Federal Democratic Republic of Ethiopia

Ministry of Health

Maternal Death Surveillance and Response (MDSR) Technical Guideline

Addis Ababa, Ethiopia

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Foreword

Though pregnancy is considered to be a normal healthy state, every woman is at risk of developing a serious complication, and therefore disability and death, during pregnancy and childbirth. EDHS 2011 states that the MMR is 676 per 100,000 live births.

Counting Maternal Mortality alone cannot generate important information to avert maternal deaths. Knowing the statistics on levels of maternal mortality is important but not enough to identify what can be done to prevent such unnecessary deaths. In order to stop the deaths, the right kind of information is needed upon which to base actions.

Maternal Death Surveillance and Response (MDSR) is now promoted as a means of availing such actionable information locally and in real time making maternal deaths visible events that beg for response. By reviewing the death it helps to sensitize communities and health workers in facilities to the fact that women need not die and encourages discussion and thought about prevention. It provides information about why the woman died and suggests ways that deaths like hers can be prevented in the future. It also connects actions to results.

Maternal death audit (MDA) at community and health facility level is among the activities prioritized in HSDP IV. All sector ministries and development partners having a stake in the wellbeing of mothers and newborn will be working with Ministry of Health for operationalizing MDA.

This MDSR Technical Guidelines provide guidance for health professionals, health care planners and managers, and policy makers working in the area of maternal, newborn, and child health who strive to improve the coverage and quality of care provided. They must be willing to take action based on the MDSR findings and use the information to improve maternal health outcomes. Those with the ability to drive change should be involved in the process to ensure that the recommended changes are implemented.

The Federal Ministry of Health acknowledges all stakeholders for their contribution towards the development of this guideline.

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List of Abbreviations

BEmONC	Basic Emergency Obstetric and Newborn Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CEO	Chief Executive Officer
D&C	Dilatation &Curettage
EDHS	Ethiopian Demographic Health Survey
EPHI	Ethiopian Public Health Institute
ESOG	Ethiopian Society of Obstetrics and Gynecologists
FMHACA	Food, Medicine and Health care Administration and Control Authority of Ethiopia
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
HC	Health Center
HCW	Health Care Workers
HDP	Hypertensive Disorders of Pregnancy
HEW	Health Extension Workers
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HO	Health Officer
HPDP	Health Promotion and Disease Prevention
IEOS	Integrated Emergency Obstetrics and Surgery
IMR	Infant Mortality Rate
KPI	Key Performance Indicators
M&E	**Monitoring and Evaluation**
MDG	**Millennium Development Goals**

MDR	**Maternal Death Review**
MMR	**Maternal Mortality Rates**
MNH	**Maternal and Newborn Health**
NGO	**Non Governmental Organization**
OPD	**Out Patient Department**
OR	**Operation Room**
PHCU	**Primary Health Care Unit**
RH	**Reproductive Health**
RHB	**Regional Health Bureau**
SMH	**Safe Motherhood**
TB	**Tuberculosis**
TOR	**Terms of Reference**
TWG	**Technical Working Group**
UN	**United Nations**
VA	**Verbal Autopsy**
WRA	**Women of Reproductive Age**

Definitions

Maternal death is defined as the death of a woman while pregnant or within 42 days of the 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. (ICD-10).

Direct obstetric deaths are maternal deaths resulting from complications of the pregnancy, labor or postpartum or from interventions omissions or incorrect treatment.

Indirect obstetric deaths are maternal deaths resulting from previously existing disease or newly developed medical conditions that were aggravated by the physiologic change of pregnancy.

Late maternal death is defined as a maternal death which occurs from 42 to 365 days after the termination of pregnancy. (ICD-10)

Pregnancy related death is defined as all deaths of women during or within 42 days of termination of pregnancy regardless of cause. (ICD-10)

Maternal near-miss is defined as a woman who nearly died but survived a complication that occurred during pregnancy, child birth or within 42 days of termination of pregnancy. In practical terms, women are considered near miss cases when they survive life threatening conditions (i.e. organ dysfunction).

Severe maternal outcomes: are maternal near misses and maternal deaths.

Maternal death surveillance and response (MDSR) has been defined as "a component of the health information system, which permits the identification, the notification, the quantification, and the determination of causes and avoidability of maternal deaths, for a defined time period and geographic location, with the goal of orienting the measures necessary for its prevention".

Maternal Death Audit (MDA) is used to describe maternal death case reviews, confidential enquiries, and maternal death surveillance.

Clinical audit has a more specific meaning and recently has been described as "a quality improvement process that seeks to improve patient care and outcomes by the systematic review of care against explicit criteria and the implementation of change."

Verbal Autopsy (Community-based maternal death review) is a method of identifying the determinants of death and ascertaining the personal, family or community factors that may have contributed to the deaths in women who died outside of a medical facility. It identifies deaths that occur in the community and consists of interviewing people who are knowledgeable about the events leading to the death such as family members, neighbors and traditional birth attendants.

Maternal Death Review (Facility-based maternal deaths review) is a qualitative, in-depth investigation of the causes of and circumstances surrounding maternal deaths occurring at health facilities. Deaths are initially identified at the facility level but such reviews are also concerned with identifying the combination of factors at the facility and in the community that contributed to the death, and which ones were avoidable.

Introduction

1. Background

Pregnancy is a normal healthy state which most women aspire to at some point in their lives. Yet this normal, life affirming process carries with it serious risks of death and disability. Most maternal deaths are preventable, even where resources are limited, provided that preventive measures are taken and adequate care is available. It is generally believed that maternal mortality offers a litmus test to the status of women, their access to health care and the adequacy of the health care system to respond to their needs. The International health and development community has repeatedly called for action to address this problem and governments have formally committed themselves to doing so, notably at the International Conference on Population and Development (Cairo 1994), and the Fourth World Conference on Women (Beijing 1995) as well as their follow up conferences and more recently the Millennium Declaration in 2000. Improvement in Maternal Health is enshrined as one of the essential prerequisites for development and for poverty reduction.

According to the report on "Trends in Maternal Mortality between 1990 and 2010" released by the UN Agencies in 2012, the number of maternal deaths has reduced globally from 543,000 in 1990 to 280,000 in 2010, a decrease by 47%. Likewise, the global MMR reduced from 400/100,000 LB in 1990 to 210 by 2010.The latter averages to a 3.1% annual decrease in maternal deaths. However it is to be noted that the reduction is lower than the needed level of annual reduction (5.5%) to reach the MDG goal of reducing MMR by 75% between 1990 and 2015. Moreover, millions of women continue to needlessly suffer illness and disability due to complications associated with pregnancy and child birth.

Ethiopia, a country with more than 80 million people living in a geographically diverse environment (1,104,300 square kilometers of land area ranging from high peaks of 4,550m above sea level to a low depression of 110m below sea level) carries a high burden of maternal ill health. It is one of the six countries that contribute to about 50% of the maternal deaths worldwide; the others being India, Nigeria, Pakistan, Afghanistan and the Democratic Republic of Congo. (Lancet, April 2010). There has been tremendous progress in the country over the past decade in terms of improving access to essential health services aimed at improving the health status of the population in general and women and children in particular. Among the progress documented are reductions in the average fertility rate from 6.4 in 1990 to 4.8 in 2011 and CPR has risen from 5% to 29% in the same period (DHS 2011). According to the global estimates for "trends in Maternal Mortality", the MMR for Ethiopia has come down from 950/100,000 LB in 1990 to 350/100,000 LB in 2010 which shows an average annual decline of 4.9%. However it is

worth noting that DHS 2011 shows a higher MMR estimate (676/100,000 LB) and there are also other global estimates with different figures highlighting the challenges in estimating maternal deaths, especially in areas where civil registration is weak.

2. Rationale

Because measuring maternal mortality is difficult and complex, reliable estimates of the dimensions of the problem are not generally available and assessing progress towards the goal of reducing maternal mortality is difficult. Moreover, counting Maternal Mortality alone cannot generate important information to avert maternal deaths. It tells only part of the story. In particular, it tells us nothing about the faces behind the numbers, the individual stories of suffering and distress and the real underlying reasons why particular women died. Most of all, it tells us nothing about why women continue to die in a world where the knowledge and resources to prevent such deaths are available or attainable. Knowing the statistics on levels of maternal mortality is important but not enough to identify what can be done to prevent unnecessary deaths. In order stop the deaths, the right kind of information is needed upon which to base actions.

To help tackle these challenges, a variety of methods for reviewing and analyzing deaths and producing actionable information have been implemented throughout the world. Maternal Death Surveillance and Response is now promoted as a means of availing such information locally and in real time making maternal deaths visible events that beg for response. By reviewing the death it help sensitize communities and health workers in facilities to the fact that women need not die and encourages discussion and thought about prevention. It provides information about why the woman died and suggests ways that deaths like hers can be prevented in the future. It also connects actions to results.

Each maternal death has a story to tell and can provide indications on practical ways of addressing its causes and determinants. Detailed Systematic Reviews to the cause of maternal death provide evidence of where the main problems in overcoming maternal mortality and morbidity may lie, produce an analysis of what can be done in practical terms and highlight the key areas requiring recommendations for health sector and community action as well as policy directions.

An MDSR done with clear standards should provide information that can be used in the development of programs and interventions to improve maternal health, reduce maternal morbidity, and improve the quality of care of women during pregnancy, delivery, and postpartum. Counting cases is important but not enough. The data must lead to information that can, in turn, lead to specific recommendations and actions, as well as to an evaluation of the effectiveness of interventions.

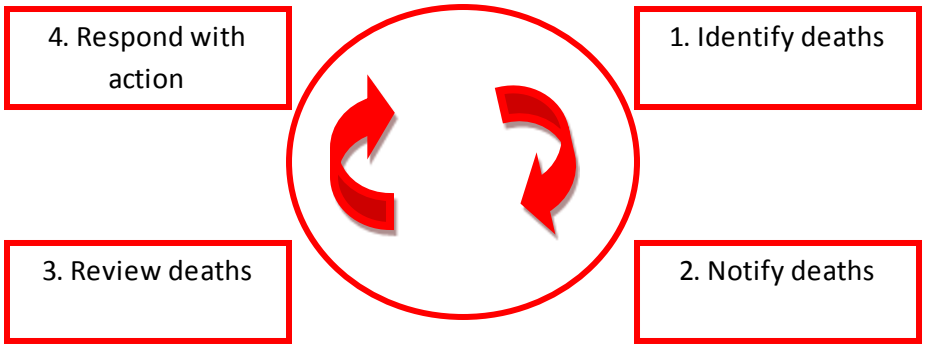


Figure 1: Maternal death surveillance and response system: a continuous action cycle at community, facility, regional & national level

The information contained in the MDSR can increase awareness of maternal mortality at community, health care system, and intersectoral (policy-making) levels. Increased awareness can lead to changes in practice among the public and health practitioners, as well as lead to a reallocation of resources to activities for decreasing maternal mortality. An enabling environment of collaboration rather than blame is needed to conduct MDSR and apply the findings towards action.

MDSR has two underlying rationales:

First: MDSR provides information about avoidable factors that contributed to a maternal death and guides actions that need to be taken at the community level, within the formal health care system, and at the intersectoral level (i.e. in other governmental and social sectors) to prevent similar deaths in the future.

Second: MDSR establishes the framework for an accurate assessment of magnitude of women's deaths related to pregnancy. By having an accurate assessment of maternal mortality, policy and decision makers may be more compelled to give the problem the attention it deserves. In addition, evaluators will more accurately assess the effectiveness of interventions to decrease mortality rates.

Ultimately an MDSR system will aim to identify every maternal death in order to accurately monitor maternal mortality and the impact of interventions to reduce it. The FMOH is aiming at

conducting MDSR at large scale to ensure each maternal death is notified in time, the reasons behind the death are identified locally, and corrective actions taken to make sure that similar deaths are subsequently prevented.

This Guideline is prepared to guide key players in the conduct of MDSR, standardize the implementation and help ensure actionable items are identified locally and appropriate corrective measures are taken at different levels.

Users of this manual

A variety of health programmers, health service providers and training institutions working on maternal health can benefit from this manual. It is developed for use by:

- National, Regional, Zonal, Sub-City and Woreda Maternal Health Program managers
- National, Regional, Zonal, Sub-City and Woreda IDSR officers
- Health facility managers
- Health service providers at community and health facility level
- Teaching institutions' training health professionals
- Professional associations
- Other stakeholders

Key messages of this guide:

- Avoiding maternal death and improving quality of care is possible, even in resource constrained settings. Obtaining the right kind of information to guide action is critical.
- Every maternal death is a tragedy and should be a notifiable event that is reviewed, discussed and leads to corrective actions to address the problems encountered.
- Understanding the underlying factors leading to the deaths is critical to preventing future mortality.
- Data collection must be linked to action. A commitment to act upon findings is a key prerequisite for success.
- As a starting point, all maternal deaths in health facilities and communities should be identified, reported, reviewed and responded to with measures to prevent future deaths.
- While response is critical and the primary purpose of MDSR, there is also a need to improve the measurement of maternal mortality by working to identify all deaths in a given area because otherwise we do not know if our actions are truly effective.

Goal and Objectives of the MDSR Technical Guidelines

The overall goal of the MDSR technical guideline is to guide effective implementation and scale up of MDSR in systematic, standardized and integrated manner.

The objectives are:

- Strengthen the capacity of program managers and service providers in the analysis and interpretation of information from maternal deaths.
- Ensure standardization and harmonization of the MDSR process at community, facility, district, regional and federal level
- Guide program managers in the timely undertaking of implementation, monitoring and supervision of the MDSR process at the different levels
- Serve as basic tool to guide service providers in the undertaking of MDSR
- Improve use of information to produce local solutions to root causes of maternal death
- Empower decision makers/ facility managers to make local level actions

Maternal Death Surveillance and Response (MDSR) System

I. Process of the MDSR system (Identifying, reporting and reviewing maternal deaths)

1. Sources of information

There are two major sources of information for maternal deaths: Communities and facilities.

1.1. Community

The HEW will establish a link with all possible sources of information for identifying **deceased women of reproductive age**. For In the community, the sources for the information include:

- Health Development Army members
- Religious leaders/institutes
- Community leaders
- Administrative leaders
- The HEW
- Community members

Any of these individuals can identify a death to women of reproductive age (15-49), and should notify the local HEW. The HEW should pass on the Information using Annex 1 to the Health Centre Head, who will arrange the Verbal Autopsy (VA) (Annex 1B). Family and other community members assist in completing the VA, which relies on the following sources of information:

- Persons who primarily attended the women during illness
- Persons who attended the women in labour and delivery (if at home)
- Persons who were present at the side of the woman at the time of death
- Husband (who is likely to have additional details on the woman's experiences during pregnancy)

1.2. Facility

The head of the any ward where a suspected maternal death occurs is responsible for notifying these to the head of the health facility/the medical director. The sources of the information for facility deaths reviews include:

- Referral sheets
- Medical records
- Log books (OR, maternity, OPD, anaesthesia)
- Attending health workers (OPD, maternity, OR)
- Others

2. Identification and reporting of maternal deaths

2.1 Identification and reporting of maternal deaths in the community

Maternal death reporting from the community will be done by health extension workers (HEWs). As previously described, the HEW should identify deaths of **all women of reproductive age**. S/he will report each death to the head of the health center within one week. The health center head will notify the PHEM/surveillance focal person, who will include all deaths in the Weekly Surveillance Report.

The HEW will also determine whether the death was likely to be causally related to the pregnancy, by filling out the screening questions on the notification form (Annex 1) in consultation with family or other community members. An assigned person from the health center will review this form and confirm the likelihood that the death was a maternal death; if it is determined as related to pregnancy, data will be collected through a VA within three to four weeks of notification of the event. The Health Centre head is responsible for assigning a unique code to each death, using the form available at the end of Annex 1B. If the VA further confirms pregnancy-related cause of death, the Maternal Death Review Form (Annex 3) will be completed by the health center surveillance focal person.

2.2 Identification and reporting of maternal deaths in facilities

The head nurse of the labor/ other wards will be responsible for checking death logs and other records from the previous 24 hours on a daily basis. Any death of a woman of reproductive age

should trigger a review of her medical record to assess whether there was any evidence the woman was pregnant or within 42 days of the end of a pregnancy, in which case Annex 2 should be completed. The death has to be reported to the facility medical director within 24 hours of identifying deaths, and s/he will ensure that Annex 2B is completed as soon as possible.

3. Data contents and Data collection

A maternal death review collects data from various sources, including family folders, antenatal care records, medical records from health facilities, and interviews with family members, local community members/leaders, traditional health workers and health care workers. Each data source may provide different information.

For community level deaths, an assigned professional from the HC will be trained on how to fill the VA tool (Annex 1B). The medical director of the HC responsible for that kebele will have a supervisory role. Data collectors for both facility and community level should be fluent in the local language.

4. **Reviewing the Event**

The chairperson or medical director of the maternal death review committee at each level of the review process will assign two reviewers for every death to be reviewed. Death reviewers will be oriented on how to review the death and produce summary reports.

The information provided for the review process should be anonymous, which is to say that the case information presented to the maternal death review committee should contain no identifying data regarding the patient, health care providers, or facilities. After data collection is complete, all data files and instruments should be made anonymous, although a key linking the case number to the identity of the mother can be kept in a locked storage space.

At the maternal death review committee meeting, members may take turns reading the case summaries (Annexes 2B and 3). After each case summary is read, the members then discuss the

case, the events that may have led to the mother's death. If any points are unclear, the reviewers will explain. The rapporteur should keep a list of the main points of the discussion.

The means of communicating findings of the review should follow three principles:

The first principle is that there should always be a feedback of the findings and the recommendations at the level of the facility or the community where the information was collected.

Second, this feedback should be in a de-identified form so that the individual families or health care providers cannot be identified.

Finally, it should be clear at all levels of the MDSR system that the data collected and analyzed is to be used solely for the MDSR process and for identifying actions to prevent avoidable maternal deaths. The MDSR policy is committed to avoiding the use of review findings for any other purposes, including legal investigations or litigation.

The process of the review is summarized below in Figure 2.

Figure 2: Maternal death review at community level

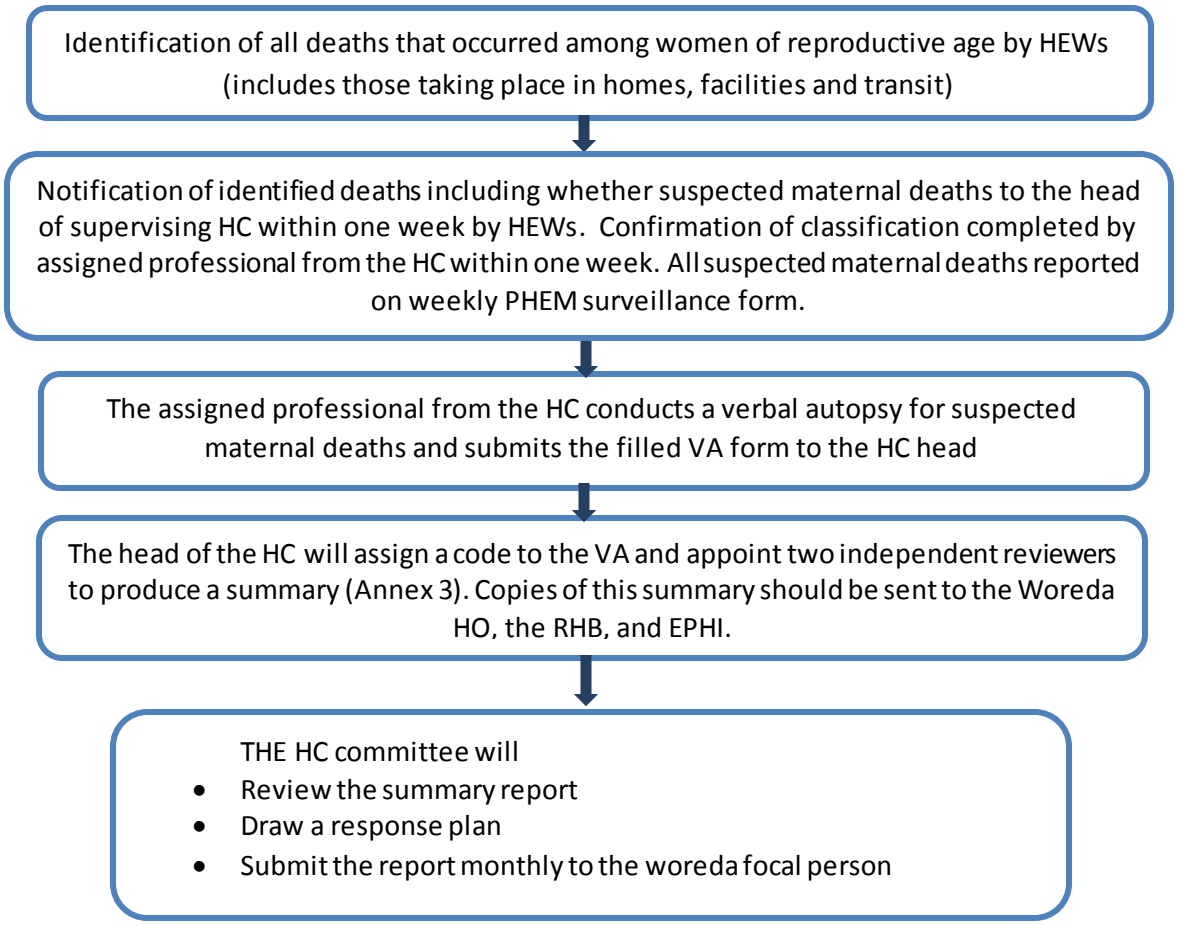
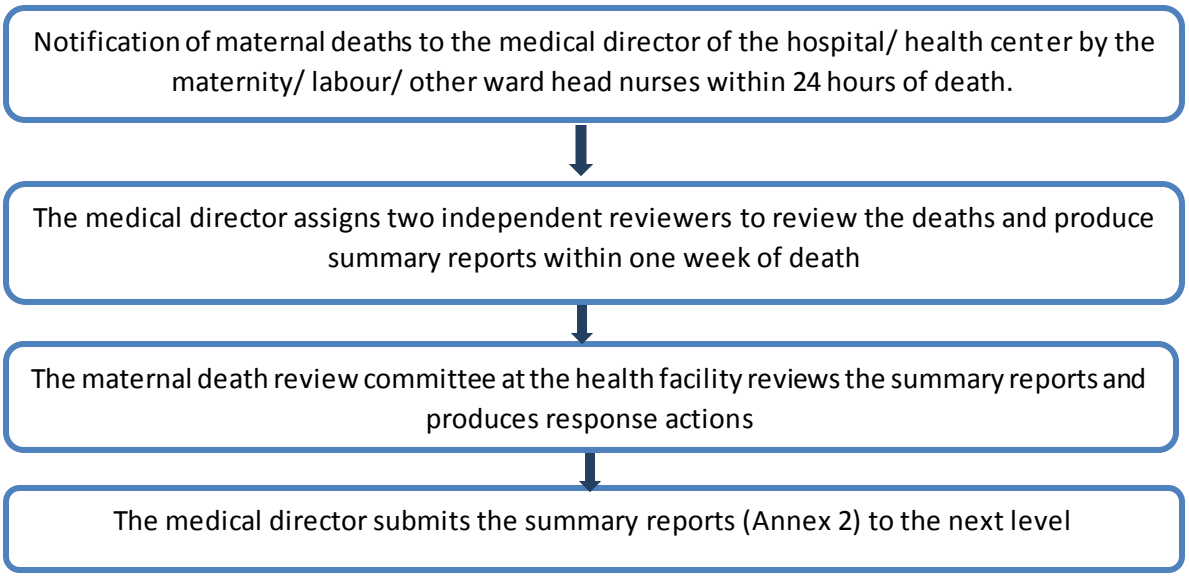


Figure 3: Maternal death review at facility level



The following general principles can help make the review process more effective and efficient:

- The problems leading to maternal death are frequently not all medical - think holistically.
- Focus only on those events that may have directly contributed to the maternal death throughout pregnancy and delivery, not everything that happened.
- Quality of care received by the mother should be compared to both accepted local practice as well as best medical practice.
- While most cases are unique, try to group problems into general categories (e.g., lack of transportation to health care facility) while keeping enough information so that a specific strategy can be developed (e.g., not general recommendations such as "improve health care system").

4.1 Establish the cause of death

a. Establish the medical cause of death

The investigation should determine the medical or pathophysiologic cause of death as specifically as possible and categorize it as a direct obstetric, indirect obstetric or non-maternal death. Mechanisms for establishing the medical cause of death will depend on whether the woman was hospitalized or not.

Facility deaths

The medical cause of death can frequently be established from the medical records. Interviews of facility personnel involved in the care of the woman may provide additional information that can be used to corroborate facts in the facility record. This is particularly important in situations where there are questions on quality of care.

Deaths occurring outside the facility:

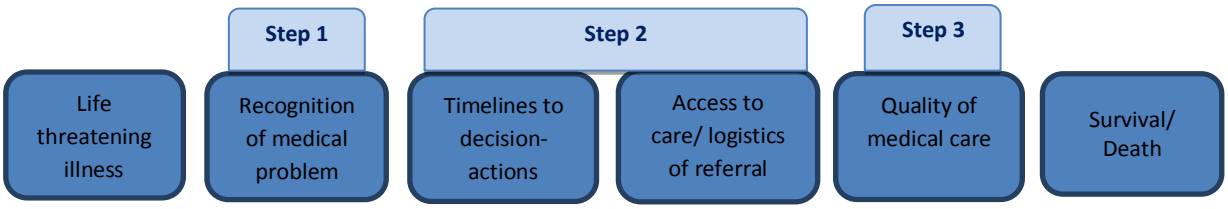
In some cases, a woman who dies outside the facility may have had antenatal care or been hospitalized prior to her death. Medical records may be helpful but are sometimes unavailable in these situations. If the woman was dead on arrival at the facility or died soon after arrival, her case should be reviewed by that facility maternal death committee whenever possible.

All maternal deaths occurring in facilities or in transit should also be notified through community based channels (by the local HEW to the HC) and a verbal autopsy conducted as previously described.

b. Determine the non-medical causes of death

Non-medical causes of death are often more important in determining whether a woman lives or dies than the medical condition itself. It is important to investigate these in order to reduce maternal mortality. Major examples of non-medical causes of death include the timeliness of recognizing the problem and taking decisions, access to care and logistics of the referral process (see ***figure 4***:).

Figure 4: Pathway to Survival



i. Timeliness of problem recognition and decision making:

- Was the problem recognized promptly? If not, why not? Did the death occur so suddenly that the women could not receive any care? Were any risk factors present that may have been missed because the woman did not seek prenatal care or because prenatal care was inadequate?
- If the problem was recognized, was the decision made to seek care? If not, why not? Again, did the death occur too suddenly? Did the woman refuse to seek care? Were there family obstacles to a referral? Was concern over access to care an obstacle to decision making?
- Did any beliefs or cultural practices create barriers to obtaining appropriate medical care? Did previous poor experiences with the health care system make the patient or TBA reluctant to seek care?

ii. Access to care/logistics of referral:

- Was geography a factor? Were there problems with transportation? Or with the roads? Did the woman live far away from the necessary health care services?
- Were financial factors obstacles to obtaining care? Were actual costs a deterrent to the woman or her family? Did the health care delivery provider refuse appropriate care because the patient could not pay, or for cultural reasons?
- Were there delays in transferring the patient to an appropriate level of care, such as from a clinic to a hospital? Was there a delay in her receiving care at the institution?

iii. Assess the quality of medical care:

- The investigation should include information about the medical management of the women's condition in order for the committee to determine if the

recommendations and treatment were appropriate and the quality of care was adequate.

- The quality of any prenatal care such as screening for risk factors or underlying conditions also needs to be assessed. This is true of postnatal care, if the death was post-delivery. For both facility and out of facility deaths the quality of care evaluation should include that care given by traditional birth attendants, nurses, midwifes and physicians.

4.2 Determination of preventability

The purpose of every death investigation is to determine the causes of death, whether the death was preventable and if so, how it could have been prevented. The aim of this investigation is not to blame a particular person or facility for the death. Rather preventa bility is a pro-active concept in which lessons are learned and applied to prevent future deaths from similar factors. The following factors should be considered when assessing if a death was preventable:

a. Family/community level

Patient/family factors: *Did the woman and her family…*

- Recognize that a problem existed?
- Seek medical care?
- Seek antenatal care?
- Comply with any medical advice given?

Delivery attendant factors. *Did the community-based delivery attendant …*

- Manage the labor and delivery correctly?
- Recognize that a problem existed?
- Refer the women appropriately and without delay?
- Consider herself part of the local health care system?

b. Formal health care delivery-system level

Antenatal care. *Determine whether…*

- The woman received antenatal care?
- Any medical issues were assessed and treated?
- Patient received education on signs and symptoms of complications?

Health facility factors. *Determine whether …*

- Essential obstetric functions were available at the first referral level?
- Resources were adequate to resolve the problem?
- Protocols/norms were available and appropriate?
- Care was available regardless of the ability to pay?

Health care provider factors. *Determine whether the health personnel …*

- Were trained to treat the problem correctly?
- If so, did they treat the problem adequately?
- Were sensitive to the social and cultural values of the patient and her family?

c. Intersectoral level

Transportation factors. *Assess if transfer was hindered by…*

- Availability of transport
- Adequacy of transport
- Cost
- Education factors
- Communication factors
- Social status of women

Based on information obtained from the investigation, the maternal death review committee will make recommendations to prevent such deaths in the future. As cases accumulate and patterns emerge, especially at the regional and national levels, interventions can be prioritized according to which will have the greatest impact.

Case review need to be linked to a response. Every case review should include a recommendation (with response/ action) to prevent future deaths (Annex 4).

II. Setting Up the MDSR

For successful implementation of MDSR, the following components are required:

1. Established national, regional and local committees

1.1. National MDSR task force: will be composed of the national MDSR focal person, representatives from WHO, H4+, FMHACA, EPHI (specifically from the PHEM centre), PFSA, a focal person from policy and planning directorate, representatives from NGO and implementing partners. The chair of this team will be the national focal person for the MDSR and the representative from EPHI will be secretary of the task force. The task force will conduct regular monthly meetings.

Roles and responsibilities of this national task force:

- Develop detailed TOR and Plan of action of the committee.
- Organize the overall MDSR system in the nation
- Revise/ develop national technical guidelines, tools and other relevant documents
- Establish a National Maternal Death Review committee and respond to its reports and recommendations
- Coordinate the involvement of stakeholders from planning to implementation of the MDSR
- Oversee the review process
- Work for the sustainability of MDSR
- Provide regular monitoring and supervision in the implementation of MDSR in the country bi-annually
- The task force should work closely with FMHACA to set-up legal framework for the implementation of MDSR (for legal back up/data protection)
- Evaluate the MDSR system

1.2. National Maternal Death Review Committee – *details to be added in future*

1.3. Regional MDSR committee: Comprised of a multidisciplinary mix of professionals, including the regional MNCH and PHEM focal persons, a senior midwife from midwifery association, senior obstetrician/gynaecologist from ESOG, a representative from FMHACA and development partner representatives. The RHB deputy head will be chair of this committee. The assumption is that there are existing MNCH / RH task forces in each region and MDSR can be implemented through these groups.

Roles & responsibilities of the regional committee include:

- Develop detailed TOR and Plan of action for the committee.
- Plan and implement MDSR in the region
- Coordinate all issues related to maternal and new born health
- Compile and analyze data coming from the woreda /zones/ facilities.
- Involve stake holders in the MDR system
- Devise action points for the outputs of the review process
- Follow up to ensure recommended actions implemented in a timely way
- Regular monitoring and supervision of the MDSR
- Evaluate the MDSR system at regional level
- Conduct selected death reviews for at least 5 to 10% of the reported deaths

1.4. Facility based MDSR committees:

1.4.1. Hospital: The committee should comprise an obstetrician & gynecologist/ IESO officer, a senior midwife, anesthesiologist /anesthetist, CEO, medical director, pharmacy case unit head quality officer, surveillance focal person, and support staff (non-health workers) representative of the hospital. The medical director will chair this committee.

The roles and responsibilities of this committee include:

- Develop detailed TOR and plan of action

- Reviews all maternal deaths in the hospital within 48 hours of death notification
- Devise and implement action points based on findings according to their expertise
- Keep the completed review tool (Annex 2B) confidential and ensure it will not be used for any other purpose including litigation
- Conduct anonymous reviews of all cases of maternal death and cases of near miss to avoid blaming and bias
- Review near misses based on the facility case load. A minimum of 50% of near misses should be reviewed.
- Compile and report findings of maternal death reviews to zonal and/or RHB every month, including zero-reporting
- Conduct in-depth investigation of selected cases
- Provide technical assistance to health centers as needed

1.4.2. Health centers:

The maternal death review committee at HC comprises a HC head/director, a midwife working in the delivery case team, a nurse working in MNCH case team, pharmacist/druggist, HEW from the kebele where the deceased mother resided and woreda health office representative. For deaths that occurred at home/HP level, two community representatives (e.g. kebele chairpersons, HDA team leader from where the deceased was a member) will be added to the HC committee. The HC head will chair the committee and assign a senior midwife and HO to review the VA and/or facility notes and produce a summary for deaths.

Roles and responsibilities of the health center maternal death review committee:

- Develop its own TOR that guide and facilitate the task
- Assign a professional to collect data (verbal autopsy) for all deaths reported by HEWs irrespective of place of death
- Conduct monthly meeting to review and produce summaries.
- Develop response actions and follow implementation

- Keep the completed review and action tools (Annexes 2B, 3 & 4) confidential and ensure it will not be used for any other purpose
- Conduct anonymous reviewing of cases to avoid blaming and bias
- Compile and report the findings to woreda health office focal person on monthly basis, including zero-reporting

1.4.3. Sub-Cities or Zones:

Roles and responsibilities of the sub-city or zonal committee:

- Plan and implement MDSR in the sub-city or zone
- Develop detailed TOR and Plan of action for the committee
- Compile the monthly MDSR reports from woredas
- Submit monthly reports and action plans to the region, including zero-reporting
- Propose action points & follow their implementation

2. Roles and responsibilities of key actors

2.1. Sub-city or Zonal MNCH focal person will

- Take part in the monthly meetings of maternal death review at health facilities
- Compile the monthly MDSR reports from woredas
- Propose action points & follow their implementation
- Submit monthly reports to the region, including zero-reporting
- Facilitate the regional audit of selected cases

2.2. Woreda MNCH focal person will

- Take part in the monthly meetings of maternal death review at health facilities
- Compile the monthly MDSR reports from facilities
- Propose action points & follow their implementation
- Submit monthly reports to the zone and/or region, including zero reporting
- Facilitate the regional detailed examination of 5-10% selected cases

2.3. Medical director of hospital / health center

- Chairs the review committee
- The HC head
  - will receive death notification from the HEWs
  - confirms HEW's screening on whether the death was causally related to pregnancy
  - assigns one professional to conduct the verbal autopsy
  - keeps all completed notification forms in a secure location (whether the death is identified as maternal or not)
  - sends one copy of each notification form to the woreda HO or RHB.
- The medical director of a hospital receives and keeps the completed death notification forms from the wards
- Assigns two independent reviewers (one being the inpatient process owner) for the deaths.
- Collects relevant medical records and makes them anonymous (by giving numerical codes to records) before handing over to the assigned independent reviewers
- Receives the summary report from the reviewers and presents it to the review committee

2.4. Health extension workers will:

- Fill the notification form (Annex 1) in triplicate for all deaths of women in the reproductive age group, including answering the screening questions to determine whether the death was causally related to pregnancy.
- Submit the completed notification form to the HC head within one week of death and keep one copy of the notification form at HP level.
- Assist the assigned HC professional in conducting the verbal autopsy

- Attend the meeting of the HC review committee when it discusses the death at the respective kebele
- Follow implementation of action plans at community level

2.5. PHEM focal persons at woreda, zone, region and national level

- Collect data from the lower level
- Analyze the data,
- Prepare report and disseminate to relevant bodies

3. Availing tools and guidelines for MDSR

The original tools/guideline prepared by the FMOH and EPHI will be distributed to RHBs. The RHBs and Woreda Health Offices are responsible for producing and distributing the required quantities of tools/guidelines to their health facilities. Using the PFSA system could be one route for distribution of reporting formats. The tools that are to be used in the MDSR process include:

- PHEM Weekly Surveillance Report
- Notification
- Verbal autopsy tool
- Verbal autopsy consent form
- Facility based abstraction form
- Maternal death reporting form (summarizing the VA)
- Action plan template
- Near miss review forms will be made available to all hospital facilities
- Review committee disclaimer

4. Legal and ethical considerations

Ideally, maternal death reviews should be part of the routine supervision and monitoring of maternal health outcomes. However, given the potential for lawsuits, health personnel who

attend to the cases under review might be reluctant to participate. The Ministry of Health is firmly committed to the principles of anonymity, confidentiality and "no blame." Official MDSR policy precludes the use of data outside the MDSR process. In this regard, consent forms (Annex 6) should be administered prior to interviewing family members. After the committee meeting, all notes with identifying information collected for the purposes of the audit will be kept secured. Further, the notes with identifying information should not be shared by electronic means, such as email.

Ethical issues will be considered when reviewing maternal deaths both at community and facility level. These include:

a. **Informed decision:** family and friends of the deceased should be well informed about the review process. Their voluntary participation should be sought for and the interview can be interrupted at their request. This particularly applies for verbal autopsy. Their consent should be sought.

b. **Confidentiality:**

   - Families and health care workers directly and indirectly involved in the review process have to be reassured of their privacy.
   - The identities of the deceased, family and health care providers involved in the management should be kept confidential and known only to those who are doing the actual review.
   - Anonymizing staff member may be done for example by labeling them as Midwife A, Midwife B, Doctor X etc.
   - All persons having access to identifiable information will sign a confidentiality agreement stating that they will not disclose any identifiable information.
   - Data collection forms, case summaries, review meeting minutes and reports or dissemination results will not contain any personal identifiers.

- All records of cases reviewed & any discussion will be kept secured; hard copy information will be kept in locked cabinets/offices and electronic data in password protected files.

c. **Beneficence:** Data obtained through the MDSR should be tailored in a way that enables production of response actions at different levels so that further maternal deaths will be prevented.

III. Awareness creation among health care workers and the community

In the MDSR system, health care workers will be involved in a variety of ways such as data collection, revision or care provision. Therefore, every individual involved in the process will have basic understanding of the review; appreciate the significance and their role in generating quality data for the success of the MDSR. The committees at different levels will arrange and execute orientations to their respective health care staff on objectives, processes and principles of MDSR.

In addition, awareness creation to the wider community will be the top priority to be accomplished as those deaths occur there and for establishment of ownership of the review process. The health development army (HDA) will be used for awareness creation among the community through their regular meetings and also the pregnant mothers' conference. For community deaths they'll assist the HEWs in notifying deaths of reproductive age women. Furthermore the HDA will work on assuring the implementation of the community based action plans to prevent maternal deaths. For community-based reviews, in addition to the HDA the support of local village leaders and religious & cultural leaders will be sought.

IV. Analysis (aggregation of multiple case reviews) at national, regional and woreda levels.

The purpose of all the data collection and analysis is to have the information on which to act, to understand the problems which led to maternal deaths, and use that knowledge to develop appropriate interventions. Data analysis is critical to provide useful information to guide action. It is important to analyze data in a thoughtful way, maintaining the focus on identifying problems in the system that may contribute to maternal deaths, especially those that could have been prevented or avoided.

When collecting data for a maternal death review, it is important to have an analytic plan to guide the process and identify problems in the system that may contribute to maternal deaths, especially those that are amenable to change. Analysis will have different functions and corresponding responses when done for the facility level, compared to analysis done for the district and national levels.

The best approach would be a combination of both qualitative and quantitative analysis. Qualitative and quantitative analysis provide different insights into the causes of maternal deaths, and a combination of the two provides more information than either can alone. Qualitative analysis of each case, done as part of the Maternal Death Review process, identifies the medical and non-medical problems that contributed to that death. Grouping the findings, especially the problems, and looking at them quantitatively provides information on which problems are most common. The use of qualitative and quantitative analysis together allows one to both understand what the problems are and prioritize the actions to remediate them.

Key message: **A guide to categorizing contributory factors**

Non-medical problems	Medical / service problems
Lack of awareness of danger signs of illness	No health service available or too far away
Delay in seeking care due to lack of family agreement	Sought care but no staff were available
Geographic isolation	Medicine not available at the facility and must be provided by the family
Lack of transportation or money to pay for it	Doctor would not see woman without payment
Other responsibilities	Woman was not treated immediately after arriving at the facility
Cultural barriers, such as prohibitions on mother leaving house	Health facility lacked needed supplies or equipment
Lack of money to pay for care	Staff did not have knowledge/skills to diagnose and treat mother
Belief in use of traditional remedies	Had to wait many hours for qualified staff to see mother
Belief in fate controlling outcome	No transport available to reach referral hospital
Dislike of or bad experiences with health care system	Poor staff attitude

Analysis of data depends on the level of health service delivery:

1. **Woreda level analysis**- the woreda based analysis should be done annually by the MCH focal person which entails a detailed analysis on:
    1.1. Background information of the deceased including :-
        - Age
        - Marital status
        - Geographical location (HC catchment area)
        - Education
        - Occupation
        - Income
        - Ethnicity
        - Religion
        - Parity
        - ANC
        - Place of death(home, facility)
        - Timing of death in relation to pregnancy (Antepartum, intra partum, postpartum)
        - Fetal outcome (abortion, ectopic, live birth, still birth, neonatal death)
    1.2. Cause of Death
        - Direct obstetric (hemorrhage, obstructed labor, HDP, unsafe abortion, sepsis)
        - Indirect obstetric (anemia, malaria, HIV, TB, etc.)
        - Preventability
    1.3. Contributory factors
        - Health seeking
        - Transport access (road, vehicle, communication)
        - Transport cost
        - Health system related (human resource, supplies, equipment, service cost, etc.)
    1.4. Status of implementation of the proposed action plan

2. **Regional level analysis-** the regional based analysis should be done twice a year. This entails analysis on

    2.1. Cause of Death

    - Direct obstetric (hemorrhage, obstructed labor, HDP, unsafe abortion, sepsis)
    - Indirect obstetric (anemia, malaria, HIV, TB, etc.)
    - Preventability

    2.2. Contributory factors

    - Health seeking (delay one)
    - Transport access (road, vehicle, communication)
    - Transport cost
    - Health system related (human resource, supplies, equipment, service cost, etc.)

    2.3. Background information of the deceased including :-

    - Age
    - Residential address (urban/ rural)
    - Marital status (married, unmarried, others)
    - Education (illiterate, primary, secondary, higher education)
    - Parity
    - ANC
    - Place of death (home, facility)
    - Timing of death in relation to pregnancy (Antepartum, intra partum, postpartum)

    2.4. MMR (Maternal mortality ratio) – can be calculated annually for progress monitoring purposes. It is worth noting, however, that as the MDSR system initially improves reporting of maternal deaths, it could look as if the MMR is *rising* for some time.

3. **National level analysis**: the national analysis should be done quarterly by the national maternal death review committee. This entails analysis on:

3.1. Cause of Death

- Direct obstetric (hemorrhage, obstructed labor, HDP, unsafe abortion, sepsis)
- Indirect obstetric (anemia, malaria, HIV, TB, etc.)
- Preventability

3.2. Contributory factors

- Health seeking (first delay)
- Transport access (road, vehicle, communication)
- Transport cost
- Health system related (human resource, supplies, equipment, service cost, etc.)

3.3. Background information of the deceased including :-

- Age
- Residential address (urban/ rural)
- Marital status (married, unmarried, others)
- Education (illiterate, primary, secondary, higher education)
- Parity
- ANC
- Place of death (home, in transit, at a facility)
- Timing of death in relation to pregnancy (Antepartum, intra partum, postpartum)
- MMR (Maternal mortality ratio) – can be calculated annually for progress monitoring purposes. It is worth noting, however, that as the MDSR system initially improves reporting of maternal deaths, it could look as if the MMR is rising for some time.

V. Dissemination of results

The information needs to be disseminated using a variety of channels to enable a wide range of people to access it, to ensure that the information gets to the right audience, namely those

who can act on the recommendations. If specific causes of deaths are identified as particularly problematic, conferences or seminars can be held to educate health staff.

1. **Whom to inform of the results**

The general principle is to get the key messages to those who can implement the findings and make a real difference towards saving mothers' lives. They may include:

- Ministry of Health
- Local, regional, and/or national health care planners, policy-makers and politicians
- Professional organizations and their members, including pediatricians, general physicians, obstetricians, midwives, anesthetists and pathologists who are involved at each level
- Leaders in other health care systems, such as Social Security and the private sector
- Health promotion and education experts
- Public health or community health departments
- Academic institutions
- Local health care managers or supervisors
- Local governments
- Community members like HDA
- National or local advocacy groups
- The media
- Representatives of specific faith or cultural institutions or other opinion leaders who can promote and facilitate beneficial changes in local customs
- All those who participated in the survey

2. **The following are all methods that have been used for dissemination of results:**

Community/facility level:

- Team meetings
- Thematic seminars at facilities
- Community meetings
- Printed reports
- Training programs
- Posters

- Text messages
- Video clips

Woreda/ Regional or national level:

- Printed reports for policymakers
- Statistical publications
- Scientific articles
- Professional conferences
- Training programs
- Media
- Press releases
- Websites
- Newsletters and bulletins
- Fact sheets
- Posters
- Video clips

3. Publish the results

A single facility death review report may be an internal document, copied and distributed to all staff, relevant decision makers in the area, and colleagues outside the facility. The objective is to share the findings and recommendations. As it is likely that many people involved will know the identities of the deceased women's family and staff involved in the care, it will be particularly important to focus on positive recommendations, rather than placing blame.

Publishing a zonal, regional or national MDSR report is one of the primary ways to disseminate findings and recommendations. The scope, depth and breadth of the report may vary, depending on the approach that was chosen and the number of cases reviewed. The report should be written in simple language, be easy to follow and should cover both:

- Facility-based deaths: discussion of patterns and trends of facility-based deaths. This section may be of particular interest to the facilities involved in the review, other facilities in the area (public and private), various decision makers, insurance companies and teaching institutions, as well as national authorities and the public.
- Community-based deaths: discussion of patterns and trends in community based deaths. This section will be of particular interest to local leaders, individuals involved in local programs, and health officials at all levels.

Suggested sections for a MDSR report prepared at woreda, sub-city/zonal, regional and national levels

1. Background of area covered by review.
2. Characteristics of women of reproductive age in area.
3. Characteristics of births in area (number, live or stillborn (fresh vs. macerated), birth weight, gestational age).
4. Maternal deaths by area, mother's age, ethnicity (with denominator if possible).
5. Maternal deaths by medical cause of death.
6. Problems leading to death by medical cause and non-medical cause and their frequencies
7. Recommendation to prevent future deaths
8. Review of recommendations from previous year and whether

However, remedial action does not need to wait for the report to be published. Sometimes the findings of a single case review can reveal a significant problem that needs to be addressed immediately. The frequency and importance of other problems may only become apparent after the information from the qualitative review is quantitatively analyzed.

VI. Response

Taking action to prevent maternal deaths is the primary objective of MDSR. In most reviews, multiple problems will be identified, and a number of potential actions will be recommended. The type of action taken will depend on whether decisions are being made at the national, district, facility or other level, who was responsible for the investigation, stakeholders involved, and the findings of the analysis.

Possible actions include interventions in the community, within health services, and in the public sector. Findings from the community may point to the need for the development of health promotion and education programs, facilitation of financial access as well as possible changes in community service provision, changing home practices or in the practices or attitudes of the health care facilities, or improved infrastructure such as roads, bridges, and communication technology. Information from facilities may point to the need for changes in clinical practice or modification of service provision. The needed actions may be in the area of direct patient care, or at the system level, such as how to provide the necessary drugs and personnel at a health care facility or perhaps the need for clinical guidelines for care or capacity building. Information from the findings of combined data analysis can cover all these issues on a far wider basis and are used at institutional, local and national levels by politicians, health service planners, professionals, public health personnel, educators and women's advocacy groups. They may also lead to the development of programs to improve maternal health.

Responses at different levels should include the following, but not an exhaustive list:

1. **Community level:**

- Creating awareness about the need for skilled care for all pregnancies and danger signs in pregnancy, labor and delivery by using different mechanisms
- Addressing traditions and beliefs that are inhibiting health seeking behaviors
- Devise mechanisms to have a pooled money that can be borrowed during emergency conditions
- Establish a mechanism to transport mothers to health facilities without delay
- Avoiding/ preventing traditional practices such as early marriage, FGC, etc.

2. Health facility

- Make services available 24 hours a day and 7 days a week
- Ensure providers have the needed knowledge and skills to prevent, manage and appropriately refer when needed mothers with complications
- Avail all essential drugs and supplies needed for maternal and new-born health with good stock level as well
- Establish a no blame-no shame principle with all health care worker staffs
- Good referral network with transfers based on MNH directory, ETC

3. Woreda/ district level

- Devise strategies to address barriers for health seeking behavior by using cultural and community sensitive issues by using such interventions as community dialogue and HDA
- Avail transport means such as tricycle or regular ambulances
- Establish linkage with other intersectoral offices to address maternal and new-born health issues
- Ensure adequate staffing of health facilities with appropriately qualified health workers
- Equip health facilities with all essential supplies and equipment and needed health care workers, ETC

4. Regional level

- Work for using relevant communication/ media means to increase community awareness
- Avail all essential equipment, drugs and supplies to health facilities within the region
- Staff all health facilities with the required kill mixes
- Establish intersectoral partnerships to address maternal and newborn health
- Avail tricycle or regular ambulances
- Produce SOPs for maternal and newborn referrals and directory
- Establish the platform to organize development partners for resource mobilization
- Work on avoiding/preventing harmful traditional practices such as FGC and early marriage, ETC.

5. National level

- Produce guidelines, guidelines and management books based on evidences and findings of the review
- Avail essential reproductive health commodities
- Produce referral standards
- Establish the intersectoral collaboration to address maternal and newborn health problems
- Avail ambulances (tricycle or regular or both)
- Work for higher budget allocation for maternal and newborn health
- Organize and coordinate with development partners for resource mobilization, etc.

6. Other stakeholders:

- Encourage women's and girls' education
- Good infrastructure at the community level to the extent so that referral will be facilitated.
- Work with ministry of justice for women empowerment and working for legal back up for confidential enquiries.

VII.M&E for MDSR

1. Framework for monitoring

Monitoring and evaluation of the MDSR system itself should be in place to ensure that the major steps in the system are functioning adequately and improving with time. It is also important to assess the timeliness of the information and the coverage of the system. Monitoring of the MDSR system is carried out both at national and regional level. The monitoring framework with indicators is shown in Table 1.

2. Evaluation of the MDSR system

In addition to the monitoring indicators that provide a quick snapshot of whether the system is improving, periodically a more detailed evaluation is useful particularly if i) the indicators demonstrate that one or more of the steps in the MDSR process is not reaching expected targets, or ii) if maternal mortality is not decreasing. Since the main purpose of MDSR is to lead to action to reduce maternal deaths if this is not happening the system is failing. A more detailed evaluation can also be used to assess whether the system can function more efficiently. Ideally, an evaluation of the quality of information provided would also take place periodically. The evaluation of MDSR system should take efficiency and effectiveness into consideration.

Table 1.MDSR monitoring framework – **to be finalized at a later date**

Indicator	**Target**	**Means of verification**
Overall system indicators		
Maternal death is a notifiable event	Yes	PHEM/ Data from
National MDSR task force exists	Yes	Annex 1
- that meets regularly	At least monthly	Minutes
National Maternal Death Review Committee exists	Yes	Report
- that meets regularly	At least quarterly	Minutes
National maternal mortality report published annually	Annually	MDSR Report
% of facilities with maternal death review committees		
% of woredas with someone responsible for MDSR	100%	??
	100%	??
Identification and reporting		
Facility:		
All maternal deaths are reported	Yes	??
- % within 48 hours	>90%	Survey
Community:		
% of woredas with zero reporting weekly	100%	PHEM report
[% of expected maternal deaths that are reported?]	80%	MDSR report;
% of community maternal deaths reported within 1 week	>80%	validation studies
		Review of notification forms

Review		
Facility		
% of facilities with a review committee	100%	??
% of facility maternal deaths are reviewed	100%	??
Community		
% of verbal autopsies conducted for pregnancy related deaths	100%	??
Region		
Regional maternal mortality review committee exists		
- and meets regularly to review facility and community deaths	Yes At least quarterly	 Minutes
- percentage of deaths reviewed by the region among reported ones	10%	Report
- Submits regular reports	Twice a year	Reports
Data Quality Indicators – TBD		
Cross check data from facility and community on same maternal death		Occasional audit
Sample of WRA deaths to ensure they are correctly identified as not maternal		Audit of notification forms
Response		
Facility		
% of committee recommendations that are implemented	80%	
- quality of care recommendations		??
- other recommendations		
Community	80%	??
% of committee recommendations that are implemented		
Reports		
National Committee produces annual report	Yes	Report
Regional committee produces bi-annual reports	Yes	Report
Impact		
Quality of care	??	??
- case fatality rate (facility)		

National maternal mortality ratio Regional maternal mortality ratio		

VIII Near Misses (for Hospital facilities only)

This provides an opportunity to include maternal morbidity in the surveillance system as resources allow or when a small number of deaths is identified. It is suggested that a minimum of 50% of cases of near miss are reviewed. If there are few maternal deaths more cases of near miss can be reviewed.

Near miss reviews have the advantages of:

- being less threatening to health providers than death reviews
- occurring in larger numbers and therefore allowing quantification of avoidable factors
- the possibility of interviewing the woman herself if needed (consent should be obtained)
- providing useful complementary insights into the quality of care

The near miss tool (Annex 5) should be used as a comprehensive intervention for strengthening district health systems, specifically contributing to monitoring the quality of care, assessing the implementation of key interventions, informing the mechanism of referral and strengthening all levels of health care services.

Maternal near-miss is defined as a woman who nearly died but survived a complication that occurred during pregnancy, child birth or within 42 days of termination of pregnancy. In practical terms, women are considered near miss cases when they survive life threatening conditions (i.e. organ dysfunction)

Inclusion criteria

- Women who are pregnant, in labor, or who delivered or aborted up to 42 days ago arriving at the facility with any of the listed conditions

  or
- Women who develop any of those conditions during their stay at the health-care facility are eligible.
- Women that develop those conditions unrelated to pregnancy (i.e. not during pregnancy or 42 days after termination of pregnancy) are **not** eligible.
- The eligibility is not restricted by gestational age at which complications occurred (i.e. women having abortions or ectopic pregnancies and presenting with any of the inclusion criteria are eligible).
- Women must have either suffered a **severe complication** or undergone one of the **interventions** as listed below to be included

Severe maternal complications

- **Severe Postpartum Hemorrhage**

  - Genital bleeding after delivery, with at least one of the following:
    - Perceived abnormal bleeding (1000 ml or more)
    - Any bleeding with hypotension
    - Blood transfusion.

- **Severe pre eclampsia**

  - Blood pressure > 160/110

  Plus one of
  - proteinuria of 5 g or more in 24 hours
  - oliguria of <400 ml in 24hours
  - HELLP syndrome
  - pulmonary oedema

- **Eclampsia**

  - Generalized fits in a patient without previous history of epilepsy. Includes coma in pre-eclampsia.

- **Sepsis or severe systemic infection**

  - Presence of fever (body temperature >38°C),
  - a confirmed or suspected infection (e.g. chorioamnionitis, septic abortion, endometritis, pneumonia),

    and at least one of the following:
    - heart rate >90,
    - respiratory rate >20,
    - leukopenia (white blood cells <4000),
    - leukocytosis (white blood cells >12 000).

- **Ruptured Uterus**

  Rupture of uterus during labour confirmed by laparotomy

- **Severe complications of abortion**

  Sepsis, haemorrhage or perforated uterus following abortion

Critical Interventions

- Admission to intensive care unit

- Laparotomy (includes hysterectomy, excludes Caesarean Section)
- Blood transfusion

Identifying women with near misses

All staff at the facility can report a near miss to the focal person. Posters should be made to stimulate identification.

Morning meetings are an opportunity to identify potential cases.

A log book should be made available for staff to enter the Identifying number of the case . The log book should be kept in a recognised, accessible place.

Case Review

The case summary should be prepared prior to the MDSR Committee meeting and the near miss cases reviewed after the Maternal Deaths.

An action plan should be prepared for each near miss using the action tool.

Each Hospital should determine its own ground rules. Confidentiality and no punitive use of information are of paramount importance in establishing an effective review system.

Additional considerations (Broadening the system)

Perinatal death review

As perinatal deaths are closely linked to the access and quality of obstetric care, the need to carry out perinatal death review can complement the MDSR system.

Pregnancy surveillance

Identification of all pregnant women at any given time in a location is one method to obtain denominators, identify women at higher risk, and determine pregnancy outcomes reliably. Establishing a pregnancy surveillance system, while beneficial, should take in account the resources available and the goals of the system itself.

Linkage to vital records

Identification of maternal deaths can be accomplished by reviewing vital records. Additional deaths may be uncovered using other approaches. Creating a system of verifications of the newly identified deaths is important for data validity. The valid deaths identified by other methods, if confirmed to not already be listed in the vital registration system, should be then added. In this way, the MDSR provides an opportunity to strengthen the vital registration system.

ANNEXES 1-11 : MDSR TOOLS

Annex 1: Identification and Notification form

This form will be filled for *ALL* deaths to women of reproductive age (15-49 years)

(To be filled in triplicate; one copy kept at HP (with section 1 filled), one at Health center and one sent to Woreda, both sections filled)

Notification (section one)		
1.	Name of the deceased	_____
2.	Name of head of the household:	_____
3.	Household address:	Woreda/Subcity _____ Kebele _____ Gott _____ HDA team _____ house number: _____
4.	Date of the woman's death	DD/MM/YYY ____/____/_____
5.	Who informed the death of the woman?	1. HDA 2. Religious leader 3. Self (HEW) 4. Others (specify) _____
6.	Date of Notification:	DD/MM/YYY ____/____/_____
Screening (to be filled by Health Extension Worker)		
7	Age of the woman:	
8.	Did she die while pregnant?	☐ Yes ☐ No
9	Did she die with 42 days of termination of pregnancy?	☐ Yes ☐ No
10	Has she missed her menses before she dies?	☐ Yes ☐ No ☐ Unknown
11	Place of death:	1. At home 2. On the way to health post 3. At health post 4. On the way to Health facility (HCs, hospitals) 5. At health facility (HC, Hospital)
12 .	Name of the HEW:	_____
13.	Telephone number of HEWs	_____
Section two (The section below is to be filled at the Health Centre level)		
Classification and reporting		
1.	Suspected maternal death:	☐ Yes ☐ No
2	**If suspected maternal death, ID number given at HC**	_____
Reporter Information		
3.	Name of health center	_____
4.	Name of Health Center Head/MDSR focal person	_____
5.	Telephone Number of Health Centre head/focal person	_____
6.	Date of Notification	DD/MM/YYYY ____/____/_____
7.	Signature	_____

Annex 1B: Verbal autopsy tool (maternal death review tool at community level)

[To be undertaken for all suspected maternal deaths irrespective of place of death, including facility deaths]

I. People who participated in the interview:				
Note: *A person who was there at the time of illness or death can participate in the interview. Up to four interviewees can be interviewed.*				
S.n	**Name of the Interviewees**	**Relationship with the diseased**	**Was around at the time of:**	
			Illness	**Death**
1			☐ Yes ☐ No	☐ Yes ☐ No
2			☐ Yes ☐ No	☐ Yes ☐ No
3			☐ Yes ☐ No	☐ Yes ☐ No
4			☐ Yes ☐ No	☐ Yes ☐ No

II. Interviewer Information		
1	Interviewer name:	_____
2	Date of interview:	DD/MM/YYYY _____/_____/_____/
3	Language of interview:	_____
4	Phone number of interviewer	_____

III. Identification/ Background information:		
No	Questions	Response
1	ID Number	
2	Age of deceased	
3	Time of death and date of death	
4	Ethnicity	
5	Address where death occurred (***Note:*** *select only one and provide the name)*	1. Home/ Relatives' Home (Name: _____) 2. Health Post (Name of HP: _____) 3. Health Centre (Name of HC: _____) 4. Hospital (Name of hospital: _____) 5. In Transit (Distance from the destination in km: _____)
6	Place of residency of deceased	Woreda/subcity _____ Got_____ Kebele _____ House number_____
7	Marital status of the deceased	1. Single 3. Divorced 2. Married 4. Widowed
8	Religion of deceased	1. Orthodox 3. Protestant 2. Muslim 4. Others (specify)------
9	Educational status of the deceased	1.Illiterate 2.No education, but can read and write 3. Grade completed _____ 4. Don't know
10	Level of education of the husband	1. Illiterate 3. Grade completed ___ 2. No education, but can read and write 4. Don't know
11	Occupation of the deceased	1. Farmer 5. Unemployed 2. Merchant/tradesperson 6. Public employee 3. House wife 7. Others (specify) _____ 4. Daily labourer
12	Occupation of the husband	1. Farmer 4. Daily labourer 2. Merchant/tradesperson 5. Unemployed 3. Public employee 6. Others _____
13	Family's monthly income if possible	_____ Birr
14	Do you have a death certificate?	☐ Yes ☐ No
	If Yes to Q14, ask to see the documents. Record important cause of death and identified problems _____	
15	Has she ever attended basic	☐ Yes ☐ No ☐ Not known

	antenatal care (ANC)	
16	If yes to Q15, where did she receive ANC Services (Check all that apply)	☐ HP ☐ Public Hospital ☐ Public HC ☐ Private clinic or hospital (specify) _____
17	Do you know is she had any medical problems before she died? If yes, Check *ALL* that apply	

Condition	**Check if identified**	**If Yes, When was the condition identified?**
Malaria (fever, chills, rigors)	☐ Yes ☐ No	
Tuberculosis (cough>3 weeks, fever, night sweating, etc.)	☐ Yes ☐ No	
HIV/AIDS	☐ Yes ☐ No	
Anemia	☐ Yes ☐ No	
Hypertension	☐ Yes ☐ No	
Diabetes	☐ Yes ☐ No	
Epilepsy	☐ Yes ☐ No	
Others (Specify) _____	☐ Yes ☐ No	

18. . **Did she receive treatment for any of the conditions mentioned above?**
Specify Treatment provided for each condition (separating modern and traditional treatments) If NO treatment was provided, leave blank.

Disease	*Modern treatment*	*Traditional/cultural treatment*
Malaria (fever, chills, rigors)	☐ Yes ☐ No	
Tuberculosis (cough>3 weeks, fever, night sweating, etc.)	☐ Yes ☐ No	
HIV/AIDS	☐ Yes ☐ No	
Anemia	☐ Yes ☐ No	
Hypertension	☐ Yes ☐ No	
Diabetes	☐ Yes ☐ No	
Epilepsy	☐ Yes ☐ No	
Others (Specify) _____	☐ Yes ☐ No	

	IV. Pregnancy related questions	
1	Number of pregnancies including those that ended in miscarriage and still births _____	
2	Number of births, including that ended in Stilll births and early neonatal deaths _____	
3	Number of living children _____	
4	Duration of the index pregnancy in months_____	
5	State of the pregnancy at the time of death	1. Delivered live birth 3. Undelivered 2. Delivered still birth 4. Abortion
6	If it was delivery, who assisted the delivery?	1. Family/elderly 3. HEWs 2. TBA 4. HCWs
7	Were any of the following problems experienced *during pregnancy*? Tick *ALL* those that apply	1. Seizure/abnormal body movement 3. Fever 2. Bleeding 4. Other (specify) _____
8	Did she seek care for the problems experienced?	Yes ☐ No ☐ If YES, briefly DESCRIBE _____

	V. Community factors	
1	Number of days/hours she was sick before she died (*Number of hours and days - specify*) _____	
2	Problems before she died: Tick *ALL* that apply	☐ Vaginal bleeding ☐ Baby stuck/Prolonged labor ☐ Fits ☐ Other (specify ☐ Fever
3	Was any care sought for the problem? If "No" to question number 3 go to number 9	☐ Yes ☐ No
4	If yes to Q3 above, how long after the problem/illness was detected was care sought? (*Number of hours and days - specify*) _____	

5	Where was care sought and obtained?	☐ Traditional Healer ☐ Health Centre ☐ Health Extension Worker ☐ Hospital ☐ Others (specify) _____
6	How long after seeking care did she arrive at a health facility? (*Number of hours and days - specify*) _____	
7	What mode of transport was used if care was obtained?	
8	For how long was the care given? (*Number of hours and days - specify*)	
9	If no to Q3 above, what was the main reason why care was not sought?	☐ Not knowing the impact of the illness ☐ Lack of transport ☐ Past good obstetric outcomes at home ☐ Lack of money ☐ No nearby health facility ☐ Others (Specify)
10	How long would it take to walk from this house to the nearest (*Number of hours and days - specify*	Health post _____ Hours/days Health center _____ Hours/days Hospital _____ Hours/days
11	If you want to go to health center or hospital, what mode of transport would you be able to use? (Tick *ALL* that apply)	☐ Rented /public transport ☐ Private car ☐ Ambulance ☐ Others (specify) _____

INSTRUCTION: This form should be stored with a copy of the relevant Verbal Autopsy Summary form (Annex 3) and Annex 4 in a secured location (e.g. locked cupboard in HC manager's office)

Instructions for coding a maternal death with a unique identifier number

A unique number is to be given by the Health center for each maternal death for whom a verbal autopsy is conducted. This number will be used in reporting the death to the woreda level. The Health center staff member who is assigned to make the visit to the village from where a death of a woman in the reproductive age is reported will be allocating the number to the deceased, **after conducting the screening and identifying it as a suspected maternal death**. The HC head is responsible for making sure that the numbering is given correctly by checking it upon receiving the filled format. Coding is only for those suspected of a maternal death. Health facilities investigating a facility death will be using the MRN and no other coding is given at facility level. But every woman, irrespective of place of death, will be given the code number at community level during verbal autopsy.

The following system will be used in coding a maternal death:

- Three letters for the region
- Three letters for the zone
- Three letters for the woreda
- Three letters for the HC
- Year in Ethiopian calendar on which the death occurred.
- Month Number in Ethiopian calendar on which the death occurred.
- Serial number for the individual death in the health center in the month of investigation

Examples:

A midwife from Kokofe Health center in Kiramu woreda, East Wolega Zone, Oromia is to investigate a suspected maternal death of a woman from Bedesa kebele who died on 21/05/03. There was another death she investigated during the same month in another kebele. The number she assigns to the deceased will be:

- ORO-EWE-Kir-Kok-03-05-02

A 27 year old woman from woreda 07 to Gulele Health center in Gulele subcity, Addis Abeba died on the 7th day of Miazia 2004. The midwife assigned by the HC to investigate the death uses the screening questions and determines it to be a suspected maternal death. She then writes the following code on the verbal autopsy form:

- ADD-GUL-07-GUL-04-08-01

For a maternal death to be investigated by a staff member from Kele health Center in Amaro special woreda, SNNPR, whose passing happened in the month of Nehassie 2002, the assigned number will be:

- SOU-AMA-AMA-Kel-02-12-01

The list of zonal codes is shown in the table below. For consistency reasons, all are advised to use as it is for Maternal Death Surveillance and Response activities. Woreda and Health center codes are to be given at the respective levels. That means the woreda will be giving the three-letter code to be used by all of its HCs and each HC will allocate its own facility code.

Alphabetical List of Zonal codes

SN	Region	Name of the zone	Zonal code		SN	Region	Name of the zone	Zonal code
1	Addis Abeba	ADDIS KETEMA	ADD-ADK		48	Oromia	HORO GUDURU	ORO-HOR
2	Addis Abeba	AKAKI/KALITI	ADD-AKK		49	Oromia	ILLUABABORA	ORO-ILB
3	Addis Abeba	ARADA	ADD-ARA		50	Oromia	JIMA	ORO-JIM
4	Addis Abeba	BOLE	ADD-BOL		51	Oromia	Jima Town	ORO-JMT
5	Addis Abeba	KIRKOS	ADD-KIR		52	Oromia	KELEM	ORO-KEL
6	Addis Abeba	GULELE	ADD-GUL		53	Oromia	Nekempt Town	ORO-NEK
7	Addis Abeba	KOLFE KERANIO	ADD-KOK		54	Oromia	N SHOA	ORO-NSH
8	Addis Abeba	LIDETA	ADD-LID		55	Oromia	SHASHEMENE Town	ORO-SHA
9	Addis Abeba	NEFAS-SILK LAFTO	ADD-NSL		56	Oromia	SW SHEWA	ORO-SWS
10	Addis Abeba	YEKA	ADD-YEK		57	Oromia	W ARSI	ORO-WAR
11	Afar	AFAR 1	AFA-AF1		58	Oromia	W HARERGHE	ORO-WHA
12	Afar	AFAR 2	AFA-AF2		59	Oromia	W SHEWA	ORO-WSH
13	Afar	AFAR 3	AFA-AF3		60	Oromia	W WELLEGA	ORO-WWE
14	Afar	AFAR 4	AFA-AF4		61	SNNPR	ALABA	SOU-ALA
15	Afar	AFAR 5	AFA-AF5		62	SNNPR	BENCH MAJI	SOU-BEN
16	Amhara	AWI	AMH-AWI		63	SNNPR	DAWRO	SOU-DAW
17	Amhara	BAHIR DAR	AMH-BAH		64	SNNPR	GAMO GOFA	SOU-GAM
18	Amhara	E GOJJAM	AMH-EGJ		65	SNNPR	GEDEO	SOU-GED
19	Amhara	N. GONDAR	AMH-NGN		66	SNNPR	GURAGHE	SOU-GUR
20	Amhara	N. SHEWA	AMH-NSA		67	SNNPR	HADIYA	SOU-HAD
21	Amhara	N. WOLLO	AMH-NWO		68	SNNPR	HAWASSA CA	SOU-HWA
22	Amhara	OROMIA	AMH-ORO		69	SNNPR	KEFA	SOU-KEF
23	Amhara	S. GONDAR	AMH-SGN		70	SNNPR	KEMBATA/TEMBARO	SOU-KET
24	Amhara	S. WELLO	AMH-SWO		71	SNNPR	KONTA	SOU-KOT
25	Amhara	WAG HIMRA	AMH-WAG		72	SNNPR	Segen	SOU-SEG
26	Amhara	W. GOJJAM	AMH-WGJ		73	SNNPR	SHEKA	SOU-SHK
27	Benshangul-Gumuz	ASOSA	BEN-ASO		74	SNNPR	SIDAMA	SOU-SID
28	Benshangul-Gumuz	KEMASHI	BEN-KEM		75	SNNPR	SILTI	SOU-SIL
29	Benshangul-Gumuz	MAO-KOMO	BEN-MAK		76	SNNPR	S Omo	SOU-SOU
30	Benshangul-Gumuz	METEKEL	BEN-MET		77	SNNPR	WOLAYTA	SOU-WOL
31	Benshangul-Gumuz	PAWE	BEN-PAW		78	SNNPR	YEM	SOU-YEM
32	Dire-Dawa	DIRE-DAWA	DIR-DIR		79	Somali	AFDER	SOM-AFD
33	Gambela	AGNUAK	GAM-AGN		80	Somali	DOLLO	SOM-DOL
34	Gambela	GAMBELLA	GAM-GAM		81	Somali	FAFAN	SOM-FAN
35	Gambela	MEJENGER	GAM-MEJ		82	Somali	JARAR	SOM-JAR
36	Gambela	NUER	GAM-NUE		83	Somali	KORAH	SOM-KOR
37	Hareri	HARERI	HAR-HAR		84	Somali	LIBEN	SOM-LIB
38	Oromia	ADAMA Town	ORO-ADA		85	Somali	NOGOB	SOM-NOG
39	Oromia	ARSI	ORO-ARI		86	Somali	SHEBELE	SOM-SHE
40	Oromia	BALE	ORO-BAL		87	Somali	SITI	SOM-SIT
41	Oromia	BISHOFTU Town.	ORO-BIS		88	Tigray	C .TIGARY	TIG-CTI
42	Oromia	BORENA	ORO-BOR		89	Tigray	E .TIGARY	TIG-EST
43	Oromia	E HARERGHE	ORO-EHA		90	Tigray	MEKELLE	TIG-MEK
44	Oromia	E SHEWA	ORO-ESH		91	Tigray	NW TIGARY	TIG-NWT
45	Oromia	E WELLEGA	ORO-EWE		92	Tigray	SE TIGARY	TIG-SET
46	Oromia	Finfine Zuria	ORO-FIZ		93	Tigray	S .TIGARY	TIG-STI
47	Oromia	GUJI	ORO-GUJ		94	Tigray	W. TIGARY	TIG-WTI

Annex 2: Facility based ward notification form

This form will be filled for *ALL* suspected maternal deaths in the facility/ hospital

(To be submitted to the Medical Director or Health Centre Head within 48 hours)

This form should be filled out for *all* deaths to women of reproductive age (15-49) who died while pregnant, during labour or delivery, or within 42 days of the termination of pregnancy (whatever the outcome)

To be filled in duplicate. One copy to be kept with the head of the ward/unit and one provided to the medical director. Keep forms available in each unit of the facility and report all suspected maternal deaths

Notification (section one)		
1.	Name of the deceased	
2.	Medical Record Number/ Client Card Number:	
3.	Household address:	Woreda/Subcity _____ Kebele _____ Gott _____ HDA team _____ house number: _____
4.	Date of the woman's death	DD/MM/YYY ____/____/_____
5.	Time of the woman's death	
6.	Date of Notification:	DD/MM/YYY ____/____/_____
7.	WARD on which death occurred	
8.	Name of the person reporting death:	
9.	Signature	

Annex 2B: Facility based abstraction form

I. Abstractor related Information		
Name of the abstractor:_____ Qualification of the Abstractor_____ Telephone number of the abstractor:_____ Date of abstraction:_____ Was the abstractor involved in the management of the case? 1. Yes 2. No		
II. Identification/ Back ground information		
No.	Question	Response
1	Medical Record Number of the deceased	
2	Age of deceased	
3	Date and time of death	Date _____ Time_____
4	Ethnicity	
5	When did the death occur?	1. In transit 2. While waiting for treatment 3. Following start of treatment
6	Place of usual residence	Woreda/subcity_____ Kebele_____ Got_____ House number_____
7	Religion	1. Orthodox 3 Protestant 2. Muslim 4. Others (specify)------
8	Educational status of the deceased	1.Illiterate 2.No formal education, but can read and write 3. Grade completed _____ 4. Don't know
9	Marital status of the deceased	1. Single 3. Divorced 2.Married 4. Widowed
10	Level of education of the husband	1.Illiterate 2.No formal education, but can read and write 3. Grade completed _____ 4. Don't know
11	Occupation of the deceased	1. Farmer 5. Unemployed 2. Merchant/tradesperson 6. Public employee 3. House wife 7. Others (specify) _____ 4. Daily labourer
12	Occupation of the husband	1. Farmer 4. Daily labourer 2. Merchant/tradesperson 5. Public employee 3. Unemployed 6. Others _____
13	Monthly income if possible	_____birr
III. Obstetric characteristics		
1	Gravidity	
2	Parity	
3	Number of living children	
4	Attended ANC?	☐ Yes ☐ No ☐ Not known
5	If yes, where is the ANC?	1. Health post 3. Hospital 2. Health center 4. Other (specify)
6	If yes, number of visits	
7	Basic package of services provided in ANC (Tick *ALL* that apply)	☐ RPR ☐ BP measurement during the follow up ☐ Hgb, ☐ Fefol supplementation ☐ Blood group, ☐ TT immunization ☐ HIV status, ☐ Other (Specify) _____ ☐ U/A
8	Problems or risk factors in the current pregnancy:	
i	***Pre existing problems*** (Tick *ALL* that apply)	☐ Hypertension ☐ Cardiac problem ☐ Anaemia ☐ Tuberculosis ☐ Diabetes ☐ Hepatitis ☐ HIV positive ☐ Other (Specify) _____ ☐ Malaria

ii	***Antenatal/ intranatal problems/risks*** (Tick *ALL* that apply)	☐ Pre eclampsia / eclampsia ☐ Anaemia ☐ Placenta praevia ☐ Malaria ☐ Previous Caesarean Section ☐ UTI/pyelonephritis ☐ Multiple gestation ☐ Unintended pregnancy ☐ Abnormal lie/presentation ☐ Other (specify)
9	State of pregnancy at the time of death	1. Antepartum 4. Postabortion 2. Intrapartum 5. Ectopic 3. Postpartum
10	If delivered, what is the outcome?	1.Live birth 2. Stillbirth
11	Date and place of delivery	Date: _____
12	Place of delivery:_____	1. Health post 3. Hospital 2. Health center 4. Other (specify)
13	Gestational Age at the time of death in antepartum and /or intrapartum events (specify time period in months & weeks)	
14	If the death was post partum or postabortion, after how many days did the death occur?	days
IV. Facility Episode		
1	Date and time of admission	Date_____ Time_____
2	Day of admission	1. Working days 2. Weekends 3. Holiday
3	Main reason/symptom for admission	
4	Is it a referred case? *If "No" to question number 5 go to number 9*	☐ Yes ☐ No
5	Referred from (Name of health facility)	
6	Reason for referral	
7	Comment on referral • Accompanied by HCWs • Appropriate management	
8	Summary of management at hospital	
9	Qualification of the most senior attending health professional(s)	
10	Primary cause of death	
11	Is this preventable death?	
12	If preventable maternal death, specify factors according to the three delay model	
I	Delay in seeking care	
ii	Delay in reaching at right facility	
iii	Delay within the facility (diagnostic and therapeutic)	

Annex 3: Maternal Death Reporting Format (MDRF) [VA summary form]

(To be filled in 4 copies by the Health Center and send one each for woreda, RHB and EPHI. One kept at HC)

Reporting Facility Information						
Reporting Health Facility:_____			Woreda: _____			
Zone : _____	Region: _____		Date of Reporting DD/MM/YYYY ____/____/_____			
Deceased Information						
Deceased ID: _____	Date of Death DD/MM/YYYY ____/____/_____		Age at death: ___ Years			
Place of Death	1. at home 2. at health post 3. at health center		4. at Hospital 5. on transit 6. Other specify _____			
Marital status	1. Single 2. Married	3. Divorced 4. Widowed				
Religion: _____	Ethnicity :_____					
Level of Education	1. Illiterate 2. No formal education, but can read and write 3. Elementary school		4. High school 5. College and above 6. I do not know			
Gravidity _____	Parity_____					
Timing in relation to pregnancy	1= Antepartum	2= Intrapartum	3= Postpartum			
Antenatal Care (ANC)						
Attended ANC?	1. Yes	2. No	3. Not known			
If yes, where is the ANC?	1. Health post 2. Health centre		3. Hospital 4. Other (specify) _____			
If yes, number of ANC visits	_____					
Basic package of services provided on ANC (**Tick ALL that apply**)	☐ RPR ☐ Hgb, ☐ Blood group, ☐ HIV status,		☐ U/A ☐ BP measurement during the follow up ☐ Fefol supplementation ☐ TT immunization			
Cause of death						
Direct obstetric	1= hemorrhage	2= obstructed labor	3= HDP	4=abortion	5= sepsis	6. Others
Indirect obstetric	1=anemia,	2= malaria	3= HIV	4= TB	5. Others _____	
If delivered, what is the outcome?	1. Live birth	2. Stillbirth				
Is the death preventable?	1= Yes	2= No	3= I do not know			
Contributory factors (Thick all that apply)						
Delay 1	☐ Traditional practices ☐ Family poverty ☐ Failure of recognition of the problem		☐ Lack of decision to go to health facility ☐ Delayed referral from home			
Delay 2	☐ Delayed arrival to referred facility ☐ Lack of roads ☐ Lack of money for transport		☐ Lack of transportation ☐ No facility within reasonable distance			
Delay 3	☐ Delayed arrival to next facility from another facility on referral ☐ Delayed or lacking supplies and equipments(specify) ☐ Delayed management after admission ☐ Human error or mismanagement					

Reported by: _____ signature: _____ seal

Annex 4: Action plan template

Date of meeting _____Case ID _____ Maternal Death ☐ Maternal Near miss ☐

Date of Death (date of discharge, if near miss): _____ Death preventable ☐ Yes ☐ No

Avoidable Factor	Action to be taken as a result of the case	Person responsible for the action	Timeline	Date Action completed	Remark

Annex 5: Facility Based Near-Miss Abstraction Form

I. Abstractor related Information		
Name of the abstractor:_____ Qualification of the Abstractor_____ Telephone number of the abstractor:_____ Date of abstraction:_____ Was the abstractor involved in the management of the case? 1. Yes 2. No		
II. Identification/ Back ground information		
No.	Question	Response
1	Name of patient	
2	Age of patient	
3	Patient ID	
4	Ethnicity	
6	Place of usual residence Woreda/subcity_____ Kebele_____ Got_____ House number_____	
8	Educational status of the patient	1.Illiterate 2.No formal education, but can read and write 3. Grade completed _____ 4. Don't know
9	Marital status of the patient	1. Single 3. Divorced 2. Married 4. Widowed
10	Level of education of the husband	1.Illiterate 2.No formal education, but can read and write 3. Grade completed _____ 4. Don't know
11	Occupation of the patient	1. Farmer 5. Unemployed 2. Merchant/tradesperson 6. Public employee 3. House wife 7. Others (specify) _____ 4. Daily labourer
12	Occupation of the husband	1. Farmer 4. Daily labourer 2. Merchant/tradesperson 5. Public employee 3. Unemployed 6. Others _____
III. Obstetric characteristics		
1	Gravidity	
2	Parity	
3	Number of living children	
4	Attended ANC?	☐ Yes ☐ No ☐ Not known
5	If yes, where is the ANC?	1. Health post 3. Hospital 2. Health center 4. Other (specify)
6	If yes, number of visits	_____
7	Problems or risk factors in the current pregnancy:	
i	***Pre existing problems*** (Tick *ALL* that apply)	☐ Hypertension ☐ Cardiac problem ☐ Anaemia ☐ Tuberculosis ☐ Diabetes ☐ Hepatitis ☐ HIV positive ☐ Other (Specify) _____ ☐ Malaria
ii	***Antenatal/ intranatal problems/risks*** (Tick *ALL* that apply)	☐ Pre eclampsia / eclampsia ☐ Anaemia ☐ Placenta praevia ☐ Malaria ☐ Previous Caesarean Section ☐ UTI/pyelonephritis ☐ Multiple gestation ☐ Unintended pregnancy

		☐ Abnormal lie/presentation ☐ Other (specify)
9	State of pregnancy at the time of near miss	1. Antepartum 4. Postabortion 2. Intrapartum 5. Ectopic 3. Postpartum
10	If delivered, what is the outcome?	1.Live birth 2. Stillbirth
11	Date and place of delivery	Date: _____
12	Place of delivery:_____	1. Health post 3. Hospital 2. Health center 4. Other (specify)
13	Gestational Age at the time of near miss in antepartum and /or intrapartum events (specify time period in months & weeks)	
14	If the event was post partum or postabortion, after how many days did the death occur?	days
IV. Facility Episode		
1	Date of admission	
2	Day of admission	1. Working days 2. Weekends 3. Holiday
3	Time of admission	1. Working hours 2. Non working hours
4	Date of discharge	
5	Main reason/symptom for admission	
6	Condition on arrival	1. Pulse 2. BP
7	Is it a referred case? If "No" to question number 6 go to number 10	☐ Yes ☐ No
8	Referred from (Name of health facility)	
9	Which best describes when the patient became a "near miss"?	1. Patient admitted as near miss 2. Referred from outside as near miss 3. Admitted with no disorder, became near miss 4. Admitted with disorder, became near miss
10	If referred from outside, prior visit to how many centres?	Total _____ Public_____ Private_____
11	If referred , treatment in referral centre Appropriate?	☐ Yes ☐ No
12	Qualification of the most senior attending health professional(s) at hospital	
13	Primary underlying disorder:	
I	Hypertensive disorder Circle *ALL* that apply	☐ Severe pre eclampsia ☐ eclampsia
ii	Haemorrhage Circle *ALL* that apply	☐ Abortion ☐ Scar dehis. ☐ ectopic ☐ Uterine rupture ☐ GTD ☐ Atonic PPH ☐ APH ☐ Traumatic PPH ☐ Pl. praevia ☐ Mixed PPH ☐ Pl. abruption

iii	Sepsis	1. Antepartum 3. Post partum 2. intrapartum 4. post abortion
iv	Labour related disorders	☐ Prolonged/obstructed ☐ Inverted uterus ☐ retained placenta
V	Medical disorders	☐ Anaemia ☐ malaria ☐ hepatitis ☐ pneumonia ☐ diabetes heart disease
Vi	Accidental/incidental conditions	Specify _____
14	Summary of facility management	
15	Condition at discharge?	
i	Complete recovery	☐ Yes ☐ No
ii	Residual disability	☐ Yes ☐ No ☐ Unclear as yet
16	If preventable maternal complication, specify factors that contributed to the severity according to the three delay model	
i	Delay in seeking care	
ii	Delay in reaching right facility	
iii	Delay within the facility (diagnostic and therapeutic)	

Annex 6: Informed Consent Form for Verbal Autopsy

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.

Purpose of the interview: We are talking to people in the community to learn why some women die while they are pregnant or during or soon after giving birth..

What will happen during the interview: I will ask you questions about your relative/neighbor/friend who recently died. I will ask about her background, her pregnancy history and events during her most recent pregnancy. I may also some questions about her baby from this pregnancy. Some questions have a choice of possible answers and others are open-ended.
Time required: Your interview will take approximately one hour.

Risks: It is possible that some questions could make you feel uncomfortable by talking about bad experiences.

Benefits: There are no direct benefits, however, your participation will help up improve maternal and newborn care for women and babies.

Confidentiality: All information you provide will be kept confidential. Your responses will be assigned a code number and your name will not be used in any way.

Participation: Your participation is strictly voluntary. Refusal to participate will not affect whether or not you receive subsequent services. You may discontinue participation at any time.

Do you agree to participate in this interview? YES / NO

_____ _____
Interviewer Name Interviewer Signature

_____
Date

_____ ----------
Respondent's name Respondents relationship to woman

Annex 7:Disclaimer for MDSR Committee

Non-disclosure confidentiality agreement- to be completed prior to each meeting by all attendees

We, the members of the ---- ----------review committee, agree to maintain anonymity and confidentiality for all the cases discussed at this meeting, held on [DATE]. We pledge not to talk to anyone outside this meeting about details of the events analysed here, and will not disclose the names of any individuals involved, including family members or health care providers.

Date of meeting ……

Name signature

Annex 8: Conducting the Verbal Autopsy Interview

This guide accompanies the Verbal Autopsy Tool (Annex 1 in the MDSR Technical Guidelines). It is designed to help data collectors understand each question of the form so that they can fill it in as completely and accurately as possible.

(1) Materials to take to a VA interview

You should take the following supplies with you when you go into the field to collect VA data:

- This guide
- The handout "10 Tips for Collecting Good Quality Data through a Verbal Autopsy"
- Blank maternal death verbal autopsy formats
- Informed Consent form
- Pens for writing
- Address of the household you will visit and contact details of the local HEW

(2) General instructions for the verbal autopsy questionnaire

Section I of Annex 1 (Notification tool) should have been filled out with information provided by the local HEW. If enough information has been provided by the HEW during Notification, then Section II (Screening) can be used immediately to determine whether the death was likely to have been maternal. If so, then a VA can be arranged within 3-4 weeks, as suggested by the Technical Guidelines.

If the Notification data are insufficient to complete the Screening section, then it will be necessary to visit the community to collect additional data. In this case, the Screening and Verbal Autopsy can be conducted on the same day.

Be sure to follow the 10 Tips for Collecting Good Quality Data through a Verbal Autopsy. It is particularly important to approach household members sensitively, introduce yourself, and take some time to build trust and express your sympathy for the death of their family member before you start the interview.

Ask the questions slowly and clearly so the respondent understands. Allow the respondent to think about the question before recording their answer. Note that respondents may 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.

Note: Record information as it has been reported to you. Do NOT make assumptions or "guess" the right answer. If respondents are unable or choose not to answer a question, leave it blank.

(3) Informed Consent

The informed consent form must be filled out before you start to collect the VA information. Ensure you go through all the sections of the form and explain anything that is not clear. All respondents should sign the form to indicate that they are willing to participate.

Note: Even if a respondent has signed the form, they can choose to stop the interview at any time or refuse to answer specific questions.

(4) Instructions by Section

Interview Information

- I. People who participated in the interview: Using the name of the respondent is optional as this reduces confidentiality. List just the *first name* of respondents so that you can refer to them by name during the interview. Summarise how the person was related to the deceased woman (husband, mother-in-law, neighbour, friend) and add a ✓ to indicate whether s/he was present during the woman's illness, death or both. If some respondents are not present during the whole interview, you can record what time they arrived (if late) or left (if did not stay until the end).
- II. Interviewer related: These 4 questions relate to yourself and the characteristics of the interview. Please ensure your phone number is included in case the maternal death review committee needs to contact you for follow-up questions.

III. Identification/Background Information

1. **ID Number**: Allocate a *unique identifying code* using the instructions in the Technical Guidance, based on the region, zone and the local health centre closest to the residence of the deceased woman.

2. **Age**: Write the age of the woman in years. If family members are not certain about her age, ask for a rough estimate and clearly mark that the age is not known exactly, e.g. "about 34" or "between 27 and 30".

3. **Time and date of death**: Record the date of the woman's death (using the Ethiopian calendar) and the time at which she died. You can write down an approximate time if respondents are not certain, such as "about 2 pm" or "late at night."

4. **Ethnicity**: Write down the ethnicity as reported by family members.

5. **Address where death occurred**: Place a ✓ against the type of place where the woman died. In the blank space of the answer box, write the name of the specific health post, health centre or hospital where she died if she died in a facility. If she died at a house, put down the name of

the kebele, or, if the respondents agree, you can write the specific address. For deaths in transit, write down how far from a facility the death occurred, and name the specific facility.

6. **Place of usual residence**: If family members agree, record the address where the woman usually lived. If she died at home, this should be the same address that was given in #5 above, but it may be a different address if she was staying with relatives when she died. If respondents are concerned about confidentiality, then try to get permission to record just the name of the kebele.

7. **Marital status of the deceased**: Place a ✓ against the correct marital status. "Other" may include separated, or cases where the location of the husband or whether he is still alive are not known.

8. **Religion**: Place a ✓ against the correct marital status. If the religion of the woman is unknown, this can be recoded next to the "other" category.

9. **Educational status of the deceased**: Place a ✓ against the correct category. If respondents report that the woman could not read or write at all, then mark option 1. If she had no formal education but had basic reading and writing ability (e.g. could read a newspaper or a health promotion leaflet), then choose option 2. Otherwise record the number of grades completed in option 3 or that her educational status was unknown (option 4).

10. **Level of education of the husband**: Same as above. It is best if you can ask the husband this question directly.

11. **Occupation of the deceased**: Place a ✓ against the occupation that describes the *primary way the woman earned an income*. Option 5 refers to women who usually had paid employment but were not working at the time of the death. If the woman was a full-time housewife, record that in Option 6 "others."

12. **Occupation of the husband**: Same as above. It is best if you can ask the husband this question directly.

13. **Family's monthly income**: As the respondents to *estimate* how much the household was earning each month. Income of all household members who lived together and shared daily expenses for food should be included in this calculation. Usually, this would include the deceased woman, her husband and children (if any) and any family members who shared the same house and meals on a regular basis.

Do you have a death certificate?: Death certificates are rare in Ethiopia and it is likely that only a few women who died in a hospital would have been provided with one. In future, however, they are likely to become more common. If the family has received a death certificate, ask to see it and record the Cause of Death and any contributing factors that have been listed on it. Also write down from whom/where the death certificate was provided.

1. Pre-existing Problems: Has she ever attended basic Antenatal care (ANC)?

This is a screening question. If the answer is No or Not Known, skip the next question and proceed to the table about health conditions. Otherwise, place a ✓ next to ALL types of facility where she received ANC.

Fill out the table by asking family members whether the woman had been diagnosed with any of the conditions listed. Place a ✓ next to ALL conditions the woman had, and write down when it had been identified (a rough estimate is fine, such as "ANC visit 2" or "after 3 months of pregnancy" or "During childhood".)

1.2 **Did she receive treatment for any of the conditions mentioned above**? Place a ✓ in one or both columns if the woman had received any treatment for her conditions (some women may have received BOTH modern and traditional treatments for the same condition). If the respondents know *what kind of treatment* she received, briefly note the details.

IV. Pregnancy Related Questions

1. **Number of pregnancies including those that ended in miscarriage and still births**? Write down the *total* number of pregnancies the woman had in her life, regardless of their outcome.

2. **Number of living children**: Give the number of the deceased woman's children who have survived to the current day.

3. **Duration of the index pregnancy in months**: Write down the number of months of pregnancy the woman had completed at the time of her death. If respondents do not know exactly, make clear that the number is an estimate, i.e. "about 4 months." If the woman delivered, record the number of months at which she delivered (e.g. "almost 9 months")

4. **State of the pregnancy at the time of death**: Place a ✓ next to the correct outcome of the pregnancy.

5. **If it was delivery, who assisted the delivery**?: Place a ✓ next to ALL the types of people who assisted with the woman's delivery. Others may include family members.

6. **Were any of the following problems experienced *during pregnancy***? Place a ✓ next to ALL the signs and symptoms experienced by the woman and list any additional ones next to "Other". Describe the care she received for ALL the problems she experienced in the empty space available.

V. Community Factors

1. **Number of days/hours she was sick before she died**: Give as accurate a time estimate as possible, but if the respondents are not clear, record an estimate.

2. Problems before she died: This list refers to problems experienced at the time the woman became ill, leading up to her death. Place a ✓ next to ALL the signs and symptoms experienced around the time of her death and write any others that are reported next to "Other".

3. **Was any care sought for the problem**? Place a ✓ next to YES or NO. If NO, then skip questions 4-8 and proceed to question 9.

4. If **YES to Q3 above, how long after the problem/illness was it detected**?: Write down how many hours and/or days between the start of the problem and the time that care/treatment was "sought" – meaning that the decision was made to try to obtain treatment/care. Give as accurate a time estimate as possible, but if the respondents are not clear, record an estimate.

5. **Where was care sought and obtained**? Place a ✓ next to ALL the types of person/facility from where care or treatment were obtained.

6. **How long after seeking care did she arrive at a modern health facility**? "Modern" includes health post, health centre, and hospital. It does NOT include traditional healers. Record how many hours and/or days passed between deciding to obtain care or treatment and reaching one of the modern facilities. Give as accurate a time estimate as possible, but if the respondents are not clear, record an estimate.

7. **What mode of transport was used if care was obtained**? Write down the means of travel used by the woman to go to a health facility. Write down ALL modes of transport used if there was more than one.

8. **For how long was the care given**? Write down how many hours and/or days care or treatment were received for *each type of treatment received*. Then PROCEED to Q 10.

9. **If NO to Q3 above, what was the main reason why care was not sought**? This question is ONLY in cases where respondents indicated that no care/treatment had been sought in Q 3. Place a ✓ against just ONE response. You can record more details about the decision not to seek care in the "free text box" at the end of the form.

10. **How long would it take to walk from this house to the nearest …:** Reach each of the health facilities out to the respondents and record how many hours and/or days it would take to reach *each of them* by foot.

11. **If you want to go to a health centre or hospital, what mode of transport would you be able to use**? Read all the options to the respondent and Place a ✓ next to ALL the types of transport that would be a *realistic way* to reach a health centre or hospital. Be sure to write down all the transport options mentioned by respondents.

<u>Free text box</u>

This is a blank space on the Verbal Autopsy Tool where you can record any additional details to the questions or other information received from respondents that will help to understand the events leading up to and during the deceased woman's illness and death.

You can note down any information you feel is relevant here and would like the review committee to know about.

Annex 9: 10 Tips for Conducting Good Quality Data through a Verbal Autopsy (VA)

1) Preparing in Advance

Conducting a successful verbal autopsy starts with being fully prepared. Before you set out to collect information from the community, make sure you are:

- *Familiar with the verbal autopsy tool* so that you are confident about the information you will collect. Think about different ways to ask questions to make them easy to understand.
- *Clear on the purpose of the verbal autopsy* so that you can explain it to the household. You should be able to describe how the VA is part of the MDSR and might help prevent future deaths.
- *In contact with local Health Extension Workers* who can help arrange your visit to the community, locate the household and provide additional information about the case (e.g. whether the baby is alive). The HEW can inform the family in advance of your visit and accompany you.
- *Carrying all necessary materials* with you, including Informed Consent forms, Annex 1B (the VA data collection tool), a pen, and background information (e.g. the name of the deceased woman, the date of her death, and how to find the household).
- *Know what language* is spoken at the household. Make sure you speak the same language or can bring someone to interpret for you!

2) Approaching a Household

Families may be nervous about your visit. You are also coming at a sad and difficult time, so you need to introduce yourself sensitively and show respect for their loss and bereavement. A sample introduction is provided at the end of this document. When you visit the household of the deceased woman, consider the following:

- *Groups of people* from the neighbourhood may gather as you arrive, because they are interested in what you are doing or want to be present during the visit. You need to manage this carefully to ensure the VA occurs in privacy.
- *Someone local* should introduce you to the household. This can be the HEW or a local respected person who is close to the family (religious leader, kebele representative, schoolteacher).
- *A professional but compassionate manner* will help to build trust with the family. You should give your condolences to the relatives of the deceased woman.

3) Selecting Appropriate Respondents

There may be several people in the household with information about the death of the woman. Interviews are best when conducted with just a few people at a time – too many respondents can lead to confusion or even disagreement. It is important to determine who will be the *best respondent(s).* International experience shows:

- *The husband, mother, sister or mother-in-law* often have the most information. They may have been present during illness and care prior to the death, or participated in making key decisions.
- *Different people may have attended the woman at different times*. In this case, each person should be interviewed and this can be done one at a time or together, depending on the circumstances.
- *The best respondents may not be present*, either because they are not at home or have moved. Sometimes others will still be able to provide all the necessary information, but if not, it may be necessary to return at another time or find the respondents.

4) Building Rapport

"Building rapport" refers to creating a comfortable environment and a relationship of trust to make the verbal autopsy interview easier. Some good ways to build rapport include:

- *Expressing sympathy* to show that you understand how difficult the time after a family member's death can be, and that you perceive each woman's death to be a tragedy and not a statistic.
- *Reassuring household members about confidentiality*. Right from the beginning of the interview you should make very clear that no identifying information will be recorded beyond the date of the woman's death and the location of the local Health Centre. No names of respondents will be recorded, and the information is being collected solely to help understand maternal deaths in the area and prevent similar deaths occurring in future.
- *Starting with friendly conversation*. Before the interview, it will help respondents feel at ease to have a brief casual conversation. You can ask about household members, the respondent's occupation, or anything that seems appropriate and shows you are interested in the family.

5) Handling Multiple or Disruptive Respondents

As mentioned previously, sometimes there may be more than one person who would like to be the respondent. Some family members may try to dominate the conversation, or there may be children who interrupt. Your visit might attract attention from neighbours and others. These situations can reduce the quality of the information, either by distracting the respondent or by reducing the privacy. You can try to:

- *Suggest moving to another location* to find some privacy for the interview
- *Ask to reschedule the verbal autopsy* and return at a time that is more convenient for the respondent, and when s/he can make arrangements to be alone.
- *Politely request bystanders to leave*. You can remind local people that the family has undergone bereavement and needs privacy to talk about difficult circumstances. If you have been accompanied by a HEW or other community leader, that person can help to occupy others who are not directly participating in the interview.
- *Interview respondents one at a time*. If it appears that different family members have different views on the circumstances leading to the woman's death, it may be easier to interview them one at a time rather than together. In this case, make a note of what family member provided which information, and whether they were direct witnesses to the reported events or not.

6) Good Communication Skills

Effective communication will help establish rapport and gain comprehensive information. Some examples of good communication skills include:

- *Active listening.* Show that you are paying attention to what respondents say by nodding your head, and making occasional responses such as "mmm" or "I see".
- *Maintaining eye contact* with respondents to show that you are listening and taking what they say seriously.
- *Encouraging speech*. Some respondents will be naturally quiet or brief in their responses. Ask follow-up questions when necessary such as "Can you tell me a little more about that?" or "Please explain."
- *Not rushing*. Give the respondent time to think through the question or try to remember the details. Moving quickly from one question to another can make people nervous and miss an opportunity to get more information.

7) Remaining Non-Judgmental

The purpose of the VA is to collect information, and not to express your own opinions. Some family members may feel bad about decisions made during the woman's illness or

care. It is important not to allow any personal feelings to get in the way of the interview, by:

- *Remembering that the MDSR system requires a "no blame" approach.* Even the worst experiences can teach us something about how to prevent deaths in future. Respondents need to feel they can tell you anything without being blamed.
- *Remaining focused on data collection. Y*ou should concentrate on covering each topic and getting accurate information for each question, without reacting to what is being described.
- *Having a friendly facial expression*. Smiling and looking interested will make the respondent feel more at ease and will also help you to remain professional.

8) Dealing with Respondents' Emotions

People who have recently lost a family member and are grieving can become emotional, especially when they are discussing the events leading up to the death. You should be prepared to deal with the following:

- *Tearful and upset respondents.* An interview might bring up upsetting memories. Allow the person to collect their thoughts and pause the interview to give them time to cry or compose themselves. Explain that you understand how difficult the VA process can be. Ask permission to continue the interview but if the respondent is too upset, then the verbal autopsy should be stopped. See if you can find someone in the household to comfort the respondent. Attempt to reschedule a continuation of the interview at another time, or interview others instead.
- *Angry outbursts.* There may be disagreements between household members about the care of the woman. Some respondents might blame the health care system and express their anger at you. Let the person express their anger, but explain that now, it is important to learn from their negative experience.

9) Getting Good Information

Sometimes respondents do not want to answer certain questions. There can be many reasons for this, including distrust of the verbal autopsy process, not wanting to look bad if the respondent feels they did not make good decisions at the time of the death, or avoiding painful memories. You can try to overcome this by:

- *Probing.* Think of follow-up questions such as "what happened next" or "can you tell me a little more about that" to encourage answers.
- *Returning to questions later.* For some respondents, it can take a little longer to build rapport. If a respondent skips some questions you can try to ask them again at the end of the interview when the person feels more comfortable then.
- *Accepting the refusal*. As stated in the Informed Consent form, participating in a verbal autopsy is entirely voluntary. Respondents can refuse to answer questions and can stop the interview at any time. Never insist on an answer.

10) Learning from Experience

Not all verbal autopsies will go well. It is important to reflect on the process after *each VA interview* to learn from the experience and improve your skills. VA interviewing takes practice. After conducting a verbal autopsy:

- *Review Annex 1B.* Look through your completed form to identify which parts of the interview produced all the required information, and which were more difficult. Think about whether there are other ways of asking the question or probing for more information that could help the next time.
- *Identify strengths and weaknesses.* Think about the whole visit to the household from start to finish – what do you feel you did well? How did you build rapport and make the respondent feel comfortable? What did not go so well and how could you change your approach in future?
- *Discuss the verbal autopsy with the Health Centre Head*. Talking about the process of the VA as well as its content with someone else can help identify some of its strengths and weaknesses and also will help others interpret the information that you collected within the context of the interview.

Sample Introduction (before administering the Informed Consent Form)

My name is [say your name]. *I am a nurse/midwife in the _____ Health Centre, and an interviewer. I have been informed that a woman in your household died. I am very sorry to hear this. Please accept my sympathy. In order to improve health care in our district, we are collecting information on recent deaths of women. 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, or who was present at the time of her death. I assure you that any information you or your family provide will be kept confidential.*

Annex 10: MDSR Committee Meeting Agenda Sample Checklist

DATE:

Start time – End time:

Attendees:

		☑
INTRODUCTION	Review agenda items List objectives for the meeting	☐
DISCLAIMER FORM	Affirm commitment to anonymity & confidentiality in the review process All meeting attendees to sign the Disclaimer Form	☐
REVIEW OF DATA	Discuss maternal death cases occurring since previous meeting, using summaries from database Identify patterns or common factors leading to maternal deaths Consider whether there are any geographical "hot spots" with more maternal deaths than elsewhere Detailed review of 5-10% of new cases, using Verbal Autopsy if possible	☐
RESPONSES	Discuss what actions might be required in response to the data reviewed Link actions to existing MCH or other relevant activities Fill out the Action Plan Template and assign responsible individuals	☐
MONITORING & EVALUATION	Review previous Action Plans to check whether identified actions are completed/ in progress Identify "silent areas" with no reports and follow-up action Discuss whether areas reporting zero deaths require supervision for identification and notification of deaths	☐
ANY OTHER BUSINESS	Add other agenda items here Raise new issues or emerging questions	☐

Date of next meeting:

Additional Notes:

Chairperson's Signature:

Annex 11: Maternal Death Review Committee Meeting Guidelines

This document briefly sets out the process and content that should be included in regular maternal death review committee meetings held at zonal, sub-city or regional health offices. It accompanies the MDSR Committee Meeting Agenda Checklist, which can be used during the meeting to ensure all the key components have been covered.

11) Preparing in Advance

Prior to the MDSR review committee meeting, the following should be completed:

- *All Review Committee members informed of meeting date, time & location*: The review committee meeting can only take place if a quorum of members is able to attend. This should be at least 6-7 members. Meetings can be scheduled for the same time each month, or a date set at each meeting for the next one. In either case, timely reminders should be sent to members that emphasise the importance of attending the review meeting.
- *Data obtained from all relevant areas reporting to the committee:* The Chair of the Review Committee should ensure that relevant data are complete and available for the meeting. This includes receiving reports or a completed database from all lower levels of the health system, including zero reports. Where necessary, a brief summary report should be generated from the database. Enough copies of data, action plans and other relevant forms should be prepared for distribution during the meeting.
- *Additional data obtained for in-depth review*: The TOR for the MDSR review committee specifies that 5-10% of maternal deaths should be reviewed in detail (where there are too many deaths for *all* to be reviewed). It may be useful to obtain copies of the Verbal Autopsies or facility case notes for a few cases each month for the committee to review.

12) Permanent Agenda Items

There are some topics that should be discussed at every review committee meeting, as follows:

- *Commitment to Confidentiality*: At the beginning of each review committee meeting, the Chair should reaffirm that the MDSR process follows a "no-blame, no-shame" policy. All information discussed at the meeting should be previously anonymised and details of the cases kept confidential. Members of the committee should all sign the disclaimer form to demonstrate their acceptance of these principles.
- *Recent maternal deaths:* The bulk of the meeting is likely to be focused on the most recently received data. Specific action points related to the issues raised by the recent deaths should be identified.
- *Links to MCH and other activities:* It is important that the MDSR process does not occur in isolation. Existing MCH initiatives or other programmes related to

newborn health, gender empowerment, health promotion and quality improvement may be relevant to preventing the causes of maternal deaths highlighted in the review meeting.

- *Reviewing previously identified actions:* While each review meeting may identify new actions in response to the deaths reviewed, it is important to check whether previously discussed actions have been completed. Many maternal deaths will share the same avoidable factors and actions discussed at previous review meetings will still be relevant.
- *Monitoring the MDSR system*: One of the responsibilities of the review committee is to ensure that the MDSR system is functioning well. If some areas are not reporting (or consistently reporting zero deaths), there may be a need to provide support and supervision at lower levels of the health system, such as refresher training on identifying and notifying deaths.

13) Other Activities

Some responsibilities of the committee may occur on an occasional basis, rather than at every meeting. These can be added to the Any Other Business agenda item, when appropriate:

- *Detailed review of cases:* At some levels of the health system (RHB or particularly large zones), the number of maternal deaths prior to a review committee meeting may be too large to review in depth. As a result, it is useful to review a smaller proportion in detail. The Technical Guidelines specify that 5-10% of deaths should be reviewed in greater depth. These do not need to be selected randomly, but could be selected to gain greater understanding of specific issues (such as reviewing all eclampsia related deaths one month, followed by deaths relating to a delay in transport another month, etc). This "thematic" approach can help identify trends in avoidable factors.
- *Report Writing:* Depending on the level of the review committee, narrative reports will need to be compiled and sent to a higher level on a quarterly or annual basis (see MDSR Technical Guidelines). These should summarise the data from the previous period and report on actions taken and their observed effect. It may be necessary to call additional meetings that will be specifically devoted to report-writing.
- *Community Engagement:* The MDSR process should be transparent and made available to the public. Dialogue with local communities (through traditional leaders, and other local information channels such as HEW, HDA, women's groups etc) should be periodically organised in order to build trust with communities, demonstrate how information collected through verbal autopsies has been used, and increase community demand for actions to reduce maternal deaths.

14) MDSR System Strengthening

Monitoring, evaluating and improving the MDSR system is one of the responsibilities of each MDSR review committee. This should involve:

- *Tracking participation* by members in review committee meetings, and taking measures to ensure regular attendance. The important role of the committee in contributing to Ethiopia's improved MCH should be emphasised. Over time, if some members are consistently unable to attend meetings, they may need to be replaced.
- *Improving data collection & analysis*. Support, refresher training, and tailored capacity building may be required throughout the health system to ensure accurate and consistent flow of data, and useful aggregation and analysis. The MDSR committee should discuss any weaknesses or gaps and how these can be addressed.
- *Focus on actions*. The most important part of MDSR is *response*! The review committee should work to identify feasible actions that can be realistically implemented, and work to ensure their fulfilment.