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Practices of Stakeholders engaged in reporting and reviewing maternal deaths in North India

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Abstract

Background: The current Maternal Mortality Ratio of 101 per 1,00,000 live births (Sample Registration Survey 2017-19) of Himalayan State of Uttarakhand, India calls for strenuous efforts at each level to achieve the Sustainable Development Goal of less than 70 per 1,00,000 live births by 2030. This study assesses the functioning of maternal death reporting and review system and practices of stakeholders engaged in reporting and reviewing maternal deaths.

Methods: A cross sectional study was conducted in Uttarakhand, India from 2019 to 2020 by including all Nodal Officers and Facility In-charges engaged in reporting and reviewing maternal deaths.

Results: Maternal Death Review Team for Household Verbal Autopsy was constituted only in 61.54 % Level-III Delivery Points. Only 63.33% Level-II Delivery Points had filled and maintained Block level Maternal Death Review register for all women's death (15-49 years) whereas 56.66 % health facilities had received the expected number of Maternal Deaths from their District Nodal Officers. Both Facility and Community Based Maternal Death Reviews were conducted by Maternal Death Review teams for almost 1/3rd cases. Most of issues and concerns reported during this study pointed to the need to develop an easy- to- use Standard operating procedure to facilitate the systematic reporting and review.

Conclusions: Health authorities and staff lack clear understanding on tracking and reporting of maternal deaths. Practices of public health systems stakeholders require frequent supportive supervision following the Standard Operating Procedures suggested through the current study.

Keywords: accountability, high priority districts, delivery points, facility based maternal death reviews

Introduction

The essence of accountability is answerability or the obligation to answer questions regarding decisions and/or actions taken in a matter of concern. A structural view of accountability spotlights the interdependencies among health actors [1].

Good progress has been made in reducing maternal deaths from 1990–2015 but accelerated progress is needed to attain the Sustainable Development Goals in culminating preventable maternal deaths through a renovated focus on accountability and actions [2].

Countries with relatively more number of maternal deaths usually report lot of challenges in establishing a system that tracks all maternal deaths happening in their population. While notification of all maternal deaths is crucial and main pillar to accountability in terms of measuring the actual performance of health care delivery system and progress towards decreasing the numbers in general, there are life-saving actions already initiated by countries in response to findings from maternal deaths without full implementation.

There is high degree of variation in the implementation of maternal death reviews among States and UTs in India. Out of 28 States and UTs, only six completely fulfilled the criteria set specifically designed for reviewing maternal deaths across the country. There have been rigorous efforts by the Government of India through National Health Mission to sensitize and mobilize States and UTs to conduct maternal death reviews at different level [3].

Recommendations by the WHO include institutionalizing a proper and systematic monitoring mechanism for Maternal Death Review which includes designating a nodal person right from the health care facility level to State level, improving the quality of information and data collection system, providing regular feedback to States and UTs on issues reported, and putting in place a quality assurance system.

Front line workers, Designated Officers for reporting of maternal death and bureaucrats put in lot of sincere efforts to balance conflicting demands when implementing the Maternal Death Surveillance Response system: to report all maternal deaths; to deliver perceived success in maternal mortality reduction by reporting as few maternal deaths as possible; and to avoid their own accountability for deaths. Individual and political accountability for maternal deaths carries some sort of fear amongst staff and administrators which strongly affects not only reporting practices of the health care delivery system but also the kind of care given to the deceased lady in different stages of pregnancy. Health Service Providers and Administrators usually report maternal deaths in ways that minimize their actual number and ward off liability for repulsive outcomes [4].

The present study was conducted in four high priority districts of Uttarakhand, India to assess the functioning of maternal death reporting and review system and practices of public health systems internal stakeholders accountable for reporting and reviewing maternal deaths.

Material & Methods

Study Area

Four High Priority Districts (HPDs) namely Tehri Garhwal, Pauri Garhwal, US Nagar and Haridwar district of Uttarakhand State were selected purposively to conduct the present study after getting formal permission from Department of Medical Health & Family Welfare, Govt. of Uttarakhand.

Study Design

Maternal Death Line Listing Report was collected from Medical Health & Family Welfare Department, Uttarakhand in order to identify all health care facilities engaged in delivering health care services to the deceased women before occurrence of maternal death and also reporting and reviewing these maternal deaths. The present descriptive study was conducted over a period of two years. A total of 13 Level-III and 30 Level II Delivery Points were identified as Health Units involved in reporting and reviewing maternal deaths in the selected four High priority Districts. Researcher visited all 13 Level-III Delivery Points (3 Medical Colleges Teaching Hospitals, 4 District Hospitals, 4 Sub-District Hospitals and 2 CHCs) and 30 Level-II Delivery Points engaged in reporting and reviewing maternal deaths and interviewed Facility Nodal Officers (Medical Officer In-charge/ Medical Superintendent/ Chief Medical Superintendent). District Nodal Officers designated for Maternal Death Review (MDR) in all four High Priority Districts were also interviewed using Pre designed, pre-tested interview schedule.

Inclusion Criteria

Facility Nodal Officers of public health facilities notified by the State Government for conducting the Facility Based Maternal Death Reviews and engaged administratively in rendering health services to the deceased women either directly or in case of referral from another health care facility were included. Facility Nodal Officers of Level II Delivery Points designated for reporting of maternal deaths were also included in the present study to elicit better understanding on the part of accountability in reporting of maternal deaths. Informed consent was taken from every participant included in the present study.

Data were entered into MS Excel 2007 and descriptive statistical analysis was done.

Results & Discussion

In the present study, all 13 Level-III Delivery Points engaged in reporting and facility based review of maternal deaths in four high priority districts were included as detailed in Table 1. Out of total 13 Delivery Points, an equal number i.e. 4 (30.76 %) belonged to District Hospital and Sub District Hospital category, followed by 3 (23.07 %) Medical Colleges and 2 (15.38 %) Community Health Centres. Medical Colleges of Dehradun and Nainital also included in the study as referrals were received by these institutions from other nearby districts to manage obstetric complications.

Table 1: Level-III Delivery Points engaged in reporting and review of maternal deaths (n= 13)

District	Type of Health facility	No. of Health facility
Haridwar	District Hospital	1
	Sub-District Hospital	1
Pauri	District Hospital	1
	Sub-District Hospital	1
	Medical College	1
Tehri	District Hospital	1
	Sub-District Hospital	1
US Nagar	Community Health Centre	1
	Sub-District Hospital	1
	District Hospital	1
	Community Health Centre	1
Dehradun	Govt. Doon Medical College	1
Nainital	Govt. Medical College, Haldwani	1
Total		13

Source: Department of Medical Health & Family Welfare, Uttarakhand

A total of 30 Level-II Delivery Points engaged in reporting of maternal deaths in four High Priority Districts are shown in Table 2. Out of 30 Level II Delivery Points, 11 (36.66 %) belonged to Non- FRU CHC category and remaining 19 (63.34%) belonged to 24*7 Primary Health Centres category.

Table 2: Level-II Delivery Points engaged in reporting of maternal deaths (n=30)

District	Type of Health facility	No. of Health facility
Haridwar	Non-FRU CHC	5
	24x7 PHC	3
Pauri	Non-FRU CHC	1
	24x7 PHC	2
Tehri	Non-FRU CHC	3
	24x7 PHC	6
US Nagar	Non-FRU CHC	2
	24x7 PHC	8
Total		30

Source: Department of Medical Health & Family Welfare, Uttarakhand

All 4 (100%) High Priority Districts had implemented MDR guidelines and State level health authorities had shared expected number of maternal deaths with District Nodal Officers of these districts. District MDR Committee was also constituted in all 4 (100%) districts as shown in Table 3.

Table 3: Status of preparedness for maternal death reporting and review in High Priority Districts (n= 4)

Indicators	Number (Percentage)
Maternal Death Review (MDR) guidelines implemented in the District	4 (100)
Expected number of Maternal Deaths shared with District Nodal Officers by State level Health authorities	4 (100)
District MDR Committee Constituted	4 (100)

Source: Data collected from institutions visited.

As detailed in Table 4, maternal death review guidelines were implemented in all 13 (100%) Level III Delivery points. Expected number of Maternal Deaths was reported to be shared with 3/4th (76.92%) health care facilities by District Nodal Officers. Majority i.e. 11 (84.61%) of Facility Nodal Officers were aware about reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours. About 8 (61.54%) MDR Teams were constituted for conducting Household Verbal Autopsy. MDR Team was constituted in all 13 (100%) facilities for conducting facility based maternal death reviews.

Table 4: Assessment of institutional preparedness for reporting and facility based maternal death review (n=13)

Indicators	Number (Percentage)*
Maternal Death Review (MDR) guidelines implemented in the facility (n=13)	13 (100)
Expected number of Maternal Deaths shared with health care facilities by District Nodal Officers (n=13)	10 (76.92)
Facility Nodal Officers aware about reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours (n=13)	11 (84.61)
MDR Team constituted for conducting Household Verbal Autopsy (n=13)	8 (61.54)
MDR Team constituted for conducting facility based maternal death reviews (n=13)	(100)

*Number in parenthesis shows percentage.
Source: Data collected from institutions visited.

Maternal Death reporting formats for Primary Informer were available in all 30 (100%) Level II Delivery Points as shown in Table 5. MDR line listing form for all cases of maternal deaths were found to be filled and maintained by all 30 (100%) Level II Delivery Points. Block level MDR register for all women's death (15-49 years) were found to be filled and maintained by 19 (63.33%) Level II Delivery Points. Expected number of Maternal Deaths was shared with almost half (56.66%) of Level II Delivery Points by District Nodal Officers. Around 27 (90%) Facility In-charge were reported to have awareness regarding reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours.

Table 5: Preparedness of Level-II Delivery points accountable for reporting of maternal deaths (N=30)

Indicators	*Number (Percentage)*
Maternal Death reporting format for Primary Informer available in the facility (n=30)	30 (100)
MDR line listing form for all cases of maternal deaths being filled and maintained by the facility (n=30)	30 (100)
Block level MDR register for all women's death (15-49 years) being filled and maintained by the facility (n=30)	19 (63.33)
Expected number of Maternal Deaths shared with health care facilities by District Nodal Officers (n=30)	17 (56.66)
Facility In-charge aware about reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours (n=30)	27 (90)

*Number in parenthesis shows percentage.
Source: Data collected from institutions visited.

As shown in Table 6, majority i.e. 11 (84.61 %) of Level III Delivery Points facility staff had participated in MDR Workshops in past one year at District or State Level to get an orientation about MDR guidelines. Almost half (56.25%) of meetings of District MDR Committee had been organized in past one year wherein 112 (62.92%) maternal death cases were reviewed by these committees. Both Facility Based Maternal Death Reviews (FBMDR) and Community Based Maternal Death Reviews (CBMDR) were conducted by MDR Team for almost 1/3rd cases.

Table 6: Practices of public health systems stakeholders accountable for reporting and review of maternal deaths

Indicators	Number (Percentage)
Participation of health care facility staff in MDR Workshops in past one year at District or State Level (n=13)	11 (84.61)
Meetings of District MDR Committee organized in past one year (n=16) [4 district* 4 quarter = 16]	9 (56.25)
Maternal Deaths Cases reviewed by District MDR Committee of CMO (n=178)	112 (62.92)
Deaths for which Facility Based Maternal Death Reviews (FBMDR) conducted by MDR Team (n=83)	28 (33.73)
Deaths for which Community Based Maternal Death Reviews (CBMDR) conducted by Household Verbal Autopsy team (n=178)	67 (37.64)
Minutes of Meeting (MoM) available for District MDR Committee meetings (n=16) [4 district* 4 quarter = 16]	9 (56.25)
ASHAs incentivized for reporting of maternal deaths (n=32)	26 (81.25)
Any recommendations of District MDR committees received by health care facilities (n=13)	7 (53.84)
Health care facilities reported evidence of any recommendation of District MDR Committees that have been acted on (n=13)	5 (38.46)

*Number in parenthesis shows percentage.
Source: Data collected from institutions visited.

Issues pertaining to record keeping and documentation of maternal deaths were also studied as detailed in Table 7. Availability of blank FBMDR & CBMDR forms was reported at all 13 (100%) Level III Delivery Points. Availability of filled FBMDR & CBMDR forms was

reported at around 1/3rd (36.39%) health care facilities. Only 64 (67.37 %) forms were filled up completely and correctly.

Table 7: Issues reported in record keeping and documentation n of maternal deaths

Indicators	Number (Percentage)
Availability of blank FBMDR & CBMDR forms at health care facility (n=13)	13 (100)
Availability of filled FBMDR & CBMDR forms at health care facility (n=261) [83 FBMDR & 178 CBMDR]	95 (36.39)
FBMDR & CBMDR Forms filled up completely and correctly (n=95)	64 (67.37)
FBMDR & CBMDR Forms filled up partially but correctly (n=95)	17 (17.89)
FBMDR & CBMDR Forms filled up incompletely and incorrectly (n=95)	6 (6.31)

*Number in parenthesis shows percentage.
Source: Data collected from institutions visited.

Based on the issues and concerns reported during this study, following Standard Operating Procedure, developed by the Researchers, needs to be adhered by all health care administrators and staff to streamline reporting and review of maternal deaths in Himalayan States and North East regions in India.

The purpose behind developing this Standard Operating Procedure (SOP) is to ensure that each maternal death is mandatorily reported to nearby Block PHC within 24 hours and facility and community based maternal death reviews take place with proper documentation using standard formats as per Ministry of Health & Family Welfare, Govt. of India guidelines.

Scope
This document describes the steps the Health Facility Incharges and Nodal Officers need to take in order to streamline reporting and review of maternal deaths in Uttarakhand State.

Responsibility
It is the responsibility of the Facility Incharges and District Nodal Officers to ensure that all the given steps are followed carefully, and medical causes of maternal death and four delays are identified properly to take corrective measures to prevent such deaths in future.

Procedure
District Nodal Officers share the block wise expected number of maternal deaths in the beginning of financial year with Health Facility Incharges for rigorous follow up, reporting and review of maternal deaths from their area.
District Nodal officer need to propagate the message through various social platform that no punitive action will be taken against any staff / volunteer for reporting of maternal deaths.
Facility Nodal Officers need to orient all ASHAs of their area periodically with regard to correct reporting of maternal deaths within 24 hours of occurrence of deaths.
Intersectoral convergence is required to ensure the reporting of deaths from areas having no ASHAs.
The District Nodal Officer needs to identify areas having no ASHAs and ensure orientation of Anganwadi Workers and Village Chaukidar using social platform for reporting of any women death aged 15-49 years within 24 hours of occurrence of such deaths to the Block Medical Officer Incharge.
District Nodal Officers need to ensure the availability of sufficient number of formats in Hindi and English language in hard copies at every designated delivery point to capture information on community and facility based Maternal death reviews, including the maternal death reporting format for Primary Informer. Staff and Health Facility in Charges are well oriented to conduct reviews and proper documentation using these standard formats.
Constitution of District MDR Committee of CMO for monthly review of maternal deaths and District Magistrate's committee for review of representing samples on quarterly basis needs to be ensured and follow up on regular meetings of these committees needs to be done from State Health Directorate for effective and quality review.
Reporting of maternal deaths by ASHAs and status of payment of incentives with regard to maternal death reporting needs to be strictly reviewed during the meeting of District MDR Committee of CMO. Any laggard reported in payment of incentive must be taken seriously by Health Administrators.
Random inspection of filled in formats and blank copy of review and reporting formats needs to be done by each category of Supervisor visiting these designated health facilities.
Any lacunae reported in filling requisite data/ information in standard reporting formats needs to be properly documented by the Supervisor and special mention of these reporting issues needs to be highlighted in the visit report submitted by Supervisors.
Quarterly review cum orientation workshop needs to be held in every High Priority District to discuss and highlight reporting and review related issues with concerned category of staff directly engaged in reporting and review of maternal deaths. Faculty from Medical Colleges needs to be invited as Expert to share their experiences on the subject.
District MDR Committees need to offer their comments in writing to Health Facility Incharge to take corrective measures for prevention of maternal deaths.
State Health Authorities need to release Quarterly Bulletin on Maternal Death reporting and reviews with special emphasis on cases reported in High Priority Districts for sensitization of authorities of other Line department for taking corrective measures from their end too.

Discussion
In the present study, all 13 Level-III Delivery points engaged in both reporting and review of maternal deaths and a total of 30 Level-II Delivery Points responsible for reporting of maternal deaths of their health facilities and administrative area were included. The study reported that Maternal Death Review (MDR) guidelines were implemented in all 4 (100%) High Priority Districts (HPDs) and State level health authorities had also shared data pertaining to expected number of Maternal Deaths with District Nodal Officers of these HPDs. District MDR Committees were constituted in all 4 (100%) HPDs for periodic review of maternal deaths happening in districts.
While assessing institutional preparedness for reporting and review of facility based maternal deaths, it was found that Maternal Death Review (MDR) guidelines were

implemented in all 13 (100%) Level-III facilities. However, District Nodal Officers had shared expected number of Maternal Deaths with only 76.92 % health care facilities and 84.61% Facility Nodal Officers of Level-III facilities were aware about reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours of occurrence of deaths. MDR Team for Household Verbal Autopsy were constituted in only 61.54 % Level-III facilities whereas 100% MDR Team was in place for conducting facility based maternal death reviews in these facilities. In a similar study, Kok *et al.* (2017) reported maternal death reviews (MDRs) as a part of the drive to increase accountability for maternal deaths and reduce their occurrence by identifying barriers to effective, quality care. Commencing maternal death review studies is a challenging assignment and major challenges identified in undertaking such crucial reviews are devotion of human resources involved in these reviews and existence of a universe within the system to ward off blame game matters.[5]

Preparedness of Level-II Delivery points was assessed to determine their accountability in reporting of maternal deaths. It was found that only 63.33% Level-II facilities had filled and maintained Block level MDR register for all women's death (15-49 years) whereas 56.66 % facilities had received the data related to expected number of Maternal Deaths from their District Nodal Officers. Only 10% Facility In-charges were not aware about reporting of suspected maternal death cases to the District Nodal Officer by Telephone within 24 hours of occurrence of death. Melberg *et al.* (2019) examined practices and reasoning involved in maternal death reporting and review practices and found that death reporting and review were challenged by the fact that maternal mortality is a main indicator of health system performance. Health workers strive to balance conflicting demands when implementing the MDR system: to report all deaths; to deliver perceived success in maternal mortality reduction by reporting lesser number of deaths; and to avoid individual accountability for these deaths. Fear of individual and political accountability for maternal deaths strongly affects not only fair reporting of numbers but also the health care rendered in the study sites [6].

A few lacunae were reported in practices of public health systems stakeholders accountable for reporting and review of maternal deaths. Almost half of the meetings (56.25 %) of District MDR Review Committee were organized in past one year. However, a good proportion (84.61 %) of health facility staff had participated in MDR Workshops in past one year at District/ State Level. The major area for improvement reported in this study was the poor number (62.92 %) of Maternal Death cases reviewed by District MDR Committee of CMO. The percentage of deaths for which Facility Based Maternal Death Reviews (FBMDR) and Community Based Maternal Death Reviews (CBMDR) conducted was found to be 33.73 % and 37.74 % respectively which is really an issue of serious concern. Minutes of Meeting (MoM) were available for almost half (56.25 %) of District MDR Committee meetings. A fair percentage (81.25%) of ASHAs had received incentives for reporting of maternal deaths. Only half of health facilities (53.84%) had received any recommendations of District MDR committees whereas almost one third (38.46%) health facilities reported evidence of any recommendation of District MDR Committees that had been acted on. A few important issues pertaining to record keeping and documentation of maternal deaths were reported in health facilities. Only one third (36.39 %) filled FBMDR & CBMDR forms were found at health care facility out of which 17.89 % FBMDR & CBMDR Forms were filled up partially. However, a small proportion (6.31 %) of FBMDR & CBMDR Forms were filled up incompletely and incorrectly which needs to be looked into by the Nodal Officers through random review during supportive supervision visits. In a similar study, Tayebwa E *et al.* (2020) reported that implementation of MDR was challenged by lack of enough motivated staff, heavy workload, lack of community engagement, incomplete medical records, poor classification of cause of death and no sharing of feedback among others. Implementation of MDR varied from facility to facility indicating varying capacity gaps [7]. Millimouno *et al*. (2019) in a study on accountability of stakeholders reported similar findings regarding notification, review and reporting of maternal deaths. Out of health districts (87%) which had updated guidelines and standards for the MDR, 4 (20%) did not apply the content. In two health districts (8.7%), not all health facilities had maternal deaths notification forms. Maternal death review committees didn't exist in three districts (13%). Only half (50.2%) of reported maternal deaths were reviewed. Surprisingly, only 45% of the review committee's recommendations were implemented for corrective action. Six health districts (26.1%) did not have a response plan to reported maternal deaths [8].

Conclusion

This study concludes that staff of health facilities engaged in both reporting and reviewing maternal deaths lacks clear understanding on tracking and timely reporting of cases of maternal deaths to higher authorities and organizing FBMDR and CBMDR in systematic manner. The study has reported the need to fix accountability at each level for every category of staff and authority engaged in entire MDR process. Non-sharing of expected number of maternal deaths with concerned health care facilities by District Nodal Officers is an area of great concern. Major gaps are reported in proper documentation and record keeping of MDR cases and subsequent practices of public health systems stakeholders accountable for reporting and review of maternal deaths. Standard operating procedures suggested by the researcher through the present study needs to be adhered in order to streamline the entire MDR process.

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