Republic of Namibia

Ministry of Health and Social Services

DRAFT

GUIDELINES THE
MATERNAL & PERI-NEONATAL DEATH REVIEW

Second Edition, 24 April 2018

PREFACE

Maternal and peri-neonatal mortality constitutes a silent emergency in Africa generally and Namibia in particular. The World Health Organization (WHO) has defined "Maternal Death as "a death of a woman while pregnant or within 42 days after termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes." (WHO)

The Namibia Demographic Health Survey (NDHS) of 2000 found out that the Maternal mortality rate was 271 per 100 000 live births, however, the 2006 NDHS revealed that the maternal mortality rate (MMR) had increased to 449 per 100 000 live births, while the latest NDHS of 2013, the maternal mortality ratio was 385 per 100 000 live births. According to the most recent Namibian Confidential Enquiry into Maternal Deaths from 1st April 2012 - 31st March 2015 the current MMR is 695 per 100,000 live births. The neonatal mortality rate from NDHS in 2013 is 20 per 1000 live births. Three quarters of neonatal deaths take place in the first 7 days with the greatest number occurring on the day of delivery or on the day after. The commonest causes of death are hypoxia and sepsis and not prematurity.

Maternal deaths have a significant adverse impact on surviving children and family members and evidence from other countries suggests that children whose mothers died at birth are less likely to survive their first year of life.

Pregnancy and childbirth is not a disease and should not be a reason for a woman to die. The right to life and health is a basic human right. The Confidential Enquiry Report has shown that most maternal deaths are preventable and lessons must be learnt from all maternal deaths if the MMR is to be reduced. To help achieve this aim after each maternal or peri-natal death, a defined process should be followed to review the death. The Ministry has therefore, developed this tool to facilitate the investigation of maternal, peri-neonatal and neonatal deaths within health facilities. It is one step towards improving maternal health and will eventually contribute to the reduction of maternal and peri-neonatal mortality in the country. It helps determine the factors that contributed to the death as well as to identify shortcomings and strategies on how to prevent re occurrence of the event.

Finally we wish to extend our sincere gratitude and appreciation to Development partners and stake holders for the technical support provided during the revision of these guidelines. I commend the Directorate Primary Health Care Services and in particular Family Health Division and The Quality Assurance Division for the coordination role they have played as well as Regional staff and all those individuals who have contributed in one way or another.

I urge all doctors, nurses/midwives to familiarize themselves with these guidelines and use it to improve the quality of care to our mothers and their newborns for the achievement of the Sustainable Development Goals (DGs) and for the prosperity of the Namibian Nation.

MS. PETRONELLA MASABANE
ACTING PERMANENT SECRETARY

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
CD 4	Cluster Differentiation 4 receptors (T-Lymphocyte bearing CD4 receptors)
CHPO-FH	Chief Health Programme Officer -Family Health
CMO	Chief Medical Officer
CPAP	Continuous Positive Airway Pressure
CVA	Cerebro -Vascular Accident
CVP	Central Venous Pressure
C/Section	Caesarean Section
CSF	Cerebrospinal Fluid
CVP	Central Venous Pressure
CRN	Control Registered Nurse
DIC	Disseminated Intravascular Coagulopathy
DMPNDRC	District Maternal and Peri/Neonatal Death Review Committee
HAART	Highly Active Anti Retroviral Therapy
HC	Health Centre
HIE	Hypoxic Ischaemic Encephalopathy
HIV	Human Immunodeficiency Virus
HMD	Hyaline Membrane Disease
HMIS	Health Management Information System
HMPNDRC	Hospital Maternal Peri/Neonatal Death Review Committee
HRD	Human Resources Development
ICD	???
IMPAC	Integrated Management of Pregnancy and Childbirth
IPPV	Intermittent Positive Pressure Ventilation
MDGs	Millennium Development Goals
MDR	Maternal Death Review
MOHSS	Ministry of Health and Social Services
M&PDRF	Maternal and Peri-Neonatal Death Review Form
MPNDRs	Maternal and Peri-Neonatal Death Reviews
MVA	Manual Vacuum Aspiration

NAPPA	Namibian Planned Parenthood Association
NDHS	Namibia Demographic Health Survey
NEC	Necrotising Enterocolitis
NMPDRC	National Maternal and Peri-Neonatal Death Review Committee
NVD	Normal Vaginal/Vertex delivery
PET	Pre-Eclampsia Toxaemia
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
RMPDRC	Regional Maternal and Peri-Neonatal Death Review Committee
SBA	Skilled Birth Attendants
SDGs	Sustainable Development Goals
SHPO	Senior Health Programme Officer
SMO	Senior Medical Officer
THC	Tertiary Health Care
UNFPA	United Nation Population Fund
WHO	World Health Organization

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Chapter 1. Introduction

Every year more than 585,000 women die worldwide from pregnancy and child birth related complications. More than 99% of these deaths occur in developing countries. Evidence shows that in every pregnancy there is risk and it is not always possible to tell which pregnant women will develop complications. However it is also known that 70% of these women could be saved with quality obstetric care. Hence, skilled assistance during labour, delivery and the postpartum period is the most important intervention towards the reduction of maternal morbidity and mortality: when women are attended by trained health workers or Skilled Birth Attendants (SBA), complications are more likely to be avoided or to be detected early and managed promptly.

Maternal and Peri-Neonatal deaths have enormous consequences for the family and the society. Many more women with the same medical conditions and their babies end up as "near misses". In fact, if maternal and peri-neonatal deaths are regarded as the visible tip of the iceberg, many more cases where death was prevented occur just below the water, and go unreported. If by various interventions the number of maternal and peri-neonatal deaths decrease, the number of women and babies who have near "Near misses" will also decrease. (WHO defined near misses as a woman who nearly died but survived a complication that occurred during pregnancy, child-birth, or within 42 days of termination of pregnancy).These interventions automatically imply that quality of care has improved. Thus, by achieving a decrease in the maternal and peri-neonatal mortality rate, the quality of care of all pregnant women and their babies will have improved.

Studying maternal and peri-neonatal deaths, determining the problems, and rectifying them is a direct, effective way of improving the quality of care for all pregnant women and their babies. This is the essential motivation for the maternal and peri-neonatal death review.

An enabling environment is also needed for Skilled Birth Attendants (SBA) during delivery and in assisting obstetric emergencies on time. It is known that the existence of a competent Skilled Birth Attendant can make a difference towards improving birth outcomes and reducing maternal and neonatal morbidity and mortality. Yet little is known about the skills possessed by the health care providers, what factors enable SBAs to perform optimally or deter them from doing so, and the causes of delay in receiving care once a woman with obstetric complications arrives at a facility.

Maternal and Peri-Neonatal deaths are of major concern to the Government of The Republic of Namibia. The Ministry of Health and Social Services' objective is to reduce maternal mortality

from 385(NDHS 2013) to at least 200 per 100,000 live births by 2021/22 and to reduce newborn mortality from 20 to 10 per 1,000 live births by 2021/22.

To realize the objectives and achieve the Sustainable Development Goals, the Ministry of Health and Social Services has made maternal deaths notifiable medical conditions. The Ministry had institutionalizing MPNDR by creating National, Regional and Health Facility and District Maternal and Peri-Neonatal Dearth Review Committees

The National Maternal and Peri/Neonatal Death Reviews Committee (NMPNDRC) is mandated by the Minister of Health and Social Services to conduct confidential enquiries of maternal and peri-neonatal deaths. The process is highly **confidential** and information regarding the **identity of the patient or health personnel will not be available to anyone.** The members of the National Maternal and Peri-Neonatal Death Review Committee (NMPNDRC) have been appointed in their individual technical expertise. The findings of the Committee can never be used for any medico-legal cases.

2.1 AIMS and Objectives of the MATERNAL AND PERI-NEONATAL DEATH REVIEW (MPND)

The Maternal and Peri-Neonatal Review is a systematic, confidential, multi-disciplinary process of establishing number, cause and factors leading to deaths to women and new-born during pregnancy, labour and puerperium**.**

The aim is to identify and analyse the cause of maternal and peri-neonatal deaths in order to take corrective measures (improving health system, building capacity of health workers, revising policies, strategies and guidelines on the delivery of quality maternal and peri-neonatal health services and take or recommend other appropriate measures) to avoid further deaths.

The objectives of the MPNDR is to establish the following:

- Major causes of maternal mortality (direct and indirect)
- Major causes of perinatal mortality
- Associated factors contributing to maternal or perinatal death
    - Health worker factors
    - Administrative factors
    - Patient/family factors
    - TBA/community factors
    - Other factors
- Trends of maternal and peri/neonatal death
- Any avoidable or substandard factors
- Barriers and facilitators to skilled care among women and new-borns with special focus on the cause of:
    - Delays in obstetric care
    - Neonatal and perinatal deaths
    - Directions for future areas for research and audit at a local and national level; and
    - Recommendations concerning the improvement of clinical care and service provision

CHAPTER 2: TERMS OF REFERENCES AND COMPOSITION OF MATERNAL PERI-NEONATAL DEATH REVIEW COMMITTEES

2.1 National Maternal Peri-Neonatal Death Review Committee (NMPNDRC)

The National Maternal, Peri-Neonatal Death Review Committee (NMPDRC) constitute a panel of expert medical officials appointed by the Minister of Health to make recommendations based on maternal and peri-neonatal analysis such that their implementation would result in a reduction of maternal and peri-neonatal mortality rate.
NMPNDRC Members will not be remunerated or receiving setting allowance because audit is accepted as one of the professional duty of Nurses and Doctors. However Daily Substance Allowance shall be covered (based on GRN rates) when requested to conduct an investigation, attend workshops or training outside his/her post.

Permanent Members

1. Obstetricians and Gynaecologists (2)
2. Senior Nurse Managers and Chief Medical officer - Quality Nursing Care (1) (chair)
3. Paediatricians / Neonatologists (1)
4. Senior Midwives (Neonatal , midwife) (2)
5. Senior Midwives (Rotating from regions) (2)
6. School of Medicine - UNAM OBS&GYNAE and Paediatrics (1)
7. Director of Primary Health Care
8. Director of Tertiary Health Care and Clinical Support Services
9. Director of Health Information System &Research
10. UN Representative (2-3)
11. US (CDC) Representative (1)
12. Director of Special Programmes
13. Nursing Training Institutions (Welwitchia, UNAM, NHTC, IUM etc)

Co – opted Members

14. Anaesthetist (Co –opt)
15. Senior Medical Officer/GP working in maternity Ward (Rotating from regions) (Co-opt)
16. Pharmacist (Co – opt)
17. Laboratory Services (Co-opt)
18. Pathologist (Co –opt)
19. Blood transfusion (Co-opt)

Specific objectives:

- Reviews the regional analysed maternal and peri/neonatal deaths summaries.
- Compiles quarterly reports for presentation to the MoHSS Steering Committee.
- Coordinates visits to the regions/DVC to discuss the analysed cases and provide feedback when necessary.
- Prepares annual reports for distribution through the Minister and Permanent Secretary
- The national committee meets every 60 days (2 months) days but can have an ad hoc meeting when necessary.
- Produce a comprehensive triennial reports and conduct workshops to disseminate the reports to Health care professionals (private and state) and relevant Tertiary Training Institutions. Is accountable to the Permanent Secretary/Minister

The NMPNDRC Secretariat

The Secretariat for the National Maternal and Peri-Neonatal Death Review Committees shall be two (2) officers dedicated for the National Committee from the **Reproductive and Child Health and Quality Assurance Nursing** programmes of the Ministry of Health and Social Services and supported by co-opted Development Partners.

TOR for the NMPNDRC

- Receives electronic data of the maternal and peri-neonatal death reviewed summary forms and copies of patient files from the Regions.
- Checks and verifies documents/information for completeness and contacts the RMPNDRC or designated person for submission of the complete summaries.
- Organizes NMPNDRC routine and add hock meetings.
- Prepares an agenda and invites committee members for the National Maternal and Peri-Neonatal Death Committee meetings
- Prepares and presents summarized cases to the NMPNDR Committee
- Takes minutes of the meetings
- Facilitate consultative meetings with Regions.
- Assist the NMPNDRC to compile the NMPNDR country report

2.2 The Regional Maternal and Peri-Neonatal Death Review Committee (RMPNDRC)

The Regional Director will be the Chairperson and all committee members will be appointed by the Regional Director as indicated below.

Permanent Members

1. The Regional Director- Chairperson
2. The Chief Medical Officer Co-Chair
3. Medical Superintendent where applicable
4. The Senior Medical Officers
5. The Senior Registered Nurse (Quality Assurance nurse and Regional)
6. Senior Midwives working in maternity and neonatal ward

7. Health Information System
8. Human Resource Management
9. Chief Control Administrative Officer
10. Regional Health Training Centre Midwifery Tutor
11. Representative from the private hospital

Co – opted Members

12. Regional Pharmacist (Co-opt)
13. Social worker (Co –opt)

TOR for the Regional MPNDR Committee

- The committee meets **every ten working days** but may have an ad hoc meeting when needed. This is to enable them to deal with all their cases and forward them to the national committee.
- Ensures receipt of the district electronic maternal and peri-neonatal death review documents.
- Ensures the authenticity and completeness of the documents.
- Conducts regional analysis of the maternal peri-neonatal deaths and prepares a report for the NMPDRC.
- After each review, submits the electronic report and copies of the case files to the NMPNDRC within five (5) days.
- Compile annual regional report and conduct workshops for dissemination

Secretariat for the Regional Maternal Peri-Neonatal Death Review Committee (RMPNDRC)

- Chief Health Programme Officer-Family Health
- Chief Health Programme Officer- Special Programmes
- Senior Health Programme Officer-Special Programmes
- Senior Health Programme Officer –Family Health

TOR for the RMPNDRC Secretariat

- Receives and reviews all electronic and documents of maternal and peri-neonatal death cases from the District/Health Facilities.
- Checks and verifies documents for completeness and contacts the D/HMPNDRC or designated person for submission of the complete summaries.
- Organizes meeting for the regional committee **every tenth (10) days**
- Prepares an agenda and invites committee members for the Regional Maternal and Peri-Neonatal Death Review Committee meetings
- Prepares and presents summarized cases to the RMPNDR Committee
- Takes minutes of the meetings
- Organizes consultations with Health Facility and District MPNDRC.
- Assist the RMPNDRC to compile the RMPNDR Regional report

2.3 Health Facility and District Maternal Peri-Neonatal Death Review Committee (HF/DMPNDRC)

It is recommended that the Health Facility and District Maternal and Peri-Neonatal Death Review Committee should merge and become one committee. Members of The Health Facility/District Maternal, and Peri-Neonatal Death Review Committee shall be appointed by the Regional Health Director.

Permanent Members

1. The Senior Medical Officer-Chairperson
2. The Nursing Officer in Charge of the Hospital (Matron)
3. The Nurse/Midwife in-charge of maternity and neonatal ward
4. Obstetrician/Gynaecologist or Medical Officer (MO) In charge of Obstetric and Gynae ward
5. Medical Officer (MO) in anaesthesia
6. Paediatrician or Medical Officer in charge of paediatrics
7. Health Information System (HIS)
8. Nurse in charge of Community Health Workers/Health Extension Workers (HEW)
9. Nurse in charge of clinic/health centre

Co – Opted Members

10. Pharmacist (Co-opt)
11. Human Resource Management (HRM) (Co-opt)
12. Chief Administrative Officer (Co-opt)
13. Social worker (Co-opt)

The TOR for the Health Facility and District maternal, Peri-Neonatal death review committee (HF/DMPNDRC)

- The committee **meets within seven (7) days of a maternal or Peri-Neonatal death,** but can have an ad hoc meeting when needed.
- Reports all maternal deaths **within 24 Hours** to National Level through the Regional Director using the **Maternal Death Rapid Notification Form.**
- Reviews all Maternal and Peri-Neonatal deaths and completes the MPNDR forms.
- Ensures the authenticity, completeness of the form and submission to the RMPNDRC **within fourteen (14) days.**
- Enters all reviewed cases on the electronic data base
- Make readable hard copies of all the cases to be submitted through to Regional and NMPNDRC.
- The Committee to liaise with the councillor for Health should to ensure community involvement and reporting of Maternal and Peri-Neonatal deaths occurring in the communities.

Secretariat

Primary Health Care (PHC) District supervisor
Senior Registered Nurse
Infection Control/Quality Assurance Official

TOR of the Health Facility and District MPNDR Secretariat

- Collect all MPND records, verify documents for completeness and enter required information on an electronic data base.
- Verify whether the Maternal Death Rapid Notification Form was completed and forward to HIS, R&NMPNDR committees within 24hours after a maternal death occurred if not facilitate the reporting process.
- Organizes meeting for the Health Facility and District committee **every seventh (7) day after Maternal or Peri-Neonatal death occurred**
- Prepares an agenda and invites committee members for the Health Facility and District Maternal and Peri-Neonatal Death Review Committee meetings
- Takes minutes of the meetings
- Organizes consultations/feedback meeting with Facility clinical team.
- Make copies of all document and forward electronic and hard copies to the RMPNDRC Secretariat
- Assist the Health Facility and District MPNDRC to compile the DMPNDR report

Chapter 3: Process for Reviewing a Maternal, Peri Natal and Neonatal Death at Health Facility/District Level, Regional Level and National Level

A maternal and Peri-Neonatal death review is an in-depth systematic analysis of deaths, aiming to determine contributory factors, and the findings are used to make recommendations such that the interventions may prevent similar mistakes and future maternal and Peri-Neonatal deaths. All MPNDRC members must be orientate on the Maternal Per-Neonatal Death Review Guidelines and use of the review forms.

WHO defined Maternal Death as a death of a woman while pregnant or within 42 days after termination of pregnancy, irrespective of duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Peri Natal Death is the death of a foetus 28weeks and above (still births), and the death of a newborn baby within one week after birth; early neonatal period

Neonatal is a death of a baby within 28days of life.

The Peri-Neonatal death and maternal death review process is precisely the same procedure however Peri-Neonatal deaths are not required by the policy to be notified within 24h00.

3.1 Health Facility and District Maternal and Peri-Neonatal Death Review Procedure

1. All Maternal and Peri-Neonatal Deaths occurring at facility must be reviewed
2. The Physician/Medical Officer/Nurse/Midwife of the institution where the death occurred should complete the Maternal Death Notification Form within 24 hours.
3. Report/Notify the Maternal Death within 24 Hours to National level, to the Chairperson of the National Maternal and Peri – Neonatal Death Review Committee, Health

Information and Research (HIRD) Director as well as to the Primary Health Care (PHC) Services Director.

4. The Health Facility Committee should meet and review the maternal and peri-neonatal deaths within seven (7) working days. Health Professionals from referring facility where applicable must be co-opted.
5. Information pertaining to the death should be collected from the health personnel who attended to the death case and also from the referring health facility if need be.
6. Information of dearth on arrival should be obtained from family members or people who accompanied the person to the Hospital
7. Ensure that the recommendations issuing from committee meetings are followed through to improve obstetric services. The recommendations must be evidence based and should be communicated to health personnel and hospital management for appropriate corrective actions
8. The committee members should provide feedback to the facility clinical team
9. The MPNDRC should provide input into the future revision of the Review Forms and Guidelines
10. Following the review meeting the Health Facility/District Committee should complete electronic forms of the Maternal Death Review Form. These completed forms, plus complete copies of the Patient's file and Health Passport, must be forwarded to the Regional Maternal and Peri-Neonatal Death Review Committee Chair or his/her designated person within fourteen (14) days of the maternal death.

3.2 Regional Maternal and Peri-Neonatal Death Review Procedure

1. The Regional Maternal and Peri-Neonatal Death Review Committee Chair or his/her designated official must analyse, review the death and compile a regional report within seven (7) days of receiving documentation from the facility/district.

2. The RMPNDRC chair or his/her designated official must ensure that verbal and written feedback and copy of the report is given to the respective health facility within 7 days following the review.

3. The RMNPDRC should provide supportive supervision to the HF/DMPNDRC and ensure that recommendations are duly implement to improve the quality of and access to obstetric care.

4. The report with all relevant documentations (electronic/hardcopies) must be submitted to the National Maternal Peri-Neonatal Death Review Committee Secretariat within seven (7) working days.

5. The RMPNDRC should Prepare Regional Reports and conduct annual meetings to disseminate regional reports and take stock of progress made in the implementation of recommendations

3.3 National Maternal Peri-Neonatal Death review procedure

1. The NMPDRC will **meet every sixty (60) days** and review all the Regional presented cases. The committee will provide feedback to the regions **within seven (7) days** of the meeting.

2. The NMPNDRC should investigated all maternal deaths and a purposely sample of Peri-Neonatal deaths to identify the causes and associated factors, the committee then will give quarterly written guidelines to health personnel and to MoHSS on how to prevent similar deaths in future

3. The Secretariat of the National Maternal and Peri-Neonatal Death Review Committee (NMPNDRC) **must issue a unique file number** for the cases to ensure that no death is entered twice in the register.

4. All Maternal and Peri-Neonatal Death Review Committee (MPNDRC) and secretariat must ensure that all the cases presented are captured and kept safe for the compilation of the MPNDRC Reports at all levels.

5. The National Maternal and Peri-Neonatal Death Review Committee (NMPDRC) must produce annual reports on maternal and Peri-Neonatal deaths occurring in the country with specific recommendations to the Minister of Health and Social Services.

3.4 Ethical and Legal Frame Work

- It is the responsibility of all members involved in death review committees at national, regional, district and facility level including all secretariat members to maintain confidentiality.

- The MoHSS is expected to provide the committee with legal backing to prevent the use of findings for litigation. As such consent forms (for disclosure statement) should be administered prior to interviewing family member or community member

- Patient documents or notes with identifying information should not be shared by electronic means.

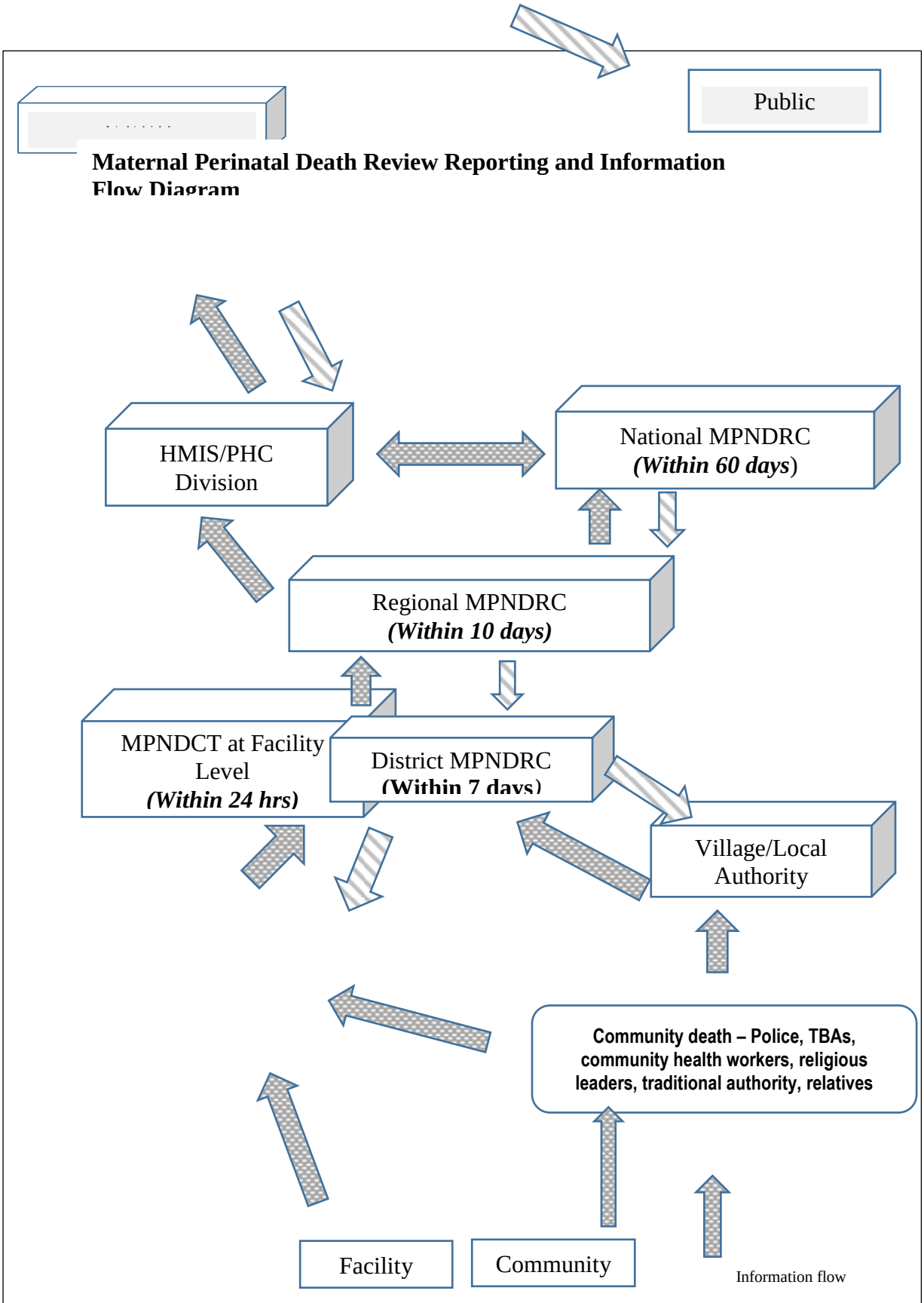
- Once the National report is completed, all copies of the documentation relating to the report will be destroyed according to national regulation medical records disposal.

- If any member of any committees does not maintain confidentiality, he/she will be dismissed from the committee.

3.5 Outline of the MPNDR Report

- Introduction
- Names of Review Team Members
- Brief summary of ANC & Obstetric History
- Sequence of events: Management during the cause of pregnancy till death
- Action taken to save lives
- Possible causes or contributing factors to the death

- Way forward/recommendations from the region/Health Facility/District
- List of copies of documents available at time of review



CHAPTER 4: QUALITY ASSURANCE

Quality Assurance Committee
Quality Improvement projects

Chapter 5: Maternal and Peri-Neonatal Death Review (MPNDR) Forms

The aim of the review form is to collect information on maternal and Peri-Neonatal deaths. It is designed to capture what has happened before the maternal and Peri-Neonatal deaths and should be accurately recorded. These guidelines are designed to help you fill in the forms and **also** to discuss the death with the health personnel in the facility and the community. It should be seen as a document that will take you systematically through the death of a woman, still birth or death of a neonate so that an understanding of what has happened is reached. This guideline should be read and understood to enable accurate filling in of the Maternal and Peri-Neonatal Death Review Forms.

The principle of the MPNDR is not to criminalize but to identify and analyse the causes and contributing factors of maternal and Peri-Neonatal deaths and make corrective measures such as improving health systems, building capacity of health workers, revising policies, strategies and guidelines on the delivery of quality maternal and Peri-Neonatal health services to avoid similar deaths.

RULES OF MATERNAL/PERI/NEONATAL DEATH REVIEW

Control: Reviews should be conducted by health workers themselves and designated death review committee members

Standards: Standards of maternal and Peri-Neonatal health services should be in line with national policies/guidelines

Methods: There should be a climate of trust and openness. The review should be systematic in order to get consistent results (repeatable)

Resources: Maternal and Peri-Neonatal death Reviews should be simple and cost-effective

Records: Should be complete and confidential

All cases will be analysed by the NMPNDRC and after analysis the following will be known:

1. The magnitude of the problem.
2. Contributing factors to the problem.
3. The geographical areas/distribution of where the major problems occur.
4. The pattern of conditions that result in deaths of mothers, foetuses and neonates.

5. Areas where the health system can be improved.

Without information, there can be no action!

By defining the problem using the above five features, the Minister of Health and Social Services, the Regions, Districts and health facilities will be able to make informed decisions. The outcomes of the death reviews can be used to strengthen the research agenda.

Outline and Philosophy of the design of the form

The forms have 10 sections as shown below:

1. Institution where death occurred
2. Details of deceased
3. Admission at institution where death occurred or from where it was reported
4. Antenatal care
5. Delivery, puerperium and peri/neonatal information
6. Interventions
7. Cause of death
8. Other factors
9. Autopsy
10. Case summary

Sections 1-3 gives the demographic details of the patient, 4-7 the medical conditions that resulted in the death, 8 whether there were other circumstances surrounding the death not related directly to the medical condition e.g. transport problems, 9 is autopsy result, and 10 is a summary of the story of what happened in the case in the words of the medical practitioner.

Information that a woman died when pregnant or within 42 days after delivery or abortion, where she died, her age, gravity, parity and her surviving children etc, is important in obtaining maternal and Peri-Neonatal mortality figures, in identifying geographical problem areas and in determining some general risk factors. This information is grouped together to form the **demographic information**. From this information the **size** of the problem will be determined and over time any decrease in the number of deaths will be seen.

The second section on the **medical condition** which led to the death of the woman will enable the various committees to determine the most common problems, and also see whether the common causes of death vary from one area to another. This information will also inform teaching, research, and if necessary resources, to combat the problem.

Maternal deaths are uncommon events. Most women survive severe illnesses that occur in pregnancy, delivery, the puerperium and after abortion; however some women unfortunately die. The objective is to determine why a woman died in a particular case. Commonly there have been challenges in various levels in the **health system**. If these breakdowns are identified, and occur repeatedly, action can be taken so that the deaths can be prevented. This bit of detective work is captured in the third section. This is one of the most important parts of the form as it can lead to rapid intervention and subsequent prevention of loss of life.

The form has been designed in this way so that information about the case can be obtained in a usable format. If the form is filled in systematically, the important facts will be obtained and at the same time you will be able to analyse the death for yourself. The case summary at the end serves to focus your mind. After going through the facts of the death, the story of what happened should be clear. If opportunities for preventing the death occurred they will be identified and can be reported. Solutions can be looked for locally.

It is the task of the NMPNDRC to bring information about all the deaths together and to analyse the data. With the information, the NMPNDRC will be able to report how many maternal deaths there are per defined geographical area, what the medical conditions are that are causing most of the deaths and where there are problems with the health system. Once this information is available, solutions to the problems identified can be sought. Finally recommendations based on sound information can be made to the Minister. Implementation of the recommendations should lead to a decrease in the number of maternal and Peri-Neonatal deaths and should also improve the quality of care of our pregnant women and newborns.

5.1 MATERNAL DEATH REVIEW FORMS

Note:

- There are two forms to be completed in the event of maternal death; the maternal death notification form and the maternal death review form.
- Both forms must be completed for all maternal deaths, including abortions and ectopic gestation related deaths, in pregnant women or within 42 days after termination of pregnancy irrespective of duration or site of pregnancy.
- Both forms must be completed in three originals. The one original remains at the institution where the death occurred and the other one originals are sent to the Regional and National Maternal Peri-Neonatal Death Review Committees.

List of Abbreviations:

- Y = YES
- N = NO
- U = UNKNOWN

5.1.1 MATERNAL DEATH NOTIFICATION FORM

Note:

- The maternal death notification form must be completed and forwarded to Regional and National Maternal Peri-Neonatal Death Review Committees within 24 hrs after a maternal death occurred.
- The Maternal Death notification form is to be completed by Medical Practitioner or Registered Nurse/Midwife who was involved in the management of the patient.
- See appendix 2 for Maternal Death Rapid Notification Form sample

5.1.2 MATERNAL DEATH REVIEW FORM

Note:

- The maternal death review form must be completed within 7 days by the chairperson or secretary of the committee after the death has been discussed at an institutional mortality meeting.
- The reviewed forms with complete copies of the maternity records/patient file must be sent to the regional and the National level seretariats pf the various maternal and neonatal death committee

1. Case discussed at an institutional meeting

YES: ☐ *NO:* ☐ *If YES, Date:* _____

A. Demographic Information

1. Locality where death occurred

This information is important. Geographical patterns of maternal deaths can be determined with it. A picture of the pattern of Maternal Peri-Neonatal deaths throughout the whole country can then be obtained. **ALL** Maternal and Peri-Neonatal deaths, even those occurring at home and during transportation should be reported.

Region	Name of Health Facility

Type of Health Facility: (Make a cross in one box only)

Clinic	Health Centre	District Hospital	National Hospital	Private Hospital	Other -

					Specify

Classification of institutions

1. Clinic
2. Health Centre
3. District Hospital
4. Intermediate Hospital
5. National Hospital
6. Private Hospital
7. Other Specify _____

Details of the Deceased

This information is necessary so that tracing the route of the patient within the health service system is possible. The names will be removed once the form has been certified by the committee as being complete.

DETAILS OF THE DECEASED

Name & Surname	Age

Date of Birth (DOB)	Registration No.

Residential Address	Postal Address

Nationality

At time of death

Gravida	Para

Gestation (weeks) at delivery	Days since delivery/abortion

Definitions

Gravida: The number of times the woman has been pregnant

Parity: Number of times the woman delivered a baby of 28 weeks of gestation or 1000g or more, whether alive or dead

B. Medical Condition

1. **Admission where Death occurred or from where it was reported**

Date of admission: **Time of admission:**

D	D	M	M	Y	Y	Y	Y

Hours	minutes

Date of death: **Time of death:**

D	D	M	M	Y	Y	Y	Y

Hours	Minutes

On admission:

Abortion	Ectopic	Antepartum	Intra Partum	Post Partum	Other specify

Condition on admission/arrival at health facility:

Stable/definition ☐	Critically ill ☐ Coma ☐ Shock ☐	Dead on arrival ☐	Other-Specify ☐ _____

Reason for admission:

Referral from another health facility? if "YES" specify name of facility:

Yes	No	

Reason for referral

Diagnosis according to ICD 10 at time of death:

Abortion ☐	Haemorrhage ☐	Infection/Sepsis ☐	Eclampsia ☐	DIC ☐	PE ☐	Other ☐ _____

Information regarding the condition of the woman on admission will help in identifying any problems in transport. It will also indicate at what stage of the pregnancy she was, i.e. ante-partum, intra-partum or postpartum.

The reason for admission question is to ask why the woman was admitted to the hospital/ health centre/clinic where she died.

It is important to trace the route the woman took through the health services as well as the time it took from each place. Therefore we need records from all the health services that the woman entered.

2. Antenatal Care

The effective use of antenatal care is associated with a decreased maternal mortality. The information gathered here will help in establishing whether there were problems in accessing antenatal care.

Did she receive antenatal care? (trimester) : **Total number of visits:** **Timing of 1st visit**

Y	N	U

1st	2nd	3rd	

If "Y" at what health facility? (Make a cross in *one box only*)

Unknown	HC/Clinic	District Hospital	Intermediate Hospital	National Hospital	Private Hospital	Other

Antenatal care provider
(Make a cross at *more than one block if applicable*)

Specialist	Med.Officer	Adv. Midwife	Reg. Nurse/ Midwife	Enrolled Nurse/ Midwife	Other

Antenatal Risk Factors

Past Medical History

Hypertension **Yes** ☐ **No** ☐ **Other** ☐

Diabetes Mellitus **Yes** ☐ **No** ☐ **Other** ☐

Epilepsy **Yes** ☐ **No** ☐ **Other** ☐

Asthma **Yes** ☐ **No** ☐ **Other** ☐ **Other** **Yes** **No**

Other

HB on admission ☐

Past Obstetric History (If yes how many?)

Pre term labour **Yes** ☐ **No** ☐ **Other** ☐

C/Section **Yes** ☐ **No** ☐ **Other** ☐

Stillbirth/neonatal death	**Yes** ☐	**No** ☐	**Other** ☐
Antepartum Haemorrhage	**Yes** ☐	**No** ☐	**Other** ☐
Postpartum Haemorrhage	**Yes** ☐	**No** ☐	**Other** ☐
Abortion			

Other Specify: ☐

Note: More than one block can be ticked.

A list of antenatal risk factors has been included in the form to help in assessing the quality of the antenatal care given. Only the risk factors that are known to have a direct bearing on maternal deaths have been included. Those related to Peri-Neonatal deaths (deaths of the babies) are not included. By going through the risk factors one can see whether if the risk factor was there and appropriate action(s) was/were taken.

The important antenatal risk factors are explained below.

- **Hypertension** (High Blood Pressure). Was the blood pressure recorded?
- **Diabetes Mellitus -** Diabetes mellitus predisposes a woman to infection and if the diabetes gets out of control can lead to death on its own.
- **Proteinuria** - This indicates the possibility of kidney disease or if in combination with hypertension it indicates that pre-eclampsia/eclampsia might have been present. In Namibia as far as is known, pre-eclampsia/eclampsia is one of the most common causes of maternal deaths.
- **Anaemia** - Screening for anaemia at antenatal clinics is very important because if the woman has low haemoglobin that indicates she will have very little reserve if bleeding occurs. It is a risk factor that can be easily detected and treated.
- **Abnormal Lie** - A transverse or oblique can lead to ruptured uterus, cord prolapse.
- **Previous caesarean section** - This is a risk factor for rupture of the uterus.
- **Stillbirth/Neonatal death: to be defined**
- **Ante-partum haemorrhage: to be defined**

- **Postpartum haemorrhage: to be defined**
- Other; specify: Note any additional medical or obstetric history in the box provided. For example, rheumatic heart disease is an important cause of death in pregnancy.
- Asthma
- Epilepsy
- Pre Term Labour

Fill in the HIV status if is known. This information will help in determining the effects of the disease on maternal mortality.

Add any comment on the antenatal care in the box provided. Especially record any medication the woman was on and how the antenatal care was performed, that is was it at a clinic/Health Centre (HC) alone, or in combination with a clinic and hospital.

3.Delivery, puerperium and peri/neonatal information

Information regarding the labour is important as it can explain why some complications occurred.

For example, if the labour was very prolonged, this can lead to postpartum haemorrhage, or to puerperal infection. Both these can result in a death. Prolonged labour in itself can lead to a ruptured uterus.

Did labour occur?

Y	N

Y	N	U

If yes, was a partogram used?

Duration of Labour (hours, min)

Latent Phase	Active Phase	Second Stage	Third Stage
_____	_____	_____	_____

Method of Delivery
(Tick appropriate box)

Undelivered ☐	NVD ☐	Assisted Vaginal Vacuum/forceps ☐	Caesarean Section ☐

Place of delivery (tick appropriate box)

Home ☐	Clinic ☐	HC ☐	District Hospital ☐	Intermediate Hospital ☐	National Hospital ☐	Others ☐

Delivery Successful?

Y	N	U

☐ ☐

Birth weight in kg or g

Immediate Apgar out of 10

Head circumference in cm ☐

5 min Apgar out of 10 ☐

Outcome

Alive	Still born
☐	☐

Comments on labour, delivery and puerperium

The information regarding the baby helps in recording the size of the social problem that a maternal death leaves behind.
Fill in the box with any other information, especially what happened to the mother once the baby was born.

4.Interventions

Many women who die in pregnancy have had multiple procedures. Some are as a result of the medical condition causing the problem, but in some the intervention directly results in the death of the woman, e.g. anaesthesia. It is useful to list all the interventions. In addition, indicate **whether the intervention was due to the complication or resulted in the complication**. The interventions have been grouped in the stages of pregnancy to help with the analysis later.

Early pregnacy intervention undertaken		**Antenatal**		**Intrapartum**		**Postpartum**		**Other**	
Evacuation	☐	Blood transfusion	☐	Instrumental Delivery	☐	Evacuation	☐	General Anaesthesia	☐
Laparotomy	☐	Version	☐	Hysterectomy	☐	Laparatomy	☐	Epidural	☐
Hysterectomy	☐			Caesarean Section	☐	Hysterectomy	☐	Spinal	☐
Blood Transfusion	☐				☐	Blood Transfusion	☐	Local	☐
Hysterotomy				Blood Transfusion	☐	Manual Removal of placenta	☐	Invasive monitoring	☐
				Oxytocin	☐	Oxytocin	☐	ICU Ventilation	☐

Other – Specify			

	Yes	No
Intervention was **due to** the complication?		
Intervention **resulted in** the complication?		

Comments on interventions

Some definitions:

1. **Evacuation** - The uterus is emptied by using a curette or MVA (vacuum aspirator).
2. **Laparatomy** - This is where the abdomen is opened surgically.
3. **Hysterectomy** - This is where the uterus is removed.
4. **Hysterotomy** – Opening the uterus as a method of removing non viable fetus.
5. **Transfusion** - In this case it is used to mean whether blood or blood products were given to the woman
6. **Version** - In this case it means the baby was turned in the uterus either by manipulating the foetus abdominally or from inside the uterus.
7. **Instrumental delivery**. Where a forceps or vacuum is used to assist in delivering the baby
8. **Symphysiotomy** - This is where the ligaments holding the symphysis together is cut so that the size of the pelvis is enlarged.
9. **Caesarean section** - The baby is born abdominally through a cut in the abdomen and uterus and not vaginally.
10. **Manual removal** - This is where the placenta is removed using a hand in the uterus after a baby has been born.
11. **Anaesthesia** - General anaesthesia is where the woman is put to sleep while a procedure is carried out.
12. **Epidural anaesthesia** - Where a local anaesthetic agent is injected into the epidural space to provide pain relief during a procedure.
13. **Spinal anaesthesia** - Where the local anaesthetic is injected into the cerebrospinal fluid (CSF).
14. **Local anaesthesia** – Where local infiltration of each tissue layer was performed

15. **Invasive monitoring** - Was a central venous pressure (CVP), Swan-Ganz catheter or invasive blood pressure monitoring used?
16. **Prolonged ventilation** - Did the woman require ventilation other than during an operation? This is usually in an intensive care situation.

5.Cause of death

This is one of the most important sections of the form. Analysis of this information will tell us what are the common causes of death in Namibia and once this has been clearly established, interventions around these causes can be planned and implemented. The causes of death may not be the same for each region and thus interventions may have to be tailored to specific areas. Fortunately, this information will be available because the place where the woman died has already been recorded.

Primary cause of death:

Final cause of death: Specify
Contributory (or antecedent) cause/s: Specify:

Medical conditions involved

The classification system used here has two aims:

1. To identify the initiating condition or disease that led to the death of the woman. This is called the **primary (or underlying) obstetric cause.** There can be only one primary obstetric cause. This classification is orientated towards prevention.

2. To identify what event finally resulted in death of the woman. This is called the **final cause** of death. There can be only one final cause of death. However, in some cases there may be **contributory (or antecedent) factors** that lead to the final cause of death. The contributory factors have the same classification as the final cause. The classification is orientated towards the organ systems that fail and lead to death, and will indicate what resources are required to prevent the death. It is important to differentiate between the **final** cause of death and the **mode** of dying. Everyone ultimately dies when the heart stops beating thus a cardiac arrest is the mode of dying. The event that led to the cardiac arrest is the final cause of death.

For example, a woman who developed eclampsia, complication of this can have a brain bleed and a cardiac arrest. The primary (underlying) obstetric cause would be classified as eclampsia, the final cause of death being the cerebral haemorrhage and the mode of death was the cardiac arrest.

It is necessary to identify the primary (underlying) obstetric cause; because this will indicate areas where programmes based on **preventing** maternal deaths can be concentrated.

The final cause and contributory causes indicate the **resources** that the health system requires in terms of saving lives. They also indicate where management protocols and resources may be lacking. For example, if the primary (underlying) obstetric cause of death was a septic abortion and the final cause was pneumonia with the contributory causes being acute tubular necrosis, a disseminated intravascular coagulopathy and septic shock, the resources required to save the woman's life would have been mechanical ventilation, probably renal dialysis and transfusion of blood products like fresh froze**n** plasma and platelets. The health system would have to indicate where these resources are available and how the critically ill woman could gain access to them.

After discussing the case with all the relevant health personnel, fill in the most appropriate cause in the applicable block. The classification of causes is given in the appendices at the end of these guidelines. If an autopsy has been performed, please give the findings.

C. HEALTH SYSTEM FACTORS

1. Other contributing factors

Use the list below to guide the discussion or thinking about the death. After discussing the case with the health personnel, try and answer the following questions. What, if any, were the "missed opportunities", "avoidable factors" or "substandard care" and where, if anywhere, did the health system breakdown. If any block is ticked, please specify what you mean.

A "missed opportunity" is an event where an act that might have helped prevent the death was omitted or where an act resulted, directly or indirectly, in the death. For example, the death of a woman who was detected as having severe hypertension at a health centre, and was not appropriately managed or referred to the appropriate institution and subsequently developed eclampsia and died, could be considered as a preventable death. The "missed opportunity" lay in not referring the woman. Another example would be a woman who delivered at a health centre, and developed a massive postpartum haemorrhage. The health personnel tried to resuscitate her and transfer her to a hospital, but no transport was available and because of delays in getting an ambulance, the woman died. Here the health system broke down due to lack of provision of transport. This is a health system problem, which has to be solved by management.

Many developed countries had a well-established confidential enquiry into maternal deaths for many years. They had a system of analysing their maternal deaths and looking for "avoidable factors" and "missed opportunities".

"Substandard care": The term substandard care has been used in this report to take into account not only failure in clinical care, but also some of the underlying factors which may have produced a low standard of care for the patient. This includes situations produced by the

action of the woman herself, or her relatives, which may be outside the control of the clinicians. It also takes into account shortage of resources for staffing facilities; and administrative failure in the maternity services and the back-up facilities such as anaesthetic, radiological and pathology services. It is used in preference to the term "avoidable factors" which was used previously in the England and Wales Reports until 1979 and has also been used in the Scottish and Northern Ireland reports. This was sometimes misinterpreted in the past, and taken to mean that avoiding these factors would necessarily have prevented the death. "Substandard" in the context of the report means that the care that the patient received, or care that was made available to her, fell below the standard which the authors considered should have been offered to her.

The NMPNDRC and the RMPNDRC use the same definition of "substandard" care. The information obtained by looking for substandard care is vital in pinpointing where the health system can be improved, and indicates immediately where one's efforts must be concentrated.

In your opinion were any of these factors present?

System	Example	Y	N	U	Specify
Personal/Family	Delay in woman seeking help	☐	☐	☐	
	Refusal of treatment or admission	☐	☐	☐	
Logistical Systems	Lack of transport from home to health care facility	☐	☐	☐	
	Lack of transport between health care facilities	☐	☐	☐	
	Health service communication breakdown	☐	☐	☐	
Facilities	Lack of facilities, equipment or consumables	☐	☐	☐	
	Lack of human resources	☐	☐	☐	
Health personnel problems	Lack of expertise, training or education Delay in decision making Failure to make correct diagnosis Failure to manage correctly	☐ ☐	☐ ☐	☐ ☐	

Comments on potential avoidable factors, missed opportunities and substandard care:

For ease of analysis of a maternal death the possible areas of substandard care have been grouped into four areas; personal/family problems, logistical systems problems, facilities problems and health personnel problems.

Personal/Family orientated problems are those related to the woman or her family in utilising the health services, of poor communication between the health service and woman or her family.

Logistical systems problems relate to things like transport, the mechanisms of communications for example are there telephones available and so on.

Facilities problems relate to lack of facilities like intensive care beds, equipment like ventilators and consumables like drugs.

Health personnel problems relate to the staffing at health facilities (lack of human resources) and the management of patients.

To assess problems in management of women, standard texts such as the Integrated Management of Pregnancy and Childbirth (IMPAC***), Safe Motherhood Protocol, Life Saving Skills Training Manuals and other relevant books and guidelines*** should be used to assess the standard of care expected of midwives and registered nurses.

Texts like ***Obstetrics in Peripheral Hospitals and other standard text books*** should be used to assess the standard of care expected of medical doctor and other category of health workers performing operations. For specialists, the standard of care expected of specialists should be used.

D. Autopsy

Indicate whether an autopsy has been performed. If one was performed give the findings. Send the report if one is available. Unfortunately, it usually takes much longer than 7 days to get the full autopsy report. This report should be sent later to the person responsible for maternal health in the Region or in the centre.

An autopsy is very important in confirming the cause of death and should be asked for at every opportunity. Remember a medico-legal autopsy needs to be performed when the death is thought to be due to an unnatural cause e.g. any death related to local or general anaesthesia,non medical induced abortion or when the cause of death is not known and therefore a death certificate cannot be issued A senior member of staff should discuss the importance of the post mortem with the relatives.

1. Case summary

A short summary should now be written, giving the story of what happened and why. The main events should be highlighted. Remember it is a story and the events should be placed in the sequence that they occurred.

Officer completing this form:

THIS FORM IS COMPLETED BY:

Name /Surname (Print)	
Rank	
Cell phone	
Telephone	
Fax	
E-mail	

Date

D	D	M	M	Y	Y		Y	Y

Signature:_____

The officer completing the form must not be the health professional in charge of the patient at the time of her death.

The head of the institution where the death occurred must ensure that the form is filled in and submitted within the prescribed time frame. Ideally the forms should be filled in following a meeting where the death is discussed with all the people involved in managing the case.

Usually in health stations and health centres, the head of the health facility will ensure the form is filled in and lead the discussion around the death.

In Regional and National referral hospitals the Regional Director/Medical Superintendent and his team can ensure the form is filled properly. The head of the department and/or the Medical Director will obviously lead the discussion around the death.
Note: Copies of all the case notes must accompany MPND form.

Appendix 1: Classification of the primary (underlying) cause of maternal death

❖ **Ectopic pregnancy** ➢ Extra uterine pregnancy (more than 20 weeks) ➢ Pregnancy less than 20 week
❖ **Abortion** ➢ Medically induced abortion ➢ "Non medicalinduced" abortion (if known) ➢ Septic abortion ➢ Spontaneous abortion ➢ Trophoblastic disease
❖ **Pregnancy-related sepsis** ➢ Chorioamnionitis, Puerperal sepsis following vaginal delivery ➢ Puerperal sepsis following caesarean section ➢ Other – specify
❖ **Antepartum haemorrhage** ➢ Abruptio placentae ➢ Placenta praevia ➢ Other–specify
❖ **Postpartum haemorrhage** ➢ Retained placenta; placenta accreta, increta or percreta ➢ Uterine atony – causes: due to prolonged labour, uterine over distension (multiple pregnancy, polyhydramnios), parity, ➢ Retained placenta/products ➢ Ruptured uterus - with previous caesarean section ➢ Ruptured uterus - without previous caesarean section ➢ Laceration/tear of cervix, vagina, perineum ➢ Other uterine trauma – specify ➢ Clotting disorders
❖ **Hypertensive disorders of pregnancy** ➢ Chronic hypertension ➢ Eclampsia ➢ Pre-eclampsia ➢ HELLP syndrome ➢ Other specify
❖ **Anaesthetic complications** ➢ Complications of general anaesthesia; state ➢ Complications of epidural block ➢ Complications of spinal block
❖ **Embolism** ➢ Pulmonary embolus ➢ Amniotic fluid embolus
❖ **Unknown** ➢ No primary cause found

Primary (Underlying) Cause

- **No obstetric cause**
  - Motor vehicle accident
  - Assault
  - Suicide
  - Herbal medicine
  - Other – specify

- **Pre-existing maternal disease**
  - Cardiac disease
    - Undiagnosed
    - Rheumatic heart disease
    - Congenital heart disease
    - Dilated CardiomyopathyO
    - Arrhythmias
    - Other
  - Endocrine
    - Diabetes mellitus
    - Thyroid disease
  - Gastrointestinal Tract
    - Liver disease
    - Pancreatitis
    - Gastroenteritis
  - Central Nervous System
    - Cerebrovascular accident
    - Epilepsy
  - Respiratory
  - Haematological
  - Genito-urinary
    - Renal
    - Hypertension
    - Others

- **Non-pregnancy-related infections and AIDS**
  - Pneumonia
  - Acquired Immune Deficiency Syndrome (AIDS)
  - Tuberculosis
  - Bacterial Endocarditis
  - Pyelonephritis, urinary tract infection
  - Appendicitis
  - Malaria
  - Meningitis
  - Other – specify

APPENDIX 2: MATERNAL DEATH RAPID NOTIFICATION FORM

REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

NOTE:

1. This form must be completed for all Maternal deaths, including deaths from abortion and ectopic gestation related deaths in pregnant women or within 42days after termination of pregnancy irrespective of duration or site of pregnancy
2. Mark with (X) where applicable
3. Completed the form is three originals; one original remain at the facility where death occurred and other two originals must be sent to the Regional and National Maternal Per-Neonatal Death Review Committees within 24hours after a maternal death occurred
4. To be completed by Medical Practitioner or Registered Nurse/Midwife who was involved in the management of the patient.

1. LOCALITY WHERE DEATH OCCURRED

Region | Name of Health Facility

Type of Health Facility: (Make a cross in one box only

Clinic	Health Centre	District Hospital	Intermediate Hospital	National Hospital	Private Hospital	Other Specify

DETAILS OF THE DECEASED

Name | Age

Registration No.

Residential Address	Postal Address

Nationality

At time of death
Gravidity

Parity

Gestation Age (weeks) delivery/abortion At delivery / abortion	Still pregnant	Days since

7. CAUSE OF DEATH
Suspected cause of death

THIS FORM COMPLETED BY:

Name/Surname (Print)	
Rank	
Cell phone	
Telephone	
Fax	
E-mail	

Date: Signature: ----------

APPENDIX 3. CONFIDENTIAL MATERNAL DEATH REVIEW FORM

REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

NOTE:

1. **This form must be completed for all deaths, including deaths from abortions and ectopic gestation related deaths in pregnant women or within 42 days after termination of pregnancy irrespective of duration or site of pregnancy.**
2. **Mark with an (X) where applicable.**
3. **Attach a copy of the case records to this form.**
4. **Complete the form in three originals within 7 days of a maternal death. Then one original remains at the institution where the death occurred and the other two originals are sent to the Regional and National Maternal Death Review Committees.**
5. **To be completed by Medical Practitioner and Registered Nurse/Midwife who was involved in the management of the patient.**
6. **All Maternal deaths must be discussed at an institutional mortality meeting.**
7. **NB: Case discussed at an institutional meeting?**

   YES: ☐ ***NO:*** ☐ ***If YES, Date:*** _____

8. **List of Abbreviations:**

   Y = YES
   N = NO
   U = UNKNOWN

1. LOCALITY WHERE DEATH OCCURRED

Region **Name of Health Facility**

Type of Health Facility: (Make a cross in one box only)

Clinic	Health Centre	District Hospital	National Hospital	Private Hospital	Other - Specify

2. DETAILS OF THE DECEASED

Name **Age**

Registration No.

Residential Address	**Postal Address**

Nationality

At time of death

Gravida

Para

Gestation (weeks) at delivery

Days since delivery/abortion

3. ADMISSION AT FACILITY WHERE DEATH OCCURRED OR FROM WHERE IT WAS REPORTED

Date of admission:

D	**D**	**M**	**M**	**Y**	**Y**	**Y**	**Y**

Time of admission:

Hours	**minutes**

Date of death: **Time of death:**

D	D	M	M	Y	Y	Y	Y

Hours	minutes

On admission:

Abortion	Ectopic	Antepartum	Intrapartum	Postpartum	Other-specify
☐	☐	☐	☐	☐	☐ _____

Condition on admission:

Stable	Critically ill	Dead on arrival	Other-Specify
☐	☐	☐	☐ _____

Diagnosis at time of death:

Abortion	Haemorrhage	Infection/Sepsis	Eclampsia	CVA	DIC	PE	Other
☐	☐	☐	☐	☐	☐	☐	☐ _____

Reason for admission:

Referral from another health facility? If "YES" specify name of facility:

Yes	No	

4. ANTENATAL CARE

Did she receive antenatal care? **Total number of visits:** **Timing of 1st visit (trimester):**

Yes	No	

1st	2nd	3rd

If "Y" at what locality? (Make a cross in *one box only*)

Unknown	Health Center /Clinic	District Hospital	Intermediate Hospital	National Hospital	Private Hospital	Other
☐	☐	☐	☐	☐	☐	☐

Antenatal care provider
(Make a cross at *more than one block if applicable*)

Specialist	Medical Officer	Advanced Midwife	Registered Nurse/ Midwife	Enrolled Nurse Midwife	Other
☐	☐	☐	☐	☐	☐

Antenatal Risk Factors

Past Medical History

Hypertension **Yes** ☐ **No** ☐ **Other** ☐

Diabetes Mellitus **Yes** ☐ **No** ☐ **Other** ☐

Epilepsy **Yes** ☐ **No** ☐ **Other** ☐

Asthma **Yes** ☐ **No** ☐ **Other** ☐ **Yes** ☐ **No** ☐

Other

HB on admission ☐

Past Obstetric History (If yes how many?)

Pre term labour	**Yes**	☐	**No**	☐	**Other**	☐
C/Section	**Yes**	☐	**No**	☐	**Other**	☐
Stillbirth/neonatal death	**Yes**	☐	**No**	☐	**Other**	☐
Antepartum Haemorrhage	**Yes**	☐	**No**	☐	**Other**	☐
Postpartum Haemorrhage	**Yes**	☐	**No**	☐	**Other**	☐
Abortion	**Yes**	☐	**No**	☐	**Other**	

Other Specify: ☐

HIV Status (Make a cross in *one box only*)

HIV + (Positive)	HIV - (Negative)	Unknown
☐	☐	☐

If HIV positive, On HAART? **Yes** ☐ **No** ☐

Latest CD4 Count :_____(indicate month & year)

Viral load: _____ (indicate month & year)

Comments on Antenatal Care – list any medications

4. DELIVERY, PUERPERIUM AND NEONATAL INFORMATION

Did labour occur?

If yes, was a partogram used?

Y	N	U

Duration of Labour (hours, min)

Latent Phase	Active Phase	Second Stage	Third Stage
_____	_____	_____	_____

Method of Delivery
(Tick appropriate box)

Undelivered	NVD	Assisted Vaginal Vacuum/forceps	Caesarian Section
☐	☐	☐	☐

Place of delivery (tick appropriate box)

Home	Clinic	Health Centre	District Hospital	Intermediate Hospital	National Hospital	Others
☐	☐	☐	☐	☐	☐	☐

Delivery Successful?

Y	N	U

Birth weight in kg or g ☐ Immediate Apgar out of 10 ☐

Head circumference in cm ☐ 5 min Apgar out of 10 ☐

Outcome

Alive	Still born
☐	☐

Comments on labour, delivery and puerperium

5. INTERVENTIONS (Tick Appropriate Box)

Early pregnancy		**Antenatal**		**Intrapart**		**ostpartum**		**Other**	
Evacuation	☐	Blood Transfusion	☐	Instrumental Delivery	☐	Evacuation	☐	General Anaesthesia	☐
Laparotomy	☐	Version	☐	Hysterectomy	☐	Laparatomy	☐	Epidural	☐
Hysterectomy	☐			Caesarean Section	☐	Hysterectomy	☐	Spinal	☐
Blood Transfusion	☐					Blood Transfusion	☐	Local	☐
Hystorotomy				Blood Transfusion	☐	Manual Removal of placenta	☐	Invasive monitoring	☐
				Oxytocin	☐	Oxytocin	☐	ICU Ventilation	☐
Other – Specify									

Intervention was **due to** the complication?

Intervention **resulted in** the complication?

Comments on interventions

Primary cause of death: Specify

Final Cause of death: Specify

Contributory (or antecedent) cause/s: Specify:

7. OTHER FACTORS

IN YOUR OPINION WERE ANY OF THESE FACTORS PRESENT?

System	Example	Y	N	U	Specify
Personal/Family	Delay in woman seeking help	☐	☐	☐	
	Refusal of treatment or admission	☐	☐	☐	
Logistical Systems	Lack of transport from home to health care facility	☐	☐	☐	
	Lack of transport between health care facilities	☐	☐	☐	
	Health service communication breakdown	☐	☐	☐	
Facilities	Lack of facilities, equipment or consumables	☐	☐	☐	
	Lack of human resources	☐	☐	☐	
Health personnel problems	Lack of expertise, training or education Delay in decision making	☐	☐	☐	

Comments on potential avoidable factors, missed opportunities and substandard care:

8.AUTOPSY

Performed: ☐

Not performed: ☐

If performed please report the gross findings and attach the detailed report

9. CASE SUMMARY (Please supply a short summary of the events surrounding the death)

_____

_____

THANK YOU FOR COMPLETING THIS FORM.

THIS FORM IS COMPLETED BY:

Name /Surname (Print)	
Rank	
Cell phone	
Telephone	
Fax	
E-mail	
Date	

D	D	M	M	Y	Y	Y	Y

Signature:_____

APPENDIX 4: CONFIDENTIAL PERI-NEONATAL DEATH REVIEW FORM

Republic of Namibia

MINISTRY OF HEALTH AND SOCIAL SERVICES

Note:
1. This form must be completed for all Still Births and infants who die within 28 days of birth.
2. Mark with an (X) where applicable.
3. Attach a copy of the case records to this form.
4. Complete the form in three originals within 7 days of a peri/neonatal death. Then one original remains at the institution where the death occurred and the other two originals are sent to the Regional and National Maternal Peri/Neonatal/Neonatal Death Review Committees.
5. To be completed by Medical Practitioner or Registered Nurse/Midwife who was involved in the management of the patient.
6. All Peri/neonatal/Neonatal deaths must be discussed at an institutional mortality meeting.
7. Was the Case discussed at an institutional meeting?

YES: ☐ ***NO:*** ☐ ***If Yes Date_____***

8. List of Abbreviations:

Y = YES
N = NO
U = UNKNOWN

1. LOCALITY WHERE DEATH OCCURRED

Region **Name of Health Facility**

Type of Health Facility

Clinic	Health Centre	District Hospital	Intermediate Hospital	National Hospital	Private Hospital	Other Specify

2. DETAILS OF MOTHER OF THE DECEASED

Name **Age**

Registration No.

Residential Address	**Postal Address**

Nationality

Gravida Para

Gestation (weeks) at delivery **Days since delivery/ abortion**

3. ANTE-NATAL CARE OF THE MOTHER

Did she receive antenatal care?

Yes ☐ **Timing of first visit**

1st	2nd	3rd

Total number of visits: ☐
Trimester

If "YES" at which health facility? (Make a cross *where applicable*)

Unknown	Health Center /Clinic	District Hospital	Intermediate Hospital	National Hospital	Private Hospital	Other
☐	☐	☐	☐	☐	☐	☐

Antenatal care provider
(Make a cross at *more than one block*)

Specialist	**Med.Officer**	**Adv. Midwife**	**Reg. Nurse/ Midwife**	**Enrolled Nurse/ Midwife**	**Other**
☐	☐	☐	☐	☐	☐

Antenatal Risk Factors

Past Medical History

Hypertension: Unknown ☐ Yes ☐ No ☐

Diabetes Mellitus Unknown ☐ Yes ☐ No ☐

Proteinuria Unknown ☐ Yes ☐ No ☐

Anaemia Unknown ☐ Yes ☐ No ☐

Past Obstetric History

C/Section Unknown ☐ Yes ☐ No ☐

Stillbirth/ neonatal death unknown ☐ Yes ☐ No ☐

Antepartum haemorrhage unknown ☐ Yes ☐ No ☐

Postpartum haemorrhage unknown ☐ Yes ☐ No ☐

Other Specify: ☐

HIV Status (Make a cross *in one box only*)

HIV+ (Positive)	HIV- (Negative)	Unknown
☐	☐	☐

If HIV+ (positive), On HAART? Yes ☐ No ☐

Latest CD4 Count:_____

Latest Viral Load: _____

Comments on Antenatal Care – list any medication

4. INFORMATION ON LABOUR DELIVERY, PUERPERIUM AND NEONATAL INFORMATION

Did labour occur?

Y	N

If yes, was partogram used?

Y	N	U

Duration of Labour (hours, mins)

Latent Phase	Active Phase	Second Stage	Third Stage
_____	_____	_____	_____

Method of Delivery
(Tick appropriate box)

Undelivered	NVD	Assisted Vaginal Vacuum/forceps	Caesarian Section
☐	☐	☐	☐

if more than one explain

_____

Place of delivery (tick appropriate box)

Home	Clinic	HC	District Hospital	Intermediate Hospital	National Hospital	Others
☐	☐	☐	☐	☐	☐	☐

Delivery successful? If no please explain

Y	N	U

Outcome ☐ ☐

Immediate Apgar score: out of 10 ☐ **5min Apgar** ☐

Birth weight kg or g ☐ **Head Circumference cm** ☐

If the baby was a stillborn was it:

Fresh	Macerated

Comments on labour, delivery and puerperium

5. DETAILS OF THE BABY'S CONDITION AFTER DELIVERY
Fill this in case of neonatal death

Date and time of birth

D	D	M	M	Y	Y	Y	Y		Hours	Minutes

Date and time death was diagnosed.

D	D	M	M	Y	Y	Y	Y		Hours	Minutes

Where did the baby die if the place was different form place of birth?
Place of death_____

If health facility: Name of health facility: _____

Age at death in days ☐

PMTCT
☐ **Yes**
☐ **No**
☐ **Unknown**

Cause of neonatal death:

(i) Congenital malformation – specify: ☐

(ii) Prematurity: Gestational age: ☐

(iii) Resp. cause
☐ **H.M.D. (Birth Asphyxia)**
☐ **Congenital pneumonia**
☐ **Meconium aspiration**
☐ **Other – specify:** ☐

(iv) Birth asphyxia ☐
(v) HIE ☐

(vi) Sepsis – Blood culture result if available:
(vii) NEC
(viii) Surgical cause ☐ **- Specify** ☐

6 INTERVENTIONS (TICK AS APPROPRIATE)

Ventilatory treatment

IPPV ☐ **Yes**
☐ **No**

Nasal CPAP ☐ **Yes**
☐ **No**

Feeds: **Formula Milk** ☐
Breast Milk ☐
Expressed Breastfeeding /Sterilized breast milk in case of HIV (+) mother ☐

7. PLEASE COMPLETE THIS SECTION IN THE CASE OF A STILL BIRTH

Date:_____ Time:_____

Did death (in utero) occur? Yes ☐ No ☐

1. Before admission, not in labour ☐
2. Before admission, probably in labour ☐
3. After admission, but before labour ☐
4. After admission, during the first stage of labour ☐
5. After admission, during delivery ☐

Cause of death. Please tick the main cause of death closest to top of the list and give details in question below:

1. Congenital malformation/defect ☐
2. Unexplained antepartum haemorrhage ☐
3. Intrapartum death form ‘asphyxia’, ‘anoxia’ or trauma ☐
4. Due to accident or non intrapartum trauma ☐
☐

5. Unknown

8) OTHER FACTORS
IN YOUR OPINION WERE ANY OF THESE FACTORS PRESENT?

System	Example	Y	N	U	Specify
Personnel/Family	Delay in woman seeking help	☐	☐	☐	
	Refusal of treatment or admission	☐	☐	☐	
Logistical Systems	Lack of transport form home to health care facility	☐	☐	☐	
	Lack of transport between health care facilities	☐	☐	☐	
	Health service - Health service communication breakdown	☐	☐	☐	
Facilities	Lack of facilities, equipment or consumables	☐	☐	☐	
	Lack of human resources	☐	☐	☐	
Health personnel problems	Lack of expertise, training or education	☐	☐	☐	

9. AUTOPSY

Performed: ☐

Not performed: ☐

If performed please report the gross findings and attach the detailed report

10. CASE SUMMARY (Please supply a short summary of the events surrounding the death)

_____

_____

THANK YOU FOR COMPLETING THIS FORM.

THIS FORM IS COMPLETED BY:

Name /Surname (Print)	
Rank	
Cell phone	
Telephone	
Fax	
E-mail	

Date

D	D	M	M	Y	Y	Y	Y

Signature:_____
Chairperson

APPENDIX 5: Box 1. Five approaches for reviewing maternal deaths and ill health

Facility-based maternal death review:

■ In-depth investigation of the causes of and associated factors in maternal deaths that occur in health facilities.

■ Entails interviews of health personnel who attended to the deceased. Can also be extended to interviews of family members who accompanied the deceased.

■ The review is nonjudgmental to encourage the cooperation of the health workers involved.

■ Provides information for improving obstetric care.

Community-based maternal death review (verbal autopsy):

■ In-depth nonjudgmental investigation of the causes and the associated factors of maternal deaths that occur outside health facilities.

■ Entails interviews of family members who cared for the deceased. This requires a community informant to let local authorities know whenever there is a death of a reproductive-age female in the community.

■The interviewer, who is usually not a health worker, should be sensitive when probing the circumstances leading to the death. In some cultures, the interview is done after the mourning period.

■ A team of physicians then examines the interview notes to determine the cause of death.

■When this is combined with the facility-based review described above, it gives a more complete picture of maternal deaths in a given local jurisdiction.

Confidential enquiries into maternal deaths

■ A national or subnational multidisciplinary committee meets periodically to systematically investigate a representative sample of (or all) maternal deaths to identify the causes and associated factors; the committee then gives written guidelines to health personnel and administrators on how to prevent similar deaths in future.

■The investigation is carried out in a confidential manner (“No blame, no shame”).

■ Requires a complete and functioning civil registration or health management information system.

■ A subnational or district-level panel might be more appropriate in countries with high mortality, so that the guidelines issued can be tailored to local situations.

Survey of severe morbidity (near misses)

■A near-miss event refers to one in which a woman has nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days of termination of pregnancy.

■This survey is an in-depth investigation of the factors that led to the near miss, what worked well in the treatment of the life-threatening complications, and the lessons learned.

■Unlike the other approaches, in this one the pregnant woman herself is also interviewed, creating the opportunity to obtain more insight into the circumstances.

■This survey is less threatening to health personnel than the others, since the women have survived.

Clinical audit

■Entails a systematic review or audit of the obstetric care provided to pregnant women against established protocols or criteria aimed at improving the quality of care.

■Protocols for the management of obstetric complications will have to be established beforehand in order to ascertain whether cases are properly being managed at health facilities.

References

Government of the Republic of Namibia. 2014, Report on Maternal, Perinatal and Neonatal Death Review. Ministry of Health and Social Services, Windhoek

Government of the Republic of Namibia. 2010. Guidelines for the Completing the Maternal & Peri/Neonatal Death Review Form. Ministry of Health and Social Services, Windhoek

HNPNotes publication, March 2011