THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE

MATERNAL AND PERINATAL DEATH SUVEILLANCE AND RESPONSE GUIDELINE

Reproductive and Child Health Section

P. O. Box 9083

Dar es Salaam

June 2015

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ABBREVIATIONS

AGOTA	Association of Gynaecologists and Obstetricians of Tanzania
BBA	Born Before Arrival
C/S	Caesarean Section
CHMT	Council Health Management Team
CNO	Chief Nursing Officer
CPD	Cephalopelvic Disproportion
CRHS	Commonwealth Region Health Secretariat
DMO	District Medical Officer
DNO	District Nursing Officer
DRCHCo	District Reproductive and Child Health Coordinator
FBO's	Faith Based Organizations
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune-Deficiency Syndrome
HMIS	Health Management Information System
IMCI	Integrated Management of Childhood Illnesses
IUFD	Intra-Uterine Foetal Death
KG	Kilogram
MCHA	Maternal and Child Health Aide
MDGs	Millennium Development Goals (MDGs)
MDR	Maternal Death Review
MDSR	Maternal Death Surveillance and Response
MoHSW	Ministry of Health and Social Welfare
MPDR	Maternal and Perinatal Death Review
MPDSR	Maternal and Perinatal Death Surveillance and Response
MSD	Medical Stores Department
NGO's	Non-Governmental Organizations
NM	Nurse Midwife
PAT	Paediatric Association of Tanzania
PHN'B'	Public Health Nurse 'B'
PID	Pelvic Inflammatory Disease
RCHC	Reproductive and Child Health Clinic
RHMT	Regional Health Management Team
RMO	Regional Medical Officer
RNO	Regional Nursing Officer
SMI	Safe Motherhood Initiative
SVD	Spontaneous Vaginal Delivery
TAMA	Tanzania Midwives Association
WHO	World Health Organization

FOREWORD

Complications of pregnancy, childbirth and abortion are major causes of death for women of reproductive age in Tanzania. According to the National Household Census 2012 results, the maternal mortality ratio (MMR) is 432 deaths per 100,000 live births with wide variations across regions. The major direct causes of maternal deaths include hemorrhage, hypertensive disorders of pregnancy, obstructed labour, sepsis and abortion complications. Indirect causes such Malaria, HIV/AIDS and anaemia also contribute to maternal deaths. However, most of these deaths and serious morbidities are preventable with quality and timely appropriate care.

Improving women's health and specifically reducing maternal and perinatal mortality and morbidity remains core to the safe motherhood programme in the country. This can be achieved through quality of care during pre-pregnancy, pregnancy, labour and delivery and postpartum period. Attending antenatal care at least once is almost universal in the country, but only 43% of pregnant women attend required minimum of four visits. Delivering in health facilities and postnatal care coverage are equally low, impacting negatively on pregnancy outcome.

The main goal of maternal and perinatal death surveillance and response guideline is to facilitate identification, review, notification and respond on recommendations generated from the reviews. This will in turn improve the quality of care provided, and consequently reduce maternal and perinatal deaths in our health facilities. The main objective of MPDSR is to provide information, recommendations and actions to be taken so as to eliminate preventable maternal and perinatal deaths at health facilities. The guideline should never be construed as a way of apportioning blame or as a basis for litigation or management sanctions. The purpose of MPDSR is to allow for a full understanding of the chain of events related to a maternal and perinatal death, identify the main problems in the management of the patient, before admission to death, and then come up with the best solutions to correct the identified gaps. The MPDSR will also help to clarify the most likely medical cause(s) of death and circumstances/factors that might have adversely affected provision of care, such as shortage of medicines, equipment and essential supplies, as well as factors beyond the health system such as women's status in the community.

It is my sincere hope that all health care providers in maternal and newborn fields will find this document helpful and will use it effectively so as to reduce maternal and perinatal morbidity and mortality In Tanzania.

Dr. Donan W. Mmbando
Permanent Secretary

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Dr. Margaret E. Mhando
Acting Chief Medical Officer

CHAPTER I

GUIDELINE FOR CONDUCTING MATERNAL AND PERINATAL DEATH SURVEILLANCE AND REPORTING

1.0 INTRODUCTION

Over the years, maternal mortality has remained among the major public health problems in developing countries. Recent estimates indicate that maternal mortality has declined globally by almost 50% from 1990 to 2010. However, sub-Saharan Africa had the least progress, underlying the need to improve efforts to address high levels of maternal mortality in the region. Of the total 287000 maternal deaths that occurred worldwide in 2010, 56% (approximately 161,000 deaths) occurred in this region [WHO]. Although available DHS data may not be appropriate to analyze trends, WHO estimates suggest that Tanzania has also been slow in reducing maternal mortality in the same duration as maternal mortality might have declined by about 47%, at an annual decline of 3.2% [WHO]. Availability and accessibility of key services for maternal survival such as skilled delivery and emergency obstetric care have not coped with the rapid population increase and demand. Available data for maternal and perinantal mortality are largely facility based. Such data leave out deaths that occur outside the health system, and with only half of Tanzanian women delivering in health facilities, the true magnitude of the problem remains underestimated.

Perinatal deaths contribute to a high infant mortality rate. In Tanzania, like in many other Developing countries, the perinatal mortality rate is high. Crude estimates range from 58 – 91 per 1000 live births. Perinatal mortality is a sensitive indicator of health status of the women, the health of the newborn (neonatal health) and the quality of health care provided during the perinatal period. However in developing countries priority is usually given to interventions addressed to post neonatal and early childhood causes of deaths. As a result, causes of perinatal deaths are not given the attention they deserve, resulting into increasing trend of perinatal mortality rates, and thus high level of infant mortality.

Tanzania was among the first countries to adopt Safe Motherhood Initiative (SMI) programme since its inception in 1987. The review of 10 years of safe motherhood implementation in 1997 in Colombo, Sri Lanka, realized that broad interventions embraced in SMI needed to be revised in order to have an accelerated impact. Above all, the need for measuring progress was emphasized and hence development of process indicators. However, it was also realized that, misclassification of maternal death is a common phenomenon which need to be addressed by developing a standardized tool to learn and classify maternal deaths. Over and above every maternal death counts and needs to be investigated. Thus the thrust to re-establish and strengthen maternal and perinatal deaths identification, review, notification, analysis of data, monitoring and evaluating performance, learning, acting on recommendations from reviews and results from data analysis to improve maternal and perinatal survival through surveillance and response (MPDSR).

The process works as a reminder to health service providers on what went wrong at the community level, patient and facility levels. It allows a more rational understanding and classification of causes of maternal and perinatal deaths, beyond medical boundaries by looking at factors that might have contributed to the development of life threatening complications, including health care seeking behaviour. The process also opens a room for constructive criticism among those involved in care provision, allowing rectification of the

identified problems to reduce maternal and perinatal deaths.

Maternal and perinatal deaths review (MPDR) guidelines were produced and rolled-out in the country in 2006. The guidelines required identification, review and notification of maternal and perinatal deaths occurring in health facilities. Specifically, reporting was to happen from health facilities to districts and from districts to regions and to national levels. Despite evidence that reviews occur at health facilities and reporting to districts, notification to regions and to the RCHS unit at the MOHSW has not been equally encouraging, leading to paucity of country data to inform strategies targeted at reducing maternal and perinatal mortality. Information is also scarce on actions implemented from maternal and perinatal deaths review recommendations across all levels of the health care system; health facilities, districts, regions and national.

With the foregoing reasons, the Reproductive and Child Health Section (RCHS) of the Ministry of Health and Social Welfare has revised and standardized the process and forms to be used for learning and reporting maternal and perinatal deaths. Surveillance and response is emphasized to define and enforce maternal and perinatal death reviews in the country as well as build a platform for better notification, data analysis, dissemination of findings and acting on recommendations from reviews and reports at all levels of the health system, including health facilities. The guidelines will therefore be used as resource tool for health care providers at all levels of the health system. RHMTs and CHMTs should include maternal and perinatal death reviews in their comprehensive council health plans, for sustainability and ensure that recommendation from reviews are implemented to improve maternal and perinatal survival.

NOTE:
Review sessions will not include deaths occurring outside health care system.
However all maternal and perinatal deaths occurring in the community need to be reported to the nearby health facility and probable cause of death identified.

CHAPTER II

Maternal and Perinatal deaths

2.0 MATERNAL DEATHS

2.1 Definition

Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of pregnancy from causes related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

2.2 Causes – causes of maternal deaths are classified into three groups;

2.2.1 Direct causes. The major direct causes include:

- Obstetric haemorrhages
- Hypertensive disorders in pregnancy including eclampsia
- Sepsis
- Abortion complications
- Obstructed labour

2.2.2. Indirect causes. The major indirect causes include:

- Severe anaemia
- HIV/AIDS
- Severe malaria

1.1.3 Unspecified causes. Maternal death where the underlying cause is unknown or undetermined

2.3 **Associated factors may include:**

- Lack of knowledge on recognition of danger signs
- Unwillingness to seek professional help
- Delayed decision making at family level
- Lack of resources in the family
- Poor infrastructure
- Sub-optimal antenatal care
- Late referral from another facility
- Inadequate supplies, equipment or infrastructure at health facility
- Inadequate staff
- Inadequate skills of provider
- Delay in receiving appropriate treatment in the health facility.

3.0 PERINATAL DEATHS

3.1 **Definition**

Death of a foetus from 28 weeks of gestation to seven completed days of life including still births.

3.2 **Causes**

3.2.1 Direct causes include:

- Complications of prematurity
- Severe infection

- Asphyxia
- Anaemia
- Congenital Malformation(s)
- Birth injuries

3.2.2 Associated causes include:

- Poor maternal health
- Inadequate care during pregnancy
- Inappropriate management during labour and delivery
- Poor hygiene during delivery and the first critical hours after birth
- Sub-optimal newborn care
- Baby - mother separation after birth

3.3 **Magnitude of the problem**

- It is estimated that:
    - 1,763,000 perinatal deaths occur in Africa
    - 279,000 perinatal deaths occur in America
    - 768,000 perinatal deaths occur in Mediterranean
    - 222,000 perinatal deaths occur in Europe

- Similarly the estimated perinatal mortality rate in different areas is as follows;
    - Africa 66 deaths/1000 live births
    - South East Asia 61 deaths/1000 live births
    - Mediterranean 49 deaths/1000 live births
    - Europe 21 deaths/1000 live births
    - America 17 deaths/1000 live births

In Tanzania, perinatal mortality rate is not known due to paucity of data. Available data is from various community sites like Hai – Moshi and ranges between 58 – 91 deaths per 1000 live births.

4.0 LINKAGE OF MATERNAL AND PERINATAL DEATHS TO MILLENNIUM DEVELOPMENT GOALS (MDGs)

The problem of maternal and perinatal deaths is also reflected in the Millennium Development Goals (MDGs). Two out of eight goals specifically addresses the problem of maternal and perinatal deaths:

Millennium Development Goal no.4: Reduce child mortality:
Target 4: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

This target has three health indicators namely:

- Under-five mortality rate
- Infant mortality rate
- Proportion of one year old children immunized against measles

NB: The first two indicators can be decreased by reducing perinatal mortality.

Millennium Development Goal no.5: Improve maternal health:
Target 5B: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

This target has two health indicators namely:

- Maternal mortality ratio
- Proportion of births attended by skilled health personnel.

NB: Learning the causes of maternal deaths and taking appropriate actions to rectify the identified gaps will decrease the maternal mortality.

CHAPTER III

3.0 Goals and Objectives of MPDSR

3.1 **Goal: To eliminate preventable maternal and perinatal mortality in the country**

The primary goal is to eliminate preventable maternal and perinatal mortality, using evidence based strategies to guide both clinical and public health actions by all stakeholders and monitor progress. Availability and utilization of good quality maternal and neonatal health care services, is important for significant reduction of maternal and perinatal mortality. Thus evaluation of available care for women during pregnancy, delivery and immediately after, provides vital information that will lead to specific recommendations and actions to improve both maternal and perinatal survival.

3.1.1. Overall Objectives

1. To provide information, recommendations and actions taken to eliminate preventable maternal and perinatal deaths at health facilities and in the community
2. To document maternal and perinatal deaths in order to understand and asses the true magnitude of the problem, and trends over time in order to assess the impact of various maternal and perinatal mortality reduction strategies

3.1.2. Specific objectives

1. To collect reliable data on maternal and perinatal deaths through identification, reviews, notification and analysis of maternal and perinatal deaths.
    - Identification, reviews, notification and analysis of facility-based maternal and perinatal deaths.
    - Identification and notification of community-based maternal and perinatal deaths.
    - Document causes of facility deaths and probable causes of community deaths as well as contributing factors.
2. To conduct analysis of maternal and perinatal mortality data for an in-depth understanding of trends, causes and associated factors (groups at increased risk, geographical mapping and socio-demographic).
3. To use maternal and perinatal mortality data to recommend and implement evidence based strategies and enhance accountability to reduce maternal and perinatal mortality.
4. To disseminate maternal and perinatal mortality findings and recommendations to targeted groups and to the wider public, to advocate for maternal and perinatal survival, including more resources for maternal and perinatal health.

CHAPTER IV

Key issues to understanding of Maternal and Perinatal deaths

APPROACHES FOR LEARNING MATERNAL DEATHS

KEY POINTS

- Majority of deaths are avoidable
- Don't just count the numbers, understand why
- Each death tells a story; each story shows what could have been done better
- Taking action on the results is essential
- Many changes cost nothing
- The sole purpose of these reviews is to save lives
- Even a simple study, or study of one case, can help save another woman's life.

4.1 **Approaches**

Beyond the numbers, guideline from WHO, shifts emphasis from simply measuring maternal mortality, to understanding what happened and why. This enables us to learn lessons and make changes. This guideline presents five approaches of generating information on maternal outcomes on maternal health care. They are presented in ascending order starting with community, facility to the national level. These approaches can be used to review a range of aspects of health care including structures, outcomes, or processes. In this guideline, two specific health outcomes (maternal and perinatal deaths and life threatening complications or near miss) are described.

Not all locations are suited for all approaches. For example reviewing clinical practice is feasible at facility level rather than at national level and community level. On the other hand both outcome and process are open to review at facility level. Review of near miss is impossible at community level because this requires standard criteria or practices which is non-existent at this level.

The five approaches include:

i. Community-based maternal death review (verbal autopsy).
ii. Facility-based maternal death review
iii. Confidential enquiries into maternal deaths.
iv. Survey of severe morbidity (near miss).
v. Clinical audit.

Each approach has its own advantages and disadvantages as described below:

i. **Community-based maternal death review (verbal autopsy)**

Identify deaths that occur in the community and consist of interviewing people who are knowledgeable about events leading to death such as family members, neighbours, village government leaders and traditional birth attendants.

Table 1. Advantage and disadvantage of community based autopsy

Advantages	Disadvantages
• Majority of women die at home • May reveal personal, cultural, community and medical factors – comprehensive determinants of maternal mortality • Will increase community awareness, advocacy and change	• Medical causes obtained from verbal autopsies are not necessarily correct • Avoidable factors tragedy remains a matter of subjective judgment • Under-reporting very likely in early pregnancy deaths, over-reporting likely for indirect causes of maternal death

ii. **Facility-based maternal death review**

A qualitative, systematic, confidential, in depth investigation of the causes and circumstances leading to each maternal death occurring at the facility.

Table 2. Advantage and disadvantage of facility based maternal death reviews

Advantages	Disadvantages
• Will improve local management or professional practice training and standards. • Enables in-depth study of maternal deaths in terms of avoidable factors at facility and • Community levels. • The review does not require written and agreed standards of care. • Less expensive to conduct.	• Will not provide information about women dying in the community. • Not as systematic as clinical audit. • Requires committed skilled individuals at facility to drive the process and follow recommendations. • Misses many community maternal deaths.

iii. **Confidential enquiries into maternal death**

A systematic multi-disciplinary anonymous investigation of all or representative sample of maternal deaths occurring at an area or country identifying the numbers, causes and avoidable or remediable factors associated with them.

Table 3. Advantage and disadvantage of confidential enquiry in maternal death

Advantages	Disadvantages
• Will produce strong evidence to influence national policy change and resource allocation. • Provide more complete picture of maternal mortality than is generally available from the vital records. • The published information can be used for public advocacy on improving quality of care. • Encourages co-operation between policy makers (government and service providers.	• Requires commitment of senior managers of government to act on the findings. • More expensive than maternal death reviews. • Requires commitment from the care givers.

iv. Survey of severe morbidity ("near miss")

Any pregnant or recently delivered woman in whom immediate survival is threatened and survives by chance or because of hospital care she receives.

Table 4. Table of rationale for "near miss" analysis

Advantages	Disadvantages
• Occur in larger numbers than deaths allowing quantification of avoidable factors. • Can be done at any level of health care. • Can show what worked for the survivor providing lessons from positive experiences. • Less threatening to health providers. • It is possible to interview the woman herself in addition to a close member of the family.	• Can only be done in health facility. • Requires clear definitions and sophisticated tools for diagnosis. • Case identification requires reviewing a large number of registers and case notes. • Bias may be unavoidable as patient may conceal information about the quality of care they received.

v. Clinical audit

Systematic critical analysis of the quality of care provided to patients at a health facility with primary aim of improving clinical practice.

Advantages	Disadvantages
• Used to improve clinical practice or enhance the rational use of limited resources. • Provides direct feedback to facility staff to enable improvement of quality of care. • Less expensive as non-medical personnel are capable of doing the necessary data extraction. • Less subjective assessment of case management. • Audit process can help highlight deficiencies in patient records, record keeping etc.	• Limited to clinical care in the facility, cannot deal with community issues. • It can only address certain causes of death at any one time and will not provide a complete overview of all maternal deaths. • May appear threatening to health providers. • Requires appropriate set of standards (protocols) or local criteria in place.

Two other key documents were used in preparing these guidelines; the FIGO document "How to Conduct Maternal Death Reviews (MDRs): Guidelines and tools for Health Professionals 2013 which summarize the process of maternal death reviews at health facilities and the WHO document titled "Maternal Death Surveillance and Response: Technical Guidance Information for Action to Prevent Maternal Deaths" of 2013. While the FIGO document highlights key steps in conducting maternal deaths review and provides tools to assist health professionals to conduct the reviews, the WHO document is a technical guidance for establishing maternal death surveillance and response. The later puts emphasis on identification, review, notification and acting on recommendations from the reviews as key elements to understand and address maternal mortality by various levels of the country's health system and other stakeholders.

4.2 Choosing method

In Tanzania like many other developing counties, the information on maternal and perinatal deaths is grossly limited. This is due to a number of factors including; Poor record keeping at facility level, lack of properly set standards of practice, low skills of service providers and inadequate staffing.

Learning on maternal and perinatal mortality is imperative for understanding and designing effective strategies to address the problem. Understanding all perinatal and maternal deaths is desirable but challenges in obtaining good information from deaths that occur outside health facilities in the absence of comprehensive vital registration are abound. Notably, skills for collecting good quality information from the community are limited and some deaths go unreported.

Prioritizing facility deaths is thus pragmatic while allowing collection of information on community deaths in settings where it is feasible. In order to achieve this, a well organized system is required for conducting facility based maternal and perinatal deaths reviews, surveillance and response. Furthermore, by identifying and notifying, analyzing, reporting and responding to recommendations from the reviews is a step further to understand the magnitude of maternal and perinatal deaths in the country. The purpose of these guidelines is to strengthen facility based maternal and perinatal deaths review as well as to start a key component of maternal and perinatal death case identification and notification (surveillance) at facility level and build a practical response to the high level of maternal and perinatal deaths in the country.

CHAPTER V

CONDUCTING FACILITY BASED MATERNAL AND PERINATAL DEATH REVIEW

Facility Based Maternal and Perinatal Death Review

5.1 Goal
To generate information that can be used by health service providers, planners and managers to improve maternal and perinatal survival by improving the quality of care provided.

5.2 The process
The fundamental principle of these processes is confidentiality. Confidentiality leads to openness in describing causes and factors leading to adverse maternal outcomes.

Confidentiality means: The information of the discussion should not go outside the committee room. All documents i.e. patient case notes, minutes for review meetings and the filled forms should be kept under lock and key. The process should be anonymous, done under non-threatening environment.

Participants should be assured that the sole purpose of this process is to learn from past tragedies, identify failures in health care system and save lives in future. **Never should this be a way of apportioning blame or used to provide basis for litigation, or management sanctions.** A commitment to act upon the findings of these reviews is a key pre-requisite for success. Each maternal/perinatal death or life-threatening complication has a story to tell and can provide practical ways of addressing the problem. Furthermore, it is important to note that during the MDR session, each participant has an equal right to express an opinion and people should as much as possible, sit around the same table.

5.2.1. The process involves the following steps:
Any maternal or perinatal death shall be notified and documented within 48 hours.
All potential sources of maternal or perinatal death are usually identified through health facility registers, therefore the following registers should be examined: Hospital admission and discharge registers, Operating theatre register, Delivery ward register, Intensive care unit register, and Mortuary register.

Special attention should be given to missed cases, such as those that ; occurred in early pregnancy, those due to indirect causes, and those which may have been misclassified/ not recorded. Compilation and examination of all deaths of women in the reproductive age groups (15-49 years old) may shed light on missed maternal deaths. Reviews at the facility level should be done within a week of the occurrence of maternal or perinatal death.

On the day of review, use documents (Antenatal card or its photocopy, case note, partograph and referral letter if applicable, and others) to learn the circumstances surrounding the death
MPDR session facilitators should be chosen, including; Case presenter, the moderator/ chairperson, and the secretary. The case presenter is responsible for identifying deaths,

gathering all information concerning cases and summarizing clinical cases during the MPDR session. The moderator will chair the session and the debates. The secretary will summarize the case analysis, record the proceedings of the review process (minutes), and produce a session report. The discussion should identify the gaps that might have led to death, analyze causes of the gaps then formulate appropriate action plan for implementation (see format). Then fill in the appropriate form.

Preparing for maternal perinatal death review session:
During the review ensure protocols and other standard practice guiding documents are available for reference. For facilities with very few maternal deaths (e.g. none in three months), near miss reviews are advised to maintain skills and motivations for the review. There are usually more perinatal deaths than maternal deaths; number of perinatal deaths for review should be enough for most health facilities.

Sources for information of maternal and perinatal deaths may be multiple, ranging from written information, from wards and operating theatre registers, ANC cards, patients medical records and inpatient files, emergency department, admission and discharge registers. Additionally, staff involved in management of patients should be interviewed for clarity on patient management.
Interviews with relevant people e.g. husbands and relatives may also be required. Communities where feasible, data should be collected on the circumstances which led to maternal or perinatal death. **Ensure that all documents used for review do not contain the deceased name.**
A presenter at this stage prepares a comprehensive clinical brief summary of the deceased preferably not exceeding 1 page of A4 paper.

Content of the Clinical Summary:
As pointed above, the presenter is required to prepare a summary of events leading to maternal or perinatal deaths. Below is a form designed to assist in organizing a brief summary: -

Figure 1. Maternal Death Review: Clinical Summary form

Maternal Death Review: Clinical summary form

Date of MDR: MDR session N°:

Patient code: Patient Age:

Marital status: married/cohabitant divorced single

Gravida: Para: Live children:

Number of previous caesarean sections: Date of last CS:

Number of ANC visits in this pregnancy:

Risk factor(s)/complications detected during this pregnancy/labour:

If delivered/aborted before admission:

Date: Duration of amenorrhea: Alive baby?

Place of birth/abortion? Assisted by:

Complications occurred?

If pregnant on admission:

Duration of amenorrhea:

Referred from another institution? Type of institution?

Reason for coming to hospital:

History of the referral/process of reaching the institution:

How does the woman's status in the community affect the process leading up to admission in this particular case?

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Date and time of admission:

Main reason for admission:

Initial clinical assessment/Ultrasound/laboratory findings at admission:

Diagnosis made at admission:

Summary of the case evolution if complication(s) occurred after admission:

Sequence of events if abortion/delivery occurred:

Complications:

Clinical assessment/Ultrasound/laboratory findings:

Diagnosis:

How does the woman's status in the community affect the process after admission in this particular case?

Main treatment(s) given:

Time between diagnosis of complication and appropriate treatment:

Complementary tests and laboratory results after treatment

Summary of case evolution and monitoring put in place (t°, BP, Pulse, Bleeding):

Date of death: Time elapsed between complication and death:

Cause of death notified in records:

Pregnancy outcome (Live birth, SB, Early death, Miscarriage):

Other information available (from family, health centres, community, etc….)

Summary of the case, to be presented to the team:

5.2.4 Maternal Death Review: Narrative summary example

Primigravida, 28 years old, was admitted at 8 pm. Vital signs at admission were BP 110/70 mmHg, PR 110 beats per minute, Respiratory rate of 22 breaths per minute, fully conscious with good orientation at gestation age of 37 weeks. Significantly, the woman complained of difficulty in breathing for the last 1 month and for a week she is having chest pain. The history further tells that the woman started antenatal clinic at a neighbouring health centre at a gestation age of 18 weeks and so far she had attended 3 visits. During the visits, the clinic was unable to supply SP and Fefol because all the time they were out of stock. Her only haemoglobin check was done 2 weeks prior when she was told she was severely anaemic and referred to the district hospital for appropriate care. After family consultation, resources were made available to enable her to come. Further assessment revealed that the woman was in labour with at least 2 contractions for every 10 minutes which were graded as moderate and cervix dilation was 5 cm. HB check in labour ward revealed that the woman was anaemic with HB 6 g/dl and blood for blood group and cross matching was collected and 2 units of whole blood for transfusion requested as the hospital did not have RBC concentrates. However, the report from the laboratory indicated that there was standby blood as the refrigerator used to store blood was out of order for the last 3-months. The labour ward team was told to wait till next morning for blood to be collected from the blood centre. The labour progressed but the condition of the patient continued to deteriorate. At midnight, the patient pulse rate was 120 b/min, BP 100/60 and RR 28 breath per minute and the chest was reported to be crepitus and iv Lasix 40 mg was given. The contractions were graded as strong and cervix dilation was 8 cm. An hour later, the mother delivered a normal female baby with 2.5 kg who cried immediately. However, soon after completing AMTSL the woman started to bleed profusely, in half an hour she was reported to have lost close 600 ml. The bleeding was controlled with a combination of oxytocin 10 IU IM and 20 IU in 500MLS of R/L drip. However, her vital signs dropped sharply to PR 140 b/min, BP 80/30 and RR 34 breath per min. Despite of giving life support with oxygen, the woman died at 4 a.m.

Conducting MPDR Session:

Review sessions will be held within a week following a maternal or perinatal death or both. In case of no maternal or perinatal death, sessions should be called monthly to review recommendations of the previous review sessions or near miss. Facilities with many near misses should select a few cases for review.

1. Invite participants in good time for good participation, invitations should be made by
   Coordinator/chair.
2. Ideally review no more than 2 cases per session although in some situations more cases may be reviewed.
   An effective review would require at least one hour per case. It is advised, the venue allow members to sit in around a big table

The first step

The Moderator chairs the session and facilitates discussion and debate. The main principle of MPDR is confidentiality, anonymity and non-recriminatory atmosphere. The chair should elaborate and remind participants on the ground rules:

- To arrive on time for review sessions.
- To respect the statements and ideas of everyone.
- To respect the confidentiality of the team discussions and information and problems raised during the review must not be communicated outside the team.
- To participate actively in the discussions.
- To accept discussion and debate among participants without verbal violence.
- To refrain from hiding or falsifying information that could be useful in understanding the case being reviewed.
- To accept that our own action/decision may be questioned.

The second step: Re-evaluate results from the previous session:
This step aims to assess whether the recommendations proposed during the last MPDR session have resulted in actions and change. The following aspects should be considered

- The degree of implementation of planned activities and the need for further action(s) (Refer to MPDR action plan follow up form).
- The improvement of case management, which can be estimated through the observed reduction in the previously identified dysfunctions and obstacles to good care.

The third step: Clinical summary presentation
The presenter will give an oral case summary as explained above. The summary contains all information gathered in narrative format. Thereafter, the main facts are analyzed by participants

The fourth step
Conducting a good MPDR
The purpose of the MPDR session is to fully understand the chain of events related to the case, identify the main problems in the management of the patient, from the time before admission to death and come up with solutions to correct them. In addition, the MPDR will help to clarify the most likely medical cause(s) of death and the circumstances/factors that might have adversely affected care e.g. shortage of medicines, essential supplies and equipment, factors beyond the health system such as woman's status in the community. Identified positive aspects (strengths of the maternity unit) observed in the care provided should also be identified and acknowledged. During the analysis process, at each step, it is useful to systematically examine;

- The appropriateness of diagnostic or therapeutic procedures (according to clinical standards).
- The quality of the monitoring of the patient's condition (temperature, blood pressure, pulse, bleeding, etc.).
- Reliability of information

To facilitate effective case review, use the provided grid analysis of clinical case management (page 30). The grid allows an in-depth understanding of the deceased from the time before admission, at admission and the stages she went through while at the health facility before she died.

Maternal Death Review: Grid analysis of clinical case management

Date of MDR: MDR session Nº

In the chain of events described below, make note of the points at which dysfunctions occurred and explain why they are dysfunctions (by comparison with standards of good practice):

- **Itinerary before**
- **admission:**

If is a referred patient:

- Conditions of transfer were appropriate: consider mode of transport (ambulance), qualified escort, first treatment (e.g.: intravenous line in place) and time required to reach hospital. Was there a referral letter? clear? Useful? Clinical standards of best practice applied?

If not referred but a complication arose before admission:

- Decision to seek for hospital care was taken in time
- It was possible for the patient to make the journey to hospital in adequate conditions: consider mode of transport and time to reach hospital
- In any case, consider the influence of the woman's socioeconomic status on the care received
- **Admission**

At Reception: The admission was carried out appropriately: first aid provided was correct and provided at the right time in relation to the patient's condition and status (e.g. if necessary: rapid call for qualified assistance, supportive first care)

Diagnosis

If already experiencing a complication at the time of admission:

- Staff reaction and first assessment were appropriate in relation to standards
- Diagnosis at admission was appropriate on the basis of available information
- Time to diagnosis was acceptable in relation to standards
- Management at admission was correct in relation to diagnosis and standards of care

If the complication occurred during the stay in hospital:

- Time to diagnosis was acceptable in relation to standards

- Management was correct in relation to patient condition and standards of care
- Management was correct in relation to patient condition and the timing between

DIAGNOSIS AND TREATMENT

In both cases:

- Investigations necessary for diagnosis were requested and carried out (all, none or some of them) in relation to standards
- The time which passed before investigations were made was acceptable in relation to patient condition
- If applicable, results from investigations were acted upon
- Unnecessary investigations were not made

Treatment

- Appropriate treatment for the complication was given based on diagnosis and in relation to standards of care
- If applicable, time between diagnosis and surgery was acceptable in relation to standards
- Medical treatment was given without delay once the diagnosis was made
- Clear instructions were provided and documented on how and when the treatment should be given

PATIENT MONITORING

- Clear instructions on monitoring vital signs and other clinical features were given and documented
- If applicable, instructions given were appropriate in relation to standards of care
- (what to be monitored, frequency and duration)
- Monitoring of vital signs and other clinical features was documented according to instructions given or in relation to standards of care

INFORMATION IN PATIENT RECORD

All information necessary to assess adherence to standards of care was documented in the patient's case notes.

CAUSES OF DYSFUNCTION

For every dysfunction reported in the management of the case and/or in the procedures carried out, try to identify or clarify the causes. Consider:

Staff

Qualification, skills, availability, attitudes, communication

Medicines

Availability, accessibility

Equipment

Availability, accessibility, functionality

Standards of good practice

Existence, availability, transmission, use

Management, care organisation

(Coordination, communication)

Patient and her family

(Care accessibility, understanding, commitment, beliefs)

DEATH

- On the basis of this analysis, the medical cause of death is the same as was documented in the patient's record
- What are the factors/circumstances that might have adversely affected care?
- Could the death have been prevented? How?

The fifth Step: Recommendations and action plans

Actionable recommendations are key to effective maternal and perinatal death reviews. Specific recommendation rather than broad and those that cannot be implemented are advised. Identification of individuals who will be responsible for implementing the suggested actions is also important as well as specifying the timelines for implementing the suggested actions.

The sixth step: Complete the maternal and perinatal reviews notification forms

This step involves filling the notification forms by the review team, led by the meeting secretary and should be completed at the review session. The forms should be filled in duplicate, one copy sent to the district and another kept at the health facility.

The seventh step: Plan for the next session

Before closure of the review session, the date for next meeting should be set.

CHAPTER VI

IDENTIFICATION AND NOTIFICATION OF MATERNAL AND PERINATAL DEATHS

Identification of maternal and perinatal deaths is an important component of MPDSR. Figure2&3. Summarize the important steps in the identification and notification of maternal and perinatal deaths and various levels of identification, reviews and notification of maternal and perinatal deaths.

Figure 2. Maternal and perinatal deaths identification and notification

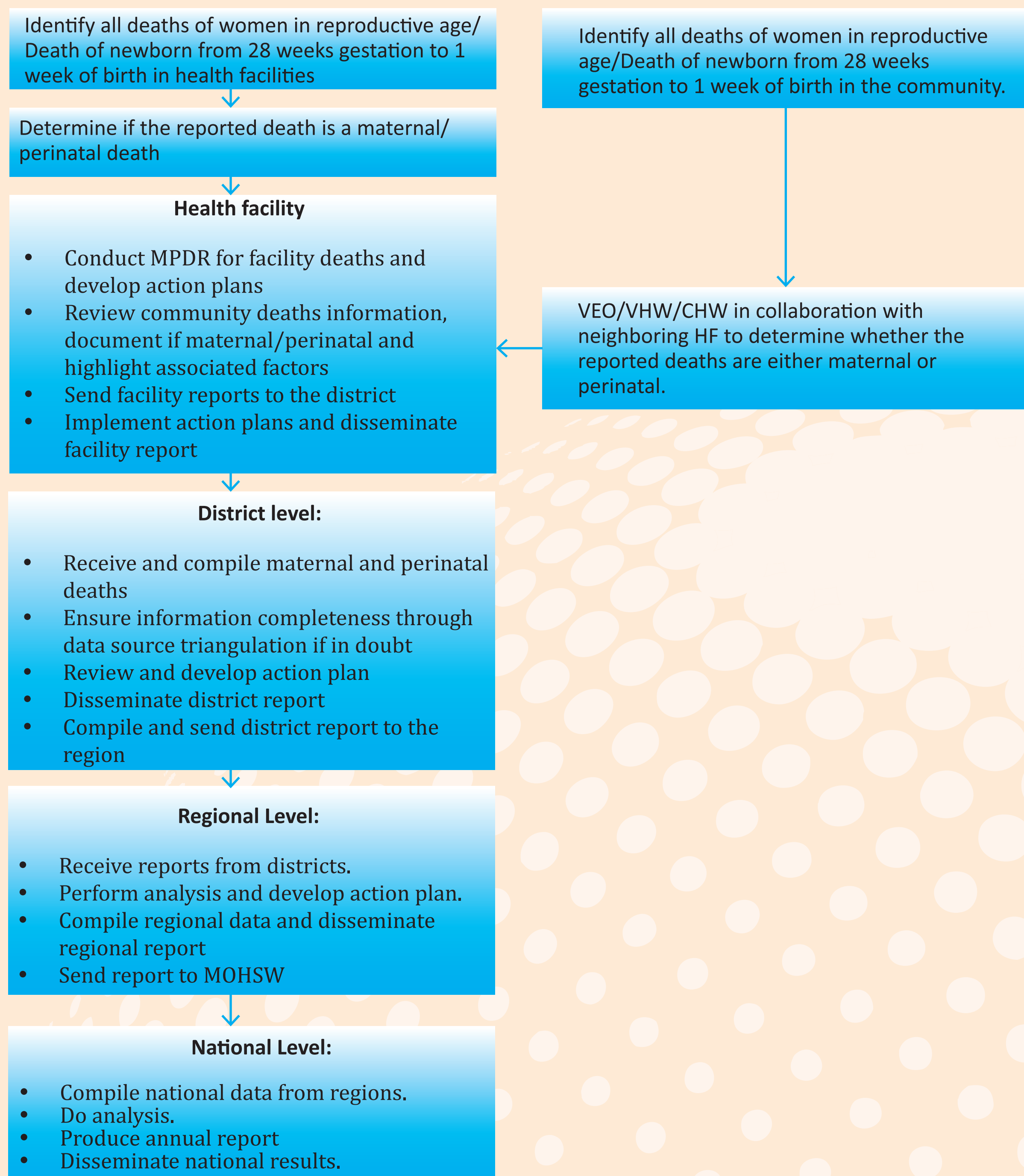
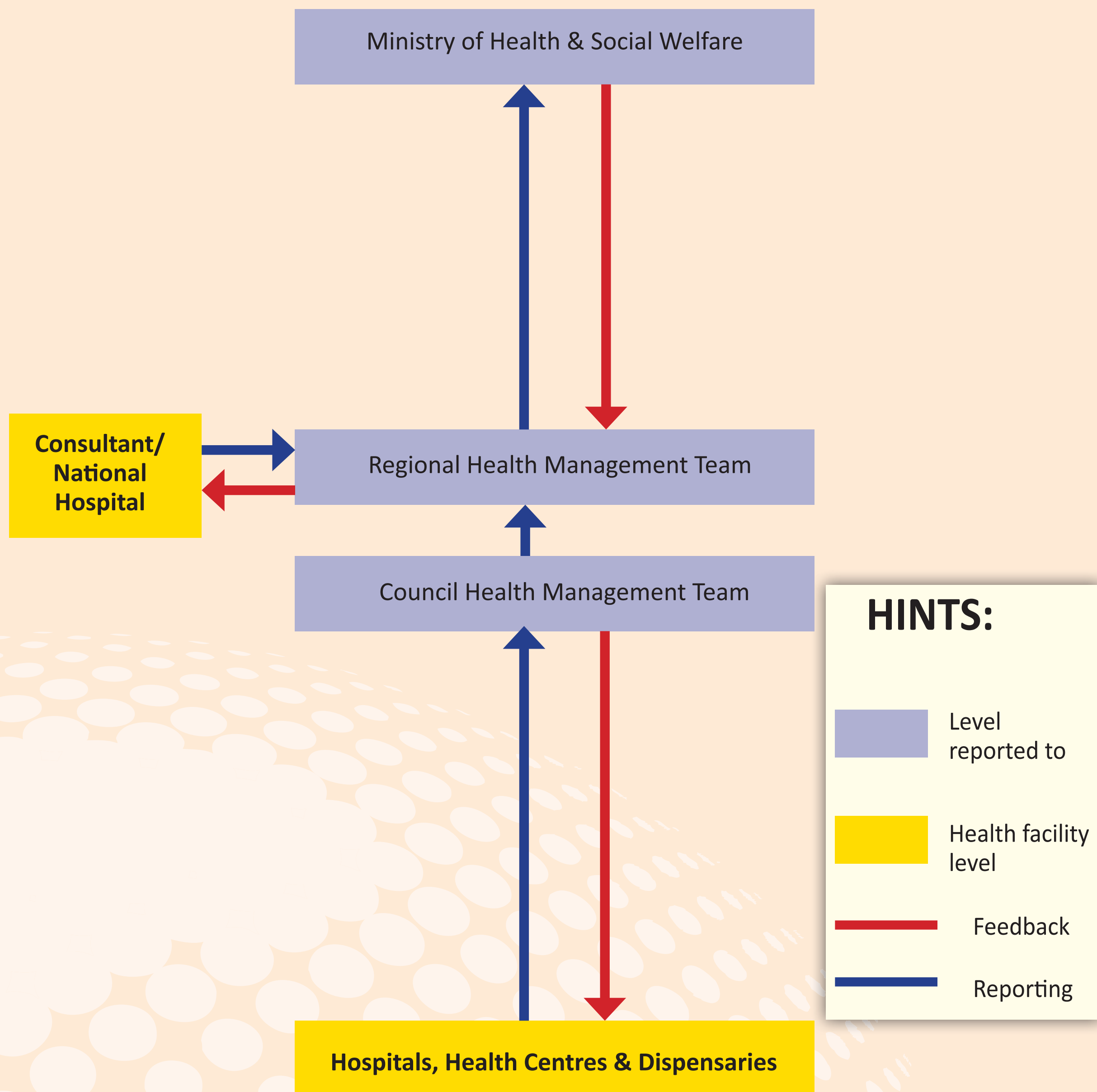


Figure 3. A summary of maternal and perinatal deaths notification and feedback



Maternal and perinatal deaths often indicate weaknesses in the health-care system therefore timely maternal and perinatal deaths reporting is essential if the MPDSR is to be successful. Recall of events that might have contributed to a maternal or perinatal death becomes less clear as time passes. **Maternal and perinatal deaths are thus notifiable events; it is an offence if not notified.**

Maternal and perinatal deaths occurring in a health facility should be reviewed within a week of occurring and reported to the district within a month. Identification of community maternal and perinatal deaths may be challenging in the current context as not all districts have mechanisms to collect such information. Village/community health workers and village executive officers should help to identify all deaths among women in the reproductive age group (15-49 years) in the community and of newborns from 28 weeks gestation to within a week of birth, try to determine if such deaths were maternal/

perinatal and report them to the nearby health facility for further scrutiny to ascertain whether they are indeed maternal or perinatal deaths and to establish possible causes. Health facilities will then report such deaths to the district.

Districts will review all maternal and perinatal deaths reported by health facilities, ensure completeness and where in doubt triangulate information before the review at the district level. All reviewed deaths are then reported to the region. Regions are the ones tasked to report maternal and perinatal deaths to the Ministry of Health and Social Welfare.

Regions will review district reports, prepare regional reports and forward the maternal and perinatal deaths review forms to the national level (MOHSW) together with the regional reports.

The national committee will meet semi-annually to review maternal and perinatal deaths and produce annual reports that will also be disseminated to various stakeholders in the country as annual event, at key national forums such as annual RMO, DMO and RCH meetings and get published in the Government gazette.

Summary of the various committees involved in MPDSR in Tanzania

7.0 The Committees

The committees will be of two different types;

- Facility based maternal and perinatal death review committee
- Technical committee at district, regional and national level formed by different stakeholders as outlined below:

Members of facility based maternal and perinatal deaths review at different levels

Consultant Hospital

Maternal deaths
Chairperson and Coordinator
Head of Department or someone senior and knowledgeable on his/her behalf.

Secretary
Nurse in-charge of Obstetrics and Gynaecology Department
Members

- Nurse in-charge of all Gynaecology and Obstetrics wards.
- All Obstetrician Gynaecologists.
- Nurse in charge or representative of labour ward.
- Zonal RCHCo.
- Nurse incharge operating theatre.
- Anaesthetist.
- Head of pharmacy.
- Representative RCH Clinic.
- Head of laboratory services.
- Provider(s) involved in management of deceased.
- Hospital administrator/ secretary.
- Social Welfare Officer.
- Any invitee as it may be found necessary.

Perinatal death
Chairperson

The Head of Neonatal Unit or Someone senior and knowledgeable on his/her behalf
Secretary and Coordinator
The Nurse in-charge of Neonatal Unit
Members

- Head of Paediatric Department
- Head of Obstetrics and Gynaecology
- All paediatrician
- Nurse from;
    - labour ward
    - KMC ward
- One Nursing Officer from neonatal ward
- Zonal RCHCo
- Representative from operating theatre
- Head of laboratory services
- Head of Pharmacy
- One doctor from neonatal ward
- One doctor from labour ward
- Providers involved in the management
- Hospital administrator/secretary
- Social Welfare Officer
- Any invitee as it may be found necessary

Regional Referral Hospital

Maternal and Perinatal deaths (at regional level the committee will be one)
Chairperson and Coordinator
Doctor in charge of Obstetrics and Gynecology/ Doctor in-charge Paediatrics Department or Someone senior and knowledgeable on his/her behalf.

Secretary
Nurse in-charge of Obstetrics and Gynecology/Nurse incharge Paediatrics Department
Members

- Medical Officer in-charge of the hospital.
- Nursing Officer in-charge of the hospital.
- Representative of;
    - Operating theatre
    - Anaesthetist
    - RCH Clinic
- One Doctor from the department of Paediatrics.
- One Doctor from the department of OBGY.
- Nurse in-charge of labour ward.
- Nurse incharge neonatal unit.
- Hospital In-charge of;
    - Pharmacy and
    - Laboratory services
- Regional RCHCo.
- Provider(s) involved in management.
- Hospital secretary.
- Social Welfare Officer.
- Any invitee as it may be found necessary.

District Hospital

Maternal and Perinatal deaths
Chairperson and Coordinator
Doctor in-charge of the hospital or someone senior and knowledgeable on his/her behalf
Secretary
Nurse in-charge of the hospital
Members:

- District Reproductive and Child Health Coordinator
- Nurse in-charge of labour ward
- Nurse incharge of neonatal ward
- Medical Doctor in-charge of labour ward
- Medical doctor in charge in paediatrics
- In-charge – OPD services.
- Representative from:
  - RCH clinic
  - Anaesthetist
  - Operating theatre
- Hospital in-charge of;
  - Laboratory services
  - Pharmacy
- Nurse in-charge of gynaecological ward
- Hospital secretary
- Social Welfare Officer
- Any invitee as it may be found necessary

NOTE: The above committee formulation applies for all other Hospitals in the district, including private Hospitals.

Health Centre and Dispensary:

Members for facility based maternal and perinatal death review committee at these levels will be the same.

Health Centre

Chairperson and Coordinator
In-charge of health centre or someone senior and knowledgeable on his/her behalf

Secretary
Nurse in-charge of health centre
Members

- Medical officers at the centre.
- Assistant Medical Officers at the centre.
- All Clinical officers at the centre.
- All Nurse/Midwives, PHNB/MCHA at the centre.
- Member of CHMT (DMO, DNO or DRCHco).
- Provider(s) involved in management.
- Any invitee as it may be found necessary.

Dispensary

Chairperson and Coordinator
In-charge of the dispensary or someone senior and knowledgeable on his/her behalf
Secretary
Nurse in-charge of the dispensary.
Members

- All trained personnel at the dispensary.
- Member of CHMT (DMO, DNO or DRCHco).
- Any invitee as it may be found necessary.
- Provider(s) involved in management.

Technical committees for maternal and perinatal death reviews at different levels

National level

Chairperson
Director of Preventive Services or Someone senior and knowledgeable on his/her behalf
Secretary
SMI Coordinator/NCH coordinator
Coordinator
Assistant Director RCHS

Members

- Assistant Director Diagnostic Services.
- Chief Nursing Officer.
- Managing Director – MSD.
- Principal nursing officer preventive services.
- Directors of National/ zonal referral hospitals.
- HMIS Officer MoHSW.
- Representative from DMO/RMO.
- One representative;
    - AGOTA
    - TAMA
    - PAT
    - PRINMAT
    - APHFTA
- Head Obstetrics and Gynaecology from Muhimbili National Hospital.
- Head Paediatrics from Muhimbili National Hospital.
- Director nursing services from Muhimbili National Hospital.
- A Representative from Ministry of Finance.
- Community development.
- Social Welfare Department.
- Lawyer.
- Quality Assurance (MOHSW).
- UN agencies (WHO/UNICEF/UNFPA).
- Secretaries of RMNCAH technical working groups.

NOTE: The committee will meet for three days twice per year to review all maternal and perinatal deaths that occurred in the country.

Regional level

Chairperson
Regional Medical Officer or Someone senior and knowledgeable on his/her behalf
Secretary
Regional Nursing Officer
Coordinator
Regional Reproductive and Child Health Coordinator
Members:

- District Medical Officers in the region.
- Medical Officer in-charge of all hospitals in the region (including private and FBO hospitals).
- Matron/Patron of all hospitals in the region (including private and FBO hospitals).
- Zonal RCH Coordinator.
- Regional laboratory technologist.
- Regional Pharmacist.
- Head Obstetrics and Gynaecology in the Regional hospital.
- Head Paediatrics in the Regional hospital.
- One representative from RMNCAH partners in the region.

Note: It is a 3 days session for reviewing all maternal and perinatal deaths which occurred in each quarter of the year with actions to rectify the situation.

District Level

Chairperson
District Medical Officer or Someone senior and knowledgeable on his/her behalf
Secretary
District Nursing Officer
Coordinator
District Reproductive and Child Health Coordinator
Members:

- Medical Officer in-charge of all hospitals in the district (including Private and FBO Hospitals).
- Matron/Patron of all hospitals in the district.
- District Pharmacist.
- District Laboratory Technologist.
- In-charge;
    - Obstetrics and Gynaecology.
    - Paediatrics.
- All Obstetricians available in the district.
- All Paediatricians available in the district.
- One representative RMNCAH partners in the district.

Note: It is a 2 days session for reviewing all maternal and perinatal deaths which occurred in health facilities in each month and will come up with actions to rectify the situation.

6.2 Maternal and Perinatal deaths review and notification forms

6.2.1 Introduction

After a maternal or perinatal death review meeting, appropriate forms should be filled. The information is filled into the maternal or perinatal death review form accordingly. In this form, most of the questions are closed and some have multiple responses from which the reviewing team can choose from. All questions **MUST** be answered. **NB.** A single form is felt for each case (Maternal death and perinatal death)

6.2.2 How to fill the form

Following a review session, forms should be filled according to instructions. For questions with star (*) further clarifications can be obtained as indicated in this guideline.

6.2.3 Maternal Death Review Form

In this form questions with a star (*) which need further clarification include the following:

Q6**. Gravidity:** For those who died undelivered
Q7. **Parity:** Should indicate number of deliveries after 28 weeks of gestation including the index pregnancy if the mother died after delivery. Note: "+" indicates number of abortions or ectopic (e.g. para 2 + 1 means this woman had delivered twice, and had abortion or ectopic once).
Q9. **Duration from onset of complication(s) to death:** This refers to duration from the onset of complication which has led to death. It can be minutes, hours or days.
Q12 **Unknown:** No ANC card and no information
Q19. **Duration from onset of complication(s) to death:** This refers to duration from the onset of complication which has led to death. It can be minutes, hours or days.
Q20. **Death occurred:** Before intervention means the actual treatment of the condition has not been started e.g. in case of ectopic pregnancy laparotomy has not been done although specimen for blood grouping and cross-match has been taken. During intervention means despite an appropriate treatment death occurred e.g. in case of ectopic pregnancy the patient died after laparotomy.
Q22. **Mode of delivery:** This question can have more than one response in case of multiple pregnancy delivered by different routes e.g. Twin delivery delivered by SVD and breech, or SVD and caesarean section.
Q25. **Outcome of pregnancy:** can have more than one response in case of multiple pregnancy
Q26. **Post mortem done:** Post mortem is indicated to all maternal death whose diagnosis is not certain.
Q31. **Contributory factors:** This question can have more than one response. Some responses in this question need elaboration

- Poor infrastructure implies problems in transportation and communication
- Inadequate skills – means lack of skills to institute appropriate treatment despite availability of equipment and supplies.
- Delay in decision-making refers to delay at family or community level in deciding to seek medical attention.

Q35. **EXAMPLE OF ACTION PLAN**

Table 5. Cause of death: Postpartum haemorrhage

Problem Identified	Reason(s)/ Causes(s) for the problem identified	Action to be taken	Responsible person	Timeframe	Expected outcome indicators
Inappropriate fluid given	• Lack of knowledge and skills of health service provider	• Adhering to treatment guidelines supplied by MoHSW • On-job training	• Health facility in-charge	First week of July – on going	• Protocols in place and adhered to • Training done • Proper fluids given

ICD-10 used in maternal death.

In order to facilitate consistency in data collection, analysis and interpretation of information on maternal deaths, all causes of maternal deaths are recorded according to WHO ICD – 10 coding as illustrated in the table below;

Table 6. ICD 10 used in matenal deaths

ICD 10 CODE	Disease/condition	ICD 10 CODE	Disease/condition
O00	Ectopic pregnancy	O66	Obstructed labour – Other causes
O14.1	Severe pre eclampsia	O44.1	Placenta praevia
O15	Eclampsia	O45.0	Abruptio placentae
O85	Puerperal sepsis	O71	PPH – Trauma
O64	Obstructed labour Malposition/ Malpresentation	O72	PPH – Non traumatic
O65	Obstructed labour-Maternal pelvic abnormality	O08	Abortion complications
O74	Anaesthetic complication	O90	Cardiomyopathy
O88	Embolism	T65	Herbal intoxication
O99.0	Anaemia	O24	Diabetes Mellitus
O98.6	Malaria	O98.0	TB
O98.7	HIV/AIDS	T65	Herbal intoxication
O88	Embolism	O95	Unspecified or unknown cause of death

2.4 Perinatal death review form

In this form questions with a star (*) which need further clarification include the

following:
Q16. **Parity:** Should indicate number of deliveries after 28 weeks of gestation including the index pregnancy if the mother died after delivery. Note: "+" indicates number of abortions or ectopic (e.g para 2 + 1 means this woman had delivered twice, and had abortion or ectopic once).
Q19 **Unknown:** No ANC card and no information

Q23: **Relevant antenatal problem detected:** This question may have more than one response

(a) HIV/AIDS and syphilis must be confirmed by positive laboratory test

(b) If the response is **"others"** the following apply

- Age below 18 years
- History of previous IUFD
- History of early neonatal death
- Pelvic deformity
- History of previous Vacuum Extraction
- Gestation age above 42 weeks
- Fundus not corresponding to gestation age.

Q 24: **Intrapartum complications:** This question may have more than one response.

If the response is **"others"** the following apply:
- Malposition.
- Stuck after coming head in case of breech.
- Shoulder dystocia.
- Severe hypertension without eclampsia.

Q30: **Weight at birth:** All babies whether alive, or stillbirth must be weighed and recorded.

Q31**: Congenital malformations:** This question may have more than one response. If the response is "**others"** the following apply:

- Congenital tracheo oesophageal fistula.
- Congenital oesophageal atresia.
- Conjoined twins.
- Deuodenal atresia.
- Bilateral choanal atresia.
- Hydrocephalus.

In case the response is Neural Tube Defects, will include;
- Spina bifida
- Anaencephaly
- Encephalocele

Q32: **Gestational age at birth:**
- Calculate gestation age from the last normal menstrual period OR.
- Estimate from the date of quickening if dates are unknown and the woman booked late.

Where available, ultrasonography estimation may be used.

Note: Fundal height is not necessarily equivalent to gestation age and should not be taken as the substitute to unknown gestation.

Q33: **Duration of life after birth:** Record the duration of life in full days only when the

child survived more than 24 hours.

Q35: **Conditions before death** – this question can have more than one response. If the response is **"others"** then the following options applies:

- Indrawing of sub-costal spaces
- Stridor
- Grunting
- Mouth sores/thrush
- General muscular weakness
- Persistent fisting.

Q36: **Probable cause of death:** This question may have more than one response. If the response is **"birth injuries"** the following apply:

- Soft tissue injuries (subaponeurotic haemorrhage)
- Intraventricular haemorrhage
- Multiple long bone fractures

In this question if the response is **"infection"** includes:

- Septicaemia.
- Meningitis.
- Pneumonia.

Q37: **Probable medical cause of stillbirth:** This question may have more than one response. If the probable cause of death is **"others"** the following apply:

- Rhesus iso-immunization.
- Rubella infection.
- Toxoplasmosis.
- Cytomegalo virus infection
- Immunological causes.

Q39: **Briefly explain:**

Factors at the health facility:

Indicate here what could have been done at the facility to reduce the chances of death ***but were not done*** e.g. availability of equipment and supplies like ambu bag, suction

Antenatal factors:

Indicate here what could been done at the antenatal clinic to reduce chances of perinatal death ***but were not done*** e.g. screening facilities for anaemia, isoimmunization, syphilis and HIV, proteinuria and hypertensive disorders. Secondly, if screening was done but appropriate action(s) were not taken.

Maternal factors:

List all intrapartum complications which could have led to a perinatal death e.g. abruptio placenta, prolonged second stage, eclampsia etc.

Foetal/newborn factors:

List factors which the foetus or newborn could have which increases the chances of death e.g. congenital malformations, cord prolapse etc.

Q35: **Format of an Action Plan**
Table 7. Causes of death: Birth asphyxia

Problem Identified	Reason(s)/ cause(s) of the identified problem	Action to be Taken	Responsible Person	Timeframe	Outcome Indicators
Poor monitoring of progress of labur	• Lack of knowledge on the use of partograph	• Proper use of the partography • On-job-training	• Nurse in-charge of the labour ward • Unit Head	I month	• Proper manage-ment of labour • Training conducted

7.0. REPORTING MECHANISM

Maternal and perinatal deaths occurring in the country need to be reported due to the following reasons:

- Establish maternal mortality ratio (MMR) and perinatal mortality rate (PMR)
- Rational classification of the causes
- Acquisition of constructive criticism allowing rectification of identified problems
- Plan of action to prevent further deaths

The reporting mechanism for maternal and perinatal deaths will be the same. There will be different reporting mechanism for facility based reviews and technical committee reviews.

Facility based reviews

Each facility (dispensaries, health centers, hospitals including consultant hospitals within the district) will fill the form. The form should be photocopied and the original should be sent to the DMO and the copy should be kept in the facility.

The DMO will counter-sign the received form and make a copy which will be sent to RMO on a monthly basis.

Maternal and perinatal death technical committee reviews

Technical committee review reports will be submitted under the following mechanism;

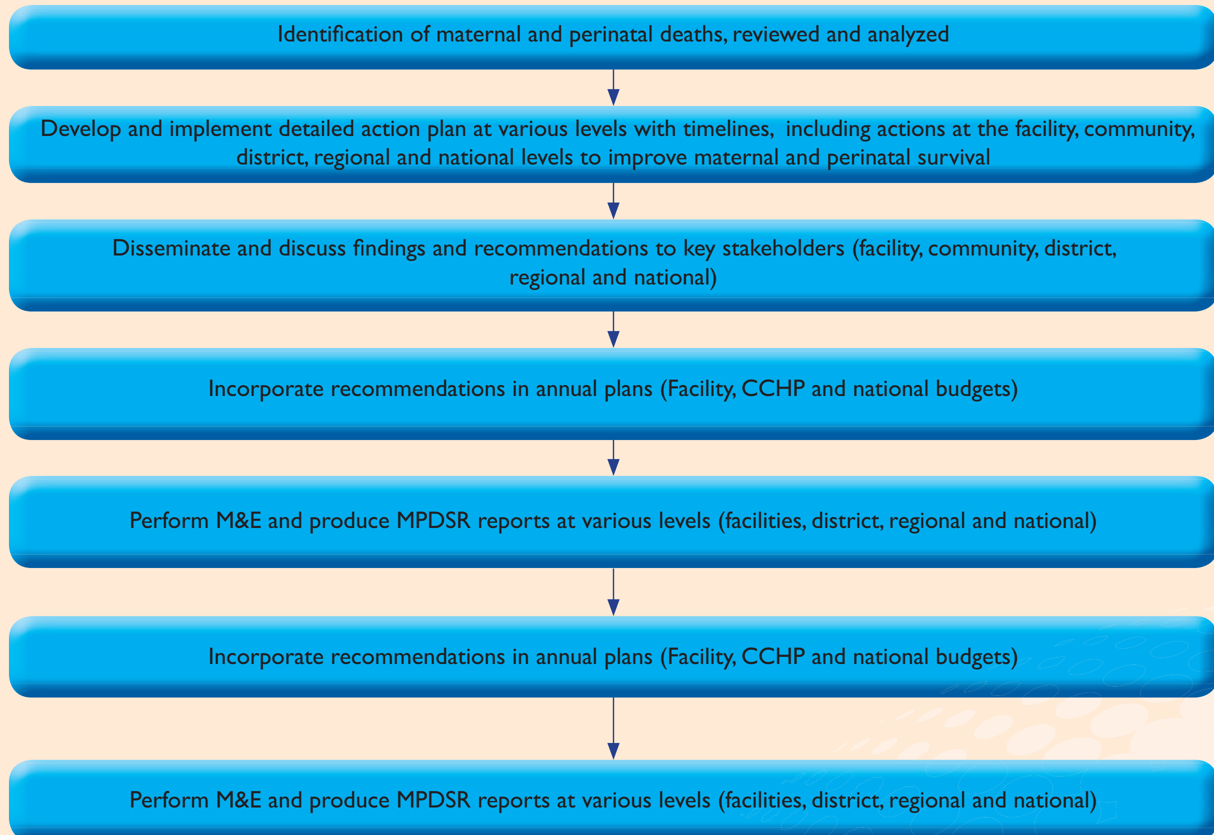
- **District level**
  - The summary of the filled district maternal and perinatal deaths review report forms will be submitted to the RMO on a monthly basis.
  - The DMO will give the feedback to the respective health facilities.
- **Regional level**
  - The summary of the filled regional maternal and perinatal deaths review forms will be submitted to the MoHSW on a quarterly basis.
  - The RMO will give the feedback to the respective districts.
- **National level**
  - The summary of the filled national maternal and perinatal deaths review forms will be submitted to the Permanent Secretary MOHSW biannually.
  - The national technical committee will give feedback to the regions and districts where appropriate.
  - The head of RCHS will present annual reports to the national RCH, RMOs, RNOs and DMOs meetings and also disseminate appropriately to other stakeholders as necessary including in the Government Gazette.

CHAPTER VII

RESPONSE

Acting on recommendations from MPDR is a primary objective of MPDSR. Importantly, every maternal and perinatal death provides information that can be used to prevent similar deaths in future. Figure 4 summarizes the response steps for MPDSR in Tanzania.

Figure . Maternal Perinatal Death Response



For each maternal or perinatal death reviewed, a detailed action plan should be developed and implemented to address the gaps that might have contributed to the death. Facility recommendations should include actions to be implemented at the community level. Recommendations from reviews for implementation may be immediate actions but some take longer to address and thus require to be incorporated into health facility, council, regional or national budgets. Before each subsequent review meetings at health facility level, previous action plans should be reviewed and feedbacks sent to the district on how far the recommended actions have been implemented. For actions by districts, communication should be made from this level to the health facility so that members of the facility review teams are aware of what has been achieved. Districts should make also follow-up of recommended actions by regions. More importantly, the district RCH coordinator is also tasked with data entry into the DHIS-2 database.

MPDSR reports at all levels (facility, district, region and national) must include information on the implementation of various recommendations emanating from the reports. At the national level, actions on various programs or policy implementation may be a key to guide a better implementation of maternal and perinatal survival strategies.

CHAPTER VIII

DATA ANALYSIS AND DISSEMINATION OF RESULTS

All levels of the health system should analyze maternal and perinatal mortality data and produce results specific for the level of health care. Two sources of data for MPDR reports should be recognized; maternal and perinatal review reports from review forms that are filled at health facilities and sent to districts and eventually to regions and national levels and from M&E based on selected indicators for each level of care. While both are applicable for annual reports at all health system levels, only some elements of the M&E may be relevant for facility, district and even regional levels interim reports: monthly, quarterly and semi-annually.

Dissemination of the results to entities that are likely to make a difference in maternal and perinatal survival in the country is also an important step towards effective MPDSR implementation. Multiple channels of communication are more effective than a single strategy to ensure that the right information reaches the targeted audience(s). At all levels the findings should focus on improving the systems rather single out particular errors.

Health facilities in particular should ensure that facility maternal and perinatal mortality data are analyzed based on facility maternal and perinatal reviews and M&E indicators as highlighted in chapter IX in addition to other relevant information required for understanding and addressing maternal and perinatal mortality. It is advised that the team involved in the maternal and perinatal death review also be involved in reviewing the report, developing the recommendations, planning and promoting their implementation as well as acting as advocates for change. Where feasible, districts should help health facilities to analyze and prepare reports. Specifically, district RCH Coordinators will be able to produce district and facility mortality reports from DHIS-2 database and share this information with facilities.

At the minimum, analysis and reports by districts and regions should also base on the two sources of data as highlighted for health facilities. Dissemination of reports to relevant authorities/levels in the districts and regions will nurture better understanding of maternal and perinatal mortality, especially the goal of eliminating preventable deaths. In addition, this has a potential to attract more resources to maternal and perinatal health. Notably, results should be shared in district/regional RCH, council and regional secretariat meetings as well as national forums such as DMO/RMO/RCH meetings. Audience specific dissemination materials can also be produced and disseminated as appropriate for wider public reach with maternal and perinatal mortality information and the importance of taking actions from recommendations coming out of MPDSR implementation on better maternal and perinatal survival in the district/region.

The bi-annual; national technical maternal and perinatal deaths review meetings should also produce national reports based on the two sources of data but at the national level as well as any other indicators that might have been decided. Besides a comprehensive report, the report must have an executive summary that can be shared to stakeholders. Figure 4suggests standard sections of a MPDSR report

Figure 4. Sample sections in a annual MPDSR report

1. Background of area covered by the review.
2. Characteristic of women in the reproductive age in the area.
3. Characteristics of births in the area (number, live, stillborn-fresh and macerated, birth weight, gestational age).
4. Factors associated with maternal and perinatal deaths:area of residence (administrative geographic area, urban or rural) maternal age, maternal level of education, place of death (home or facility).
5. Proportion of maternal/perinatal deaths by causes of deaths as highlighted in the review forms
6. Case fatality rates (for facility maternal deaths).
7. Factors contributing to maternal/perinatal deaths as highlighted in the review forms
8. Recommendation and actions for preventing future deaths.
9. Review of recommendations and actions from previous year and lessons learned, including implementation challenges.

(Adapted from WHO Maternal death and Surveillance and Response Technical Guidance Information for Action to Prevent Maternal Death 2013).

Analysis of national data should engage key stakeholders in the country under the leadership of the RCHS in the MOHSW. Importantly, correct interpretation of the MPDSR results, including key messages will lead to development of targeted strategies to address challenges in maternal and perinatal survival and inform stakeholders on key priorities rather than disjointed efforts.

The annual maternal and perinatal mortality reports in particular must include a high level dissemination event with materials for various audiences/stakeholders aiming at informing the public on maternal and perinatal mortality in the country, achievements and challenges in MPDSR implementation, actions likely to make a difference in maternal and perinatal survival, including at an individual level. A short summary of the recommendations are easily implemented than those in bulky documents. Policies and strategies likely to better maternal and perinatal survival should also be highlighted. The event should also be a platform to recognize health system and wider public entities that may have performed exceptionally well in addressing maternal and perinatal deaths in the country.

MONITORING AND EVALUATION

See Attachment IV

REFERENCES

WHO Maternal Death Surveillance and Response: Technical Guidance Information for Action to Prevent Maternal Death 2013. Available at http://apps.who.int/iris/bitstream/10665/87340/1/9789241506083_eng.pdf

WHO Trends in maternal mortality: 1990 to 2010. WHO, UNICEF, UNFPA and The World Bank Estimates. Available at http://whqlibdoc.who.int/publications/2012/9789241503631_eng.pdf

ATTACHMENT 1

STRICTLY CONFIDENTIAL

The United Republic of Tanzania – Ministry of Health and Social Welfare

Maternal Death Review Form

(To be filled in within one week of the death. One photocopy of this form to be kept in the health facility and the original must be submitted to higher level as per guidelines)

Table 8. Maternal Dealth Review form

Reporting Facility Information		
1. Name of Reporting Health Facility ______________	2. Facility unique ID number (YYYY/Number) ____________	3. Address of the deceased Ward ______________ Division ______________ District ______________ Region ______________
Deceased Information		
4. Date of Death DD/MM/YYYY ___/___/____	5. Age at death: __ Years	*6. Gravidity _____
*7. Parity ________	8. Marital status (circle what applies. Only one response allowed) 1. Married 4. Cohabiting 2. Single 5. Separated 3. Widowed 6. Divorced	
*9. Level of education (circle what applies)	1. None 4. Higher education (above secondary) 2. Primary 5. Unknown 3. Secondary	
10. Occupation ___________________	11. Admission at the health facility Date DD/MM/YY ______________ Time __________	
Antenatal Care (ANC)		
*12. Attended ANC?	1. Yes 2. No 3. Not known	
13. Where was the ANC done?	1. Dispensary 4. Other (specify) _______ 2. Health centre 5. Had not attended yet 3. Hospital	
14. Number of ANC visits	_________ Not applicable (Had not attended yet)	
15. Basic package of services provided on ANC (Circle what applies)	Syphilis screening 1. Yes 2. No 3. Unknown Hgb, 1. Yes 2. No 3. Unknown Blood group 1. Yes 2. No 3. Unknown , HIV status 1. Yes 2. No 3. Unknown ,	

<table>
<tr><td></td><td colspan="4">BP measurement during the follow up 1. Yes 2. No 3. Unknown
Urinalysis 1. Yes 2. No 3. Unknown
Fe/FoL supplementation 1. Yes 2. No 3. Unknown
TT immunization 1. Yes 2. No 3. Unknown</td></tr>
<tr><td>16. Diagnosis on admission (circle what is appropriate)</td><td colspan="4">1.Normal labour
2. Eclampsia
3. Hypertensive disorders without eclampsia
4. Nursing mother
5. HIV/AIDS
6. Antepartum haemorrhage
7. Postpartum haemorrhage
8. Incomplete abortion
9.Sepsis
10. Ectopic pregnancy
11. Previous C/S scar
12. Violence
13. Obstructed labour
14. Severe malaria
15. Ruptured uterus
16. Anaemia
17. IUFD
18. Others (specify)………</td></tr>
<tr><td>17. Name and Place of Delivery/abortion (circle what applies)</td><td colspan="4">1. Hospital
2. Health centre
3. Dispensary
4. Maternity home
5. Delivery before arrival
6. Home
7. Not applicable (in case undelivered</td></tr>
<tr><td>18. Date of death DD/MM/YYY

________________</td><td colspan="4">18 b. Place of Death (circle what applies)
1. at home
2. at dispensary
3. at health center
4. at Hospital
5. on transit to facility
6. Other specify _________</td></tr>
<tr><td>*19. Duration from onset of complication to time of death</td><td colspan="2">_________(hours/days)</td><td>*20. When did death occur?</td><td>1. Before intervention
2. During intervention</td></tr>
<tr><td>21. Timing in relation to pregnancy</td><td>1= Antepartum</td><td colspan="2">2= Intrapartum</td><td>3= Postpartum</td></tr>
<tr><td colspan="5">Delivery and related information</td></tr>
<tr><td>*22. Mode of delivery</td><td colspan="4">1. Spontaneous vertex delivery
2. Emergency C/S
3. Elective C/S
4. Vacuum extraction
5. Breech delivery
6.Laparotomy/Hysterotomy
7. Other ....
8. Not applicable (had not delivered yet)</td></tr>
<tr><td>23. Delivery attendant</td><td colspan="4">1. Nurse/midwife
2. Medical Officer
3. Obstetrician
4. AMO
5. Clinical officer
6. Assistant Clinical officer
7. Traditional birth attendant
8. Other ____________________
9. Not applicable (had not delivered)</td></tr>
</table>

24. In case of cesarean section/laparotomy/Hysterotomy (fill in or circle what applies)	1. Indication of surgery ____________________ 2. Duration of surgery: a. one hour or less b. More than one hr 3. Type of anaesthesia used: a. General b. Spinal c. Not recorded 4. Time from decision to performing surgery…….hrs ……...mins 5. Not a C-section/laparotomy	
*25 Pregnancy outcome (circle what applies)	1.Live baby 2. Fresh still birth 3. Macerated stillbirth 4. Ectopic 5. Abortion	
*26. Was a post mortem done?	1= Yes What was the diagnosis? ____________________	2= No
Cause of death		
27. Direct cause (circle what applies**. Only one choice** allowed)	• 00 Ectopic pregnancy • 014.1 Severe pre eclampsia • 015 Eclampsia • 085 Puerperal sepsis • 064 Obstructed labour – Malposition/Malpresentation • 065 Obstructed labour-Maternal pelvic abnormality • 066 Obstructed labour – Other causes • 044.1 Placenta praevia • 045.0 Abruptio placentae • 071 PPH – Trauma • 072 PPH – Non traumatic • 008 Abortion • 074 Anaesthetic complication • 088 Embolism	
28. Indirect cause	• 099.0 Anaemia • 098.6 Malaria • 098.7 HIV and AIDS • 090.3 Cardiomyopathy • T65 Herbal intoxication • 024 Diabetes Mellitus • 098.0 TB • Others specify…………………….	
29. Other causes	• 095 Unspecified or unknown cause of death	
30. Underlying medical conditions that could have contributed to the death	____________________ ____________________	
***31. Contributory factors and non-medical causes of death (Tick all that apply)**		
Delay 1	☐ Traditional practices ☐ Family poverty ☐ Failure of recognition of the problem ☐ Delay in starting antenatal care	☐ Lack of decision to go to health facility ☐ Unwillingness to seek medical help ☐ 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	☐Sub optimal antenatal care ☐Delayed arrival to next facility from another facility on referral ☐Delayed or lacking supplies and equipment (specify) ________________ ☐Delayed management after admission ☐Human error or mismanagement (specify) ____________________ ☐Inadequate skills of provider (specify) ______________________	
Other	(specify) ____ ____	

32. Could this death have been avoided?	☐Yes ☐ No Comment____________________________________ ____
33. List the avoidable factors, missed opportunities or substandard care – why did this happen?	
34. Summarize the case	

ATTACHMENT II

Recommendations and action plan for problem(s) identified in question 31

35 EXAMPLE OF ACTION PLAN

Table 9. Postpartum haemorrhage - Non traumatic-ICD 10 no. 072

Problem identified	Reason(s)/Causes(s) for the problem identified	Action to be taken	Responsible person	Timeframe	Outcome (s) achieved
Inappropriate fluid given despite availability of all types of fluids	Lack of knowledge and skills of health service provider	• Conduct on-job training • Adhere to MoHSW treatment guidelines	Health facility in-charge	First week of July – on going	• On job training done • Protocols in place and adhered to • Proper fluids given

_________________________ _______________ _____________

Reported by (Full name): signature: date:

ATTACHMENT III

STRICTLY CONFIDENTIAL

The United Republic of Tanzania – Ministry of Health and Social Welfare

Perinatal Death Review Form

(To be filled in within one week of the death. One photocopy of this form to be kept in the health facility and the original must be submitted to higher level as per guidelines)

Table 10. Perinatal Death Review Form

Reporting Facility Information		
1. Name of Reporting Health Facility ______________________	2. Facility unique ID number (YYYY/Number) __________	3. Address of the health facility District ____________ Region ____________
4. Category of health facility (circle what applies) i. Consultant Hospital ii. Regional Hospital iii. District/Any other Hospital iv. Health Centre v. Dispensary vi. Maternity home		5. Date of reporting DD/MM/YYYY ___/___/____

Deceased Information			
6. Date of death		DD/MM/YYYY ___/___/____	
7. Place of Death (circle what applies)	1. Dispensary 3. Hospital 5. Other specify _________	2 Health centre. 4. On the way to facility	
8. Date of delivery DD/MM/YYYY ___/___/____	Condition at delivery (circle what applies)	1. Alive 2. Stillbirth (2.1 Fresh stillbirth, 2.2 Macerated Stillbirth)	
9. Place of Delivery (circle what applies)	1. Dispensary 3. Hospital 5.Home	2 Health centre. 4. On the way to facility 6. Other specify _________	
10. Admission at the health facility	DD/MM/YYYY ___/___/____ Time _____ ☐ Stillbirth	11. Duration from admission to time of death	_______(hours/days) ☐ Stillbirth
12. Address of the mother	Ward ____________ District ____________	Division ____________ Region ____________	
13. Marital status of mother	Circle what applies. Only one response allowed 1. Married 2. Single 3. Widowed	4. Cohabiting 5. Separated 6. Divorced	

14. Level of Education of mother	1. None 2. Primary 3. Secondary	4. Above secondary 5. Unknown
15. Mother's occupation ________________		Unknown
*16. Parity of mother including this delivery __________		

17. Level of Education of the father	1. None 2. Primary 3. Secondary	4. Above secondary 5. Unknown
18. Occupation of the father ______________________ Unknown		

Antenatal Care (ANC)		
*19. Mother attended ANC?	1. Yes 2. No 3. Not known	
20. Where was ANC done?	1. Dispensary 2. Health centre 3. Hospital	4. Other (specify) _______ 5. Mother had not attended yet
21. Number of ANC visits	________ Not applicable (Mother had not attended yet)	
22. Basic package of services provided on ANC (Circle what applies)	Syphilis screening Hgb, Blood group HIV status BP measurement during the follow up Urinalysis Fe/FoL supplementation TT immunization	1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown
*23. Relevant antenatal problems detected during ANC (circle what applies)	Diabetes mellitus Multiple pregnancy Antepartum Haemorrhage Malaria Anaemia Polyhydramnios Heart disease Untreated syphilis Hypertensive disorders HIVandAIDS......... Others (Specify) .... None Unknown Not applicable (did not attend ANC)	1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown 1. Yes 2. No 3. Unknown

Circumstances of death							
*24. Intrapartum complications	1= Abruptio placenta	2 = Eclampsia	3 = Ruptured uterus	4 = Obstructed labour	5= Foetal distress	6 = Cord prolapse	7= Other ______
25. Underlying maternal medical conditions that could have contributed to the death	______________________________						

	______________________________________ ______________________________________
26. Mode of delivery	1. Spontaneous vertex delivery 2. Emergency C/S 3. Elective C/S 4. Vacuum extraction 5. Breech delivery 6.Laparotomy/Hysterectomy 7. Other ________
27. Duration of labour	1st stage ________ hours ☐not recorded ☐ Not known 2nd stage _________ minutes ☐not recorded ☐ Not known ☐ elective c/section
28. Delivery attendant	1. Nurse/midwife 2. Medical Officer 3. Obstetrician 4. AMO 5. Clinical officer /Assistant Clinical officer 6. Medical attendant 7. Traditional birth attendant 8. Family member 9. Unassisted

29. In case of caesarean section/laparotomy/Hysterotomy (fill in or circle what applies)	1. Indication of surgery …………………………………………… 2. Duration of surgery a. One hour or less b. More than one hour 3. Type of anaesthesia used: a. General b. Spinal c. Not recorded 4. Time from decision to performing surgery…….hours ………minutes 5. Not applicable (delivery not by C-section/laparotomy)		
*30. Weight at birth	_______ grams ☐not recorded ☐ unknown	Sex of the baby	☐male ☐female ☐ambiguous ☐not recorded
*31. Congenital malformations	☐none ☐ Q20 congenital heart disease ☐Q 00-07 neural tube defects ☐ Q42.3 imperforate anus ☐ Others (specify)___________		
*32. Gestational age at birth	______ weeks ☐ not recorded ☐ unknown	APGAR score at 5 minutes ☐ unknown	☐7-10 ☐1-7 ☐0 ☐ not recorded ☐ unknown
*33. Duration of life after birth	________(hours/days) ☐ Stillbirth☐ unknown	Is the mother alive?	☐yes ☐no ☐ Unknown
34. Was a post mortem done?	1= Yes What was the diagnosis? ______________________________	2= No	

*35. Conditions before death (circle what applies)	1 = P81 Fever	2 = P92 Failure to suck	3 = Difficulty in breathing	4 = P57 Jaundice	5 = P90 Convulsion / fits	6 = Abdominal distension	7= P39.4 Skin Infection
	8 = P53 Haemorrhagic disorder	9 = P38 Cord Sepsis	10 = P80 Hypothermia	11 = Cyanosis	7 = Others (specify)	8 = N/A Stillbirth	

*36. Probable cause of death	☐ P07 Complications of prematurity ☐ P61.4 Anaemia ☐ P21 Asphyxia ☐ P10 Birth injuries (specify) ______ ☐ P36 Infection ☐ Q00-89 Congenital malformation ☐ Other ______________						
*37. Probable medical causes of stillbirth (tick all that apply)	☐ P20 Intrapartum asphyxia ☐ 015 Severe hypertension / eclampsia ☐ E14 Diabetes ☐ P37.3 Severe malaria ☐ A50 Untreated Syphilis ☐ B80HIV/AIDS ☐ Other (specify)__________ ☐ NA (not a stillbirth) ☐ P95 Unknown						
38. From the available information and the assessment carried out, could this death have been avoided?	☐ Yes ☐ No Comment... ________________________________ ____						
*39. Briefly explain factors that contributed to this perinatal death at following levels	Health facility						
	Antenatal						
	Foetal/Newborn						
	Maternal						
40. List the avoidable factors, missed opportunities or substandard care – why did this happen?							
41. Summarize the case							

42. Recommendations and action plan

EXAMPLE OF ACTION PLAN

Table 11. Causes of death: Birth asphyxia - ICD 10 no. P21

Problem identified	Reason(s)/Causes(s) for the problem identified	Action to be taken	Responsible person	Timefram e	Outcome (s) achieved
Poor monitoring of progress of labour	Inadequate knowledge on the use of partograph	• Conduct on-job-training • Monitor all women in labour using partograph	• Nurse in-charge of the labour ward • Head of Department	From second week of July 2014 and on going	• On job training done to all staff in the LW • All women in labour are properly monitored using partographs

ATTACHMENT IV

MPDSR Indicators

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Identification and notification									
All maternal & perinatal deaths are notified	100%	Proportional (%) of notified maternal/perinatal	No. of notified maternal/perinatal deaths	Total No. of maternal/perinatal deaths	HMIS	X	X		
Notified maternal *(perinatal)* deaths that are from the community	100%	Proportional (%) of maternal/perinatal deaths notified by community	No. of maternal deaths reported in the community	Total No. of maternal/perinatal deaths	HMIS	X	X		
Facility maternal (perinatal) deaths identified and reviewed within 1 week	>80%	Proportional (%) maternal/perinatal deaths reviewed within 1-week occurrence	No. of Maternal/perinatal deaths reviewed within 1-week	Total No. of reported maternal/perinatal deaths	HMIS	X	X		
Review									
Health facility with a maternal (*perinatal*) death review committee	>80%>	Proportional (%) of health facilities with maternal/perinatal deaths reviews	No. of health facilities conducting maternal/perinatal death reviews	Total No. of facilities eligible for maternal/perinatal death reviews	HMIS	X	X		
Health facilities conducting maternal (*perinatal)* death reviews	90%	Proportional (%) of health facilities conducting maternal/perinatal death reviews	No. of health facilities conducting maternal/perinatal death reviews	Total number of health facilities eligible to conduct maternal/perinatal death reviews		X	X	X	X
Health facility conducting maternal (*perinatal)* death review meetings monthly	80%	Proportion (%) of health facilities conducting monthly maternal/perinatal death review meeting	No. of facilities conducting monthly maternal/perinatal death reviews meetings	Total No. of health facilities eligible to conduct maternal/perinatal death reviews	HMIS	X	X		
Health facility reviews that include recommendations (report both maternal and perinatal separately)	80%	Proportional (%) of maternal/perinatal deaths reviews that came up with recommendations	No. of Maternal/perinatal reviews which came up with recommendations	Total No. maternal/perinatal deaths which were reviewed	HMIS	X	X		
Maternal *(perinatal)* deaths reviewed	80%	Proportion (%) of all maternal/perinatal deaths reviewed	No. of maternal/perinatal deaths reviewed	Total No. maternal/perinatal death	HIMS	X	X		
Suspected community maternal *(perinatal)* deaths that had verbal autopsies conducted	50%	Proportion (%) of suspected community maternal/perinatal deaths which verbal autopsy was conducted	No. of suspected maternal/perinatal deaths which verbal autopsy was conducted	Total No. of suspected community maternal/perinatal deaths	HMIS	X	X		

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Reported community maternal *(perinatal)* deaths reviewed within one week	>80%	Proportion (%) of all reported community maternal deaths reviewed within one week of occurrence.	No. of maternal/perinatal deaths in the community reviewed within one week	Total No. of Maternal/perinatal deaths reported from the community	IDSR/ HMIS	X			
Community verbal autopsies that were reviewed and confirmed as maternal *(perinatal)* deaths	80%	Proportion (%) of community maternal/perinatal deaths confirmed by verbal autopsy	No. of community/perinatal deaths confirmed by verbal autopsy	Total No. of maternal/perinatal deaths reported from the community	HMIS	X			
Reporting and notification									
Health facilities reporting maternal *(perinatal)* deaths (including zero reporting)	>80%	Proportion (%) of all facilities regularly reporting maternal/perinatal deaths regardless of occurrence or absence	No. of health facilities which regularly report maternal/perinatal deaths	Total No. health facilities reporting maternal/perinatal deaths	HMIS		X	X	X
Maternal *(perinatal)* deaths notified that are from community	>80%	Proportion (%) of maternal/perinatal deaths that are from the community	No. of Maternal/perinatal deaths reported from the community	Total No. health facilities reporting maternal/perinatal deaths	HMIS		X	X	X
Health facilities that reported zero maternal *(perinatal)* deaths	>80%	Proportion (%) of health facilities that reported zero maternal/perinatal deaths	No. of health facilities that report zero maternal/perinatal deaths	Total No. health facilities reporting maternal/perinatal deaths	HMIS		X	X	X
Health facilities with zero maternal *(perinatal)*community death notification	>80%	Proportion (%) of health facilities with zero community maternal/perinatal deaths notification	No. of health facilities with zero community maternal/perinatal deaths notification	Total No. health facilities reporting maternal/perinatal deaths	HMIS		X	X	X
Reported maternal *(perinatal)* deaths that were from hospitals	>80%	Proportion (%) of maternal/perinatal deaths reported that are from hospital	No. of maternal/perinatal deaths reported from the hospital	Total No. of maternal/perinatal deaths	HMIS		X	X	X
Health facilities whose maternal *(perinatal)* death(s) were reported in the DHIS 2 database	>80%	Proportion (%) of health facilities whose maternal/perinatal deaths report in DHIS2 database	No. of health facilities reporting maternal/ perinatal deaths in DHIS2	Total No. health facilities reporting maternal/perinatal deaths	HMIS		X	X	X
Maternal *(perinatal)* deaths that were reported in the DHIS 2 database	>80%	Proportion (%) of maternal/perinatal deaths reported in DHIS2 database	No. of Maternal/perinatal deaths reported in DHIS2	Total No. of Maternal/perinatal deaths	HMIS		X	X	X
District									
District maternal *(perinatal)* mortality review committee exists and meets regularly to review facility and community deaths	>80%	Proportion (%) of districts whose committees meet regularly to review (facility and community) maternal/perinatal death	No. of districts whose committees meet regularly to review (facility and Community) maternal/perinatal death	Total No. of districts	HMIS		X	X	X
Health facilities conducting data compilation and analysis monthly	>80%	Proportion (%) of districts which compile and analyze data on monthly basis	No. of districts which compile and analyze data on monthly basis	Total No. of districts	HMIS		X	X	X

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Reviews that include community participation and feedback	>80%	Proportion (%) of maternal/perinatal review that included community participation and feedback	No. of maternal/perinatal review that included community participation and feedback	Total No. of maternal/perinatal death reviews	HMIS		X	X	X
Health facilities with functioning maternal (*perinatal*) deaths review committees (and disaggregated into hospitals, health centre and others)	>80%	Proportion % of health facilities with functioning maternal/***perinatal*** deaths review committees (and disaggregated into hospitals, health centre and others)	No. of health facilities with functioning maternal/***perinatal*** deaths review committees	Total No. of health facilities	HMIS		X	X	X
Notified maternal (perinatal) deaths that were reviewed	>80%	Proportion (%) of all notified maternal**/perinatal** deaths that were reviewed	No. of all notified maternal**/perinatal** deaths that were reviewed	Total No. of notified maternal/perinatal deaths	HMIS		X	X	X
Health facilities conducting maternal (perinatal) death reviews within one week of occurring	>80%	Proportion (%) of health facilities conducting maternal/perinatal death reviews within one-week	No. of health facilities conducting maternal/perinatal death reviews within one-week	Total No. of health facility conducting maternal/perinatal death reviews	HMIS		X	X	X
MPDSR review facilities that include community deaths	80%	Proportion (%) of health facilities whose MPDSR review include community deaths	No. of health facilities whose MPDSR review include community deaths	Total No. health facilities which conduct MPDSR review	HMIS		X	X	X
Maternal *(perinatal)* deaths reviewed that are from the community	80%	% of all maternal ***(perinatal)*** deaths reviewed that are from the community	No. of all maternal ***(perinatal)*** deaths reviewed that are from the community	Total No. Maternal/perinatal death reviews	HMIS		X	X	X
Community maternal *(perinatal)* deaths that are reviewed	80%	Proportion (%) of community maternal ***(perinatal)*** deaths that are reviewed	No. of community maternal ***(perinatal)*** deaths that are reviewed	Total No. of Maternal/perinatal death reviews	HMIS		X	X	X
Health facilities whose reviews include community maternal *(perinatal)* deaths	80%	Proportion (%) of all health facilities whose reviews include community maternal ***(perinatal)*** deaths	No. health facilities whose reviews include community maternal ***(perinatal)*** deaths	Total No. of health facilities conducting maternal deaths	HMIS		X	X	X
Region									
% of district councils with functioning maternal (perinatal) deaths review committee	80%	Proportion (%) of district councils with functioning maternal **(perinatal)** deaths review committee	No. of district councils with functioning maternal **(perinatal)** deaths review committee	Total No. of district councils	HMIS			X	X
Maternal (perinatal) death reviews conducted within one week of occurring	80%	Proportion (%) of maternal **(perinatal)** death reviews conducted within one week of occurring	No. of maternal **(perinatal)** death reviews conducted within one week of occurring	Total No. of notified maternal/perinatal deaths	HMIS			X	

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level: Health facility	Council	Region	National
District councils conducting data compilation and analysis monthly	80%	Proportion (%) of district councils conducting data compilation and analysis monthly	No. of district councils conducting monthly data compilation and analysis	Total No. of district councils	HMIS			X	X
District councils that produce annual MPDSR reports	>80%	Proportion (%) of district councils that produce annual MPDSR reports	No. of district councils that produce annual MPDSR reports	Total No. of district councils	HMIS			X	X
Reviewed maternal (perinatal) deaths that were from community	>80%	Proportion (%) of all reviewed maternal **(perinatal)** deaths that were from community	No. of all reviewed maternal **(perinatal)** deaths that were from community	Total No. of all reviewed maternal **(perinatal)** deaths	HMIS		X	X	X
Reviewed facility maternal (perinatal) deaths that were from hospitals	>80%	Proportion (%) of all reviewed facility maternal **(perinatal)** deaths that were from hospitals	No. of all reviewed facility maternal **(perinatal)** deaths that were from hospitals	Total No. of all reviewed facility maternal **(perinatal)** deaths	HMIS		X	X	X
Reviewed maternal *(perinatal)* facility deaths that were from lower level health facilities (health centres & dispensaries)	>80%	Proportion (%) of reviewed health facility maternal ***(perinatal)*** deaths that were from lower level health facilities i.e. health centres & dispensaries and others	No. of health facility reviewed maternal ***(perinatal)*** deaths that were from lower level health facilities	Total No. of reviewed health facility maternal and perinatal deaths	HMIS		X	X	X
National									
Maternal *(perinatal)* death reviews conducted within one week of occurring	>80%	Proportion (%) of maternal ***(perinatal)*** death reviews conducted within one week of occurring	No. of maternal ***(perinatal)*** death reviews conducted within one week	Total No. of notified maternal deaths	HMIS	X	X	X	X
Data Quality Indicators									
District									
Health facilities that cross-checked 5% of same maternal *(perinatal)* deaths data with information from facility & community	>80%	Proportion (%) of health facilities that cross-checked 5% of same maternal ***(perinatal)*** deaths data with information from facility & community	No. of health facilities that cross-checked 5% of same maternal ***(perinatal)*** deaths data with information from facility & community	Total No. of eligible health facilities	HMIS		X	X	
Districts compiling, summarizing and conducting quality data analysis (maternal and perinatal reported separately)	>80%	% of districts compiling, summarizing and conducting quality data analysis (maternal and perinatal reported separately)	No. of districts compiling, summarizing and conducting quality data analysis (maternal and perinatal reported separately)	Total No. of districts	HMIS		X	X	X

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Review forms with missing data, incomplete data, inappropriate answers (maternal and perinatal reported separately)	>80%	Proportion (%) of maternal/perinatal death review forms which are incomplete filled (with missing data, incomplete data, inappropriate answers)	No. of maternal/perinatal review forms which are incomplete filled	Total No. of filled maternal/perinatal death review forms	HMIS		X	X	X
Region									
District councils in the regions compiling, summarizing and producing a quality analysis of data	80%	Proportion (%) of district councils in the regions compiling, summarizing and producing a quality analysis of data	No. of district councils in the regions compiling, summarizing and producing a quality analysis of data	Total No. of district councils in the region	HMIS			X	X
Response									
Facility									
Notification forms with concrete action plan (maternal and perinatal reported separately)	80%	Proportion (%) of notification forms with concrete action plan (maternal and perinatal reported separately)	No. (%) of notification forms with concrete action plan	Total No. of notification forms	HMIS	X	X	X	X
Recommendations that were on quality of care (maternal and perinatal reported separately)	80%	Proportion (%) of maternal/ perinatal death review committee recommendations that are implemented	No. of Implemented maternal/ perinatal death review committee recommendations	Total No. of maternal/ perinatal death review committee recommendations	HMIS	X	X	X	X
Recommendations that were on community interventions (maternal and perinatal reported separately)	80%	Proportion (%) of recommendations on maternal and/or perinatal death reviews that targeted community interventions	No. of recommendations on maternal and/or perinatal death reviews that targeted community interventions	Total No. of recommendations on maternal and/or perinatal reviews	HMIS	X	X	X	X
Notification forms with concrete action plan (maternal and perinatal reported separately)	80%	Proportion (%) of notification forms on maternal/perinatal death review with concrete action plan	No. of notification forms on maternal/perinatal death review with concrete action plan	Number of notification forms on maternal/perinatal death reviewed	HMIS		X	X	X
Health facilities that received follow-up/monitoring visits by the district committee on MPDSR	80%	Proportion (%) of health facilities that received follow-up/monitoring visits by the district committee on MPDSR	No. (%) of health facilities that received follow-up/monitoring visits by the district committee on MPDSR	Total. of health facilities conducting MPDSR in the district	HMIS		X	X	X
National									
Reviews recommendations that were implemented (maternal and perinatal reported separately)	80%	Proportion (%) of Maternal/perinatal death reviews recommendations that were implemented	No. of Maternal/perinatal death reviews recommendations that were implemented	Total No. of Maternal/perinatal death reviews recommendations	HMIS				X
Health facility:									

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Health facility: produces a report (and disaggregated as monthly, quarterly & annual)	80%	Proportion (%) of health facility which produce maternal or perinatal death report	No. of health facility which produce maternal or perinatal death report	Total No. of health facility which conducting maternal or perinatal death report	HMIS	X			
Health facility annual report disseminated in at least one forum	≥50%	Proportion (%) of health facility which produce maternal/perinatal death annual review report disseminated in at least one forum	No. of health facility which produce maternal/perinatal death annual review report disseminated in at least one forum	Total No. of health facility which conducting maternal or perinatal death report	HMIS	X			
District									
Hospitals producing MPDSR quarterly reports	>80%	Proportion (%) of hospitals producing MPDSR quarterly reports	No. of hospitals producing MPDSR quarterly reports	Total No. of hospitals	HMIS		X		
Health facilities whose MPDSR reports are included in the quarterly/annual reports (and disaggregated into hospitals and other facilities)	>80%	Proportion (%) of health facilities whose MPDSR reports are included in the quarterly/annual reports	No. of health facilities whose MPDSR reports are included in the quarterly/annual reports	Total No. of health facility which conducting maternal or perinatal death report	HMIS		X	X	X
Health facilities whose MPDSR reports were entered into the DHIS 2 database	>80%	Proportion (%) of health facilities whose MPDSR reports were entered into the DHIS2 database	No. of health facilities whose MPDSR reports were entered into the DHIS2 database	Total No. of health facility which conducting maternal or perinatal death report	HMIS		X		
Health facilities whose MPDSR reports were disseminated and discussed in at least one forum	50%	Proportion (%) of health facilities whose MPDSR reports were disseminated and discussed in at least one forum	No. of health facilities whose MPDSR reports were disseminated and discussed in at least one forum	Total No. of health facility which conducting maternal or perinatal death report	HMIS		X	X	X
Region									
Hospitals producing quarterly MPDSR reports	80%	Proportion (%) of hospitals producing quarterly MPDSR reports	No. of hospitals producing quarterly MPDSR reports	Total No. of hospitals	HMIS			X	X
District councils producing quarterly and annual MPDSR reports	80%	Proportion (%) of district councils producing quarterly and annual MPDSR reports	No. of district councils producing quarterly and annual MPDSR reports	Total No. of district councils	HMIS			X	X
District councils producing quarterly/annual MPDSR reports using DHIS2	80%	District councils producing quarterly/annual MPDSR reports using DHIS2	District councils producing quarterly/annual MPDSR reports using DHIS2	Total No. of district councils	HMIS			X	X
National									
National committee produces semi/annual MPDSR reports	2 reports/ year	2 semi and annual MPDSR reports are produced by National committee	No of MPDSR reports produced by National committee	Total No. of MPDSR reports produced by National committee					X

Indicator	Target	Indicator definition	Numerator	Denominator	Source	Reporting level			
						Health facility	Council	Region	National
Regions producing semi/annual MPDSR reports	2 reports per year	Proportion (%) of regions producing semi/annual MPDSR reports	No. of regions producing semi/annual MPDSR reports	Total No. of regions	HMIS				X
Regions producing semi/annual MPDSR reports using DHIS2	2-reports/ year	Regions producing semi/annual MPDSR reports using DHIS2	No. of Regions producing semi/annual MPDSR reports using DHIS2	Total No. of regions	HMIS		X		X
National committee disseminate annual MPDSR reports									X
Impact **Hospital perinatal mortality ratio/lethality rates**		Perinatal case fatality rates (early neonatal, Fresh/macerated SB rates)	No. of perinatal deaths (early neonatal, FSB, MSB)	Total No. of deliveries (multiplets counted)		X	X	X	X
Health facility intrapartum and very early neonatal death rates	<1%	Proportion (%) of babies dying intrapartum to 7-days of life	No. of babies dying intrapartum to 7-days of life	Total No. of deliveries		X	X	X	X
Perinatal Death (commencing from 28 weeks of gestation to 7 days after birth)		Perinatal death No. of stillbirths and deaths in the first week of life per 1,000 live births	No. of stillbirths and deaths in the first week of life per 1,000 live births		HMIS	Case fatality	Case fatality	X	X
Early neonatal death	<1%	Death of a live baby within 7 days of life per 1000	No. newborn deaths within 7 days of life per 1000 per 1000 live births		HMIS	Case fatality	Case fatality	X	X
Late neonatal mortality	<1%	Death of a newborn occurring 7 - 28 days.	No. newborn deaths within 7 -28 days of life per 1000 per 1000 live births		HMIS	Case fatality	Case fatality	X	X
Maternal Cause specific case fatality rate (e.g. PPH, Eclampsia, sepsis et)	<1%	Proportion (%) maternal death caused by specific complication (e.g. PPH, eclampsia, sepsis etc)	No. of deaths from specific cause	Total No. of cases	X	X			