Factors Contributing to Maternal Mortality in Nepal

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A study by

Mother and Infant Research Activities (MIRA)

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Introduction

- Nepal's Maternal Mortality Ratio (MMR) came down from 539 to 239 per one hundred thousand live births between 1996 to 2016 – but there has been marginal improvement since 2006
- There is need to understand this lack of progress and clarify why women are dying due to pregnancy related causes so the situation can be improved
- This study was designed to understand causes and pathways that lead to maternal death in Nepal
- It identifies potential health system reforms, offers recommendations to policy makers, and points out corrective actions that can reduce and prevent maternal death

About this study 1 of 3 slides

Methodology

This was a mixed method study. Literature review was detailed and involved information presented by academics, health professionals and institutions, government bodies, international organisations, and news sources

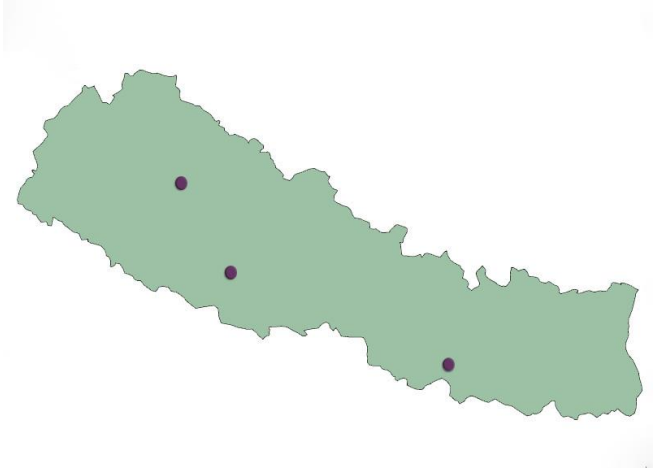
Quantitative and qualitative data was collected using four approaches

- Social Autopsy of maternal deaths, SA
- Maternal Near Miss analysis, MNM
- Policy landscaping review and
- Interview of experts

MNM studies were conducted in the largest referral hospitals of three provinces

The study took place across the country

- Province 2
- Lumbini Province
- Karnali Province



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Research questions

- What are the causes and pathways that lead to continued maternal deaths in Nepal?
- What corrective policies and actions can prevent maternal death?
- What factors (social, behavioral and health system) contribute to the three delays that can result in maternal death?
  - Why is there delay deciding to seek appropriate medical help?
  - Why is there delay reaching appropriate obstetrics facilities?
  - Why is there delay receiving care when a facility is reached?
- What measures can enable the health system to address such delays?
- What interplays between the actors below affect the quality of and access to maternal health care?
  - Policy level
  - Supply-side
  - Demand-side

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Research

- This study included views from the demand side, the views of health workers involved in the treatment of maternal mortality cases and MNM cases (supply side) was not studied
- As MNM cases lacked referral slips and records from referring health facilities, MNM analysis does not include information about the type of care received by women in referring health facilities and the reasons for referral
- Recall bias could not be avoided as the information, including timeline of the three delays, was collected through recall by the women and their family members

Findings 1 of 9 slides

Breakdown of mortality

Socio Demographics

- Ninety-two per cent of deceased women were not involved in income generating occupations and their average monthly household income was less than the national average
- Dalits had among the highest maternal deaths (27%) and near misses (34%) in both Terai and hill districts
- Women aged 25 to 31 were most likely to die during maternity
- People from the Terai plains in western parts of Nepal were more vulnerable to maternal near miss likely due to healthcare and educational drawbacks
- Castes that are behind, dalits, and ethnic groups like the madhesi suffered more maternal near miss cases
- Education and awareness played a major role, women with little or no education were more likely to suffer maternal near miss

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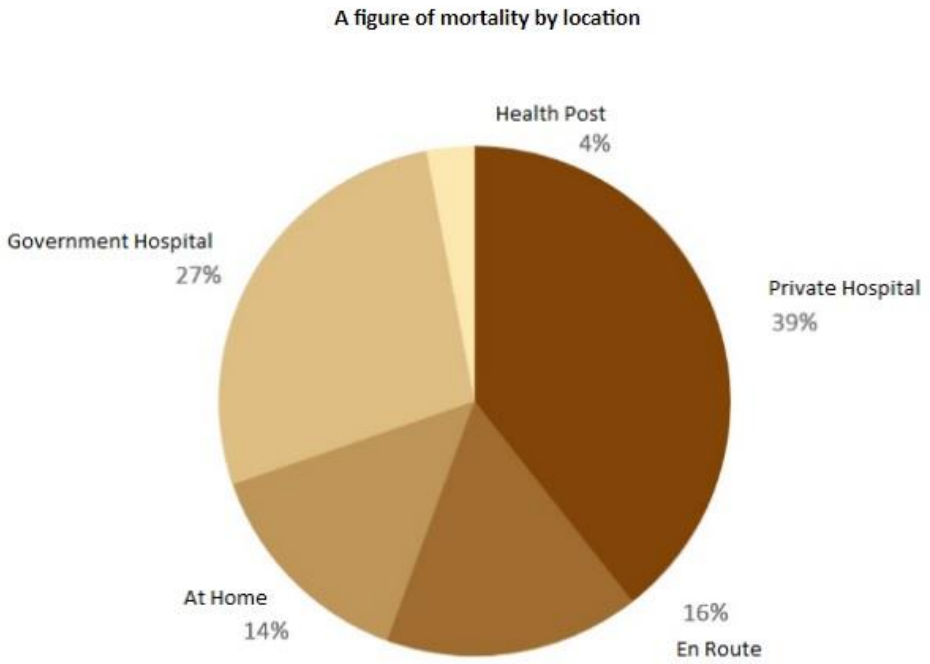
Breakdown of mortality

Location of Death



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Maternal health sector issues

- **Human resource issues**
  - Inadequate human resource
  - Lack of skill and competency
- **Accessibility issues**
  - Geographical and transportation barriers and inadequate placement of health facilities
  - Inadequate roads or travel options, lack of vehicles and options, and lack of maternity services
- **Equity and social inclusion issues**
  - Lower utilisation of facilities or services by the poor
  - Low status of women

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Maternal health sector issues

- **Social and health system accountability**
  - Inadequate social audit
  - Inadequate monitoring and supervision
  - Lack of knowledge and management skills
- **Awareness of communities**
  - Counter productive socio-cultural beliefs and practices
  - Lack of health awareness
  - Negligence
- **Financial issues**
  - Death of women who do not have their own income
  - Lack of financial resources
- **Inadequate implementation of existing policies**

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Breakdown of mortality

Underlying causes

Causes of Maternal Deaths and MNM Cases

UNDERLYING CAUSES	MATERNAL DEATHS (IN %)	MNM CASES (IN %)
Severe haemorrhage	44	54
Hypertensive disorders	19	43
Sepsis	13	4
Ruptured uterus	5	4
Severe complications of abortion	6	7
Other obstetric complications	3	0
Non obstetric medical complications	14	4

*Percentage may exceed 100% due to multiple delays

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Contributing factors

Factors contributing to maternal death and near misses were assessed through the three delay perspective as listed below

- Delay in deciding to seek appropriate medical help
- Delay in reaching an appropriate obstetric facility and
- Delay in receiving adequate care when a facility is reached

Demographics

- 62 cases of maternal deaths were studied, the age of women ranged from 19 to 31
- 74% of the women were from the Terai plains and 26% were from the hills
- Diverse ethniticies were studied: 35% from the Terai, 27% dalit, 13% Brahmin-Chhetri-Thakuri, 16% Janajatis, and 8% Muslim were among those studied
- 92% of those who suffered were not involved in income-generating occupation
- 39% did not have any education with 37% having studied up to grade 8, 23% up to grade 9-12 and 2% having been in college
- Average monthly income was less than Rs. 30,000 (the national average) in 87% of the cases

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Contributing factors

The Three Delays

First delay Delay in seeking care when danger signals manifest; lack of family support; fear of institutional delivery; ignoring danger signs; seeking care from traditional healers instead of a obstetric facility **42%**

From the patients' perspective

- Not understanding the need or benefit of visiting obstetric centers
- Lack of anticipation of problems and severity
- Fear of institutional delivery: fear of shots, procedures, treatment by health personnel
- Lack of family support
- Perceived high cost and insufficient funds, especially when women involved did not make an income
- Traditional beliefs and practices
- Long distance to health facilities

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Contributing factors

The Three Delays

Second delay Delay in reaching lower level obstetric facility from home; transportation problems; inability to manage money **21%**

From the patients' perspective

- No road or poor roads and bad road conditions
- Lack of transportation
- Long distance to health facilities
- Inability to manage financial resources, especially by women not making an income

Third delay Delay in referral; late or no treatment at final obstetric facility; incompetent service providers **31%**

From the patients' perspective

- Unavailability of skilled healthcare workers, incompetent service providers
- Unavailability of Caesarean section, Intensive Care Units, blood transfusion, lifesaving drugs
- Delay in treatment and lack of immediate treatment
- Neglect, unethical practices and bad behaviour of health workers
- Poor communication by health workers while referring to other facilities

Note: percentage may not exactly total 100 due to multiple delays

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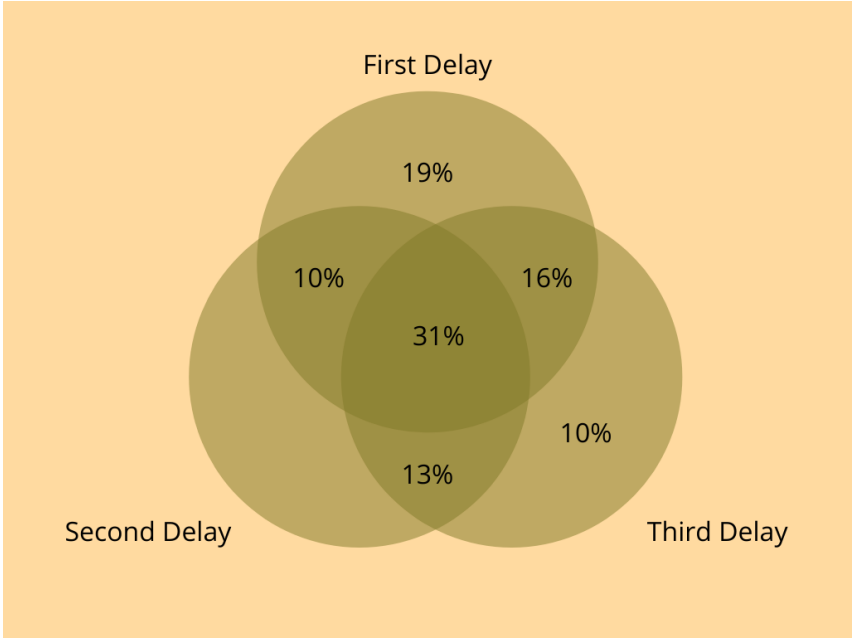
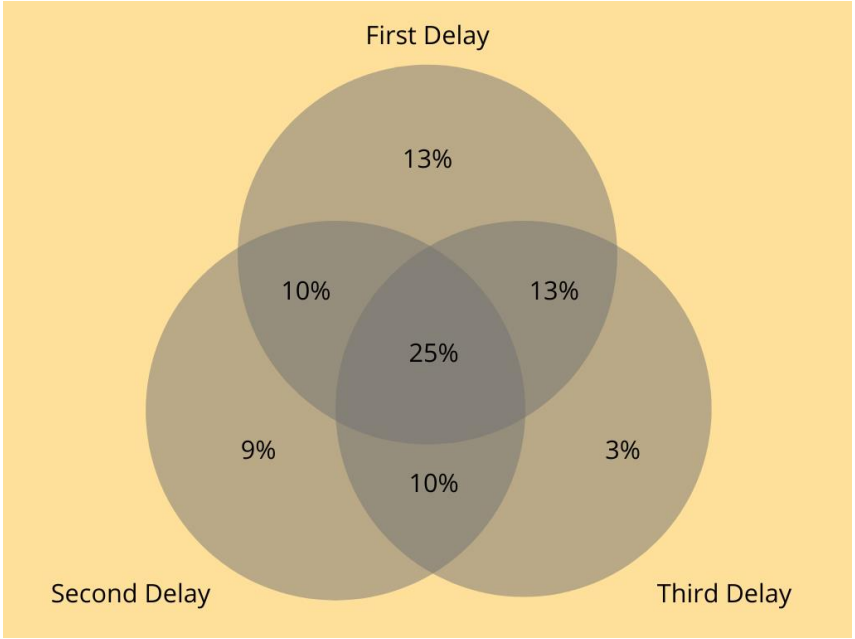
Contributing factors

Factors contributing to maternal mortality



Factors contributing to maternal near miss



Recommendations

First delay occurs because women and their families wait before seeking care

Potential solutions

- Women need to generate income so they can choose maternity care and have greater decision-making power
- Knowledge: ability to recognise danger signs and preventive action can save many women's lives. Mobile apps can be used to share maternity calendars, checklists, antenatal visit reminders, birth-preparedness lists, and information on free delivery and safe delivery programs. Schools can expand reproductive education curriculum and representative organisations of disadvantaged, dalit, madhesi, muslim, women, mothers, and others can be mobilised
- History taking, teaching and counselling must be ensured during antenatal visits
- HFOMC can monitor access to services
- Women and families in remote areas need to be informed about free delivery programs and available financial and other incentives

Recommendations

Second delay takes place as women are slow in reaching an appropriate obstetric facility

Potential solutions

- Safe transportation of expecting women in difficult terrain is required as emergency services may be a long distance away so free airlifts should be made available in remote areas. Home-grown solutions such as auto-rickshaw linkage where suitable, motorcycle ambulances, if safe, and easily available stretcher services with equipment and bearers (voluntary or paid) can be set up within communities. Ambulance services should be made available
- Maternity waiting homes are innovative and can be tested in hill districts so women may reside near obstetric facilities (especially if endangering signs manifest) to reduce first and second delays
- Free delivery: should be available to those in need with incentives provided to medical facilities and personnel. Turning away maternal delivery cases for financial reasons should be strictly discouraged

Recommendations

Third delay occurs at obstetric facilities where timely interventions may not happen

Potential solutions

- Emergency obstetric referral systems should be strengthened and proper documents maintained
- Skilled health workers have to be available at every obstetric service level
- Health workers should be trained from within local communities
- Medical personnel should be available even during festivals
- Designated hospitals at all levels need sufficient personnel, medication, and equipment to manage complications
- Blood transfusion facilities should be mandatory at every primary hospital and emergency transport for blood and patients should be on standby 24/7
- Comprehensive emergency obstetric care should be available with paramedics during transit. Public and private facilities need to be regulated
- Training can make staff more receptive, responsive, and respectful

Need for further research

- Best practices in safe motherhood
- Centers that lack Caesarean section delivery units
- Centers that lack intensive care units
- Anaesthetic, gynaecology and MDGP in CEONC sites
- Death reviews and effective reporting (despite medical personnel's fear of being blamed)

Conclusion

This study concludes that it is possible to decrease maternity deaths and near misses significantly in Nepal. Women at risk who reach obstetric facilities on time have a much higher chance of being saved.

Increasing awareness of danger signs; birth preparedness and complication readiness; empowerment of women – especially those from disadvantaged groups and hard to reach communities; improvement in the capacity of local level health workers; social accountability; better monitoring and supervision of programs in place; public private partnerships; and development of equity based strategies can improve Nepal's health system overall.

Early diagnosis of pregnancy complications, timely transportation, accommodation facilities near health centers and easy availability of medicine, equipment, and blood supply can be major ways to reduce maternal mortality in Nepal.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