Descriptive Analysis of Reported Cases of Maternal Deaths in Uttar Pradesh

By

Swati Bansod

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2017-2019

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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Swati Bansod**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **Indian Health Action Trust.** From **4th February 2019 to 4th May 2019.**

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.

Dean, Academics and Student Affairs

The IIHMR University, Jaipur

17 May 2019

Associate Professor

The IIHMR University, Jaipur

INDIA HEALTH ACTION TRUST

Ref. No. IHAT/HR/CERT/2019-2020/31

Date: 10 May 2019

The certificate is awarded to

Dr. Swati Bansod

In recognition of having successfully completed her Internship in the department of

Monitoring & Evaluation

And has successfully completed her Project on

DESCRIPTIVE ANALYSIS OF REPORTED CASES OF MATERNAL DEATHS IN UTTAR PRADESH

4th Feb 2019 - 4th May 2019

At

India Health Action Trust

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning

We wish her all the best for future endeavors

Monitoring & Evaluation

Human Resource

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Descriptive Analysis of Reported Cases of Maternal Deaths in Uttar Pradesh** and submitted by **Swati Bansod** Enrollment No.: **IIHMR-U/01/2017-19/0681** under the supervision of **Dr. Seema Mehta** for award of MBA in Hospital and Health Management in Health and Hospitals of the University carried out during the period from **February 2019 to May 2019** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Bansod

Swati Bansod

ABSTRACT

Tittle: Descriptive Analysis of Reported Cases of Maternal Deaths in Uttar Pradesh

Name of Author: Dr. Swati Bansod

BACKGROUND:

The maternal mortality ratio of Uttar Pradesh was 201 in the year 2014-16 which making the second most major contributor in MMR. The major challenge in reducing these rates includes the underreporting of maternal deaths in the Health Management Information System. To address these challenges of maternal mortality and morbidity, the government launched Maternal Death Review (MDR) process in 2010. One of its key focuses was also to improve quality of obstetric care. It analyzed various factors based on community, facility, and district at regional and national level. This study was a Descriptive study to analyze the reporting of maternal deaths after the introduction of MDSR.

OBJECTIVES:

- To assess the status of maternal death reporting on HMIS/UPHMIS portal at 75 districts of Uttar Pradesh

METHODOLOGY:

Descriptive crossectional study of all the 75 districts of Uttar Pradesh (reference period April2018 to March 2019) based on the data uploaded on the HMIS/UPHMIS portal was done. Facility and Community based data was collected from the portal. Transportation data was collected from the data uploaded on UPHMIS portal.

RESULTS:

In financial year 18-19, 28 districts out of 75 districts in Uttar Pradesh reported less number of maternal deaths as compared to the financial year 17-18. in the financial year 18-19 ,41 Districts uploaded MDSR report till March 19 on UPHMIS portal. The study also revealed the cause of non-reporting i.e. Lack of human resource for data reporting, Multitasking of staff, Lack of research skills, Lack of updated infrastructure (non-availability of internet connection and updated versions of computers), Irregular training in data management

CONCLUSION:

Since most of the districts are still lacking behind in terms of reporting the maternal deaths therefore ruling out the actual causes of underreporting of the maternal death data will lead to improvement in the quality of the data. MDR being a new initiative, it will need close monitoring and supervision of the process to identify the problems that need to be addressed on a priority basis for its effective implementation and ultimate impact.

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TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES

LIST OF SYMBOLS AND ABBREVATIONS

MMR	Maternal Mortality Ratio
NRHM	National Rural Health Mission
MDG	Millennium Developmental Goals
MDR	Maternal Death Review
CBMDR	Community Base Maternal Death Review
FBMDR	Facility Based Maternal Death Review
HMIS	Health Management Information System
ANM	Auxiliary Nurse Midwifery
FMR	Financial Management Report
UHMIS	Uttar Pradesh Health Management Information System

1. INTRODUCTION:

Globally 287 000 maternal deaths occurred worldwide in the year 2010. The maternal mortality ratio (MMR) in India was estimated at 130 maternal deaths per 100, 000 live births in the year 2014-16. Obstetric complications are a leading cause of death among women of reproductive age, and for every woman who dies approximately 20 more suffer injuries, infection and disabilities related to pregnancy or childbirth. Therefore, to accelerate the pace in decline of maternal mortality rate to achieve the NRHM and MDG Goal of less than 100 per 100,000 live births, Maternal Death Review (MDR) as a strategy was formulated by India. It is an important strategy to improve the quality of obstetric care and reduce maternal mortality and morbidity. In the National RCH-II program, maternal death audit was considered an important example of reform and innovation, but due to various factors the maternal deaths remained underreported causing a gap in the evidenced based decision-making process.

Table 1.1: States with highest MMR

India & major states	MMR
India	130
Assam	237
Bihar/Jharkhand	165
Madhya Pradesh/Chhattisgarh	173
Odisha	180
Rajasthan	199
Uttar Pradesh	201

Source: SRS bulletin 2014-16

The maternal mortality ratio of Uttar Pradesh was 201 in the year 2014-16 which makes it the second major contributor in MMR after Assam which is 237 in the year 2014-16. The major challenge in reducing these rates includes the underreporting of maternal deaths in the Health Management Information System.

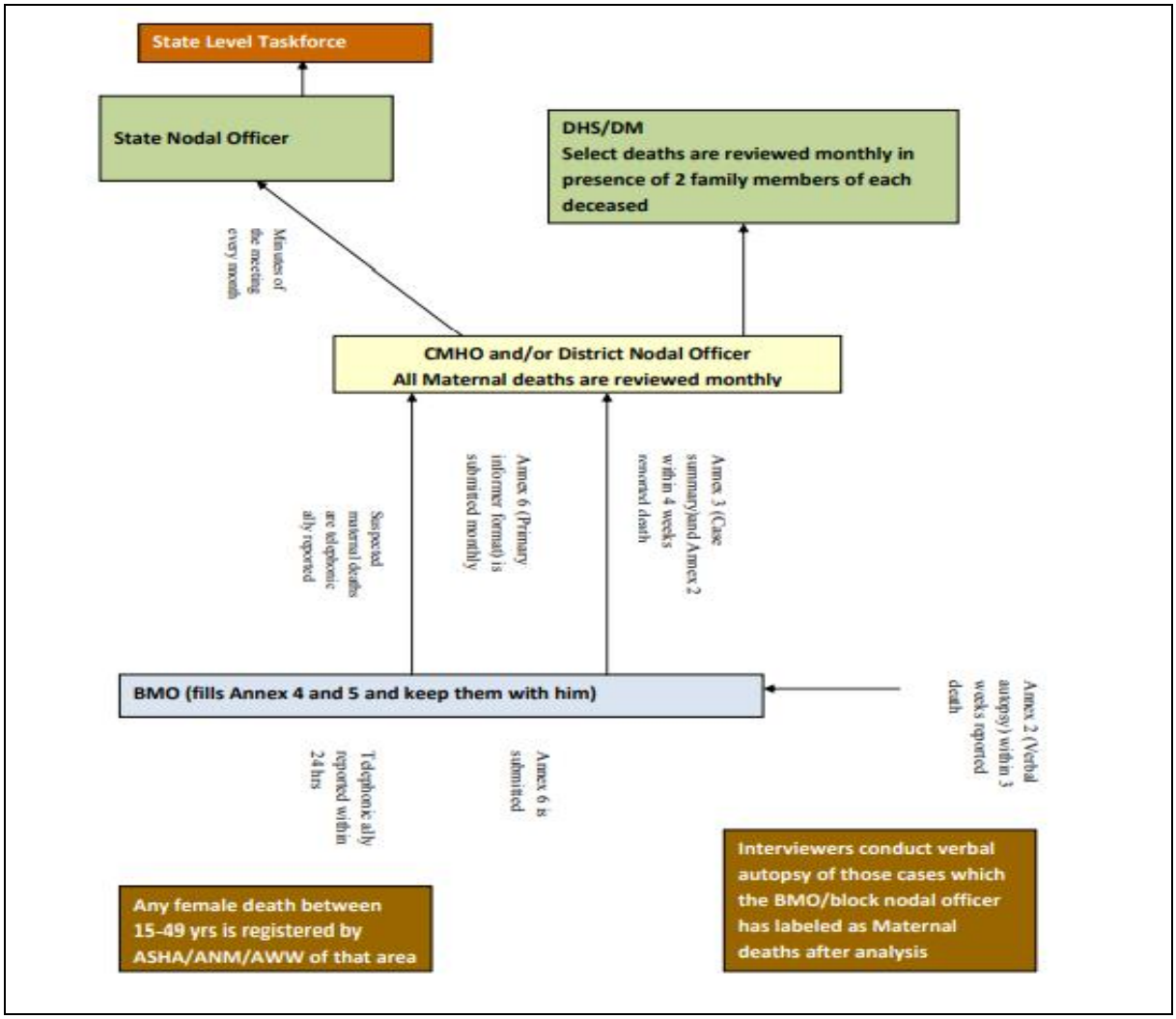
To address these challenges of maternal mortality and morbidity, the government launched Maternal Death Review (MDR) process in 2010. One of its key focuses was also to improve quality of obstetric care. It analyzed various factors based on community, facility, and district at regional and national level.

1.1 TYPES OF APPROCHES FOR INVESTIGATION OF MATERNAL DEATHS

- Community based maternal death review (Verbal autopsy)
- Facility based maternal death review
- Confidential enquiries into maternal deaths
- Surveys of severe morbidity (near miss)
- Clinical audit

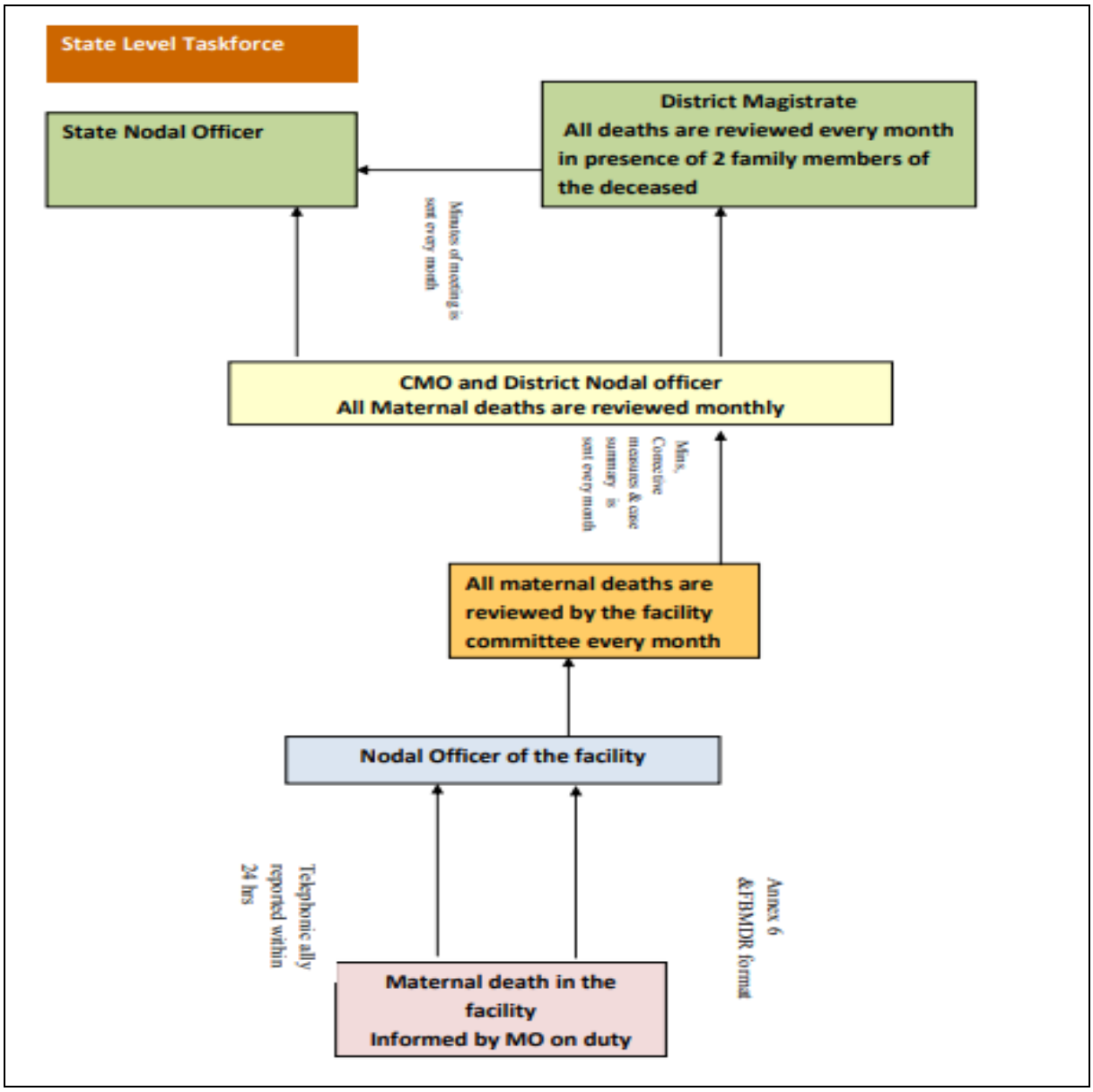
Government of India has decided to take up **Community based maternal death review (CBMDR)** and the **Facility based maternal death review (FBMDR)** which would help in identifying the gaps in the existing health care delivery systems, prioritize and plan for intervention strategies and to reconfigure health services.

Figure1.1: CBMDR information flow



Source Maternal Death Review Handbook

Figure 1.2: FBMDR information flow



Source Maternal Death Review Handbook

2. HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS) AT A GLANCE

Ministry of Health and Family Welfare launched the National Rural Health Mission (NRHM) to ensure necessary architectural corrections in the basic health care delivery system. The plan of action includes: increasing public expenditure on health, reducing regional imbalance in health infrastructure, optimization of health manpower, decentralization and District management of health programs, community participation and ownership of assets, induction of management and financial personnel into District health system, and operationalizing Community Health Centers into functional hospitals in each Block across the country that Indian Public Health Standards.

These interventions have increased demand for data on population and health for use in both micro-level planning and program implementation. At the same time, understanding the synergy between availability of services, cost involved in provision of public health care services, expenditure and pattern of utilization among various sections of population, including vulnerable sections of the society, are important aspects that influence decision making. A continuous flow of good quality information on inputs, outputs and outcome indicators facilities monitoring of the objectives of NRHM.

For reasons such as these efficient health management information systems are required. HMIS is an information system that has been specially designed to assist health departments, at all levels, in managing and planning health programs. HMIS is defined as:

"A tool which helps in gathering, aggregating, analyzing and then using the information generated for taking actions to improve performance of health system"

All levels in a health department, be it a Primary Health Centre or District Hospital or the State or National Office, need information on regular basis not only to monitor the health status of the population they serve but also to track progress towards achievement of targets under different health programme. Information needs, purpose, and use of information differs at each level in the hierarchy. Therefore, a robust information system which can provide accurate, up-to-date, and timely information to the health department is needed at every level.

Following are the use of HMIS at different levels of health department:

At the National and State level, HMIS is primarily a tool of policy and strategy making. It is useful for assessing the progress of national health programs. For example, by analyzing full immunization coverage in different states, the officer responsible for child health can evaluate performance of immunization coverage in various states, so that they can allocate resources more effectively and strengthen support for the States.

At the State and District level, HMIS is a tool of programme monitoring and management. A robust HMIS can help Programme Managers to track the progress of implementation of various programs. It enables them to distinguish well performing areas from those that require more support and resources. Thus, HMIS helps in planning and designing specific interventions that can strengthen a programme. At the sub-District level such as Block, PHC, sub-Center and other facilities, HMIS facilities: efficient and effective registering and collation of data; improvements in data quality; systems for complete reporting; timeliness and accuracy; provision of data analysis tools; interpretation and translation of data to guide action and intervention at local level. HMIS's Named-based tracking system for pregnancy and child care can help ANM to use their primary name-based register to plan their visit and service delivery schedules for women and children.

- 2-way feedback mechanism: Many a times no feedback is provided on information collected from facilities and service providers after processing of data. Data/information/reports are always sent up in the hierarchy. Feedback ensures data quality and reliability, it also builds up the sense of responsibility among service providers. HMIS portal under NRHM generates 'Feedback reports'. The "Feedback reports" provide status of achievement against a target, comparisons with facilities and time periods can also be made. Provision for reminders about service delivery due dates can also be made to the Service Providers on their mobile phone to assist them with their work.

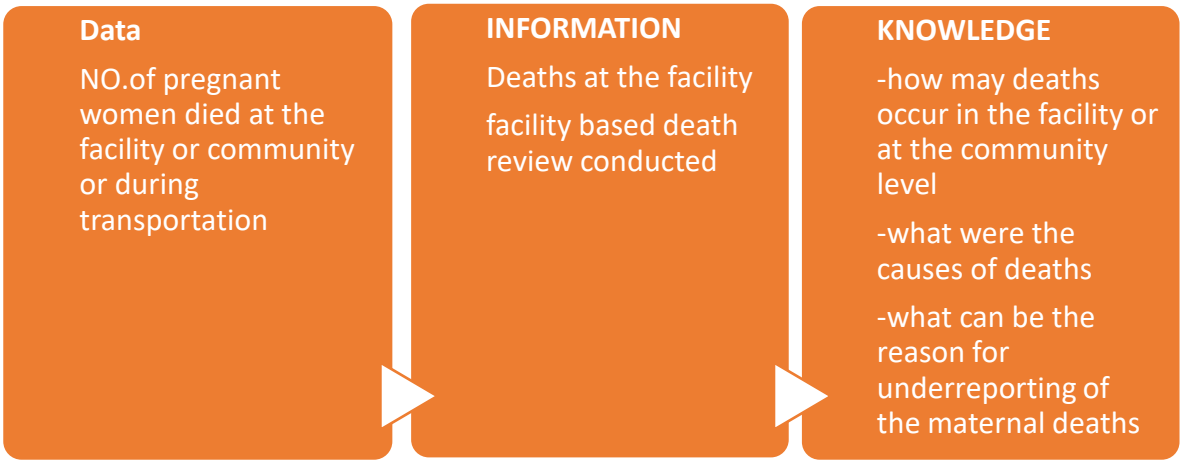
  At every level, an effective HMIS should help us answer six classical epidemiological questions: Who, What, When, Where, Why and How about the health status of the people.

  Service Providers such as ANM or Medical Officers will probably be interested in fewer data elements that they can use as indicators. Some may find indicators confusing. However, it is empowering for the Service.
  Providers to understand the utility of HMIS in programme planning and resource allocation. This higher level of understanding improves competency and ability of Service Providers in programme planning and engagement at all levels.

3. BASIC CONCEPTS IN HMIS

The concepts of data, information, and knowledge are often used interchangeably though they are not synonymous. Often collecting more data is regarded as creating more knowledge, which is a wrong assumption.
Data: it is the raw material in the form of numbers or characters and it is without context.
Information: it is a meaningful collection of facts/data with reference to a context.
Knowledge: when information is analyzed, communicated, and acted-upon it becomes knowledge.

Figure 1.3: BASIC CONCEPTS OF HMIS WITH EXAMPLE



3.1 Steps of data process

3.1.1 Data Collection –

- A person should be designated to collect data from multiple departments and should be well versed about the data definition.
- If records are not found and service is provided by the facility, then create recording registers

3.1.2 Data Reporting

- Should be reported in single format. NO DUPLICATION
- Proper data computation from registers

3.1.2.1 Monthly Reporting Formats

- Monthly HMIS data set (reporting form)
- 'Line-listing format for births' or 'Aggregated Line-listing for births'
- Line-listing for deaths
- District monthly Stocks
- Other institutions: customization according to services provided

(i) Quarterly

- For District: District HMIS quarterly report (data set).
- For State: State HMIS quarterly report (data set).
- District & State Financial Management Report (FMR)

(ii) Annual

- District HMIS annual report.
- State HMIS annual report.

3.1.3 Data Entry

- The levels of reporting in computer application can be District, Block, and facility. (if needed one could add the sector also). Each level of reporting has its own benefits.
- Facility-wise reporting helps in:
  - Assessing performance of each facility with respect to other facilities.
  - Identifying which facility has low/high coverage to identify underserved population.
  - Assessing how many facilities are reporting data on time (not possible in consolidated reporting such as block or district).
  - Probing further question related to data quality and services coverage.

3.1.4 Data Authentication/Authorization

- Check, verify, approve facility-based datasets before sending to block/district (1 copy) and filing (1 copy).
- Check data quality or authenticate the data
- Block/district accepts only duly signed copies for data entry.
- Aggregated report generated & verified at block level. Duly signed copy retained & 1 sent to district office.
- District office: Reports received from blocks, monthly stocks, and district facilities. Verified, approved & sent to State office (via web portal).
- State office: confirms & verifies the reports and forward to the national level (via web portal) after due verification. Files paper copy.

3.1.5 Data Analysis

Data should be converted in to information.

- with the help of indicators
- Presentation process – graphs, charts, flow charts, tables etc

3.1.6 Use of Information

Converting information into knowledge

3.1.7 Quarterly planning

- Review in Monthly meetings
- Annual Plan – DHAP
- Budget allocation

4. RATIONALE:

According to SRS bulletin 2014-16 Uttar Pradesh ranks second in the maternal mortality ratio after Assam. Due to the increased maternal death incidences continuous monitoring and evaluation of the maternal health status is to be done. For this purpose, a tool was introduced by NRHM called Health Management Information System and to improve the quality data in UP a supporting tool was introduced called UPHMIS. The study is aimed to identify the frequency of maternal death data uploaded on the HMIS/UPHMIS portal and to identify the probable reasons of non-reporting.

5. OBJECTIVES:

- To assess the status of maternal death reporting on HMIS/UPHMIS portal at 75 districts of Uttar Pradesh

7. LITERATURE REVIEW:

Author	Year	Study location	Sample Size	Salient Features	Ref.
A district-based audit of the causes and circumstances of maternal deaths in South Kalimantan, Indonesia					
Gunawan Supratikto, Meg E. Wirth, Endang Achadi, Surekha Cohen, and Carine Ronsmans	1994	Indonesia	130 maternal deaths were reviewd	Delay in decision making (77%) and poor-quality care (60%) lead to maternal deaths and the major causes were hemorrhage (41%) and hypertensive diseases (32%). The audit done led to changes in obstetric care in the district.	1

A strategy for reducing maternal mortality					
Abu Bakar Suleiman, Alex Mathews,Ravindran Jegasothy, Roslinah Ali, & Nadeswary Kandiah	1994	Malaysia	1066 reported maternal deaths	44,48,46 and 39 per 100,000 live births were the maternal mortality ratio for the successive year and the major causes of deaths were post-partum hemorrhage (24%), hypertensive disorders of pregnancy (16%), obstetric pulmonary embolism (13%) and associated medical conditions (7%)	2
3. WHO analysis of causes of maternal death: a systematic review					
Prof Khali S Khan, Daniel Wojdyla, Lale Say, Dr A Metin Gulmezoglu, Paul FA Van	2006	Worldwide	34 data set (35197 maternal deaths)	In Africa hemorrhage is one of the leading causes of death, hypertensive disorders caused most of the deaths in the Carrabin and Latin America	3
Maternal death inquiry and response in India - the impact of contextual factors on defining an optimal model to help meet critical maternal health policy objectives					
Henry D Kalter,Pavitra Mohan, Archana Mishra, Narayan Gaonkar, Akhil B Biswas, Sudha Balakrishnan,Gaurav Arya, and Marzio Babille	2011	4 districts of Rajasthan, M.P and W.B		Government shared the finding of maternal death after the death inquiry procedure which has increased the notification in maternal death	4

8.METHODOLOGY

8.1. Research question

Assessment of underreporting of maternal deaths in the HMIS/UPHMIS portal after the MDR training intervention

- What is the status of reporting before and after the training?

8.2. **Study design**: Retrospective observational

8.3. **Sample size:** 75 districts of UP (Reference Period April 2018-March 2019)

8.4. **Data collection method:** The study was based on the secondary data collected from the HMIS elements uploaded at the UPHMIS portal. The data was derived out from the portal under the following indicators

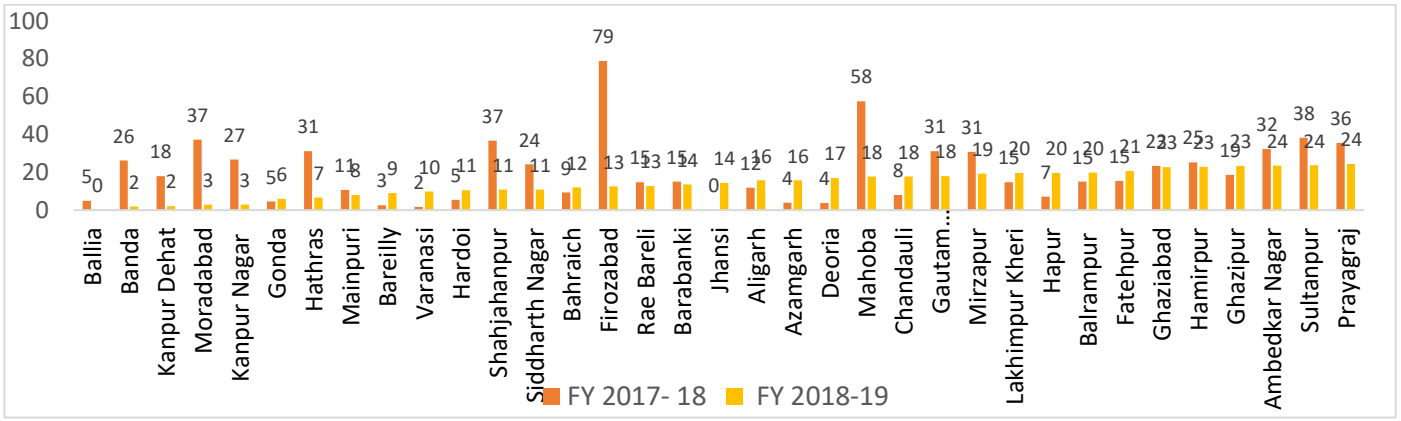
In-depth discussion with the support staff, of the facilities (4) for identifying the reasons of less reporting

- Maternal deaths
- Maternal deaths abortion
- Maternal deaths bleeding
- Maternal deaths HTN-fits
- Maternal deaths high fever
- Maternal deaths obstructed labour
- Maternal deaths other
- Community based maternal review conducted
- Infection/sepsis (maternal) died at facility
- infection /sepsis (maternal) out referral (died)
- Maternal death review conducted

9.RESULTS:

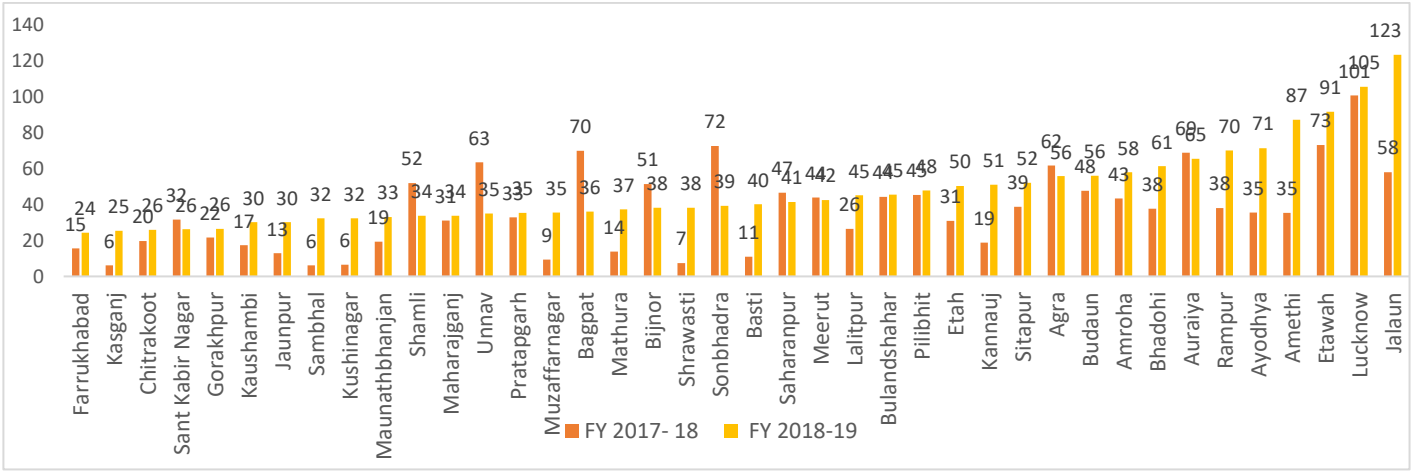
As shown in figure (4.2 & 4.3) Out of 75 districts,districts like Ballia (0%), Banda (2%), Kanpur dehat (2%), Moradabad (3%), Kanpur nagar (3%), Gonda (6%), Hathras (7%), Mainpuri (8%) and Bareilly (9%) showed poor reporting i.e. less than 10% of the expected maternal deaths in the HMIS/UPHMIS portal.

Figure 4.1: District wise uploading of maternal death data on UPHMIS/HMIS portal



Source: UPHMIS portal

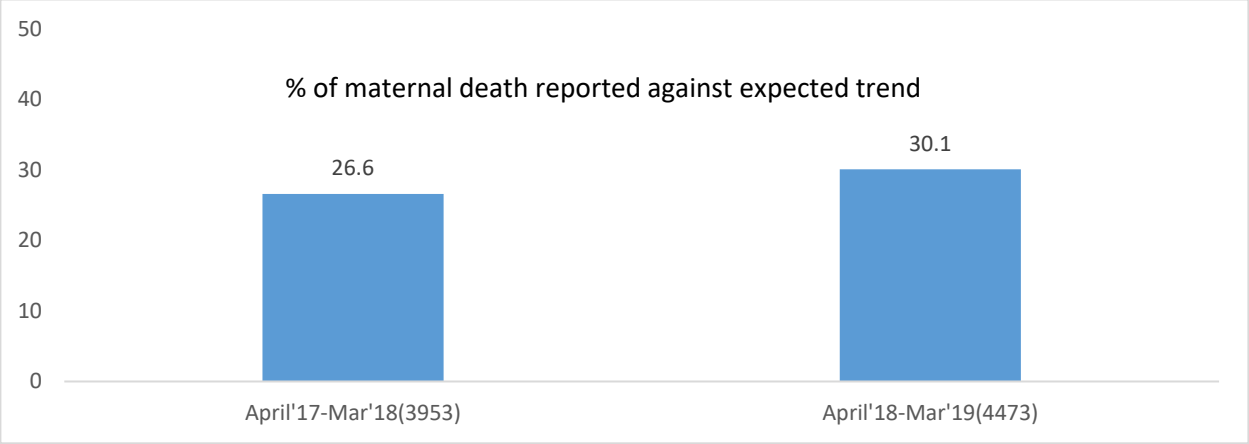
Figure 4.2: District wise uploading of maternal death data on UHMIS/HMIS portal



Source UPHMIS portal

In the financial year April-2017 to March-2018 the percentage of maternal death reported was 26.6% against expected, in comparison to that in the financial year April -2018 to March-2019 the percentage of maternal death reported was 30.1% against expected. Overall 70% of the maternal deaths against expected remained unreported during the FY year 2018-2019 in the HMIS/UPHMIS portal. (Figure 4.3)

Figure 4.3: PERCENTAGE OF MATERNAL DEATHS REPORTED AGAINST EXPECTED IN THE FY-2017-2018 AND 2018-2019

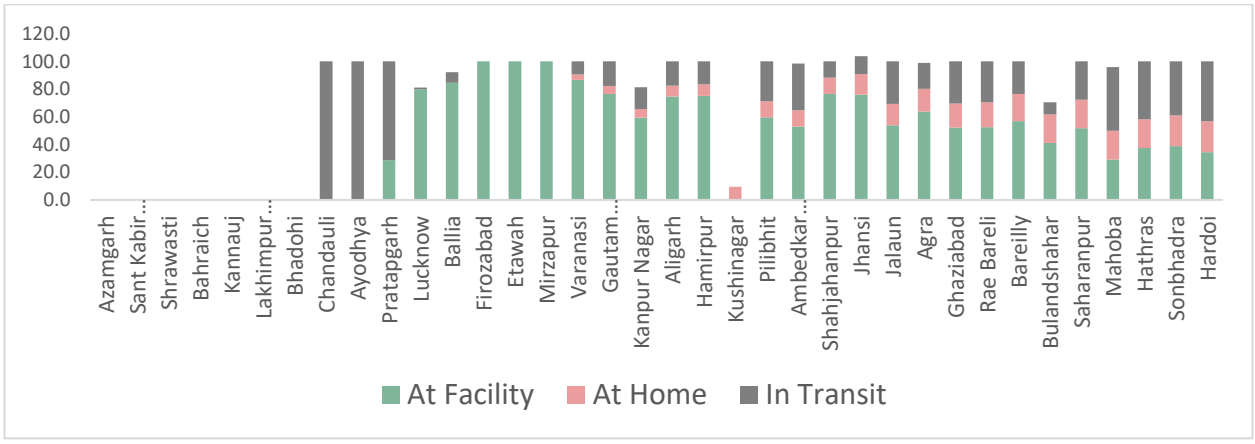


Source HMIS/UPHMIS portal

PLACE OF DEATH

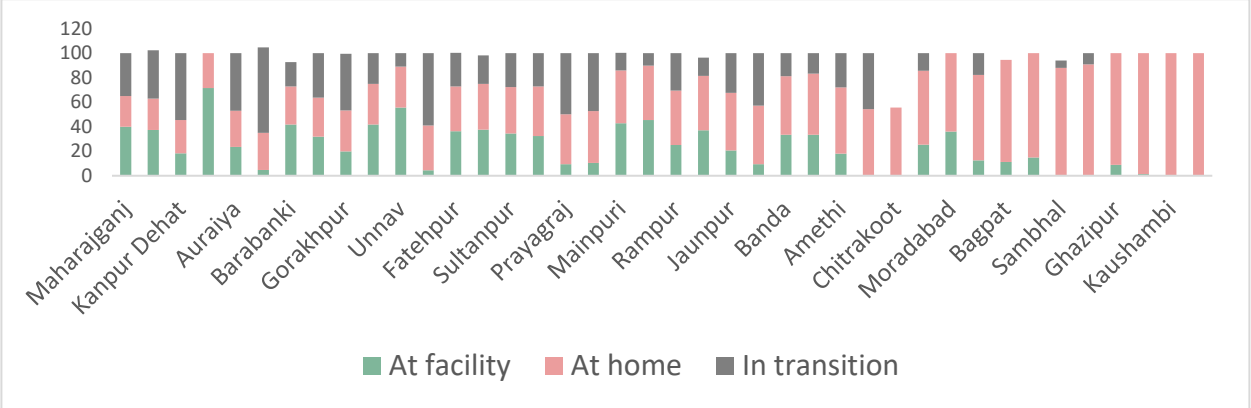
(Figure 4.4) Out of 75 districts, Districts like Azamgarh, SK Nagar, Shrawasti, Bahraich, Kannauj, Lakhimpur, Bhadohi did not reported the place of death

Figure4.4: District wise distribution of place where deaths occurred



Source UPHMIS portal

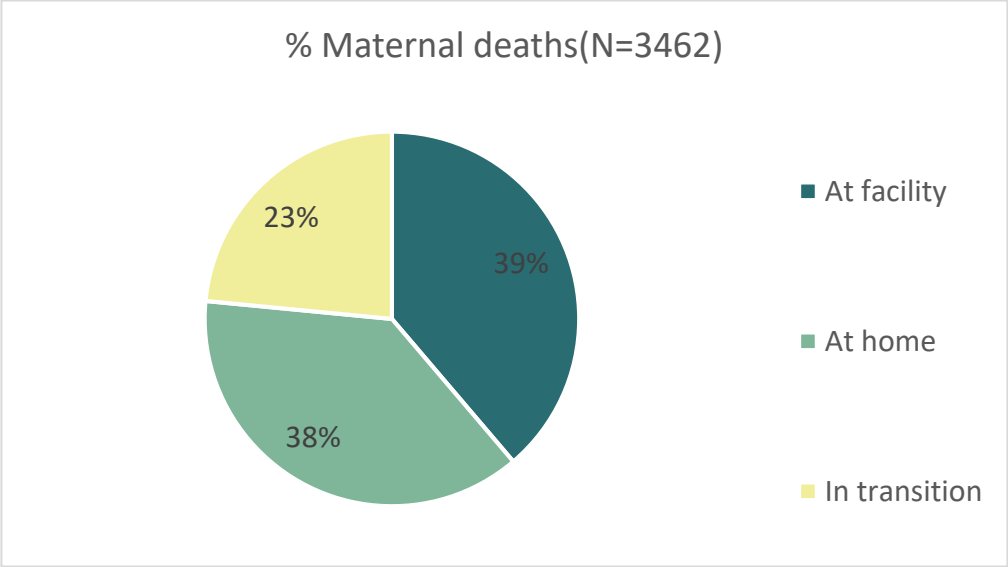
Figure 4.5 District wise distribution of places where deaths occurred



Source UPHMIS portal

During the financial year April 18- March 19, 39% of the deaths were reported at the facility, 38% of deaths were reported at home and 23% were reported during transit.

Figure 4.6: Places where deaths occured

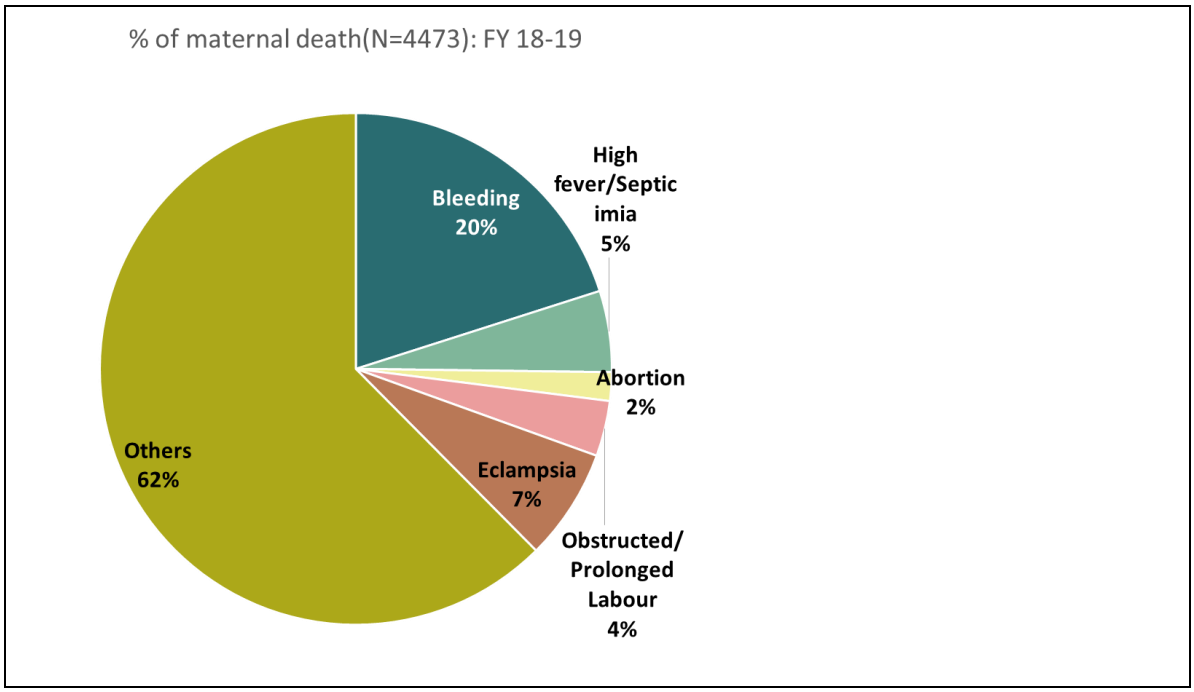


Source UPHMIS portal

CAUSES OF MATERNAL DEATH

The causes of maternal deaths were Bleeding (20%), Eclampsia (7%), High fever/Septicemia (5%), Obstructed/prolonged labour (4%), Abortion (2%) and others like Hepatic encephalopathy, Acute respiratory failure, Cardiogenic shock, Pulmonary Embolism, HELLP syndrome (62%) during April -18 to March-19 in UP

Figure 4.7: Causes of maternal death



Source UPHMIS portal

REASONS OF UNDER REPORTING

- Lack of human resource for data reporting
- Multitasking of staff
- Lack of research skills
- Lack of updated infrastructure (non-availability of internet connection and updated versions of computers)
- Irregular training in data management

RECOMMENDATIONS:

- Sensitization of the stake holders about the importance of the maternal death data
- Ensuring proper follow up of the status of the pregnant women after 3 days of transfer from the facility
- Ensuring adequate mapping of the area for improved data quality
- Maintenance of proper records at the facility and community level

Conclusion:

Since most of the districts are still lacking behind in terms of reporting the maternal deaths therefore ruling out the actual causes of underreporting of the maternal death data will lead to improvement in the quality of the data. MDR being a new initiative, it will need close monitoring and supervision of the process to identify the problems that need to be addressed on a priority basis for its effective implementation and ultimate impact

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1. Gunawan Supratikto C. A district-based audit of the causes and circumstances of maternal deaths in South Kalimantan, Indonesia. [Internet]. PubMed Central (PMC). 2019 [cited 16 May 2019].

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4. 2. Kalter HD, Mohan P, Mishra A, Gaonkar N, Biswas AB, Balakrishnan S, et al. Maternal death inquiry and response in India - the impact of contextual factors on defining an optimal model to help meet critical maternal health policy objectives. Health Res Policy Syst. 2011 Nov 30; 9:41.

ANNEXURE

Facility Based Maternal Death Review Form

(To be conducted and filled by Medical Officer on duty and Facility Nodal officer)

NOTE:

1. *This FBMDR Form must be completed in duplicate 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.*
2. *Mark with an (√) where applicable (mark with '?' when uncertain).*
3. *Attach a copy of the case sheet/records of the deceased with this form.*
4. *Complete the form in duplicate within 24 hours of a maternal death. The original remains at the institution where the death occurred and the copy is sent to the District MDR Committee for district level monthly review.*

   (Ref. Chapter 3, para 3.7 & 3.10 of MDR guidelines)

Yearly Serial No: _____ . **Calendar Year:** _____

(Refer to **Para 3.9** of the MDR Guidelines)

Please fill up the proforma given below

1. GENERAL INFORMATION

Contact Person:

Name & Address:.....

.....

Telephone/Mobile No. : .....

Relationship with the deceased: .....

Name, Age & Residential Address of deceased woman:

.....

.....

Address where Died:

Name and Address of facility: .....

.....

Block: ..... District: .....

2. DETAILS OF DECEASED

Inpatient Number:..... **Name:**..... **Age (years) :**.....

Gravida ☐☐ **Live Births** ☐☐ **Still Births** ☐☐ **Abortions** ☐☐

No.of Living children ☐☐ **Days since delivery/abortion:** ☐☐

Date of admission: Day ☐☐ Month ☐☐ Year ☐☐ **Time of admission** Hrs ☐☐ min ☐☐

Date of death: Day ☐☐ Month ☐☐ Year ☐☐ **Time of death:** Hrs ☐☐ min ☐☐

3. ADMISSION AT INSTITUTION WHERE DEATH OCCURRED OR FROM WHERE IT WAS REPORTED (tick where appropriate)

Type of facility where died:

PHC	24x7 PHC	SDH/RURAL HOSPITAL/CHC	DISTRICT HOSPITAL	MEDICAL COLLEGE/TERTIARY HOSPITAL	PRIVATE HOSPITAL	PVT CLINIC	OTHER

Stage of pregnancy/delivery on admission:

Abortion	Ectopic pregnancy	Not in labour	In labour	Postpartum

Stage of pregnancy/delivery when died:

Abortion	Ectopic pregnancy	Not in labour	In labour	Postpartum

Duration of time from onset of complications to admission: ☐☐Hrs ☐☐mins

Condition on Admission: ☐ Stable ☐ Unconscious ☐ Serious ☐ Brought dead

Referral from another centre? ☐ Yes ☐ No ☐ Don't know

If yes, how many centres? ☐☐ Specify type of centre(s):

4. ANTENATAL CARE

Did she receive ANC? Yes☐ No ☐ Don't know ☐

If no, reason(s): Lack of awareness ☐ Lack of accessibility ☐ Lack of funds☐

Lack of attendee☐ Family problems ☐

If Yes, Type of Care Provider (mark one or more): S/C ANM☐ M/O PHC☐

M/O CHC☐ Specialist SDH☐ Specialist D/H☐ Specialist College/Tertiary Hosp☐

Private Hosp☐ (Please Specify Type of Doctor/Nurse):

If yes, was she told she has risk factors? Yes☐ No ☐ Don't know ☐

Complications:

Type of Complication	Yes	No	Don't know	Comments if any
Previous C/Section				
Abnormal Presentation/lie				
Anaemia				
Glycosuria				
Hypertension with Proteinuria				
Hypertension				
Twins etc				
APH				
Ectopic/pain in abdomen				
Other (Please specify)				

Comments on antenatal care and list medication, if any:

8. DELIVERY, PUERPERIUM AND NEONATAL INFORMATION

Did she have labour pains? Yes☐ No ☐ Don't know ☐

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

In which phase of labour did she die?

Latent phase	Active phase	Second stage	Third stage	> 24 hrs after delivery

Duration of labour: ☐☐hrs ☐☐mins

Delivery:

Undelivered	Vaginal (unassisted)	Vaginal(assisted) Vacuum/forceps	Caesarean Section

Puerperium (Tick ✓): Uneventful / Eventful: **PPH / Sepsis / Others** (Specify):

Comments on labour, delivery and puerperium:

Details of Baby:

Baby Birth Weight(gms)					Apgar Score		Outcome	Still born	Alive at birth	Died immediately after birth	Alive at: 7 days	Alive at: 28 days

Needed resuscitation: Yes / No

If yes, who gave ENBC:

If died, probable cause:

Comments on baby outcomes(in box below)

6. INTERVENTIONS: (Tick appropriate box)

Early pregnancy		Antenatal		Intrapartum		Postpartum		Other	
Evacuation		Transfusion		Instrumental del.		Evacuation		Anaesthesia - GA	
Laparotomy		Version		Symphysiotomy		Laparotomy		Epidural	
Hysterectomy				Caesarean section		Hysterectomy		Spinal	
Transfusion				Hysterectomy		Transfusion		Local	
				Transfusion		Manual removal		Invasive monitoring	
Any Other – specify:								ICU ventilation	

7. CAUSE OF DEATH :

Probable direct obstetric (underlying) cause of death: Specify:

Indirect Obstetric cause of death: Specify:

Other Contributory (or antecedental) cause/s: (Specify)

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

System	Example	Y	N	?	Specify
Personal/Family	Delay in woman seeking help				
	Refusal of treatment				
	Refusal of admission in facility				
Logistical Problems	Lack of transport from 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 blood				
Health personnel problems	Lack of human resources Lack of Anesthetist Lack of Surgeons				
	Lack of expertise, training or education				

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

9. AUTOPSY: Performed ☐ Not Performed ☐

If performed please report the gross findings (and send the detailed report later):

10. CASE SUMMARY: **(please supply a short summary of the events surrounding the death)**

Form filled by:

Name:

Designation:

Name & address of the Facility:

Block/Tehsil: District:

Signature and Office Seal: Date & Time:

Facility Nodal Officer:

Name:

Designation:

Signature:

DISTRICT LEVEL FBMDR - CASE SUMMARY

District level FBMDR-Case Summary, for every maternal death reported by the Facilities, to be completed in duplicate by the District Nodal Officer after review by the District MDR Committee and reports compiled to be put up to the Deputy Commissioner for monthly review & to State Director Family Welfare for monthly report (Ref: MDR Guidelines-Para 5.5-iii, 5.5-v and 6.2)

(Fill / tick (√) in appropriate boxes)

Yearly Serial No. : _____ . **Calendar Year:**_____

General Information:

<table>
<tr><td colspan="2">Name of the Facility/ District:</td><td colspan="4"></td></tr>
<tr><td colspan="2">Particulars of the deceased:</td><td>In-Patient No.</td><td colspan="2">Name</td><td>Age</td></tr>
<tr><td colspan="2">Husband's name & address:</td><td colspan="4"></td></tr>
<tr><td>Gravida</td><td>Para</td><td>Still births</td><td>Live Births</td><td>Abortions</td><td>No.of living children</td></tr>
<tr><td colspan="3">Timing of Death :</td><td>Pregnancy</td><td>Delivery</td><td>Within 42 days after delivery</td></tr>
<tr><td colspan="3">Religion:</td><td colspan="2">Caste</td><td>Sub-caste/Community</td></tr>
<tr><td colspan="3">Date & Time of admission:</td><td colspan="3"></td></tr>
<tr><td colspan="3">Date & Time of Death:</td><td colspan="3"></td></tr>
</table>

1. **Stage of pregnancy/delivery on admission:** Abortion /Ectopic Pregnancy /In labour / Postpartum

2. **Stage of pregnancy/delivery when died:** Abortion / Ectopic Pregnancy / In labour / Postpartum

3. **Duration from onset of complications to admission:** ☐☐ Hrs ☐☐ min

4. **Condition on Admission:** ☐ Stable ☐ Unconscious ☐ Serious ☐ Brought dead

5. **Complications:**

Type of Complication	Yes	No	Don't know	Comments, if any
Previous C/Section				
Abnormal Presentation/lie				
Anaemia				
Glycosuria				
Hypertension with Proteinuria				
Hypertension				
Twins etc				
APH				
Ectopic/pain in abdomen				
Other (Please specify)				

6. **In which phase of labour did she die:**

Latent phase	Active phase	Second stage	Third stage	> 24 hrs after birth

7. **Duration of labour:** Hours: _____ , Minutes:_____ .

8. **Delivery:**

Undelivered	Vaginal (unassisted)	Vaginal(assisted) Vacuum/Forceps	Caesarean Section

9. **Details of Baby:**

Baby Birth Weight (gms) ☐☐☐☐ Apgar Score ☐ Outcome

Still born	Alive at birth	Died immediately after birth	Alive at: 7 days	Alive at: 28 days

10. **Interventions:** **(Tick appropriate box)**

Early pregnancy		Antenatal		Intrapartum		Postpartum		Other	
Evacuation		Transfusion		Instrumental del.		Evacuation		Anaesthesia - GA	
Laparotomy		Version		Symphysiotomy		Laparotomy		Epidural	
Hysterectomy				Caesarean section		Hysterectomy		Spinal	
Transfusion				Hysterectomy		Transfusion		Local	

	Transfusion		Manual removal		Invasive monitoring		
Any Other – specify:					ICU ventilation		

11. Probable direct obstetric cause of death:

12. Indirect obstetric cause of death:

13. Contributory causes of death:

14. In your opinion were any of these factors present?

System	Example	Y	N	?	Specify
Personal/Family	Delay in woman seeking help				
	Refusal of treatment				
	Refusal of admission in facility				
Logistical Problems	Lack of transport from 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 blood Lack of OT availability				
Health personnel problems	Lack of human resources Lack of Anesthetist Lack of Surgeons				
	Lack of expertise, training or education				

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

16. If autopsy performed, please report the findings :

17. Findings of the review by the Facility MDR Committee and corrective actions taken:

18. Remedial follow up actions spelled out by the District MDR Committee: (Add extra page if required):

(Signatures of District Nodal Officer MDR) Name:

(Office Seal) Date:

(Signatures of Civil Surgeon) Name:

(Office Seal) Date:

Note: For details, refer to Annexure-1 on FBMDR

COMMUNITY BASED MATERNAL DEATH REVEIW FORM

COMMUNITY BASED INVESTIGATION (Verbal Autopsy) QUESTIONNAIRE FOR

INVESTIGATION OF MATERNAL DEATHS

(To be filled by investigation team, ref: para 4.12 & 4.13 of MDR guidelines)

Name of District: ..... Block: .....

NAME OF THE SUB CENTRE	
NAME OF THE VILLAGE	
NAME & AGE OF THE PREGNANT WOMAN/ MOTHER (DECEASED)	
ADDRESS	
NAME OF HUSBAND/OTHER (FATHER/MOTHER)	
PLACE OF DEATH (Home/Institution/In transit/Village/Town etc.) Specify:	
DATE & TIME OF DEATH	
NAME & DESIGNATION OF THE INVESTIGATOR(S)	
DATE OF INVESTIGATION	
PROBABLE CAUSE OF DEATH	

MODULE - I

Contains general information, information about previous pregnancies wherever applicable. It should be used for all the maternal deaths irrespective whether occurred during antenatal, delivery or postnatal period including abortion)

I. BACKGROUND INFORMATION

Tick (√) the correct answer for each question:

1.1	Resident / Visitor death								
1.2	Type of death	Abortion		Antenatal		Delivery death		Post natal	
1.3	Place of death			Home		Sub Health Centre			
				CHC		PHC			
				Medical college Hosp.		Dist. Hosp.			
				Sub Dist. Hosp.		Pvt. Hosp.			
				Transit/ on the way		Others (specify)			
1.4	Specify the name and place of the institution or village where death occurred								
1.5	Onset of fatal illness			Date / / Time __ __:__ __ _ _					
1.6	Admission in final institution (if applicable)			Date / / Time __ __:__ __ _ _					
1.7	Death			Date / / Time __ __:__ __ _ _					
1.8	Gravida			**1**		**2**		**3**		**4**		**5 & more**
1.9	Weeks of pregnancy If applicable			<16 weeks		16-28 weeks		>28 weeks	
1.10	Age at death								

2. FAMILY HISTORY

No.	Details	Deceased Mother	
2.1	Age at marriage	<18 Yrs	
		18-25 Yrs	
		26-30 Yrs	
		31-35 Yrs	
		>35 Yrs	

2.2.	Religion	Sikh	
		Hindu	
		Muslim	
		Christian	
		Others	
2.3.	Community	SC	
		ST	
		BC	
		OBC	
		Others	
2.5.	Occupation	House Wife	
		Agri. Labourer	
		Cultivator	
		Non-Agri. daily wages	
		Govt. Employee	
		Private employee	
		Self employed	
		Business	
		Others (Specify)	

3. INFANT SURVIVAL

3.1	Infant status:	Still Birth	Live Birth	Died immediately after birth	Alive at 7 days	Alive at 28 days

4. AVAILABILITY OF HEALTH FACILITIES, SERVICES AND TRANSPORT

(4.1 & 4.2 to be filled by the investigator before the interview)

4.1	Name and location of the nearest government / private facility providing Emergency Obstetric Care Services				
4.2	Distance of this facility from the residence				
4.3	Number of institutions visited before death (in the order of visits)				
4.4	Reasons given by providers for the referral	No explanation given		Lack of blood	
		Lack of staff		Others (specify)	

5. CURRENT PREGNANCY

(To be filled from the information given by the respondents)

5.1	Antenatal Care	YES			NO		
5.2	If yes, Place of Antenatal checkup	Sub Centre			PHC/ CHC		
		Govt. Hosp.			Pvt. Hospital		
		VHND			Govt. & Pvt. hospital		
5.3	Number of antenatal check ups	Nil		4 and above	1-3		Not known

MODULE - II

6. DEATHS DURING THE ANTENATAL PERIOD

(This module to be filled for the maternal deaths that occurred during the antenatal period including deaths due to abortion. In addition to module-II, module-I should also be filled for all maternal deaths)

6.1	Did the mother had any problem during antenatal period?	Not known		No	
		Yes			
6.2	If yes, was she referred anytime during her antenatal period?	YES		NO	
		Don't know			
6.3	What was the symptom for which she sought care ?	Headache			
		Edema			
		Anemia			
		High Blood Pressure			
		Bleeding p/v			
		No foetal movements			
		Fits			
		Sudden excruciating pain			
		High fever with rigor			
		Others (specify)			
6.4	If YES, did she attend any hospital?	YES		NO	
		Don't know			
6.5	In case of not seeking care from the hospital is it due to	Severity of the complications not known		Institution far away	
		No attendant available		No money	
		beliefs and customs		Lack of transport	
		Others(specify)			

7. FOR ABORTION DEATHS FILL THE FOLLOWING QUESTIONS

7.1	Did she die while having an abortion or within 6 weeks after having an abortion?	While having an abortion	Within 6 weeks after having an abortion		Don't Know
7.2	If abortion, was the abortion spontaneous or induced, including MTP?	Spontaneous	Induced	MTP	Don't know
7.3	If the abortion was induced, how was it induced?	Oral medicine	Traditional vaginal herbal application	Instrumentation	Don't know
7.4	If the abortion was induced, where did she have the abortion?	Home	Government hospital (specify level)	Private clinic/center	Don't know
7.5	If the abortion was induced, who performed the abortion?	Doctor	Nurse	Others (specify)	Don't know
7.6	If induced, what made family seek care?	Bleeding started spontaneously		Wanted to terminate the pregnancy	
7.7	If the abortion was spontaneous, Where was the abortion completed	Home	Govt. Hospital (Specify level)	Private Clinic/ centre	Don't Know
7.8	How many weeks of pregnancy completed at the time of abortion				
7.9	Whether she had any of these symptoms after abortion?	High fever	Foul smelling discharge	Bleeding	Shock
7.10	After developing complications following abortion, did she seek care?				
7.11	If yes, whom/where did she seek care?				
7.12	Date of spontaneous abortion/ date of termination of pregnancy				
7.13	Date & time of death				

MODULE - III

(To be used for the deaths occurring during delivery. For these deaths, Module-I should also be filled)

8. INTRANATAL SERVICES (Tick ' √ ' wherever applicable)

8.1	Place of delivery	Home		Sub centre	
		CHC		PHC	
		Medical College		District Hospital	
		Sub district Hospital		Private Hospital	
		Transit		Any other place (specify):	
8.2	Admission (not applicable for home delivery and transit)	Date / / Time __ __:__ __			
8.3	Delivery	Date / / Time __ __:__ __			
8.4	Time interval between onset of pain and delivery (in hours)	Hours: __ __			
8.5	Who conducted the delivery- if at home or in private institution (Not applicable for transit delivery)	ANM		Staff Nurse / M. Asst.	
		Doctor		Dai	
		Quack		Others	
8.7	Type of delivery	Normal		Assisted	
		Caesarean			
8.8	Outcome of the delivery	Live birth		Still birth	
		Multiple births			
8.9	During the process of labour/delivery, did the mother have any problems?	Prolonged labour Primi >12 hrs Subsequent deliveries >8 hrs		Severe bleeding/ bleeding with clots- (one salwar/saree/skirt soaked =500ml)	
		labour pain which disappeared suddenly		Inversion of the uterus	
		Retained placenta		Convulsions	
		Severe breathlessness /cyanosis/ oedema		Unconsciousness	
		High fever		Others (specify):	

8.10	Did she seek treatment, if yes by whom and what was the treatment given by the ANM/Nurse/LHV/ MO/others ? (give details)				
8.11	Was she referred?	YES		NO	
		Not known			
8.12	Did she attend the referral centre?	YES		NO	
		Not known		If yes, time interval between admission & delivery (if delivered)	
8.13	In case of non compliance of referrals, state the reasons	Intensity of complications not known		Institution far away	
		No attendant available		No money	
		Beliefs & customs		Lack of transport	
		Others			
8.14	Was there delay in	Decision making		Mobilizing funds	
		Arranging transport		Others	
8.15	Any information given to the relatives about the nature of complication from the hospital	Yes		No	
8.16	If yes, describe				
8.17	Was there any delay in initiating treatment	Yes		No	
8.18	If yes, describe				

9. POST NATAL PERIOD (Tick ' √ ' wherever applicable)

9.1	No. of Postnatal checkups	Nil		< 3 checkups			
		>/= 3 checkups		Don't know			
9.2	Did the mother had any problem following delivery	YES		NO			
		Not known					
9.3	Time interval between detection of complication & death (in hours/minutes)						
9.4	Specific problem during Post Natal period	Severe bleeding		Severe fever and foul smelling discharge			
		Sudden chest pain & collapse		Unconsciousness/ visual disturbance			
		Bleeding from multiple sites		Severe leg pain , swelling			
		Abnormal behaviour		Severe anemia			
		Others (specify)					
9.5	Did she seek treatment	Yes		No			
9.6	If yes, by whom	ANM		Nurse			
		LHV		MO		Others (specify)	
9.7	What was the treatment given (give details)						
9.8	Was she referred?	Yes		No			
		Not known		Not applicable			
9.9	Did she attend the referral center?	Yes		No			
		Not known		Not applicable			
9.10	In case of non compliance of referrals, state the reasons	Intensity of complications not known		Institution far away			
		No attendant available		No money			
		Beliefs & customs		Lack of transport			
		Others (specify):					

10: REPORTED CAUSE OF DEATH

10.1	Did a doctor or nurse at the health facility tell you the cause of death?	Yes		No	
		Don't know			
10.2	If yes, what was the cause of death?				

11. OPEN HISTORY (In narrative form): (explore)

11.1	Name and address of the facilities she went – decisions and time taken for action	
11.2	How long did it take to make the arrangements to go from first centre to higher centers and why those referrals were made and how much time was spent at each facility and time spent at each facility before referrals were made and difficulties faced throughout the process	
11.3	Transportation method used	
11.4	Transportation cost? (at each stage of referral)	
11.5	Travel time – at each stage	
11.6	Care received at each facility?	
11.7	Total money spent by family	
11.8	How did the family arrange the money?	
11.9	Any other	

Investigator – 1	Investigator – 2	Investigator – 3
(Signature)	(Signature)	(Signature)
Name:	Name:	Name:
Designation:	Designation:	Designation:
Place of posting:	Place of posting:	Place of posting:
Date:	Date:	Date:

COMMUNITY BASED MDR -CASE SUMMARY

(BLOCK PHC)

Case Summary Form to be filled in duplicate by the SMO Block PHC for each confirmed maternal death in the block after investigation and to be sent to District MDR Committee within 4 weeks of occurrence of the death (Ref: MDR Guidelines-Para 4.13)

Yearly Serial No. (Refer to Para 4.13 of the Guidelines): _____.

Name of the Block PHC/ District					
Particulars of the deceased			**Name:**		**Age:**
Husband's name & address					
Gravida	**Para**	**Live births**	**Sill births**	**Abortions**	**No. of living children**
Visitor/Resident: Address					
Timing of Death			**Pregnancy**	**Delivery**	**Within 42 days after delivery**
Religion/Caste/Community					
Place, Date & Time of death					
Date of investigation					

Fill in appropriate cause(s) of delay:

1. **Delay in Seeking Care:**

Not aware of danger signs	
Problem not identified/identified and neglected	

Delay in decision making	
No birth preparedness	
Beliefs and customs	
Any other (specify)	

2. **Delay in reaching first level facility:**

Delay in getting transport	
Delay in mobilizing funds	
Not reaching appropriate facility in time	
Difficult terrain	
Any other (specify)	

3. **Delay in receiving adequate care in facility:**

Delay in initiating treatment	
Substandard care in hospital	
Lack of blood, equipment & drugs	
Lack of adequate funds	
Any other (specify)	

Probable direct obstetric cause of death:

Indirect obstetric cause of death:

Contributory causes of death (may list them):

Initiatives suggested:

Date:

(Signatures of SMO Block PHC)

Name:

(Office Seal)

DISTRICT LEVEL CBMDR - CASE SUMMARY

District level CBMDR-Case Summary, for every maternal death reported by the Block PHCs, to be completed in duplicate by the District Nodal Officer after review by the District MDR Committee and reports compiled to be put up to the Deputy Commissioner for monthly review and to the State Director Family Welfare for monthly report (Ref: MDR Guidelines-Para 5.5-iii, 5.5-v and 6.2)

Yearly Serial No._____. Calendar Year: _____

1. General Information:

Name of the Block PHC/ District:					
Particulars of the deceased:		Name:			Age:
Husband's name & address:					
Gravida	Para	Live births	Still births	Abortions	No. of living children
Visitor/Resident Address:					
Timing of Death:		Pregnancy	Delivery	Within 42 days after delivery	
Religion/Caste/Community:					
Place, Date & Time of death:					
Date of investigation:					

2. Fill in appropriate cause(s) of delay:

a. Delay in Seeking Care:

Not aware of danger signs	
Problem not identified/identified and neglected	

Delay in decision making	
No birth preparedness	
Beliefs and customs	
Any other (specify)	

b. Delay in reaching first level facility:

Delay in getting transport	
Delay in mobilizing funds	
Not reaching appropriate facility in time	
Difficult terrain	
Any other (specify)	

c. Delay in receiving adequate care in facility:

Delay in initiating treatment	
Substandard care in hospital	
Lack of blood, equipment & drugs	
Lack of adequate funds	
Any other (specify)	

3. Probable direct obstetric cause of death:

4. Indirect obstetric cause of death:

5. Contributory cause(s) of death:

6. **Initiatives suggested by SMO Block PHC:** (Add extra page if required)

7. **Remedial follow up actions planned or implemented:** (Add extra page if required)

(Signatures of District Nodal Officer MDR) **Name:**

(Office Seal) **Date:**

(Signatures of Civil Surgeon) **Name:**

(Office Seal) **Date:**

Note: To facilitate investigations (Verbal Autopsy /Community Based MDR), for detailed questions refer to Annexure-2 on CBMDR

Community Based Maternal Death Review

Line Listing Form to be filled by ASHA/AWW/Others (Ref: Para 4.6, 4.7, 4.8 & 4.9 of MDR Guidelines)

(To be compiled for all deaths of women aged 15 – 49 years irrespective of cause of death or pregnancy status)

Name of village:_____Sub Centre:_____PHC:_____

Block:_____District:_____ State: _____

Contact Person's Name, address & Telephone No. :_____

Report for the Month of:_____ Date of submission of report:_____

Please submit a copy to the ANM of the area on or before 5th of every month (e.g. for report of March , this copy must reach the ANM by 5th of April).

Even if there is no death of women of age 15-49 years, submit 'NIL' report by the due date.

Sl. No.	Name, age, husband's name & address of deceased	Place of death			When did the death occur				Probable cause of death	Status of newborn (dead/ alive)	Name & Tel No. of the person interviewed	Date & time of visit to home of deceased
		Home	*Health facility (Name)*	*Others*	*During pregnancy*	*During delivery*	*Within 42 days after delivery*	*Others (Non-maternal death)*				

Name of ASHA: ..... Village: ..... Mob/Tel No:..... Signatures : .....

Note: 1. For every death of women of age 15-49 years, inform the ANM of the area telephonically within 24 hours.

2. ***In case a Maternal Death is detected, inform the SMO Block PHC and the ANM of the area IMMEDIATELY TELEPHONICALLY.***

Maternal Death is defined as the death of a woman who dies from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy or child 42 days of termination of pregnancy, irrespective of duration and site of the pregnancy.

Delay in decision making	
No birth preparedness	
Beliefs and customs	
Any other (specify)	

b. Delay in reaching first level facility:

Delay in getting transport	
Delay in mobilizing funds	
Not reaching appropriate facility in time	
Difficult terrain	
Any other (specify)	

c. Delay in receiving adequate care in facility:

Delay in initiating treatment	
Substandard care in hospital	
Lack of blood, equipment & drugs	
Lack of adequate funds	
Any other (specify)	

3. Probable direct obstetric cause of death:

4. Indirect obstetric cause of death:

5. Contributory cause(s) of death:

References:

1. Gunawan Supratikto,Meg E.Wirth(1994) “District -based audit of maternal and perinatal mortaliry in three provinces of South Kalimantan , Indonesia”.
2. UNICEF Eastern and Southern Afirica Regional office June 2003 “Maternal Mortality Reduction Strategy-Nairobi report”.
3. The Centre for Reproductive Rights “Maternal mortality in India “(2008)-Using International and constitutional Law to promote accountability and change.
4. Samuel Mills (HDNE, World Bank) March 2011. “Maternal death audit as a tool reducing maternal mortality”.