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Ranjini & Sahay The Informational Challenge is Achieving Maternal Mortality Goal Under MDG 5: An Analysis from India

THE INFORMATIONAL CHALLENGE IS ACHIEVING MATERNAL MORTALITY GOAL UNDER MDG 5: AN ANALYSIS FROM INDIA

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Abstract: India had the largest number of maternal deaths in the world. There is gross under-reporting and non-reporting of these maternal deaths, and even where data is available, they are incomplete and inaccurate most of the time. There are a number of challenges with respect to information practices, reporting, information use and information management. In this paper, we seek to understand the informational challenge in achieving maternal mortality goal under MDG5. This paper also examines how various contextual elements shape the nature of informational challenges relating to the identification and reporting of maternal deaths, and the formulation of interventions to address this very serious and current challenge that the Indian public health system is experiencing.

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1. INTRODUCTION

Behind every death in pregnancy and childbirth is a personal tragedy. That tragedy can be understood and approached in many different ways. It is a biological or medical event. It is a health system malfunction. Sometimes it is a family or community responsibility. When multiplied many times over – nearly once every minute – then it is also a social injustice of massive proportions. When framed by its social profile... then it is also a collective badge of shame.

Freedman, 2001

As the introductory quote indicates, while there may be different recorded reasons for maternal mortality, the underlying reasons of why they occur reflect a health system's malfunction. A key component of a health system's functioning relates to the information systems supporting the programs relating to maternal health. The aim of this paper is to examine some of these informational challenges and how may they be addressed in the context of the Indian situation.

The Millennium Development Goals (MDGs) were adopted by 191 countries as a framework for a number of developmental activities at the UN Millennium Summit in September 2000. These goals constitute a global set of human development objectives ranging from eradication of poverty and hunger to developing global partnerships, to be achieved by 2015. Eight specific goals have been set, with over 20 targets and over 60 indicators, of which three concern health: to reduce child mortality, to improve maternal health, and to combat HIV/AIDS, malaria and other major diseases. We are now more than halfway towards the target date – 2015 – by which the MDGs are to be achieved. The specific goals under MDG for improving maternal health are to: (1) Reduce maternal mortality rate; and (2) Increase proportion of births attended by skilled health personnel.

The Tenth Revision of the International Classification of Diseases (ICD-10) defines a maternal death as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration of the pregnancy, or from any cause related to, or aggravated by, the pregnancy or its management, but not from accidental or incidental causes.¹

Maternal mortality in 2005: Estimates developed by WHO, UNICEF and UNFPA and the World Bank (2007:15) reports that India had the largest number of maternal deaths (117,000),

¹ According to ICD-10, maternal deaths should be divided into two groups:

- *Direct obstetric deaths* are those resulting from obstetric complications of the pregnant state (pregnancy, labour and the puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.
- *Indirect obstetric deaths* are those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but was aggravated by physiological effects of pregnancy.

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followed by Nigeria (59,000), the Democratic Republic of the Congo (32,000), Afghanistan (26,000), Ethiopia (22,000) Bangladesh (21,000), Indonesia (19,000), Pakistan (15,000), Niger (14,000), the United Republic of Tanzania (13,000), and Angola (11,000). These 11 countries comprised 65% of the global maternal deaths in 2005. By the broad MDG regions, Maternal Mortality Rate in 2005 was highest in developing regions (at 450 maternal deaths per 100,000 live births), in stark contrast to developed regions (at 9) and countries of the Commonwealth of independent states (at 51). Among the developing regions, sub-Saharan Africa had the highest MMR (at 900) in 2005, followed by South Asia (490), Oceania (430), South-Eastern Asia (300), Western Asia (160), Northern Africa (160), Latin America and the Caribbean (130), and Eastern Asia (50).

In 2005, the World Health Organisation published its annual report titled *Make Every Mother and Child Count* which presented an expert analysis of the obstacles to progress in maternal, neo-natal and child health, and presented a series of comprehensive recommendations aimed at overcoming them. It estimates that complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries, killing over half a million women in 2000 and causing disability and suffering among many millions more (2005:18). Maternal deaths continue unabated, and are often sudden, unpredicted deaths that occur during pregnancy itself (some 68,000), as a consequence of unsafe abortions, during childbirth, or shortly after the baby has been born. The report notes that unwanted pregnancies are estimated at 87 million per year globally. There remains a huge unmet need for investment in contraception, information and education to prevent unwanted pregnancies. The fact that about 46 million women per year resort to induced abortion and that 18 million do so in unsafe circumstances constitutes, the report suggests, a major public health problem. It is possible, the report argues, to avoid all of the 68,000 deaths that occur every year, as well as the disabilities and suffering that go with unsafe abortions. Over half of maternal deaths occur during the post-partum period, the report notes.

According to *India Health Report* (2003), children below five years and women in the reproductive age group make up 36.2 per cent of the population of India. In terms of survival and well-being, they constitute the most vulnerable group in society. Though reliable national and state estimates of maternal mortality are unavailable, the existing estimates reflect the relative neglect of women's health in India. The SRS (Sample Registration Survey) and RGI (Registrar General of India) estimates for maternal mortality for 2001-2003 are 301. There are huge regional differences within States as well as within districts. Hence it is difficult to even arrive at estimates of infant and maternal deaths. As part of its commitment to working towards the MDGs, India has set the following targets:

<i>Goal 5: Improve Maternal Health: Reduce the 1990 maternal mortality rate by three-quarters</i>					
Maternal Mortality Rate (per 1,000 live births)	1990 5.4	2000 4.4	(2002- 2012) 2 by 2007 1 by 2012	Millennium Target for 2015 1	Source: NFHS

1.1 MATERNAL DEATHS: CHALLENGES REPORTED

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Most maternal deaths in India are caused by complications such as hemorrhage (29%), anemia (19%), sepsis (16%), obstructed labour (10%), unsafe abortion (9%) and hypertensive disorders of pregnancy (8%), all of which are preventable (Mathai, 2005:624). Murthy and Barua (2004) carried out a study to explore some of the non-medical factors responsible for the persistently high maternal mortality in India. They reported that most deaths occurred at home and during the postnatal period. Most 'death cases' belonged to high-risk age groups, had high parity (3+), were socially disadvantaged, had not received pre-natal care and advice to go to hospital as compared to women with complications. Consequently, they either had not gone to hospital or had gone too late. Delay in care was also because of lack of transport facilities, inappropriate referrals or poor emergency preparedness of referral facilities. The authors argued that about half the deaths could have been avoided if the health system had been alert and accessible. The critical determinants of avoidable death were families' awareness about complications, emergency transport and preparedness of referral facilities. The study highlighted the need for health workers to stress on health education, care during the third trimester and post-natal period, and referral to appropriate and accessible facilities, even bypassing the hierarchical referral system if necessary.

While the above challenges have been discussed by many, what is not often talked about are the informational challenges. For example, the availability of information to the medical officer on the geographical spread of pregnancies and the nearest referral centres for emergency care can help in taking more effective decisions on providing timely outreach services to the pregnant mothers. A key WHO (2005) recommendation is to improve the information basis on which health management decisions are made. In this vein, the research aims of this paper are:

1. To understand the informational challenge in achieving the maternal mortality goals under MDG5; and,
2. Discuss the various initiatives that can be undertaken to overcome it.

In the next section, we discuss various informational challenges more generally for public health systems management and specifically related to maternal deaths at different levels of the health system in India, including national, state and sub-district. We draw upon a sociological perspective of "context-process" interaction for the same.

2.1 CONTEXT PROCESS INTERACTION

The context-process framework developed for information systems by Walsham (1993) inspired by Anthony Giddens' Structuration Theory (1984) focuses on the mutual interaction between the processes of information production, generation and use, and the context within which this phenomenon is situated. The underlying principle here is that the context may both enable or constrain the processes of interest. For example, Sahay and Walsham (1996) have adopted such an approach to analyze the implementation process of Geographical Information Systems within the forestry sector in India. They identified contextual influences such as systems of bureaucracy and the high status of technology in society to contribute to the use of a compartmentalized and top down approach to implementation. However, over time, as processes of implementation got more entrenched, shifts in approaches could be discerned with the adoption of more participatory and inter-disciplinary techniques reflecting a shift in the contextual influences.

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In this paper, the focus is on understanding the nature of informational challenges related to the phenomenon of maternal deaths, and how may this be addressed by strengthening the underlying information systems. The phenomenon of maternal deaths typically takes place in the context of communities or in health institutions, and information about that death which is collected there or in the facility slowly flows through different levels of the health facilities, the district, state, national and international levels such as the WHO that may be monitoring the progress on the MDGs. A key problem here is that, often, the information does not flow. Forming the context around the phenomenon of maternal death and the supporting information systems are the facilities of Basic Emergency Obstetric Care (BEmOC) and Comprehensive Emergency Obstetric Care (CEmOC) available to the community, incentives for institutional deliveries, the effectiveness of the antenatal services and of course, the information systems that record the deaths, and support its flow to the various actors in the health system.

The Indian health system has a multi-level context, including the national, state, district and sub-district levels. While health is a state subject, there are various nationally administered programs such as for Reproductive Child Health that while getting their budgets and infrastructure from Delhi, are implemented by the States. Another relevant actor in this scenario has been the establishment in 2005 of the National Rural Health Mission that has its key agenda to adopt a health systems approach to strengthen public health delivery. The health systems approach involves strengthening infrastructure, reforming health information systems, reinforcing the community based health force, enhancing schemes for improving institutional delivery among others. Some of these contextual influences are summarized in the table below.

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Table1: Multi level contextual influences

Context	Elements of Interest
At the national level	<ul style="list-style-type: none">• India being signatory of the Millennium Development Goals declaration.• A key agenda of the National Rural Health Mission (NRHM) to strengthen community based systems.• NRHM agenda to provide budgets for the upgrading of primary health centers to provide basic emergency management obstetric care services.• On going processes of reforms of the HMIS at the national level.
At the state level	<ul style="list-style-type: none">• Various ongoing programs to implement schemes for enhancing institutional deliveries, increasing training for Skilled Birth Attendants.• Dedicated budgets for strengthening Basic and Comprehensive Management Obstetric Care services• Many states employing emergency ambulance services to strengthen referral transport.
At the district and sub-district levels	<ul style="list-style-type: none">• Various states have recruited community level workers (one for every 1000 population) to strengthen various maternal health related processes such as motivating mothers to go for institutional deliveries, improving Ante Natal Care, strengthening post natal care etc.• Redesign of the recording formats including the use of line listing for maternal deaths

In this paper, we seek to examine how the above identified contextual elements shape the nature of informational challenges relating to the identification and reporting of maternal deaths, and the formulation of interventions to address this serious and current challenge that the Indian public health system is experiencing.

3 Research Methods

The empirical component of this study is based on an ethnographic approach (Myers, 1999, Harvey and Myers, 1995:24, Suchman 1994) with a focus on developing in situ observations and descriptions of informational related processes on various aspects of health services delivery with a focus on maternal health and mortality.. The field study was undertaken in

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Hyderabad and in two districts, Chittoor and Nalgonda which involved many visits to different health centres, observations at the district offices and State offices, Further detailed interviews and focus groups were conducted with the health staff, project implementers and managers. Frequent field visits and participant observations were vital in order to grasp the phenomenon and trace various processes around the work environment, work practices, relations of use of technology in local sites of practice. As a participant observer considerable time, over 10 months, was spent observing the health staff, shadowing a health assistant to the community, spending a day with a doctor, attending many official meetings and training sessions, and generally 'hanging around' the health centres. Towards the end of the field study, focus group interviews were also arranged. Repeat visits made it possible to hear views from different participants on the same issues and how these change over time.

The ethnographic field work was situated within a larger action research programme popularly called as the Health Information Systems Programme (HISP) initiated by the Department of Informatics, University of Oslo in 1994 and now ongoing in several countries in the South including India (see Braa et al 2004 for more details). The stated goals of HISP are to develop an open source and not-for-profit District-based Health Information Software (DHIS), conduct capacity building programs for the health staff, and strengthen processes of information use on priority areas such as the monitoring of maternal health. In India, HISP was started in December 2000 in Andhra Pradesh and over time has been scaled into a national level initiative. However, for purposes of this paper, we focus on the empirical work carried out in Andhra Pradesh during the period 2000-2005. Further, we also draw upon some empirical work carried out in 2008 at the national level by one of the authors of this paper, where the focus has been to redesign the national health information systems.

4 CASE STUDY

4.1 NATIONAL RURAL HEALTH MISSION

The case study narrative involves description at two levels: one, attempts at the national level to reform of the health information systems, including making it more responsive to the issue of maternal health; two, a more micro level description of how a maternal death protocol was implemented in the community level in the state of Andhra Pradesh.

As mentioned earlier the NRHM has been tasked by the government to bring in architectural corrections in various health systems areas including related to health information systems. While these efforts were wide ranging, two sets of issues are relevant to this analysis. The first concerns the introduction of parameters to monitor whether a particular health facility is providing the six signal functions as a part of the **Basic Emergency Obstetric Care Services (BEmOC)**: 1). Parenteral administration of Antibiotic; 2) Parenteral administration of Anticonvulsants; 3) Parenteral administration of Oxytocics; 4) Assisted Vaginal delivery; 5) Manual removal of Placenta; 6) Removal of retained products of conception. After detailed negotiations with the various stakeholders, the following three treatments of complicated pregnancies was included in the health information system: antibiotics, antihypertensive/Magsulph injections and Oxytocics. **Comprehensive Emergency Obstetric Care Services (CEmOC)** should provide all the above three services along with the following services round the clock through out the year: (1) Availability of blood and blood transfusion facility; and (2) Facility for Caesarian section for delivery of foetus in emergency cases.

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Initially, there was reluctance to include the above parameters based on the argument that we already know that most facilities are not in a position to provide these 6 (BEOCS) signal functions. The counter argument raised was that this is exactly why we need to monitor them so that we know which facilities are being made capable of doing so. Finally, through negotiations it was agreed that three of the key functions would be included. The second issue concerns the recording of maternal deaths. Previously, deaths were recorded as specific data elements, with specific items for number of deaths, and then separate items relating to number of deaths by different causes. In addition to the basic problem of maternal deaths in general being not reported, the existing recording system was ineffective to track particular cases of deaths and relating them to causes. As a part of the reform process, it was argued that we should record maternal deaths through a system of 'line listing' where a particular line would contain name of the deceased, when and where the death has taken place, the probable cause of death and whether or not the maternal death audit had taken place. Since a facility typically reported one to two deaths in a month, the line listing system replaced more than 100 data elements to a few lines in the line listing. Secondly, this system gave richer data on the particulars of the death, location, causes and about its audit. After a fair amount of negotiations and discussions, this system of line listing recording has been accepted and is in the process of being rolled out.

While the above examples are of reforms that are now in the process of being implemented, it is at this point not possible to empirically argue how this will influence the management of maternal deaths. However, we now provide an example of a particular system for recording maternal deaths being implemented in the state of Andhra Pradesh.

4.2 MATERNAL AND INFANT DEATH PROTOCOL IN ANDHRA PRADESH

With a population of 76 million, Andhra Pradesh is the fifth largest State in India. With about 73 per cent of its population living in its 28,123 villages, it is predominantly a rural, agrarian and under-developed. A key concern of the State Health Department has been that although there had been a significant improvement in population stabilisation, there had not been concomitant improvement in reproductive and child health status. The state reported maternal mortality rates in 2002 at 341 per 100,000 live births respectively. Only about half of the women in the state deliver at health facilities, and routine data on causes of maternal deaths are largely unavailable and unreliable.

The State government in 2002 issued a protocol stating that 75% of maternal deaths are preventable, and advocated an approach to analyze every such event, so as to determine the direct and indirect obstetric causes, diseases and socio-economic causes of such deaths, and to suggest corrective and preventive measures in the future, such as: "a maternal death protocol and an infant death protocol be adopted for prompt reporting, investigation and action for these deaths." Towards implementation, the protocol suggested the formation of committees at the State and district levels, and also of a three-member investigation team to audit every maternal or infant death. The protocol further noted that "the occurrence of a maternal/infant death should be reported within 24 hours by telephone or telegram or fax" and that the investigation be completed within 15 days of an occurrence and a report filed to the district and state-level committees for follow-up action. A year after this protocol was implemented, it was realized that auditing every case of infant and maternal death by this team was not feasible. To further decentralize this

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process, in the next amended order the onus of investigating each maternal or infant death was left to the medical officer of every health centre who should submit the audit report to the district officials within seven days. This stipulation was a key driver for the State to conceptualize the design of a Mortality Information System (MoIS) which would require data entry of all maternal audit case sheets at the district level through a web based system.

4.2.1. INFANT AND MATERNAL MORTALITY INFORMATION SYSTEM AT THE STATE LEVEL

The department felt that it that it was necessary to understand the socio-economic along with the medical factors leading to infant and maternal deaths. It stated that the rationale for the MoIS project in order to control infant and maternal mortality the first step is to record all cases. In February 2004, the State invited HISP India to develop and implement the computer based MOIS. A special officer who was actively involved in commissioning the project said:

The government has decided that every case of infant and maternal death will have to be audited by the medical officer of the primary health centre concerned. That audit report will contain the details of the death. The HISP team should get those reports, develop an information system and feed the data at the district level so that it will be possible to analyse the data at the State level.

Here, the special officer emphasised that for the programme planners and service providers, understanding the causes of these deaths as well as in-depth investigations at the facility level is crucial. Accordingly, HISP developed a web enabled MoIS to record maternal and infant case investigation sheets. These sheets were very comprehensive, including containing various causes of deaths, obstetric history (for example, complications during previous pregnancy, whether fully immunized or not) and illnesses, and also other details such as place of delivery, distance travelled from house to institution, mode of transport, time taken to reach place of delivery, access to health professionals, nutritional status, poverty and other socio-economic indicators such as annual income of the family, type of housing, education level of parents and their occupation. The audit forms were to be sent by the doctors from the health centres to the district office. The implementation represented a highly “top-down” approach, as the data elements and the design of the project were conceived at the Commissioners’ office. After a quick pilot where the prototype was demonstrated, rapidly the MoIS was scaled to all 23 district offices of the state. A team was put in place by HISP, with each team member in charge of two districts each to train the members on the filling of the case sheets, conducting comparative analysis and in the generation of reports. A screen shot of the application is provided below.

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Figure: Maternal mortality input screen

The screenshot shows a web application interface for data entry. The browser window title is 'New Page 1 - Microsoft Internet Explorer'. The address bar contains 'http://www.aphealth.org/IMMIS%20Default%20Page.aspx'. The page header features the 'HISP INDIA' logo. The main content area is titled 'History of Present Pregnancy - Intra-Natal Care' and contains several form fields: 'Place of Delivery', 'Complications during Delivery', 'Delivery conducted by', 'Date and Time of Delivery', 'Date and Time of onset of labour pains', 'Condition of baby at Birth', 'Duration of Labour', 'Age of Mother at the time of Delivery', and 'Nature of Delivery'. To the right, there is a section for 'History of Present Pregnancy Care' with a dropdown menu set to 'Uneventful' and a checkbox for 'If no, Complications Identified'. Below this, there are sections for 'Referral Details' and 'Death Details'. 'Referral Details' includes 'Date and Time of Referral', 'Reason for Referral', 'Place from where Referred', and 'Mode of Transport'. 'Death Details' includes 'Date and Time of Death' and 'Place of Death'. A sidebar on the left contains a navigation menu with links such as 'INFANT DEATHS', 'MATERIAL DEATHS', and 'DISTRICT DATABASE'. The browser's taskbar at the bottom shows the Start button and the current page title 'New Page 1 - Microsof...'. The system clock in the bottom right corner shows '20:22'.

Under-reporting and non-reporting of infant and maternal deaths was a major constraint to the implementation of the system. Often the entry was the responsibility of the field staff rather than the doctor as the protocol stipulated. Even in cases when the doctors audited and sent audit forms, many of data elements were incomplete. The project, which was initially intended to run for six months, was scaled down to four months, because of the upcoming State elections. When the ruling party was voted out, there was change in the bureaucracy leading to the termination of the HISP contract in May 2004. Data entry and uploading of the data on the website however continued for sometime, gradually tapering down and then eventually stopping. As with most ICT projects this was also champion-centric, and with the change of bureaucracy, the project sponsor was moved contributing to the drying up of support. A recent visit to the website confirmed the non use of the web system.

4.3 AT SUB DISTRICT LEVEL: PROTOCOL VERSUS PRACTICALITIES

There were a number of challenges during the implementation of this protocol, particularly with respect to the changing of information practices, reporting and information use. There

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was gross under-reporting and non-reporting of these maternal and infant deaths, and details obtained were incomplete and inaccurate. One doctor said:

A health worker has 10-20 villages in her jurisdiction. She has a tour schedule for 20 days and she is expected to be at her sub-centre for 10 days. So, she can probably visit a village only once or may be twice in a month. In between her tour days she also has to work at health camps. So she might not go to that village. When she next time goes to the villages she will come to know about these deaths. But, there is also a huge possibility of her missing them out. Hence there is non-reporting and under-reporting of deaths.

While this is one challenge at the grassroots level, the doctor further said that even when deaths are reported, it is extremely difficult to implement the protocol and audit each and every death:

If there are 2 or 3 doctors at the Primary Health Centre, then one can go on rounds to audit these maternal deaths. I am alone here. If I go to the villages to investigate each case, who will treat out-patients here at the health centre? I will have to treat out-patients from 9 am to 12 am. Then go to the villages. Villagers leave early in the morning and come back only in the evening. Even if I go to the villages chances are that I will not be able to meet them. Some villages are very far. The other reason is I do not have a vehicle at this health centre. It is quite difficult to get to these villages using local transport.

In general, doctors preferred to spend time treating patients over conducting and documenting verbal autopsies. A district health officer added that:

Firstly, most of these maternal deaths and infant deaths do not take place at the Primary Health Centres, and usually do so at a private healthcare institution. The primary health staff do not go to the private institutions regularly and record details of maternal or infant deaths. She may come to know of these deaths probably after two or three months or whenever she goes to that village. Since she does not go to that private institution regularly she may miss recording them. Private institutions are not much bothered about maintaining accurate records on deaths. Even if the primary health staff try and follow up this, private practitioners are not bothered to provide her all the medical details. And most importantly, if the private institutions do not maintain births and death registers correctly there is no legislation to check it. There is neither incentive nor punishment. This is one major factor.

Health workers also often do not report as they fear action by district authorities for 'dereliction of duty'. If deaths are reported they have to be audited. If an audit is carried out, the grading of the facility falls. For this reason, such reports are rarely made as one health worker said: "If I report all maternal deaths they are chances that I will be suspended." So, reporting a death involved disincentives for both the individual and the facility.

5. ANALYSIS: THE INFORMATION CHALLENGES

Information related challenges have been outlined at various contextual levels from the national to that of the health facility at the community level. At the national level, there are challenges in the very design of the health information system, including what data is collected, the mechanism of collection, and the process of its flow. For example, the national level requirements are for monitoring related data rather than of evaluating and policy impact analysis related indicators.

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Also, the programme driven style of data collection, analysis and reporting impedes upon a health systems kind of analysis inherently required for addressing a multi-faceted problem like maternal deaths.

At the sub-district level, medical certification of causes of death is usually not feasible since many deaths occur without any prior medical attendance. Thus, there is a dependence on a system of lay reporting of cause of death, using what is called a verbal autopsy. In theory, verbal autopsy has to be conducted by doctors and/or health staff by visiting the community and asking questions to members of the family and community questions about the events leading to the death of the mother. The doctor who conducts that autopsy is then expected to assess the accessibility and quality of healthcare received by the deceased. Auditing every maternal death has serious practical difficulties due to various reasons including the severe shortage of health staff who are over burdened providing care to the live patients. The time and effort needed to audit such deaths, absenteeism of doctors in rural areas, geographical distances, poor logistic and transport support all contribute to the inadequate collection of data on deaths.

Further, there are systemic challenges such as the disincentives the system provides to the health workers and facilities for reporting deaths. The information system can be described as poor given that a huge amount of data is collected, but less than 5 percent of it is used for the generation of indicators. Further, the system of maternal deaths audits is not institutionalized and rarely is action taken by the state and national authorities on their non conduct..

There is a need to approach the problem of information collection with a stronger community level focus, including an informal analysis of the information relating to the death event. An approach to this could be to tap into the networks of *dais*², *anganawadi*³ workers and health assistants. The top down and formal facility based approach adopted by the health department to gather information tends to be inadequate, and also extremely time and effort intensive. The existing system of reprimand and punishment associated with the reporting of adverse events serves as a clear disincentive to report maternal deaths. Addressing this requires a shift in the prevailing information culture where data is valued for its contribution to local action, rather than seen as a tool for control and reprimand. With such fundamental problems in the context of information systems for monitoring maternal deaths, attempts to track MDG 5 remains a very complex problem..

Attaran (2005) argues that many of the most important MDGs, including those to reduce malaria, maternal mortality, or tuberculosis, suffer from a worrying lack of scientifically valid data. While progress on each of these goals is portrayed in time-limited and measurable terms, often the subject matter is so immeasurable without appropriate reference benchmarks. This problem is further compounded by the poor culture existing in the health system around the generation and use of indicators.

² Community mid-wives

³ Community social workers

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6. CONCLUSION

As discussed in this paper, while it is important to have goals in place like the MDGs to track progress on key health challenges, achieving them requires attention to health systems related parameters and processes, including related to information. This involves appropriate design of the health information systems, procedures for data collection, and the processes around how this data is validated, analyzed, circulated and used. To make the health information system effective, adequate support needs to be provided to those responsible to implement on issues of logistics, infrastructure, resources, and manpower. Incentives need to be built into the system that rewards diligence on reporting, which is contrary to the situation that currently exists. Strengthening the context of the information collection, production and use, will help to address some of the existing informational processes related challenges.

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