO):

At state level, officer in charge of Maternal Health would be designated as State Nodal Officer for MDR in the state. SNO will be responsible for

implementing MDR in the State, conducting State Level Monitoring and Review Committee meeting, Confidential Review meeting and State Task Force meeting and preparing annual report for MDR.

Responsibilities of SNO:

- Support the state level task force.
- Organize the state level orientation meeting and the training workshop.
- Ensure training of key stakeholders at district, block and facility level.
- Collect relevant data on maternal death from the district and carry out detailed analysis.
- Nominate the district level nodal officers.
- Facilitate the preparation of an annual maternal death report for the state and organize a dissemination meeting to sensitize the various service providers and managers. The annual report may contain typical maternal death case studies which may be used during the training of medical and paramedical functionaries.

SNO will be the nodal person for confidential review also. S/he will conduct and chair the meeting for confidential review. A senior obstetrician nominated by the State would team up with SNO for conduct / coordination of CR. He / she would co-chair the meeting.

Responsibilities of SNO as Nodal Officer -CR:

- Constitute the committee for confidential review and nominate the members from government and private medical colleges in the state.
- Select the cases for CR from the line list.
- Communicate the selected cases to DNO and FNO of the respective district and facility and get the FBMDR forms and other relevant documents.
- Distribute the cases to all the members as per their specialization and case requirements.
- Ensure the anonymity of the cases before distributing to the members of the committee for review.
- Fix the date for meeting and communicate to all the members well before time to ensure the maximum presence.
- Maintain the records of the CR which include line list of selected cases for every quarter, reports of cases and minutes of the meeting etc.

ANNEXURE IV

Supportive Supervision Checklist for Maternal Death Reviews

State/ District Level Checklist

Cumulative number of Maternal deaths reported during the current financial year	High Delivery Facilities (facilities conducting more than 1000 deliveries/ year) (including medical colleges/ other institutions)	Low Delivery Health Facilities (facilities conducting less than 1000 deliveries/ year)	Home	Transit	Total

Indicator	Number/ Percentage/ Yes/ No/ Other Observations	Remarks	Pointers
% of maternal deaths reported against estimated = Cumulative number of Maternal deaths reported during the current financial year * 100/ Number of Estimated Maternal Deaths			
Have details of expected number of Maternal Deaths been shared with the District level authorities?			
Do 102/108/ other ambulances report deaths occurring during transit			
How are deaths of migrant population reported? (Eg. Death of mother from neighbouring district/ State)			The death must be included in the report of the district in which the death has occurred

Indicator	Number/ Percentage/ Yes/ No/ Other Observations		Remarks	Pointers
Number of deaths for which Facility based Maternal Death Reviews (FBMDR) have been conducted				FBMDR is to be conducted for deaths occurring in High delivery facilities. i.e. facilities conducting more than 1000 deliveries/ year
Number of deaths for which Community based Maternal Death Reviews (CBMDR) have been conducted				CBMDR is to be conducted for all maternal deaths (even for those occurring in high delivery facilities)
How are deaths of migrant population reviewed? (Eg. Death of mother from neighbouring district/ State)				FBMDR has to be conducted in the district where the death has occurred. For CBMDR: • If the woman is a resident of another district/ State then the CBMDR must be conducted in the district/ block that she is a resident of. • However if the woman is a visitor (if she was staying in her mother house during the delivery) and has been staying in the district where the death has occurred for the duration of the pregnancy, the CBMDR must be conducted in the block/ district where the death has occurred.
Are filled FBMDR & CBMDR forms available? Scrutinize filled up forms to ensure the form is complete and filled correctly.				To be verified at district level
% of high delivery facilities where FBMDR Committees are in place				High delivery facilities are facilities conducting more than 1000 deliveries/ year
Number and categories of staff trained on maternal death reviews	Category	Number		To be ascertained at State and District levels

Indicator	Number/ Percentage/ Yes/ No/ Other Observations	Remarks	Pointers
Number of Maternal deaths reviewed by District MDR Committee of CMO			All deaths are to be reviewed by the District MDR Committee
Number of Maternal deaths reviewed by the District Magistrate			District Magistrate will have the option of reviewing a sample of these deaths, which will be representative of deaths occurring at home, at facilities and in transit.
Proportion of meeting of MDR Committee held out of the expected no. of meetings for the year: No. of meeting held / No. of expected meeting x 100 (%)			State Level Task Force will meet once in 6 months and Atleast one meeting / district / month/
Are minutes of the MDR meetings available?			To be verified at State & district level
Has the confidential review committee been set up? Does it meet regularly? Action taken based on the recommendations of the committee			Confidential Review Committee is expected to meet every month
Causes of MDs (Number and percentage) for the financial year (eg. Haemorrhage, sepsis, abortion, obstructed labour, hypertensive disorders, pulmonary embolism, malaria, others etc.)			
Specify/list major reasons which are identified as " Others"			
Has an annual report been prepared by the State level Task force and has there been any formal dissemination of the report?			At district level, check whether the district has received a copy of the said report.
Have written recommendations been issued to the districts/ blocks?			

Indicator	Number/ Percentage/ Yes/ No/ Other Observations	Remarks	Pointers
Have recommendations of State/ District MDR committees been acted on? If yes, share examples. If not, what is the mechanism for follow up of recommendations?			Action taken report
Number of ASHAs who have been given incentives for reporting of maternal deaths			If the State has a software/ compilation of ASHA incentives, this data can be ascertained from the same. An ASHA is eligible for incentive of Rs. 200 for maternal deaths

Block Level Checklist

Indicator	Number		Remarks	Pointers
Cumulative number of Maternal deaths reported during the current financial year				
Number of deaths for which Community based Maternal Death Reviews (CBMDR) have been conducted				CBMDR is to be conducted for all maternal deaths (even for those occurring in high delivery facilities)
Are filled CBMDR forms available? Scrutinize filled up forms to ensure the form is complete and filled correctly.				To be verified at block level
Is line listing of maternal deaths available at the block level?				
Is the Block Nodal Officer aware that he/ she must report suspected maternal deaths to the district nodal officer by telephone within 24 hours?	Yes/ No			
Number and categories of staff trained on maternal death reviews	Category	Number		To be ascertained at State and District levels
Number of ASHAs who have been given incentives for reporting of maternal deaths				An ASHA is eligible for incentive of Rs. 200 for maternal deaths
Does the investigation team receive Rs. 150/- per person for conducting the CBMDR (subject to a maximum of 3 persons)				
Has the BMO received any feedback on MDR from the District MDR Committees/ District Magistrate? Has the BMO taken any corrective actions based on the feedback? Have district authorities conducted a follow up of the action taken on the recommendations				

Facility Level Checklist – (for High delivery facilities. i.e. facilities conducting more than 1000 deliveries/ year)

Indicator	Number		Remarks	Pointers
Name of the Facility Nodal Officer				
Cumulative number of Maternal deaths reported during the current financial year				
Number of deaths for which Facility based Maternal Death Reviews (FBMDR) have been conducted				FBMDR is to be conducted for deaths occurring in High delivery facilities. i.e. facilities conducting more than 1000 deliveries/ year.
Are filled FBMDR forms available? Scrutinize filled up forms to ensure the form is complete and filled correctly.				To be verified at block level
Is line listing of maternal deaths available at the facility level?				
Is the Facility Nodal Officer aware that he/ she must report suspected maternal deaths to the district nodal officer by telephone within 24 hours?	Yes/ No			
Number and categories of staff trained on maternal death reviews	Category	Number		To be ascertained at State and District levels
Have recommendations of FBMDR committee been acted on? If yes, share examples. If not, what is the mechanism for follow up of recommendations?				
Has the FNO received any feedback on MDR from the District MDR Committees/ District Magistrate/ State Level Task Force/ Confidential Review Committee? Has the FNO/ BMO taken any corrective actions based on the feedback? Have district authorities conducted a follow up of the action taken on the recommendations				

ANNEXURE V

Template -1

Minutes of the Meeting of Facility Based Maternal Death Review Committee

Month:_____ Year:_____

Name of the Facility:_____ District:_____

Date of Conduct of Facility MDR Committee Meeting: _____/_____/_____

Number of maternal deaths in present month:_____ Reviewed: _____

Cumulative Maternal Deaths from April: _____Reviewed: _____

Review of recommendations of previous meeting

Sr. No	Recommendations of previous meeting	Responsible person(s)	Action taken
1			
2			

Review of maternal deaths of present month

Sr. No	Issue Identified	Recommendations	Responsible person(s) with time line
Case 1			
Case 2			

List of Committee members present

Sr. No	Name	Designation	Signature

Signature of FNO:

Date:

Note: To be prepared by FNO and submitted to DNO.

Template - 2

Minutes of the Meeting of District Maternal Death Review Committee

Month: _____ Year:_____

Name of the District: _____

Date of Conduct of District MDR Committee Meeting: _____/_____/_____

Number of maternal deaths in present month (Facility/community):___ Reviewed: _____

Cumulative Maternal Deaths from April: _____Reviewed: _____

Review of recommendations of previous meeting

_____

Review of maternal deaths of present month

a) Corrective measures needed at community level:

_____

_____

b) Corrective measures needed at facility level:

_____

_____

c) Corrective measures requiring state support:

_____

_____

List of Committee members present

Sr. No	Name	Designation	Signature
1			
2			

Signature of DNO:

Date:

Template - 3

Minutes of the Maternal Death Review under District Collector/ Magistrate

Name of the District:_____

Date of Conduct of District MDR Committee Meeting: _____/_____/_____

Number of maternal deaths in present month:_____ Reviewed: _____

Cumulative Maternal Deaths from April: _____Reviewed: _____

Review of recommendations of previous meeting

Sr. No	Recommendations of previous meeting	Responsible person(s)	Action taken
1			
2			

Review of maternal deaths of present month

Sr. No	Issue Identified	Recommendations	Responsible person(s) with time line
Case 1: Summary		***Indicate level of action**	
Case 2: Summary		***Indicate level of action**	

Family of deceased who narrated the event to DM/DC at MDR committee

Sr. No	Name of deceased	Family Members Name	Relationship with the deceased
1			
2			
3			
4			

List of Committee members present

Sr. No	Name	Designation	Signature
1			
2			

Signature of DNO:

Date:

Community/Facility/District/State level

ANNEXURE VI

Template for Maternal Death Review

Annual Analysis Report

Abstract Report of MDR Analysis

Parameter	Year: (previous)	Year : (current)	Remarks
No. of maternal deaths reported at High Delivery Facilities (facilities conducting more than 1000 deliveries/ year)			
No. of maternal deaths reported at Low Delivery Facilities (facilities conducting less than 1000 deliveries/ month)			
No. of Maternal Deaths at Home			
No. of Maternal Deaths in Transit			
Total Number of Maternal Deaths			
% of maternal deaths reported against estimated = Cumulative number of Maternal deaths reported during the current financial year * 100/ Number of Estimated Maternal Deaths			
Number of deaths for which Facility based Maternal Death Reviews (FBMDR) have been conducted (Percentage in bracket)			FBMDR is to be conducted for deaths occurring in High delivery facilities. i.e. facilities conducting more than 1000 deliveries/ year.
Number of deaths for which Community based Maternal Death Reviews (CBMDR) have been conducted			CBMDR is to be conducted for all maternal deaths (even for those occurring in high delivery facilities)

Parameter	Year: (previous)	Year : (current)	Remarks
Number of Maternal deaths reviewed by District MDR Committee of CMO			All deaths are to be reviewed by the District MDR Committee
Number of Maternal deaths reviewed by the District Collector			District Collector will have the option of reviewing a sample of these deaths, which will be representative of deaths occurring at home, at facilities and in transit.
Proportion of meeting of District MDR Committee held out of the expected no. of meetings for the year: No. of meeting held / No. of expected meeting x 100 (%)			Atleast one meeting / district / month
Proportion of meeting of State Level Task Force held out of the expected no. of meetings for the year: No. of meeting held / No. of expected meeting x 100 (%)			State Level Task Force will meet once in 6 months
Major causes of MDs (Also indicate other major causes of Maternal Deaths)			
Districts Reporting Maternal Deaths more than State Avg.			
Districts reporting Maternal Deaths less than State Avg.			
Number of Deaths for which Confidential Reviews have been conducted			
Number of Meetings of Confidential Review Committee			Confidential Review Committee is mandated to meet once every quarter

a) A tabulation on the Number of Maternal Deaths Reported by Districts – Year (as applicable)

b) Following Table is to be prepared only if District/ Region wise MMR Estimates are available: Year (as applicable)

Name of District	Number of Estimated Maternal Deaths	Number of Maternal Deaths Reported	% Reporting

c) **A tabulation on District Reporting Lower Number of Deaths as Compared to Previous Year (as applicable)**

d) **A Chart on % of Maternal Deaths (occurring in High Case Load Facilities) where FBMDR have been conducted, Year (as applicable)**

e) **A Chart on % of Maternal Deaths where CBMDR have been conducted, Year (as applicable)**

f) **A Chart on % of Maternal Deaths Reviewed by the CMO, Year (as applicable)**

g) **A Chart on % of Maternal Deaths Reviewed by the District Collector, Year (as applicable)**

h) **A Chart on Number of meeting of District MDR Committee, Year (as applicable)**

i) **A Pie Chart on Causes of Maternal Deaths, Year (as applicable)**

j) **A Pie Chart on Causes of Maternal Deaths – Comparison Between previous and current year**

k) **A Pie – Chart on Classification of Other Causes of Maternal Deaths, Year (specify)**

l) **A Pie Chart on Anemia as associated Cause of Maternal Death, Year (specify)**

m) **Number of ASHAs who have been given incentives for reporting Maternal Deaths, Year (current year)**

Qualitative Inputs:

1. **Have recommendations of State/ District MDR committees been acted on? If yes, share district- wise examples?**

Name of State/ District	Key Recommendations of MDR Committee	Key Action Taken

2. **Have recommendations of Confidential Review Committees been acted on? If yes, share district- wise examples?**

Name of State/ District	Key Recommendations of MDR Committee	Key Action Taken

3. **State the mechanism via which 102/108/ other ambulances report deaths occurring during transit.**

4. **State the Mechanism for reporting of death of migrant population. (E.g. Death of mother from neighboring district/ State) –** (The death must be included in the report of the district in which the death has occurred)

5. **State the mechanism for review of deaths of migrant population. (E.g. Death of mother from neighboring district/ State)**

ANNEXURE VII

Budget

Budget Head	Units	Unit Cost ₹	Duration *Days*	Sub-total ₹	Total cost ₹
National Level					
A. Master Trainer:					
1. Travel (Air fare)	4	15,000	-	60,000	
2. Accomodation	4	5,000	2	40,000	
3. Honararium	4	1,500	2	12,000	
B. Trainee:					
1. Travel	As per state Norms				
2. Accomodation					
3. DA					
C. Lunch, Tea, Snacks	40	400	2	32,000	**2,16,000**
D. Vehicle Hiring *(6-8 Seater)*	2	2,000	1	4,000	
Mini Bus	2	10,000	1	20,000	
E. Venue Hiring & AV Aids *(If required)*	1	20,000	2	40,000	
F. Incidental Charges *Photocopy, job aids, flip charts etc.*	40	200	-	8,000	
State Level					
A. Master Trainer:	4				
1. Travel (Air fare)	2*	15,000	-	30,000	
2. Accomodation	2*	4,000	2	16,000	
3. Honararium	4	1,500	2	12,000	
B. Trainee:					
1. Travel	35	2000	-	70,000	
2. Accomodation	As per state Norms				
3. DA					
C. Lunch, Tea, Snacks	40	350	2	28,000	**2,04,000**
D. Vehicle Hiring *(6-8 Seater)*	2	2,000	1	4,000	
Mini Bus	2	10,000	1	20,000	
E. Venue Hiring & AV Aids *(If required)*	1	10,000	2	20,000	
F. Incidental Charges	40	100	-	4,000	

District Level					
A. Master Trainer					
1. Travel (Road Transport)	4**	2,500	2	20,000	
2. Accomodation	4	3,000	2	24,000	
3. Honararium	4	1,500	2	12,000	
B. Trainee					
1. Travel	35	1,000	-	35,000	
2. Accomodation	As per the State Norms				
3. DA					
C. Lunch, Tea, Snacks	40	250	2	20,000	
D. Vehicle Hiring *(6-8 Seater)*	2	2,000	1	4,000	**1,39,000**
Mini Bus	2	10,000	1	20,000	
E. Venue Hiring & AV Aids *(If required)*	1	5,000	2	10,000	
F. Incidental Charges	40	100	-	4,000	

Note:

1. Trainer's TA, DA and accommodation at all levels shall be borne by the state
2. Approximate cost estimation for National TOTs
   a. Both way air fare → ₹ 15000
   b. Stay for 2 Days → ₹ 10,000
   c. Extra amount per participant that needs to be added → ₹ 25,000

* Four Master Trainers but only 2 are coming from Outstation, hence budget includes 2

** Two persons per vehicle

* Revised RCH Training financial norms have been followed to the extent possible while determining above rates

* Training of ASHAs to be undertaken by MOs & ASHA facilitators during monthly meeting of ASHAs

Budget for Incentives/ Transport Support			
Head	**Target**	**Unit Cost**	**Total Estimated Cost**
ASHA Incentives per district	Estimated number of maternal deaths per annum = 'A'	@ Rs. 200	Rs. 200 X A
Honorarium for Verbal Autopsy (VA) investigation team per district	Estimated number of maternal deaths per annum = 'A'	Rs.150 per person to a maximum of three persons	Rs. 450 X A
Travel Expenses for Verbal Autopsy Team	Estimated number of maternal deaths per annum = 'A'	Rs. 200/ team	Rs. 200 X A
Reimbursement of travel expenses (as per actual) 2 relatives per deceased mother and maximum of 3 cases at district level in the DC review meeting		Incentive of Rs.100 each for two persons of the deceased family	Rs. 100*2 Relatives* 3 Cases

The State may also budget for contingency money of not exceeding Rs. 50,000 per year at State level for Meetings of Confidential Enquiry/ other MDR related meetings and Rs. 10,000 per year per district for the conduct of MDR review meetings by the DC & CMO. This amount is to be utilized for both CDR & MDR review processes put together since the same committee is reviewing both.

ANNEXURE 8

Interviewer Reference Guide

The purpose of this reference guide is to provide the block MO and others who will interview women using the verbal autopsy questionnaire with the information they need to conduct systematic, reliable and valid interviews for investigating maternal deaths. The manual describes the roles and responsibilities of MDR interviewers (you), and provides clarity on approach to bereaved household. Interviewers are to use this reference guide during their training and, as needed, in the course of their work as MDR interviewers.

Informed consent

All potential respondents have the right to determine for themselves whether or not they will participate in the interview. All respondents must be at least 18 years old, to help ensure that they are capable of making this decision. Part of the job as an interviewer is to administer "informed consent" to all potential respondents. This means that you must fully inform them about the MDR and the interview process before asking any questions; and that after learning all the facts they consent to be interviewed. Respondent(s) must fully understand the purpose and expected duration of the interview, the risks and benefits of being interviewed, and their right to not answer any or all questions. All these and other facts are described in a "consent form," which you must read and explain to the respondent(s) before conducting the interview. Each respondent must make their mark on the consent form, which you will then sign to testify that the person consented to be interviewed. Complete a separate consent form for each respondent. The consent form is at the end of this interview guide.

Confidentiality

It is critical that all information obtained from the MDR interviews remains strictly confidential. You are not permitted to discuss the findings from an interview, gossip about it, or show your records to anyone other than your supervisor. Make all entries on the questionnaires yourself. Do not leave your verbal autopsy forms lying around where unauthorized persons may

have access to them. Maintaining confidentiality is an ethical responsibility that must be ensured. It is necessary to protect the respondents from any repercussions that might occur as a result of the information they have provided. It is also necessary to maintain the trust of the community and assure that people will be willing to talk openly about the maternal deaths.

Falsification of data

Your job as an interviewer will not always be easy. There may be times when you have to visit a household more than once to meet with the best respondent. The interview will often take one hour or longer to complete. Many of the questions seek sensitive information that may appear to reflect badly on care provided to women by their families and sometimes by the health system. All these conditions can lead to temptations to falsify data in order to quickly complete the interview and not record painful facts. However, you must never falsify actual data. The whole purpose of the MDR process is to collect and share information that can be used to prevent maternal deaths. This will be possible only if the information collected is truthful. It is your responsibility to assure that you maintain this standard.

Approach to the household and selecting the respondent(s)

The interview is best conducted with the one or a few persons who were with the woman during her fatal illness and death. However, when approaching a household in a rural village you are likely to be met by a crowd of interested persons. Once inside the yard or the house several neighbours and family members who know very little about the woman's illness may want to participate in the interview or just observe. You must manage this situation effectively and sensitively in order to ensure that you interview the most knowledgeable person(s) and that the others are not offended. Consider working with a local respected person (e.g., schoolteacher, village leader) to pre-arrange the meeting and/or to accompany the interview team to the household. In order to have respondent's cooperation and obtain complete and accurate data, you must first gain the trust and confidence of the household. You can do this by making a good impression and conducting yourself in a professional and friendly manner.

If you are knowledgeable about the project and your responsibilities, respondents will be more likely to trust you and participate. You should be able to answer any questions that household members may ask about

the purpose of the project and how the information they share will be used. Emphasize the confidentiality of the information. You must assure participants that their responses will be held in strictest confidence. No information will ever be released to anyone outside the project in a way that reveals who provided the information. If a household member or respondent hesitates to cooperate because of confidentiality concerns, you should fully explain how confidentiality will be maintained. Explain that no names will ever be revealed and that the information from all interviews will be combined in a report for district/state and national use.

Introducing yourself at the household

This is a very sensitive time for the family so it is important that you be polite and sensitive when introducing yourself. Be sure to state the purpose and confidential nature of the interview—these are key elements for gaining the family's cooperation. An example is provided below:

My name is [say your name]. I am a nurse/_____ in the _____ center. In order to improve health care in our district, we are collecting information on recent deaths of women in this area. I have been informed that a woman in your household died. I am very sorry to hear this. Please accept my sympathy. I would like to talk to the person in your house who took care of [say the woman's name] during her illness before death. I assure you that any information you or your family provide will be kept confidential.

How to select the best respondent

The respondent is the main person who will provide information about the deceased. S/he should be the one who was with the woman during her illness. Usually, the woman's husband, mother, sister or mother-in-law is the preferred respondent for a maternal death. In some cases more than one person will have taken care of the woman or been present during different stages of the illness. For example, the woman's mother may have attended the birth at home, while the woman's husband may have accompanied her to the hospital after the birth.

If the person(s) who appear(s) to be the best respondent is not available when you first visit the household, try to make an appointment to return when they will be at home. If no one is at home when you visit the house try to ask a neighbour when you might be able to find family members at home. Then leave a message indicating that you plan to return at this time.

In either case, make a note of this return date in your notebook. Sometimes the best respondent(s) may have moved to another village. In this case, you should discuss the situation with your supervisor, who will decide if you should travel to the other village or if help needs to be sought from the MDR team in another block.

How to handle multiple respondents

As discussed above, there may be instances when you need more than one respondent to get the full story of the woman's illness. If you interview these persons together it should be clear as to who is the respondent for which stage of the illness. More than one person answering the same question can lead to confusion and greatly lengthen the interview. Some persons who were not with the woman during her illness may insist on attending the interview or even on being the respondent. For example the woman's husband or mother might not let the sister talk to you alone, even if she took care of the woman during the illness. Or, the respondent may have children to care for who distract her attention from the interview. Lastly, having a visitor at the household can attract many other unwanted people to observe the interview. In these cases it is important to stress to the respondent the importance of confidentiality and privacy. You can try: Suggest moving to a different location, Ask some of the bystanders to leave and come back once the interview is finished, Reschedule a time to come back and finish the interview etc.

How to approach the respondent

Effective communication with the respondent is of key importance in obtaining high quality information. As an interviewer, you will interact with bereaved relatives of women who have recently died. In addition to mastering basic communication techniques, you need to be sensitive to the emotions of these bereaved persons and know how to handle difficult situations that might arise during the interview.

Always have a positive approach. Do not use phrases such as: "Are you too busy?" or "Can you spare an hour?" Such questions invite refusal before you start. Instead, begin by restating condolences for the death and say: "I would like to ask you a few questions." or "I would like to talk with you for a few minutes." Just as when approaching the household, state the purpose of the interview and its importance for helping the community; and stress

the confidential nature of the interview. However, if a respondent insists that s/he does not wish to talk to you, do not argue. Instead, ask her/him for another day or time when s/he would be available to participate in the interview. Answer any questions the respondent asks frankly and to the best of your knowledge.

Basic communication techniques

Sit at the same level as the respondent(s) and maintain eye contact. Always look at the respondent when administering the interview. Remember, this is a difficult time for the respondent and they must feel comfortable with you in order to complete the interview. Build rapport with the respondent(s) before discussing the case of the deceased. For example, if culturally appropriate, you may ask the respondent what work s/he does, or ask about her/his family. Encourage speech, listen actively, do not rush, nod your head etc. These are ways of showing the respondent that you are interested in what s/he is saying, and will encourage her/him to continue. Be non-judgmental. Some of the respondent's answers may make you feel that s/he contributed to the woman's death, for example, by not taking her for health care quickly enough. However, you must not transmit this message in any way because it will discourage the respondent from providing truthful answers. The success of the project depends on all of us taking this non-blaming approach. The idea is for us and the community to learn what we can do together to prevent maternal deaths. This can only be accomplished by working together without blaming individuals for the deaths. If you encounter any language difficulties, for example, if you anticipate that a respondent speaks a different dialect than you do, talk to your supervisor beforehand.

Bereaved respondents and sensitivity issues

Persons who are mourning the death of a loved one might have several emotional responses that could interfere with the interview. These might include the following: Becoming sad or upset, Getting offended or angry, Being wary or suspicious of the entire interview or certain questions, Not wanting to answer certain questions for unstated reasons, Sadness, tearfulness etc. First, be sure to express your sympathy and condolences for the respondent's loss before starting the interview. It may also help respondents to know that the health program and community will use the MDR data to help improve care for other women. If a respondent begins to cry or have great difficulty in answering questions because s/he is overcome with emotion, you should

pause and see if they recover. Acknowledge how difficult it must be to answer the questions, give the respondent time to regain their composure, and ask if s/he can continue at this time. If the respondent chooses not to continue, attempt to reschedule the interview.

A respondent may be angry at the health program if s/he feels that an individual health worker or the health program in some way contributed to the death. The respondent might direct this anger at you if s/he sees you as a representative of the health program. Another possibility is that a respondent may blame a relative or neighbor for the woman's death if, for example, s/he feels that this person did not provide help that was needed. This anger could also come out during the interview. If this happens, let the person express their anger. Acknowledge that you understand their feelings. (Never state that you agree with them, just that you understand that this is their feeling.) Last, again explain that the purpose of the interviews is to learn more about the problems that lead to maternal deaths and to help to overcome these problems.

There could be instances where a respondent does not want to answer certain questions. A question may rekindle painful memories; it may be about a topic that is particularly sensitive for the respondent; the respondent may feel that they personally did not do enough to help the woman and that the answer to the question would reflect badly on them, etc. Whatever the reason, you must never demand or even ask a respondent to answer a question that they have told you they do not want to answer. As stated in the statement, respondents' participation is totally voluntary and they have the right to refuse to answer any or all questions. It should not be a problem for the interview if a respondent refuses to answer only a few questions. However, many refusals will compromise the quality of the interview. You should make a note about any reasons you think might be leading to the respondent's reluctance and discuss such cases with your supervisor.

Conducting the interview

Ask the questions slowly and clearly so that the respondent understands. Allow the respondent to think about the question before recording their answer. Note that respondents may tend to give answers that they think will please the interviewer. Do not show any surprise, approval or disapproval of the respondent's answer by the tone of your voice or facial expression. If the respondent doesn't know the answer to a question or looks uncomfortable

with the question, you can try "probing" to get an answer. This means asking other questions similar to the subject material to try and help the respondent remember certain events. For example, if the respondent cannot remember who assisted the woman with the birth in the home, you might try "probing" by asking: "Who was in the room at the time of delivery?" Use your judgment when probing. Remember, this is a very sensitive time for the respondent and we do not want to upset them further. Allow the respondent to narrate the events leading to the death of the mother in their own words. Keep prompting until the respondent says there is nothing more to say. If you make a mistake when marking your answers do not erase the information. Instead, cross it out neatly with one line so the original entry can still be read, and then mark the correct answer. Write your initials next to the correction, so anyone who later examines the completed format will know who made any changes in the answers. Corrections can be made only by the designated interviewer.

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