सत्यमेव जयते

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

MATERNAL NEAR MISS REVIEW
Operational Guidelines

December 2014

Maternal Health Division
Ministry of Health & Family Welfare
Government of India

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लव वर्मा
सचिव
LOV VERMA
Secretary

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Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare

PREFACE

India aims to achieve the Millennium Development Goal 5 of reducing maternal mortality. During the last two decades, India has witnessed a significant reduction in the quantum of maternal deaths. Furthermore, to reach the goal we need to have a true representation of the causes of maternal deaths, so as to identify gaps and take corrective measures. Traditionally, the analysis of maternal deaths has been the criteria of choice for evaluating medical and systemic causes.

As you are aware, Maternal Death Review system has been institutionalised in India. However, much more needs to be known. The pregnant women who suffer severe complications and come close to maternal death but do not die are the "near-misses" which need to be investigated for finding programme gaps. Due to the success of modern medicine, maternal deaths are fewer in number but there are innumerable "near miss" events which have the potential to teach us lessons.

Near miss cases often precede the loss but are largely ignored because nothing (death) happened. Once we unfold the reasons for the near miss cases, we can take effective measures to avoid these eventualities. I hope that these guidelines will be an empowering tool for the medical colleges, where majority of near miss cases are likely to happen. Knowing the cause of near misses can lead to taking measures for further improvement of health outcomes.

I believe that the MNM Guideline will be useful to the States in identifying the required action needed for improving both maternal and neonatal health.

Lov Verma
Secretary (HFW)

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Dated : 17th November, 2014

FOREWORD

Maternal mortality is a critical indicator to assess the quality of services provided by a health care system. Globally, there has been decline in MMR, and India is leading this global trend. One of the key contributors to our success is the stepped up resources and additional efforts being made under NHM for improving health care.

India aims not only to achieve the Millennium Development Goal 5 of reducing maternal mortality but keep the decline accelerating beyond 2015. To achieve this, we need to have a true representation of the causes of maternal deaths, so as to identify gaps and take corrective actions.

Government of India initiated Maternal Death Review to identify and assess the gap in programme implementation and take corrective action. However, the current MDR format is not equipped to gather information on those pregnant women who delivered through complications and just about averted mortality. Investigating such cases of life threatening obstetric morbidity or maternal near miss helps in taking measures for further improvement of service delivery and programme.

The present guidelines on MNM will be an empowering tool for the medical colleges, where majority of near miss cases are likely to happen. Knowing the cause of near misses can lead to taking measures for further improvement of health outcomes.

I would like to see all Centres of Excellences and Medical Colleges initiating this important intervention on priority which can be subsequently scaled up in phases.

(C. K. Mishra)

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FOREWORD

Maternal mortality is a critical event to assess the quality of a health care system. The standard indicator for measuring this is the Maternal Mortality Ratio (MMR), defined as the ratio of the number of maternal deaths per 100,000 live births. Due to improved health care, there has been decline in MMR globally and in India as well MMR has declined steadily. There is a need to further accelerate this decline for achieving our national and international targets and goals.

Women who have survived complications during pregnancy and childbirth have been studied as surrogates of maternal deaths and been termed Maternal Near Miss. Reviews of such cases are considered a less threatening approach to improve maternal health care by the service providers.

With this tool, we will be able to identify the delays during the near miss and thereafter and take corrective action. Moreover, service providers are happy to report MNM since ultimately the life of the mother is saved; this has been proved during the pilot conducted on MNM.

This will enable us to utilise the opportunities to prevent the deaths of mother who might face a similar fate. As Near Miss occurs much more frequently than maternal deaths, a more reliable quantitative analysis can provide a comprehensive profile of the health system functioning.

Near misses are relatively simpler to analyse and easier to resolve. This knowledge will help in identifying the contributory factors of maternal deaths so that actions can be taken at community and health systems level. I am sure that these guidelines will definitely bring a sharper focus on decreasing number of maternal deaths and morbidities in India.

(Dr. Rakesh kumar)

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PROGRAM OFFICER'S MESSAGE

This is well known that complications during pregnancy and child birth can take place at any point of time, so it is important that the basic and emergency obstetric care health facilities remain in readiness in terms of infrastructure, HR, equipments etc. for timely management of complications. If such complications are not managed on time sometimes they become fatal. Government of India initiated Maternal Death Review to know the gap in the implementation of the programme and take corrective action.

The review however is not able to capture those pregnant women who suffered complications and delivered but just missed the fatality. As you know, there are several advantages of investigating near miss cases e.g. they are more common than maternal deaths, provide useful information on the same pathways that leads to morbidity and death, less threatening for service providers as women has survived, women can be interviewed and as a result more realistic analysis of gaps can be done. Thus investigating severe maternal morbidity (near-miss) helps to identify women at highest risk of maternal death and helps allocate resources especially in the area where it is needed most.

I would like to express that these guidelines would not have been possible without the constant encouragement from Mr. C.K Mishra, AS&MD & Ms Anuradha Gupta, Ex AS& MD. Dr. Rakesh Kumar, Joint Secretary (RMNCH+A) headed the expert group meeting and gave valuable inputs in framing this guideline.

I would like to acknowledge the contribution of all members of the Expert Group in developing the content of these technical and operational guidelines. I would also like to acknowledge my colleagues in MH Division especially Dr. Dinesh Baswal, DC(MH) and development partner's for their valuable efforts and inputs in developing this document.

The present guidelines are an empowering tool for the OBGYN Department of Medical Colleges where majority of near miss are likely to happen. Systematic review of such cases can help to bring forth various contributory factors whether it is medical, social, economical and other factors for necessary corrective actions which could be taken at State, District or at Community level for reduction in maternal mortality and morbidity.

12.12.14

(Dr. Himanshu Bhushan)

LIST OF CONTENTS

ABBREVIATIONS AND UNITS

AIDS	Acquired Immuno Deficiency Syndrome
ALT	Alanine Transaminase
ANC	Ante-natal Care
ARDS	Acute Respiratory Distress Syndrome
AST	Aspartate Transaminase
BP	Blood Pressure
BPL	Below Poverty Line
BS	Blood Sugar
CAB	Circulation Airway Breathing
CCF	Congestive Cardiac Failure
CMO	Chief Medical Officer
CS	Civil Surgeon
CT	Computed Tomography
DLC	Differential Leukocyte Count
DHO	District Health Officer
ECG	Electrocardiogram
ELISA	Enzyme Linked Immuno-Sorbent Assay
EmOC	Emergency Obstetric Care
FBS	Fasting Blood Sugar
FBMNM-R	Facility Based Maternal Near Miss Review
FFP	Fresh Frozen Plasma
FIGO	International Federation of Gynaecology and Obstetrics
FiO2	Fraction of inspired oxygen
FOGSI	Federation of Obstetrics and Gynaecological Societies of India
GoI	Government of India
Hb	Haemoglobin
HBsAG	Hepatitis B Surface Antigen
HELLP	Haemolysis Elevated Liver Enzymes Low Platelet
HIV	Human Immunodeficiency Virus
ICU	Intensive Care Unit
IV	Intravenous
JVP	Jugular Venous Pressure
K	Potassium
KFT	Kidney Function Test
LFT	Liver Function Test
LSAS	Life Saving Anaesthesia Skills
LVF	Left Ventricular Failure
MCTS	Mother and Child Tracking System
MOs	Medical Officers
MDR	Maternal Death Review
MNM	Maternal Near Miss
MNM-R	Maternal Near Miss Review
MoHFW	Ministry of Health and Family Welfare
MRI	Magnetic Resonance Imaging
Na	Sodium
NICU	Neonatal Intensive Care Unit
PaCO2	Partial pressure of carbon dioxide in the blood
PaO2	Partial pressure of oxygen in the blood
PIP	Project Implementation Plan
PPBS	Post Prandial Blood Sugar
PPH	Postpartum Haemorrhage
RBS	Random Blood Sugar
TLC	Total Leukocyte Count
TSH	Thyroid Stimulating Hormone
UK	United Kingdom
USG	Ultrasonography
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organization

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INTRODUCTION

Maternal mortality is a critical indicator to assess the quality of services provided by a health care system. The standard indicator for measuring it is the Maternal Mortality Ratio (MMR), defined as the ratio of the number of maternal deaths per 100,000 live births. Globally there has been decline in MMR, in India too this is declining steadily due to the additional efforts and resources put under NHM for improving health care. There is a need to further accelerate this decline for achieving our national and international goals and targets under them.

It is well known that complications during pregnancy and child birth can occur at any point of time, and it is important to ensure that readiness in terms of infrastructure, HR, equipment etc. for timely management of complications are available at all the basic and emergency obstetric care health facilities. If such complications are not managed on time they can become fatal. The Maternal Death Review guidelines launched by Government of India is a tool available with health managers and policy makers at various levels to critically look at health system performance, identify gaps and initiate corrective steps through convergent action. A major limitation of the MDR process is that the health professionals and other stakeholders involved in the service delivery fear that the great misfortune that has befallen on the pregnant mother puts the blame squarely on their shoulders, and they look at the MDR process with great suspicion as if it is a mechanism to expose them to public scrutiny and outrage. Moreover, the mother who interacted with the system was not available to share her experience. The review that captures the experiences of those pregnant women who suffered complications during pregnancy but survived a major fatality due to timely intervention provides a lot of learning opportunities, which is available more easily due to the availability of the mother as well as the willingness of health professionals who are eager to share their 'success' stories. There are various advantages of doing Maternal Near Miss-Review (MNM-R) (See Box 1). Investigating such cases of life threatening obstetric morbidity or Maternal Near Miss would help bringing further improvements to the programme.

Box. 1 Advantages of investigating near miss events

- Near miss cases are more common than maternal deaths
- The major reasons and causes are the same for both MNM and MDR, so review of MNM cases is likely to yield valuable information regarding severe morbidity, which could lead to death of the mother, if not intervened properly and in time.
- Investigating the instances of severe morbidity may be less threatening to providers because the woman survived
- One can learn from the women themselves since they survived and are available for interview about the care they received
- All near misses should be interpreted as free lessons and opportunities to improve the quality of service provision

Purpose of the document

The operational guidelines is designed for use by program managers at different levels of public health system to assist them in undertaking systematic MNM-R and use this information to bring health system improvements aimed at reduction of maternal morbidity and mortality.

- To identify the technical and non-technical causes of MNM
- To identify the health system response to maternal emergencies
- To identify the gaps and contextualise corrective measures to be taken in the health care system
- To provide regular feedback and response needed to achieve the goals
- Identify best practices

What is Maternal Near Miss (MNM)?

A Woman Who Survives Life Threatening Conditions during Pregnancy, Abortion, and Childbirth or within 42 Days of Pregnancy Termination, irrespective of Receiving Emergency Medical/Surgical Interventions, is called Maternal Near Miss.

PROCESS of MNM-R

The process of MNM-R involes ;

a) Notification (MO/HOD-if case meets inclusion criteria)

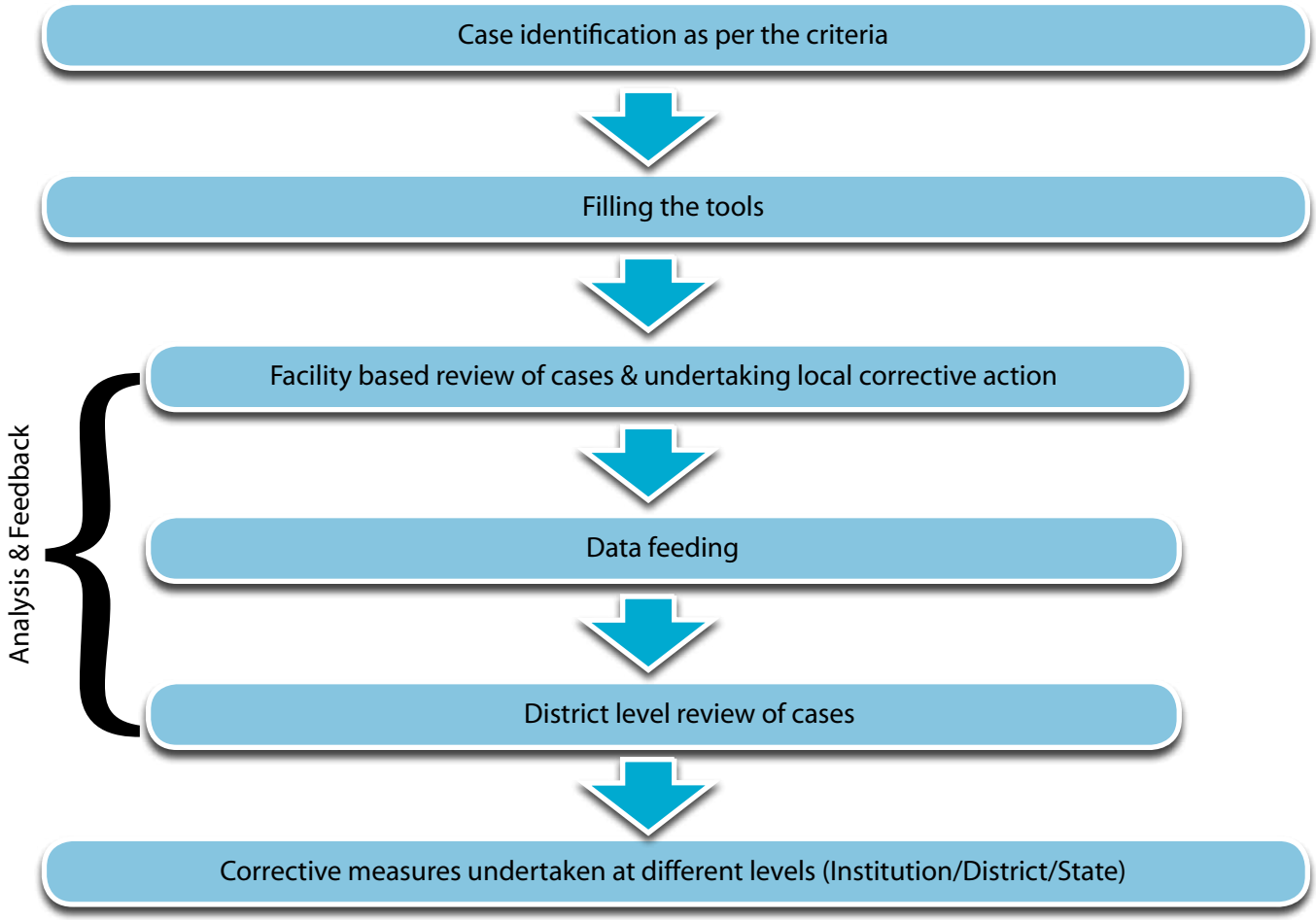
b) Data Transmission (Institution to district to state)

c) Review (Institutional & district level)

d) Analysis & Feedback for initiating necessary action.

Once the MNM is confirmed using the tool given in the guideline for diagnosing MNM, the MO/HOD of OBG-GYN notifies it to the FNO within 24 hours. There upon FBMNM-R form is filled by MO/HOD with support from FNO and submitted to district within a week. A copy of the same is kept with the institution for records, The Medical Superintendent with support from FNO and taking inputs from HOD/MO of the department will review the case. In the monthly review meeting the MNM-R committee members will be invited. The review reports will be sent to the district for further action. A snap shot of the process is given in the flow chart below;

Chart 1. Maternal Near Miss Review Process.



DIAGNOSING MNM

Inclusion Criteria:

Critically ill pregnant, labouring, post-partum and post-abortal women admitted to notified health institutions.

Criteria for identifying and notifying the MNM case:

Whenever any pregnant woman comes to the health facility in a critical condition, she needs to be given urgent medical treatment. However prior to the discharge of such cases, there is a need to identify whether the case falls under the category of Maternal Near Miss. For identification of an MNM case the following criteria (minimum three from each category) must be met with:

1) Clinical findings (either symptoms or signs),
2) Investigations
3) Interventions

Or

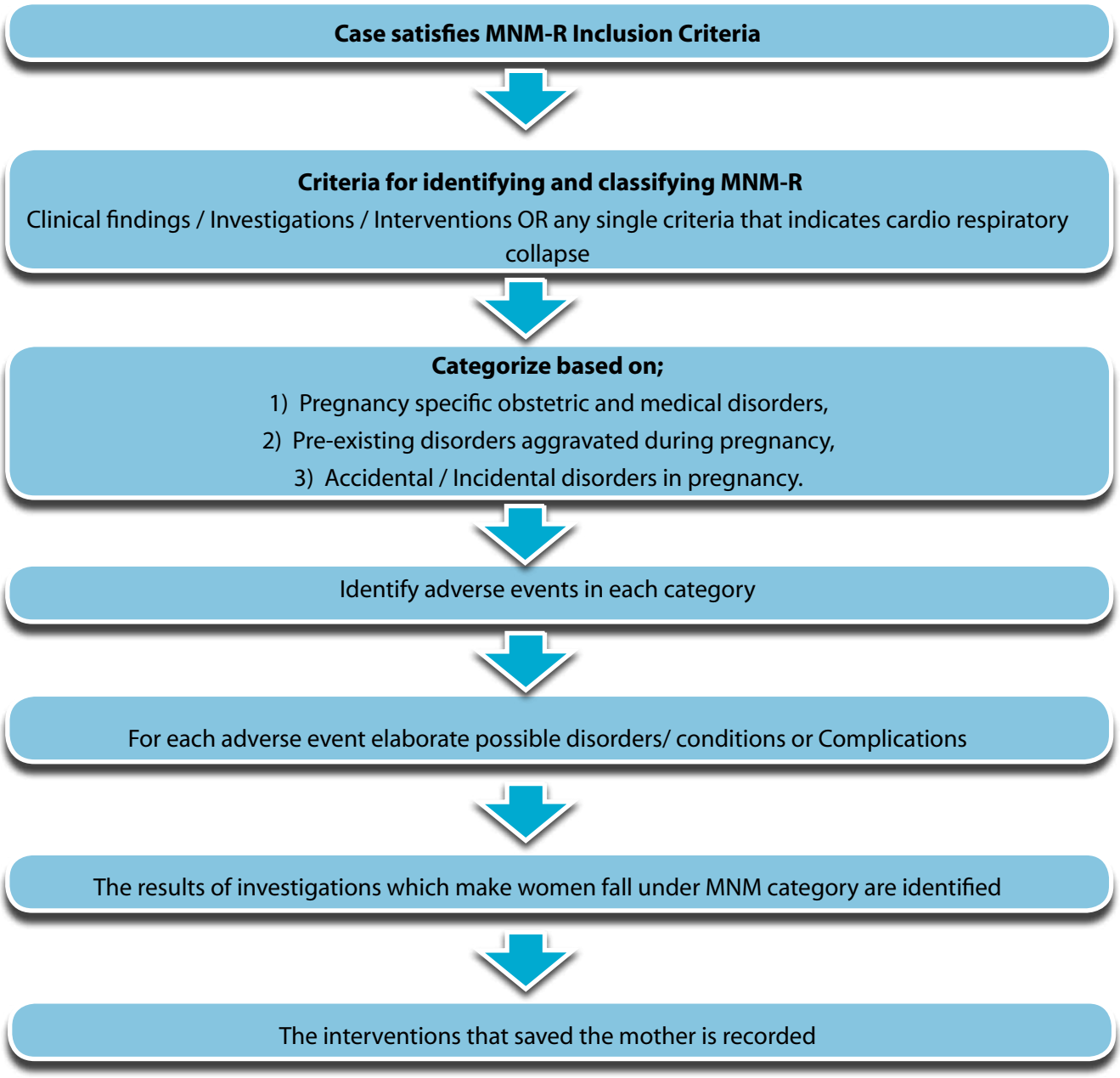
Any single criteria which signifies cardio respiratory collapse (indicated by a heart symbol)

The clinical findings, investigations and interventions have been put under three broad categories **(Annexure 2)**

1) Pregnancy specific obstetric and medical disorders,
2) Pre-existing disorders aggravated during pregnancy,
3) Accidental / Incidental disorders in pregnancy.

These broader categories have further been segregated under different clinical situations like haemorrhage, sepsis, hypertension etc. So it is important for the MO in-charge of the case to carefully see criteria for identification of MNM Case **(Annexure-2)** and scrutinise the suspected MNM case. A snap shot of the process involved in diagnosing and notifying MNM - R is given in the flow chart below;

Chart 2. Diagnosing and Notifying MNM-R



MNM-R TOOLS

There are two formats in which the data need to be entered –

1. Facility based Maternal Near Miss Review (FBMNM-R) form – **Annexure 1**
2. MNM-R case register – details of columns to be made in the register – **Annexure 3**

 # Annexure 2 illustrates the criteria for diagnosing the MNM

Investigating severe maternal morbidity (near-miss) would aim to document the frequency and nature of maternal near-miss at hospital level and to evaluate the level of care at maternal life-saving emergency services. This will also provide the gaps for corrective actions to be taken at various levels.

Implementation plan of MNM-R

In the initial phase the MNM-R will be implemented in selected well performing medical colleges or tertiary centres. Once the implementation of Maternal Near Miss at Medical Colleges is successfully established, then States can decide to extend it to District hospitals/other FRUs.

MNM-R is complementary to MDR and purpose of MNM-R is to identify the gaps in service delivery at the earliest which will ultimately help in preventing maternal morbidity and mortality.

In order to initiate MNM-R in a State the following steps have to be undertaken;

- A G.O. /policy decision on Implementation of the program by the State
- Notification of institutions to conduct MNM-R
- Provision of adequate budget and timely release to the notified institute
- Sensitization of State Program Officers
- Training of Medical College faculty and staff
- Printing of different formats

The committees under MNM-R

The MDR committee constituted at district and institutional level for review of maternal deaths will also conduct the review of MNM cases.

The committees;

- Review MNM cases and share the findings for corrective action with all the concerned departments
- Make recommendations - to initiate actions related to infrastructural strengthening, to augment human resource availability, to strengthen protocols and competence of staff, to ensure adequate Supplies and Equipment
- Analysis & Feedback - A statement of detected gaps, identified best practices, corrective measures to be taken should be sent to state nodal officer for state review meeting

The committees are ;

1. Facility Based Maternal Death/ Near Miss Review Committee (FBMNM-R Committee)
2. District level CS/CMO Maternal death/ Near Miss Review Committee (DBMNM-R Committee)

The review will focus on

a) Circumstances under which the woman received care

b) Cause of maternal near miss

c) Steps that are required to prevent such morbidities in future

The State Task Force for MDR committee will also support implementation of MNM-R at the state level.

Maternal Health division of MoHFW with support from NHSRC will provide monitoring support to all the states.

Roles and Responsibilities of Nodal Officers

Implementation of MNM-R requires coordinated effort of various nodal officers designated at various levels to support and monitor the processes to ensure the quality of data collected, analysed and feedback shared for concerted action at the various levels.

State Nodal Officer (SNO)

- Identifying the level and names of the health facility (Initially Medical Colleges) where program will be implemented
- Collect relevant data on MNM cases district-wise/institution-wise and carry out detailed analysis
- Ensuring availability of different formats and other requisite tools before initiation of program
- Priority action and timeline for the gaps identified under MNM and periodic review of progress
- Nominate the district nodal officers
- Provision of adequate budget and timely release to the implementing institute.
- Ensure the trainings at various levels
- Facilitate the preparation of an annual MNM-R report for the state and organize a dissemination meeting to sensitize the various service providers and managers. The annual report may contain typical maternal death case studies which may be used during the training of medical and paramedical functionaries.
- To make sure that the budgetary requirement of MNM-R reflects either in the state/ NHM PIP

District Nodal Officer (DNO)

District RCH Officer can be designated as the District Nodal Officer.

1. Maintain the line list of facility based MNM cases in the district; facilitate the data entry and ensure FBMNM-R at the district level
2. Organize monthly District level MNM-R meetings under the directions of the CMO; maintain the minutes of meetings; follow up on actions to be taken and prepare the Action Taken Report
3. Participate in meetings of the State Level Task-force and follow up on specific recommendations pertaining to the district
4. Undertake planning and budget estimates for MNM-R in the district where the programme is implemented
5. To make available the necessary equipment/ supplies (especially laboratory diagnostic facilities) in advance to all such health facilities conducting MNM-R in the district

Medical Superintendent/ In-charge of Health Facility

- Nominate FNO for the MNM-R program
- Form MNM-R Committee(may include Staff of OBGYN, Anaesthesia, Nursing, Blood Bank, Other relevant individuals)
- Forwarding the MNM-R tool with case sheet to district CMO/CIVIL SURGEON within a week
- Taking local corrective actions as per MNM-R findings

Facility Nodal Officer (FNO)

- Ensuring all cases of MNM are reported
- Preparing meeting calendar and calling the committee on a designated day and date
- Review of MNM cases in MDR committee
- Send the report and its findings to district CMHO/ Civil Surgeon
- Attend MDR/ MNM review meetings at district

HOD Obstetrics / Duty Medical Officer

- Identify MNM as per the indicated criteria and record in the relevant register
- Complete FBMNM-R form and send to the MNM-R Nodal officer of the facility within 48 hours of patients discharge
- ENSURING NO CHANGES ARE MADE ON THE CASE SHEET
- To ensure MNM-R formats are filled in before discharge of the case

Training Plan

The basic premise of the training plan is that all personnel directly involved with the MNM-R process get trained and all other officers whose cooperation is required in the smooth conduct of review (as well as follow up actions based on recommendations of the MNM-R Committees) get oriented in the concept and process of MNM-R.

A one day sensitization cum training of trainers for the states will be conducted at the national level by the National Health System Resource Centre (NHSRC) under the guidance of MH division of Ministry of Health and Family Welfare.

At the state level a half day sensitization meeting involving all convergent departments and state nodal officers from the directorate, SIHFW, SHS will be held. A one day training at the state level will invite the faculty (FNO, HOD, MS etc.) of the notified institutions along with District officers.

District orientation could be undertaken involving convergent departments.

At the institution level MOs of all departments in the facility will sensitized in a half-day session, followed by one day training of the faculty directly involved in the MNM-R.

The training schedule depicting the cascade of trainings undertaken at State, District and Institutional level is given below;

Table 1. Training schedule

Level	Type	Participants	Duration	Training materials
National	Training	State nodal officers for MNM-R	1 day	MNM-R guidelines and formats, case studies, role plays on MNM-R
State	Sensitization	All state programme officers and convergent departments	½ day	MNM-R guidelines
	Training	All nodal officers (district, facility)	1 day	MNM-R guidelines and formats, case studies, role plays on MNM-R, develop systems for review and remedial follow up actions
District	Sensitization	All district programme officers and convergent departments	½ day	MNM-R guidelines
Institutions	Sensitization	All division heads	½ day	MNM-R guidelines
	Training	All faculty and staff of Obstetrics & Gynaecology department	1 day	MNM-R guidelines and formats, case studies, role plays on MNM-R, registers, analysis of data

Monitoring and Evaluation

While a biological complication is assigned as a cause of MNM, in fact most MNM cases result from a chain of events that includes many social, cultural and medical factors. The tools for MNM-R have been developed with the objective of identifying gaps and reasons for severe maternal morbidities which could also lead to maternal deaths so that corrective actions to fill such gaps can be taken for improving service delivery. Private sector providers may also find this useful in instituting maternal near miss reviews. The guideline will help program managers, Medical Superintendents, officer in charges and district program managers who are routinely engaged in delivery of maternal health interventions in the implementation of this program.

Individual facilities should ensure availability of all the relevant data both in hard and softcopy. Since a large set of data is captured, analysis of data for surveillance, interventions, corrective actions etc. will be a challenge. Centralised online software to feed the data, carry out analysis and generate reports for action will be developed in due course by GOI. The data of individual facilities can be transferred to this portal once this portal is developed.

The Nodal officers will evaluate the important variables and identify the gaps for initiating corrective measure so as to prevent such morbidities in future. The major outcomes which need to be focussed in are number of women in a centre reporting with MNM or become MNM, the causes of MNM, referral places and the quality of care given, antenatal care and its quality, identified complications in pregnancy, labour care and complications in delivery, iatrogenic injuries, requirement of blood & its availability, interventions needed to save the women, good practices & reasons in terms of delay 1, 2 or 3

Indicators for Monitoring

1. Total Number of MNM cases in the reporting month
2. MNM cases reviewed by CMHO
3. Out of total MNM cases indicate the number against following complication:
    a. PPH
    b. Eclampsia
    c. Anemia
    d. Septic Abortion
    e. others
4. Type of gaps identified after review
5. Status of corrective action taken for the gaps identified

Key points to remember

- The findings from MNM-R should not be utilized for taking punitive action against service providers.
- Any single criteria which signifies cardio respiratory collapse, makes a case of MNM
- The committee on MDR will perform functions of MNM-R committee
- Training budget should be proposed in the State PIP

Budget

Establishment cost

S. No	Non-Recurring Items	AMOUNT
1	Computer, printer and MNM-R software downloading (for each facility)	1,00,000/-
2	Training Cost – 1 day orientation State Level, per (1 Batch of 40) Facility Level, (1 Batch of 20)	 183000 26500

Training cost

1 day training of MNM-R at state, batch of 40					
S. No	Head	Unit Cost	Number of Participants	Days	Total
1	TA for Participants (to and fro by Train)	3000	40	1	120000
2	DA to trainees	700	40	1	28000
3	Lunch & tea	200	40	1	8000
4	Per Diem/ Honorarium for Trainers**	1000	2	1	2000
5	Logistic expenses like study material, course material, photocopying, job aids, flip cart, LCD etc. (Rate x Days of Training x number of participants)	200	40	1	8000
	Sub Total				166000
	Incidental overhead (10% of sub-total)				16600
	Total for one batch of 40 candidates for 1day				**183000**

1 day training of MNM-R at facility, batch of 20					
S. No	Head	Unit Cost	Number of Participants	Days	Total
1	DA to trainees	700	20	1	14000
2	Lunch & tea	200	20	1	4000
3	Per Diem/ Honorarium for Trainers**	1000	2	1	2000
4	Logistic expenses like study material, course material, photocopying, job aids, flip cart, LCD etc. (Rate x Days of Training x number of participants)	200	20	1	4000
	Sub Total				24000
	Incidental overhead (10% of sub-total)				2500
	Total for one batch of 20 candidates for 1day				**26500**

Note:

*** TA to be given as per state norms.

* The state need to adjust the training norms as per the training load of the district and state.

Support is provided to conduct of CDR meetings at various levels (district committee, facility committee etc.). The same funds can be utilized for conduct of MNM-R meetings.

for sensitization meetings, cost of tea/snacks plus incidental expenses(photocopying, printing, telephone, Fax etc.) @3000/- may be booked. Since only local people are involved, no TA/DA is required except cost of outstation resource persons, which needs to be separately budgeted in PIP.

FACILITY BASED MATERNAL NEAR MISS REVIEW FORM (MNM-R FORM)

Name & Address of Medical College/FRU_____

_____

Name of Nodal Person _____Contact No_____

FOR OFFICE USE ONLY

MCTS No (mandatory) ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

FBMNM-R NO. (Of the facility) (with Date / Month / Year)

☐☐☐ ☐☐ ☐☐ ☐☐☐☐

NOTE :

- *This form must be filled for all cases of Maternal Near Miss as per Definition and criteria (as per Annexure 1)*
- *FB MNM-R number must be put serially e.g 001-dt-mth-yr.*
- *Mark with √ wherever applicable*
- *For Date use Day/Month/Year format. For time use 24hours clock format.*
- *Complete form at the time of discharge of woman with Maternal Near Miss, keep photocopy & send original to Nodal Officer MNM - R Committee*
- *New series starts with new year*
- *Attach copy of discharge summary with this form*

1. GENERAL INFORMATION

a. Full Name_____ b. Age _____ (in years)

c. Inpatient No_____ d. Contact No _____

e. Complete address_____

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

g. Below Poverty Line status: BPL Certificate / Self certified ☐ Not BPL ☐

h. Date of admission: Day ☐☐ Month ☐☐ Yr. ☐☐ Time: Hours ☐☐ Min ☐☐

i. Date of discharge: Day ☐☐ Month ☐☐ Yr. ☐☐ Time: Hours ☐☐ Min ☐☐

j. Date and time when became near miss : Day ☐☐ Month ☐☐ Yr ☐☐ Hours. ☐☐ Mins ☐☐

k. Type of Discharge: By Hospital ☐ On Request ☐ Left Against Medical advice ☐

Referred to Other Centre ☐ Absconded ☐

l. Provisional Diagnosis At Admission ☐

m. Final Diagnosis At Discharge : _____

_____

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

o. Duration of ICU stay: Days ☐☐ Hours ☐☐

2. CONDITION AT TIME OF ADMISSION

a. Patient admitted in Hospital with severe illness ☐

b. Admitted with no disorder, became Near Miss ☐

c. Admitted with disorder, became Near Miss ☐

3. TYPE OF ADMISSION

a. Self ☐ b. Referred ☐

4. REFFERAL

a. If referred from outside, no. of places visited prior ☐☐ Specify Type, - Public, How many ☐

Private, How many ☐

b. Attended by: Doctor ☐ Nurse ☐ Other staff ☐ None ☐

c. From last visited place before referral, referral slip completed: Yes ☐ No ☐

d. Transportation provided from the referring facility: Yes ☐ No ☐

5. ILLNESS DURATION

a. Duration from illness to 1st health facility : Days ☐☐ Hours ☐☐

b. Duration from 1st facility to this facility : Days ☐☐ Hours ☐☐

c. Duration from admission to Near Miss Morbidity : Days ☐☐ Hours ☐☐

6. STATUS AT ADMISSION

a. Gravida ☐ Parity ☐ Abortion ☐ Living Children ☐

b. Antenatal < 22 weeks ☐ > 22 & < 34 weeks ☐ > 34 & < 37 weeks ☐

> 37 & < 42 weeks ☐ > 42 weeks ☐

c. Intra-natal ☐ Postnatal ☐ Abortion ☐ Post abortion ☐ Other ☐

d. Days since delivery/abortion: Within 24 hrs. ☐ >24 hrs.- 1week ☐ >1 week - 6 weeks. ☐
Not applicable ☐

7. UNDERLYING DISORDERS AT ADMISSION

<table>
<tr><td rowspan="6">Haemorrhage</td><td colspan="2">Abortion</td><td colspan="2">Ectopic Pregnancy</td><td colspan="2">Gestational Trophoblastic Disease</td></tr>
<tr><td colspan="6">Antepartum Bleeding</td></tr>
<tr><td colspan="2">Placental causes</td><td colspan="4">Late pregnancy Bleeding other than placental causes</td></tr>
<tr><td>Placenta Previa</td><td>Placental abruption</td><td>Scar dehiscence</td><td>Rupture uterus</td><td colspan="2">Others</td></tr>
<tr><td colspan="6">Intrapartum Bleeding</td></tr>
<tr><td colspan="2">Postpartum bleeding</td><td>Atonic</td><td>Traumatic</td><td colspan="2">Mixed</td></tr>
<tr><td rowspan="2">Infection</td><td colspan="6">Viral such as Hepatitis/HIV AIDS/Others, Malaria, Dengue, Scrub Typhus, Other infections occurring in</td></tr>
<tr><td>Antepartum</td><td>Intrapartum</td><td>Post partum</td><td colspan="3">Post abortal</td></tr>
<tr><td rowspan="3">Hypertensive disorders of pregnancy</td><td colspan="3">Gestational Hypertension - Mild</td><td>Severe</td><td></td></tr>
<tr><td colspan="3">Pre-eclampsia - Mild</td><td>Severe</td><td></td></tr>
<tr><td colspan="2">Eclampsia</td><td>Others</td><td colspan="2"></td></tr>
<tr><td>Labour related Disorders</td><td colspan="2">Prolonged / Obstructed / Rupture uterus</td><td>Inversion of Uterus</td><td>Retained placenta</td><td>Any other</td></tr>
<tr><td rowspan="2">Medical Disorders</td><td colspan="2">Anaemia</td><td>Heart disease</td><td colspan="2">Lower Respiratory Tract Infection</td></tr>
<tr><td colspan="2">Diabetes</td><td colspan="3">Others</td></tr>
<tr><td colspan="7">Incidental/ Accidental Disorders E.g. Surgical including Iatrogenic, Trauma, Violence, Anaesthetic complications, etc.</td></tr>
</table>

8. ANTENATAL PERIOD

Did she receive ANC? ☐ Yes, Number of Visits: ☐☐ No ☐ Not Applicable ☐

A. If Yes,

i. Type of Care Provider : *Nurse ☐ *Medical Officer ☐ *Specialist ☐ (* Public Sector)

Others including private sector ☐

ii. Quality of care provided : a. Eye checked for pallor ☐ b. BP taken ☐
c. Abdominal examination ☐ d. Urine checked ☐ e. Hb checked ☐

iii. Was she informed about problems in present pregnancy? Yes ☐ No ☐

iv. Was referral made to appropriate facility? Yes ☐ No ☐

v. Referral slip with details: Yes ☐ No ☐

B. **If No** Antenatal care –

Reasons: a. Lack of awareness ☐ b. Lack of accessibility ☐ c. Lack of funds ☐ d. Lack of attendee

e. Family problems ☐ f. Others ☐

9. **SIGNIFICANT PAST HISTOR**Y- Personal Medical Surgical Obstetrical

a. Gynaecological ☐ b. Family ☐

Details

10. COMPLAINTS WITH DURATION (Please tick all the presenting complaints)

	Hours	Days		Hours	Days
Vaginal bleeding			Convulsion		
Vaginal discharge			Unconscious state		
High grade fever			Syncope		
Abdominal pain			Breathlessness		
Severe headache			Palpitations		
Swelling of feet / body			Chest pain		
Blurring of vision			Orthopnea		
Right upper quadrant pain			Yellowness of Urine/ Skin		
Passing of scanty amount of urine			Others		

11. EXAMINATION FINDINGS

Systems	Examination	At Admission	At the time of Near Miss	Systems	Examination	At Admission	At the time of Near Miss
	Date & Time of examination			Abdominal Findings	Distension		
General	Temp (°C)				Scars		
	Pulse/min				Soft / Guarding		
	Respiration/min				Tenderness		
	Blood pressure				Organomegaly		
	Pallor				Lump		
	Icterus						
	Cyanosis			Per Speculum	Bowel Sounds		
	Clubbing				Cervix		
	Lymph Nodes Enlargement				Vagina		
	Oedema (Feet/Face)				Others		
	Jugular Venous Pressure			Per Vaginum			
					Cervical dilatation		
					Cervical effacement		
CNS	Conscious				Cervical position		
	Orientation				Cervical consistency		
	Pupils (Size, Light Reaction)				Station of Head		
	Deep Tendon Reflex – Present/Absent				Membrane's Status		
	Plantar -Extensor/Flexor				Liquor		
	Any neurodeficit				Others		
CVS	Any abnormality detected				Uterus Size		
					Uterus Position		
RS	Any abnormality detected				Uterus Consistency		
					Uterine tenderness		
Abdominal Findings	Fundal height				Fornices		
	Uterine contraction present/absent				Others		
	Presentation/Position			Any Others			
	Estimated Baby size						
	Liquor						
	Fetal Heart Rate (regular/ irregular)						

12. INVESTIGATIONS

Type	Samples Collected	At Admission	At the time of Near Miss	Type	Samples Collected	At Admission	At the time of Near Miss
Blood	Hb			KFT	Creatinine		
	TLC/ DLC				Urea		
	Platelet				Na^+		
	Peripheral Smear				K^+		
	Bleeding Time, Clotting Time						
	Clot observation time			Infectious Diseases Screening	HIV – I & II		
	Blood group, Rh type				HBsAg		
	Hb - Electrophoresis				VDRL		
Urine	Urine albumin				Rapid Dengue		
	Urine sugar				Rapid Malaria		
	Urine ketone				Widal		
	Urine microscopy				Blood C/S		
					Urine C/S		
BSL	BS (F)				Cervical Swab		
	BS (PP)				Vaginal Swab		
	BS (RBS)				Lochial Swab		
LFT	Alk phos			Fundus Exam.			
	SGPT				Ophthalmoscopy		
	SGOT						
	Bilirubin (Total)						
	Bilirubin (Direct)			Imaging	USG		
	Proteins (Total)				Doppler		
	Albumin				Xray chest/ abdomen CT / MRI		
	Globulin						

13. DELIVERY DETAILS:

a. Known ☐ Unknown ☐ Not Applicable ☐

b. Place of Delivery : Public Hospital ☐ Private Hospital ☐ Home ☐ Other ☐

c. Did she have labor pains? Yes ☐ Spontaneous ☐ Induced ☐ No ☐

If Yes, was a partograph used? Yes ☐ No ☐ Don't know ☐

d. Indication for Induction : _____

e. Duration of labour : Hours ☐☐ Minutes ☐☐

f. Mode of Delivery

Undelivered	Vaginal						Caesarean Section		Laparotomy		Indication (CS/Instrumental)
	Normal	Assisted			Breech	Multiple Pregnancy	Elective	Emer-gency	Rupture uterus	* Ectopic Pregnancy	
		Episiotomy	Forceps	Vacuum							

* In Ectopic pregnancy woman does not deliver, but fetus may be removed during Laparotomy

g. Anaesthesia (any adverse reaction) :

General Anaesthesia		Reg- Epidural / Spinal		Local	

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

First stage	Second stage	Third stage	Post Birth		
			Within ≤ 6 hrs. of birth	> 6 - ≤ 24 hrs of birth	> 24 hrs after birth

i. Specify the complication

Atonic PPH	Traumatic Vaginal /Cervical tear	Broad Ligament Haematoma	Rupture Uterus	Intrapartum Eclampsia	Retained placenta/ Inversion	Others
	Cervical /Vaginal / Perineal tear					

j. Who conducted the delivery?

Traditional Birth Attendant/Family member ☐ Nurse ☐ Resident Doctor ☐ Specialist ☐

Others ☐

14. PUERPERIUM / POST ABORTAL / POST LAPAROTOMY

a. Uneventful ☐ Eventful ☐ Not Applicable ☐

b. If Eventful - PPH ☐ Sepsis ☐ Post Partum Eclampsia ☐ Others ☐

15. BLOOD TRANSFUSION

a. Received: Yes ☐ No ☐

b. In which period: Antenatal ☐ Intranatal ☐ Postnatal ☐ Post abortal ☐ Other ☐

Details of Blood / Components transfusion

Sr. No.	Components	Quantity	Total
1	Whole Blood		
2	Packed cells		
3	FFP		
4	Platelets		

16. DETAILS OF BABY

Outcome				
Stillborn	Live birth	Neonatal Death	Admitted in NICU	
	Discharged		Discharged	Died

17. SYSTEM INVOLVEMENT : Single ☐ Multiple ☐

Cardiovascular system ☐ Respiratory System ☐

Hepatobiliary System ☐ Urinary System ☐

Genital System ☐ Hematological System ☐

Central Nervous System ☐ Gastrointestinal System ☐

Immune System ☐ Musculoskeletal System ☐

18. CONDITION AT DISCHARGE

Completely recovered Yes ☐ No ☐

If No, Details of Residual morbidity

19. INTERVENTIONS DETAILS – AT PLACES FROM WHERE REFERRED AND AT INSTITUTION

Intervention	Previous Facility			Present Facility		
	Yes	No	Specify	Yes	No	Specify
ICU admission requiring resuscitative (CAB) or cardio respiratory support						
Resuscitative Procedures/Intubation						
Mechanical Ventilation						
Use of cardiotonics/ Vaso pressors						
Digitalization						
Evacuation						
Laparotomy with procedures - B lynch, Stepwise Devascularization etc.						
Hysterectomy						
Internal Iliac Ligation						
Manual Removal of Placenta						
Reposition of Inverted uterus						
Repair of Genital injuries						
Repair of bladder, bowel						
Dialysis						
Management of Ketocidosis						
Drugs to reduce cerebral odema (Mannitol)						
Anticoagulant therapy						
Others						

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

System	Example	Y	N	Specify		
				ANC	INC	PNC
Personal/Family	Delay in woman seeking help If yes, why – Lack of Awareness Lack of Resources Past Adverse Experience					
	Refusal of treatment or admission					
	Refusal of admission in facility					
Logistics	Lack of transport from home to health care facility					
	Lack of transport between health facilities					
	Lack of communication network					
Referral Facility/facilities	Infrastructural issues					
	Lack of medications, instruments, equipments or consumables					
	Non utilization of available medications, instruments, equipments or consumables					
	Lack of blood /blood products					
Present Facility/facilities	Infrastructural issues					
	Lack of medications, instruments, equipments or consumables					
	Non utilization of available medications, instruments, equipments or consumables					
	Lack of blood /blood products					

21. Form filled by:

22. Name of the Unit Consultant / Incharge — Signature and Stamp

Designation — Date:

Institution

23. Name of the Nodal Officer — Signature and Stamp

Designation — Date:

Institution

Criteria for identification of MNM Cases

- **For diagnosis of Near Miss, the patient should meet Minimum 3 criteria: one each from 1) clinical findings(either symptoms or signs), 2) investigations & 3) interventions done Or Any single criteria which signifies cardio respiratory collapse as indicated with heart ♥)symbol**

1.1 PREGNANCY SPECIFIC OBSTETRIC AND MEDICAL DISORDERS

Adverse Event	Disorders/Conditions or Complications	Clinical findings		Results of Investigations	Interventions
		Symptoms	Signs		
HAEMORRHAGE	• Abortion (Spontaneous / Termination of Pregnancy (Safe/Unsafe)) • Ectopic Pregnancy • Gestational Trophoblastic Disease • Antepartum hemorrhage -Placenta previa -Placental abruption • Scar dehiscence • Rupture uterus • Surgical injury during labour, Caesarean Section/ Forceps or Vacuum delivery • Third Stage complications, e.g. Inversion of uterus, retained placenta, Cervical tear, others • Post partum haemorrhage -Atonic -Traumatic • Amniotic Fluid Embolism	Any Bleeding from or into the genital tract leading to • Air Hunger • Syncopal attacks	• Altered conscious state • Tachycardia >120/min Low volume pulse • Bradycardia <40/min • Tachypnea >40/min • Bradypnoea < 6 /min • Blood pressure - Systolic < 90 mmHg - Diastolic < 60 mmHg • Absent peripheral reflexes • Oliguria with output < 30ml/hour	• Acute fall Hb < 5 gm % or 30 % fall in haematocrit (fall in hemoglobin so as to affect oxygen saturation) • ♥ Fall in oxygen saturation below 90 % • ♥ $PaO_2 : FiO_2 < 200$ • ♥ $PaCO_2 > 50$mm Hg • ♥ Platelet < 20,000 (Acute Decline in platelet count more significant) • ♥ Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • Serum creatinine >3.5mg/dL • ECG – Ischemic changes, ST inversion, elevation	• ♥ ICU admission requiring resuscitative (CAB) or cardio respiratory support • ♥ Blood & blood products transfusion (more than 90 ml/kg body weight/ >5 units of blood) • ♥ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • ♥ Circulatory collapse requiring Emergency Surgery for controlling blood loss such as urgent Evacuation, Laparotomy with or without Hysterectomy, Internal Iliac Ligation or any Suturing of tears with a background of hemorrhage • Dialysis- peritoneal/ hemodialysis (renal replacement therapy)

PaO2 : Partial pressure of oxygen in the blood, FiO2 : Fraction of inspired oxygen, PaCO2 : Partial pressure of carbon dioxide in the blood.

SESIS	Termination of pregnancy • Septic Abortions → Spontaneous • Prelabour rupture of membranes Term/Preterm • Puerperal sepsis • Post surgical procedures (E.g. Cesarean section, laparotomy, evacuation, manual removal of placenta , others)	• High grade fever • Abdominal pain • Distention of abdomen • Vaginal foul smelling discharge • Decreased urinary output • Altered consciousness • Difficulty in breathing	• Delirium/altered conscious state • Persistent rise in Temp >39.2°C, not responding to routine treatment • Hypothermia temp < 37 ^{0} C • Pulse rate > 120/min • Thready, low volume pulse • Tachypnoea> 20/min • Rebound tenderness of abdomen, guarding, rigidity • Clinical evidence of septic focus in body, Pus discharge from wound, cervix or vagina	• Leucocytosis (>15,000/cu mm) • Microbial culture positive for organisms • Ultrasound shows intra uterine/ pelvic/ abdominal collection • Imaging modality showing bladder/bowel /uterine injuries e.g.. air under diaphragm	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • Shifting to intravenous fourth general Antibiotics like(Sulbactum+ Cefoperazone combinations, Imepenum etc) • ❤ Blood component transfusion (upto 90 ml /kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • ❤ Surgical procedure done (Evacuation, Laparotomy for Drainage of pus,Repair of Bladder, Bowel and /or Hysterectomy) • Dialysis – peritoneal /hemodialysis (renal replacement therapy)
HYPERTENSION	• Hypertensive disorders of pregnancy (Pregnancy induced hypertension, Preeclampsia, Eclampsia, HELLP Syndrome)	• Convulsions • Diminution/Blurring of vision • Severe epigastric pain • Severe headache non responsive to pain killers • Difficulty in breathing • Palpitations	• Altered conscious state • BP ≥160/110mm Hg • Deep Jaundice • Oliguria / anuria / haematuria • ❤ coma • Coagulation failure • ❤ Pulmonary edema • ❤ Evidence of circulatory collapse	• Proteinuria > 1 gm/dl • S. Creatinine >3.5 mg /dL • Elevated S Bilirubin (> 6 mg/dL) • ALT, AST(>100 IU/L) • Thrombocytopenia <20,000 • Haemolysis on peripheral smear • ❤ Clot observation time > 7 min. or any other test done which shows deranged coagulation profile • Hypertensive retinopathy > GRADE II • Abnormal ECG (ST inversion, elevation/ arrhythmias) • ❤ Cerebral hemorrhage on CT scan	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Non responder to Magnesium sulphate • ❤ Mechanical Ventilation • ❤ Blood & blood products transfusion (more than 90 ml/kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • ❤ Status eclampticus

POSTPARTUM COLLAPSE	• Amniotic Fluid Embolism • Uterine Inversion	• Acute collapse of patient after delivery	• Pusle not recordable • BP not recordable • Cardiorespiratory arrest	• Acute fall Hb < 5 gm % (fall in hemoglobin so as to affect oxygen saturation) • ❤ Fall in oxygen saturation below 90 % • ❤ $PaO_2 : FiO_2$<200 • ❤ $PaCO_2$>50mm Hg • ❤ Platelet < 20,000 (Acute Decline in platelet count more significant) • ❤ Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • ECG – Ischemic changes, ST inversion, • elevationw	• ❤ ICU admission requiring resuscitative (CAB) or cardio respiratory support • ❤ Blood & blood products transfusion (more than 90 ml/kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • ❤ Circulatory collapse requiring Emergency Surgery for controlling blood loss such as urgent Evacuation, Laparotomy with or without Hysterectomy , Internal Iliac Ligation or any Suturing of tears with a background of hemorrhage • Dialysis- peritonel/ hemodialysis
LIVER DYSFUNCTION / FAILURE	• Acute fatty liver of pregnancy • Acute Fulminant hepatic failure	• Convulsions • Altered behavior • Bleeding from various sites (nose, gums, IV access ports, varices)	• Unconsciousness • Deep jaundice • Hepatic flaps, tremors • Abnormal bleeding sites - haematuria, haemetemesis, haemoptesis, bleeding gums etc.	• Elevated Serum Bilirubin (> 6mg/dL) • Abnormal liver enzymes ALT,AST (> 100 IU/ L) • Abnormal ECG • Coagulation profile deranged • USG showing showing changes of Acute fatty liver ❤ Fibroscan showing changes of acute fatty liver	• ❤ ICU admission for resuscitation and cardiorespiratory support • ❤ Resuscitation • ❤ Mechanical ventilation • ❤ Blood and component transfusion (more than 90 ml/kg body weight/ >5 units of blood)

CARDIAC DYSFUNCTION / FAILURE	• Cardiomyopathy (antepartum, postpartum)	• Breathlessness specially at night • Palpitations • Chest pain • Orthopnoea	• Tachycardia pulse > 120 bpm • Dyspnoea • Organic Murmurs • Cardiomegaly • Signs of CCF/LVF	• Abnormal ECG • Abnormal echocardiography • X ray chest (with shielding of abdomen) showing Gross Cardiomegaly • ❤ Acid Base values PH <7.35 or >7.45 PCO_2 >50 or <30 mmHg PO_2 arterial < 80 mmHg	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Ventilatory support • Digitalisation • Use of cardiotonics
1.2 PREEXISTING DISORDERS AGGRAVATED DURING PREGNANCY					
Anaemia	• Iron /Folic Acid Deficiency • Sickle cell Disease • Thallasemia • Aplastic Anaemia	• Dyspnea • Palpitations • Syncopal Attack • ❤ Altered conscious state • Features of Sickle cell crisis such as bone pains, joint pains, acute abdominal pain etc • Swelling over body	• Severe Pallor • Jaundice • Tachycardia- pulse rate >120/ min • Tachypnea>20/min • Tender, inflamed joints • Sternal tenderness • Spleenomegaly • Anasarca • Ascites • ❤ Signs of congestive cardiac failure • Bleeding Tendencies	• Hemoglobin below 5 gm/dl • Hemoglobin status not able to maintain O_2 saturation of 90% • Platelet < 20,000 • ❤ Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • Elevated S Bilirubin (> 6 mg /dL)	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Blood /component transfusion (Upto 90 ml /kg/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc)
Respiratory Dysfunctions	• Asthma • Tuberculosis • Pneumonia	• Breathlessness /Air hunger • High/Low grade fever • Chronic weight loss	• Tachycardia- pulse rate >120/ min • Tachypnea - >20/min • Orthopnea • Abnormal Chest signs (Ronchi, Crepts, Absent breath sounds) • Signs of Cardiorespiratory failure • Cynosis, flaps	• Various lesions on chest X ray (with shielding of abdomen) specific to disease • ❤ Abnormal Acid Base values PH <7.35 or >7.45 PCO_2 >50 or <30 mmHg PO_2 arterial < 80 mmHg PO_2 venous <40 mmHg	• ❤ ICU admission for resuscitation and Cardiorespiratory Support, and or Endotracheal Intubation

Cardiac Dysfunctions	• Rheumatic Heart Disease • Congenital Heart Disease • Cardiomyopathies • Aortic Aneurysm • Collagen Disorders	• Breathlessness/Air hunger • Orthopnea • Palpitations • Paroxysmal nocturnal dyspnea • Chest pain	• Tachycardia - pulse rate >120/ min • Bradycardia > 40/min • Irregular pulse • Tachypnea > 40/min • Bradypnoea < 6/min • Organic murmurs • Cardiomegaly • Tender hepatomegaly • Signs of CCF/LVF Pitting edema, raised JVP, basal crepts etc.	• Abnormal ECG • Abnormal Echocardiography • ❤ Abnormal Acid Base values PH <7.35 or >7.45 mmHg PCO_2 >50 or <30 mmHg PO_2 arterial < 80 mmHg PO_2 venous <40 mmHg	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Ventilatory support, • ❤ Digitalisation • ❤ Use of cardiotonics
Hepatic Dysfunction	• Cirrhosis of liver • Portal hypertension • Acute liver failure	• Yellowness of urine / eyes/other body parts • Convulsions • Altered behavior • Bleeding from various sites (nose,gums, IV access ports, varices)	• Deep Jaundice • ❤ Hepatic flaps/ tremors • Abnormal bleeding sites - haematuria, haematemesis, haemoptysis, bleeding gums etc. • Abnormal bleeding from nose, gums, I/V sites, varices • HepatomegalyAscites	• Elevated Serum Bilirubin (>6 mg /dL) • Abnormal liver enzymes ALT,AST (> 100 IU / L) • Abnormal ECG • ❤ Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • Imaging modalities showing hepatomegaly ,splenomegaly and any other abnormalities	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Mechanical Ventilation • ❤ Blood and component transfusion
ENDOCRINAL DISORDERS **Diabetic Ketoacidosis**	• Gestational diabetes mellitus • Diabetes mellitus	• Altered conscious state • Breathlessness / Air Hunger • Palpitations • Convulsions • Bladder/Bowel dysfunction	• ❤ Features of circulatory collapse • Neurological deficit like muscular weakness, paresis, plegia • ❤ Altered consciousness • ❤ Coma	• Ketoacidosis pH < 7.35 RBS > 200 g/dL • Abnormal ECG • Electrolyte imbalance (Sr Na < 129 K <3.2 - >5.5	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Mechanical Ventilation • Resuscitative Procedures • Management of Ketocidosis (Insulin or glucagon)
Thyroid Crisis	• Thyrotoxicosis • Thyroid storm • Pheochromocytoma	• Palpitations • Convulsions • Bladder/Bowel dysfunction	• Altered consciousness • Coma • Tachycardia pulse > 120 bpm	• Sr T_4 elevated (>200 IU) • Low TSH (< 0.2 IU) • Ischaemic changes on ECG • Elevated Vinyl mandilic acid	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Mechanical Ventilation • Resuscitative Procedures

Neurological Dysfunction	• Epilepsy • Cortical vein thrombosis	• Syncopal attacks • Convulsions • Unconscious state	• Altered conscious state and coma • Abnormal reflexes (hyper or absent) • Paresis/plegia • ❤ Cardiorespiratoy failure	• Abnormal EEG • Abnormal acid –base status • ❤ CT/MRI head showing abnormalities	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • Shifting to intravenous Antibiotics fourth generation • ❤ Mechanical ventilation • Heparanisation
Renal Dysfunction / Failure	• Medico renal disease e.g chronic/acute renal failure • Renal artery stenosis • Transplant complications • Collagen Disorders	• Reduced / absent urine • Edema all over body • Breathlessness (due to volume overload) • Unconscious state	• Oliguria - < 400 ml urine output in 24 hours not responding to fluid therapy and diuretics • Anuria • ❤ Coma	• USG showing renal abnormalities • Doppler USG showing stenotic renal artery • Deranged KFT	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • Need for dialysis peritonel/ hemodialysis
1.3 INCIDENTAL AND ACCIDENTAL CAUSES IN PREGNANCY					
Accident/assault/ surgical problems	• Trip or fall • Vehicular accident • Violence • Blunt trauma abdomen • Assault • Burns • Poisoning • Cancers • Acute surgical condition • Suicide attempt • Snake bite • other	• History of trauma or accident, suicide attempt • Syncope • Pain (abdominal or pertaining to specific site) • Blurred vision • Bleeding • ❤ Convulsions • ❤ Altered behavior	• Altered conscious state • Tachycardia > 120/min, low volume pulse • Bradycardia <60/min • Tachypnea >20/min • Blood pressure Systolic < 90 mmHg Diastolic < 60 mmHg • Tenderness, rigidity and guarding of anterior abdominal wall with/ without distension • ❤ Cardiorespiratory failure • Evidence of trauma /burns	• Acute fall Hb < 5 gm (fall in hemoglobin so as to affect oxygen saturation) • Fall in oxygen saturation below 90 % • ❤ $PaO_2 : FiO_2$<200 • ❤ $PaCO_2$>50mm Hg • Platelet < 20,000 acute decline in platelet count more significant • ❤ Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • USG showing trauma to vital organs • Imaging modality showing Injury to bladder, bowel, liver, spleen • CT/MRI showing injury	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Blood &blood products transfusion (more 90 ml/kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • ❤ Surgical procedures done (laparotomy for intraperitoneal haemorrhage, repair of bladder, bowel, spleen, liver, kidney, burr hole for head injury)

Anaphylaxis	• Anaesthetic drugs • Antibiotics • Antimalarials • Iron preparations • Anticonvulsants • Blood transfusions • Other reactions	• History of taking the drug • Breathlessness • Air Hunger • Syncope • Not passing urine	• ❤ Altered conscious state • Tachycardia > 120/min thready, low volume pulse • Bradycardia <60/min • Tachypnea >20/min • Blood pressure - Systolic < 90 mmHg - Diastolic < 60 mmHg • Oliguria/Anuria	• Fall in oxygen saturation below 90 % on room air • ❤ PaO_2 : FiO2<200 ❤ $PaCO_2$>50mm Hg • Proteinuria > 1 gm/dl • S. Creatinine >3.5 mg /dL • Elevated S Bilirubin (6 mg/dL) ALT, AST(>100 IU/L) • Thrombocytopenia <20,000 • Haemolysis on peripheral smear • Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • ECG	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Blood & blood products transfusion (more 90 ml/kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/ Dobutamine/ Dopamine etc • ❤ Use of Adrenaline Renal dialysis- peritoneal/ hemodialysis (Renal Replacement Therapy)
Infections	• Malaria • Dengue • H1N1 viral Disease • Lower respiratory tract infections • ARDS • Meningitis • Enchephalitis • Infective hepatitis (A,B,C,E) • HIV/AIDS • Scrub typhus • Nephritis • Other	• High grade fever (with/ without chills and rigor) • Yellowness of urine • Altered behavior • Breathlessness • Abdominal pain • Abdominal Distension • Unconscious state • Convulsions	• Altered conscious state • Persistent rise in Temp >39.2 °C, not responding to routine treatment • Hypothermia temp , 37 °C • Pulse rate > 120/min • Tachypnea> 20/min • Chest signs (Crepts, crackles, ronchi, decreased or absent air entry) • Neck rigidity • Coma • Bleeding from various sites	• Leucocytosis (>15,000/cumm) • Toxic granules on peripheral smear • Low platelets(<50,000) • Microbial culture positive for organisms • Dengue , paracheck, malarial parasite positive on ELISA/ peripheral smear • H1N1 ELISA positive • Spinal fluid positive for infection • Elevated serum bilirubin (>6 mg) • Abnormal liver enzymes (> 100 IU) • Abnormal ECG • Abnormal EEG • Clot observation time > 7 min. or any other test done which proves deranged coagulation profile • Positive Hepatitis markers • HIV ELISA positive	• ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • Shifting to intravenous Antibiotics of fourth generation (Sulbactum+ Cefoperazone combinations, Imepenum) • ❤ Blood component transfusion (upto 90 ml / kg body weight/ >5 units of blood) • ❤ Use of cardiotonics/ vaso pressors (Mephentine/Dobutamine/ Dopamine etc) • Injectable antimalarials • Use of drugs to relieve cerebral odema (Mannitol) • Antiretroviral therapy

Embolism and Infarction	• Pulmonary embolism • Cerebral embolism (stroke) • Cardiac embolism (myocardial infarction)	• Breathlessness • Air hunger • Collapse • Acute chest pain • Syncope	• Tachypnea - >20/min • BP : 1) Systolics <90 mhg. 2) Disystolics <60 mhg. • Weak pulse • Abnormal chest signs (Ronchi, Crepts, effusion) • ❤ Cardiorespiratoy failure • Sweating, cold and clammy skin	• Various lesions on chest X ray pertaining to disease • Abnormal ECG • ❤ CT/MRI showing Lesion	• ❤ ICU admission for resuscitative procedure like (CAB) or cardiorespiratory support • ❤ Blood component transfusion (upto 90 ml /kg body weight/ >5 units of blood) • ❤ Use of cardiotonics / vaso pressors (Mephentine/Dobutamine/ Dopamine etc • Anticoagulant therapy • Drugs to reduce cerebral odema (Mannitol)

MATERNAL NEAR MISS REVIEW REGISTER

TO BE FILLED AT NOTIFIED INSTITUTIONS/DISTRICT

NAME OF THE FACILITY: _____

DISTRICT: _____

Year:_____**Month:**_____

Sr No	Name	Husband's / Partner's name	Age	Address with mobile no.	MCTS No.	Date & Time of Admission	Admitted with no Disorder	Admitted with Disorder* 1/2/3	Admitted as Near Miss	Interventions done #			Date of Discharge	Remarks	Signature of the Doctor Incharge with designation and date	
										1	2	3			Name and Designation	Signature with date

***1 - Pregnancy specific obstetric and medical disorder/s** **2 - Preexisting disorders aggravated in pregnancy** **3- Accidental/ incidental disorder/s**

 # Interventions should be written broadly under following details –

- *ICU admission*
- *Cardiopulmonary resuscitation*
- *Mechanical ventilation*
- *Use of cardiotonics as vasopressins, dopamine or dubotamine*
- *Digitalization in cardiapulmonary collapse*
- *Massive blood /blood product transfusions*
- *Intravenous higher antibiotics*
- *Renal or peritonial dialysis*
- *Blood coagulation disorder leading to heparanization and anticoagulants*
- *Management of ketoacidosis*
- *Management of status epilepticus*
- *Surgical procedures as laparotomy , hysterectomy, b lynch suture, stepwise vascular ligation including internal iliac ligation, repair of bowel, bladder, Repair of vault, cervical tears and drainage of haematoma etc*
- *Any other intervention which is life saving*

This register to be printed at A3 size for actual use

NOTES

Maternal Health Division
Ministry of Health & Family Welfare
Government of India
Nirman Bhawan, New Delhi - 110011
Website: www.mohfw.gov.in & www.nhm.gov.in