



Attaining the MDGs in India
The Role of Public Policy and Service Delivery
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**THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY**

The newly appointed Minister of Health for India, Ms Ramadevi, was travelling to the city of Agra, where she had been invited to inaugurate the National Conference of the Federation of Obgyns, India. She was to address the conference about the needs for maternal health services and the government's plans. Her car passed along the bank of the Yamuna River. The Taj Mahal glowed golden in the light of the setting sun on the other side of the river. The minister was admiring the beauty of building. Just then, she remembered that her speech carried the history of Taj – a monument built in memory of a Moghul queen who died giving birth to her 14th child about 400 years ago. She was reminded of the fact that even now in India – after 400 years, the Taj stands tall but the tragic event that led to its building, a maternal death, is repeated more than 100,000 times every year, year after year. She was wondering: Why? Would she be able to make a difference as Minister of Health to this silent tragedy of injustice to women?

At the conference she promised to change the reality of maternal death in India and requested support from the Federation of Obstetrics and Gynaecology (Obgyns), a very powerful professional body. On her way back, the minister was thinking what had been done, and what needed to be done differently in order to reach this goal.

Back in her office, the minister called a meeting of her secretary, commissioners, directors and other staff in her department working in the area of maternal and child health, and posed them the following question:

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“What should we do to reduce maternal deaths? We have made so much progress in India, in various fields but there are still 100,000 maternal deaths each year. Why? Is our staff not working? Do we have less staff? Is there a shortage of buildings and equipment? Is the staff not trained? What is our strategy? What have other countries done? I would like to take this up as the topmost priority of my government, and would like you to advise me on this.”

There was a brief discussion about the topic. Various officers indicated the problems, and suggested what should be done. There were varied views. The secretary suggested that the department staff prepare a compilation of existing data, studies and reviews and present a note at the next meeting in order to be able to decide on a strategy based on facts and analysis rather than views and opinions.

India: Basic Data and Health Infrastructure

India is a large country, with over 1 billion people living in more than 30 states and union territories, in a total of more than 600 districts. Given current birth rates the Indian population was expected to overtake China's in the near future. Socio-politically a very complex country, India has a tremendous cultural, linguistic and social diversity. The multiparty parliamentary democracy with an independent but very slow judiciary, inherited a British style bureaucratic civil services and rule-based administration.

Since independence in 1947, India had developed a huge health system throughout the country. A summary of the health infrastructure in India can be found in **Exhibit 1**. The large public health infrastructure employed full-time staff (civil servants), except at the village level. Maternal care was provided along with other services such as childcare, family planning (FP), disease control and others. Beside this public structure, a strong private health infrastructure existed. For example most of the large number of "obgyns"¹ worked in private settings. The result was that India had much more health infrastructure and qualified human resources than many Asian and African countries.

The Maternal Death Challenge in India

Since 1982, India had been making policy commitments to reduce maternal mortality. However, maternal mortality rates (MMR) did not change much over the years. The last two rounds of National Family Health (NFH) surveys in 1992 and 1999 showed an increase from 436 to 540 per 100,000 live births, even though the increase was not statistically significant. Estimates of MMR for rural area in these surveys were higher – 449 and 619 per 100,000 live births respectively². MMR remained very high at 400-500 per 100,000 meaning that about 100,000 women died every year in childbirth, almost 20 % of maternal deaths globally. India had no reliable registration system, thus the exact level of maternal death was unknown. Even though some indirect estimates showed a gradual decline in mortality³, it seemed that it had stagnated over the preceding 20 years, at a relatively high level compared to Sri Lanka and China. More data is presented in **Exhibit 2**.

¹ The Federation of Obgyn societies of India (FOGSI) had about 18,000 members. Adding those who were not members, it gave a total of 22,000 obgyns.

² International Institute of Population Sciences (1995). National Family Health Survey, India 1992-93. Mumbai: IIPS. 1995, and IIPS 2000.

³ Bhat, PN Mari (2002). Maternal Mortality in India: An Update. Studies in Family Planning. September 2002; Vol. 33(3): 227-236.

India's Policy Commitments to Maternal Health

Maternal and child health had been one of the top priorities of the Government of India. The deliberate creation of an important health infrastructure had been driven by the goal to provide comprehensive health care including maternal and child health. The central government created and funded a large cadre of Auxiliary Nurse Midwives (ANM) for delivery of maternal care, which was seen as evidence of the government's commitment to maternal health. This commitment was reiterated in various policy statements from as early as 1983 up to 2003 (see **Exhibit 3**).

Programmes for Maternal Health

Since the 1960s, the government had been developing maternal health services in rural areas with the establishment of primary health care (PHC) and sub-health centres. The numbers of these centres had been increasing over the years under various five-year development plans (see **Exhibit 4**).

In the 1960s and 70s WHO and other international agencies promoted antenatal care (ANC) and high-risk approaches for maternal health. Given the limited number of health institutions and the widespread practice of home delivery by traditional birth attendants (TBA) the strategy of training TBAs became the mainstay of maternal health care. There was no emphasis on skilled delivery or institutional delivery from the 1960s to 1990s. From 1966 until about 1994 family planning programmes became highly target-oriented. However, at the time, the agenda of the 1980s and 90s was heavily biased towards child survival interventions, especially immunisation, with a relative neglect of maternal health.

In 1992 the Indian government developed, with help from the World Bank and UNICEF, a large programme called Child Survival and Safe Motherhood (CSSM), with a budget of about \$300 million US. The aim was to reduce child mortality and maternal mortality. In this programme efforts were made to operationalise emergency obstetric care (EmOC) along with antenatal care (ANC) and tetanus immunisation for mothers. The programme's success was rather limited, especially in the area of maternal health⁴, as seen in the comparison of data from the National Family Health Survey evidencing a limited progress of maternal health in the recent past (see **Exhibit 5**).

In 1997, another programme for mothers, women and children called 'Reproductive and Child Health' (RCH) was developed. With a budget of about \$250 million US to run the project over 5 years, it had much broader objectives than CSSM, such as reducing child mortality, maternal mortality and STD/RTI treatment. No evaluation of this programme has been carried out, hence achievements were unclear. But study of the design indicated that the chances of success were limited in terms of maternal mortality reduction⁵.

⁴ **MotherCare 1996**. Child Survival and Safe Motherhood Programme Review and Assessment: Lessons Learned and Recommendations - An Evaluation Report Prepared for the Ministry of Health and Family Welfare of India. Arlington: MotherCare, John Snow Inc. 1996;

The World Bank, 1997. Implementation Completion Report. India Child Survival and Safe Motherhood (Credit 2300-IN), p.11-12, Report No.16353.

⁵ **Mavalankar 2003**. Maternal Health Situation in India: Achievements, Issues and Challenges (forthcoming) Chapter in "In Monograph" "Newborn Health in India" by Saving Newborn Lives, Save The Children USA.

Management of MH Programs

For any programme to succeed, four critical inputs were needed: 1) Good policies and strategies; 2) Management structure and systems; 3) Resources; 4) Efficient implementing processes. Regarding, the first input, resources were always a constraint in any developing country. Over the past 10 years India had been receiving substantial external aid for projects to improve maternal health. India also had a large implementing organisation in the form of the PHC system, even though its quality and accountability were major issues.

Recent epidemiological evidence showed that many policies, such as those only counting on ANC, TBA training and tetanus immunisation were considered ineffective for reducing maternal mortality⁶, and the lack of progress in reducing MMR in the 1980s and 1990s in India was attributed to these incorrect strategies. The identification of good policies was a function of the top management level, where good managerial capacity was paramount. In the early-mid 1990s, the development of emergency obstetric care (EmOC) was considered to be the right strategy for reducing maternal mortality, hence externally aided projects such as CSSM and RCH included a component of improving EmOC. However they failed to be implemented adequately.

Top Management Structure of the Health Department

The Ministry of Health and Family Welfare at the national level consisted of two major divisions, the Department of Family Welfare (DFW) and the Department of Health (DH). There were two additional organisations, a small department called the Department of Indian Systems of Medicine, and the separate National Aids Control Organization (NACO) for HIV/AIDS. The division of work was such that DFW was responsible for maternal and child care, reproductive health, rural health, primary health care and family planning and DH for medical colleges, national institutes and disease control programmes.

The technical unit for maternal health (MH division) in DFW was formed by four officers: a deputy director general (DDG) for MH, and three assistant commissioners. One of the assistant commissioner positions was permanently vacant, such that there were effectively only three technical officers. **Exhibit 6** shows the historical evolution of the organisational chart.

The MH division at the national ministry was meant to oversee the technical and administrative aspects of all the maternal health activities in the whole country with its 1 billion people and 27 million births in more than 30 states. Additional responsibilities included temporarily leading all the training activities, as the post of Deputy Commissioner for Training was vacant, and looking after other components of reproductive health such as RTI/STD treatment. The functions of the MH Division were many. They included technical advice, programme design, monitoring and relations with international organisations (see **Exhibit 7**).

⁶ **Maine 1991**, Safe Motherhood Programs: Options and Issues. New York: Centre for Population and Family Health, Columbia University, 1991

⁷ **The World Bank 1991**, Staff Appraisal Report: India Child Survival and Safe Motherhood Project. World Bank Report No. 9849-IN. WB.

The World Bank 1997, Project Appraisal Document (India): Reproductive and Child Health Project. World Bank Report No. 16393-IN. WB. 1997

Only officers from Central Government Health Services (CGHS) could be assigned to the MH Unit. Public health training, qualification or experience in maternal health was not compulsory for the national technical officers. The CGHS covered mainly Delhi and other union territories – most of which were urban areas. There was no fixed tenure for the officers in the MH Division. They could be transferred even after a short tenure.

The officers of the MH Division had to spend a substantial amount of time on non-technical work, about 40-50% of their working time. These tasks included processing administrative papers; answering parliamentary questions, requests of ministers, MPs and others; participating in co-ordination and other administrative meetings; attending official functions and ceremonies; and looking after financial management and certifications. The Deputy Director General spent about 80% of his time in performing administrative functions.

More time was used up in administrative work because of the weak administrative support. The workload has been somewhat eased in recent years by better computer support, but the majority of the administration was paper-based and hence took much more time, while the use of e-mail and new technology was limited. The MH Director's office had only one phone line for voice and fax; the two assistant commissioners shared a single telephone-cum-fax between the two of them and had no reliable e-mail connection and no official mobile phones.

The MH Director's room was small (20 by 12 feet) and cramped, with a Xerox machine, fax, computer, TV and VCR, bookcases etc. Large furniture divided it to allow for meetings with guests to be separate from the desk. One of the assistant commissioners for MH shared his small office with another assistant commissioner. This office was on a different floor and quite far away from the director's office. There was no space for a library, thus the officers kept their books in their own rooms.

Other Relevant Institutions

The *Planning Commission* allocated resources according to the five-year development plans for all sectors including health. The commission's allocation strategy was very influential for the direction of future programmes. The commission had only one technical officer responsible for the health sector, called the Health Advisor. At the state level, the respective state planning commissions usually had no technical health experts on a full time basis. During the planning process the national commission formed technical working groups in order to set technical inputs on needs and directions for the next plan.

The National Institute of Health and Family Welfare (NIHFW) was the top government technical institute for training and research located in New Delhi. It was to be consulted on all technical issues and to provide the scientific and advisory inputs to the government – an important staff function. However, the NIHFW had hardly any technical officers working on maternal health. Their focus had been family planning and primary health care. Very little research had been conducted on maternal health issues in the recent past. During the RCH Programme (1997-2003) NIHFW was the nodal agency for training, and one relatively junior obstetrician had been recruited to develop the MH part of the training modules under the programme. However, NIHFW's overall capacity and role outside of training had been very limited.

The *state health departments* had an important role; following the constitution, the responsibility for health services was at state level, a big task, as with populations ranging from 20–130 million, many states were like medium-sized countries. However, given the importance of family welfare (family planning and maternal and child health) in India, respective programmes were supported financially at the national level. But the responsibility for the implementation and monitoring of the national programmes was at state level, and their success or failure depended on how the state health services were run. **Exhibit 8** shows details on health infrastructure and maternal health officers for a set of selected states. In most states the joint director or deputy director in charge of maternal child or reproductive health also looked after maternal health, besides family planning, childcare and other areas. Some officers had a very wide range of services to look after, such as the joint director in Chhatisghar State, who, beside maternal health, was responsible for leprosy, TB, nursing, stores and purchase. The additional director for maternal and child health in Maharashtra State, had to take care of school health and family planning. Usually there were no midwifery officers at state level, but in some there was one nursing officer (Gujarat). The state level technical officers also devoted a substantial part of their time (40-70%) to administrative duties.

The qualification of many of the state-level officers was Bachelor of Medicine and Bachelor of Surgery (MBBS), with no special training in Obgyn, public health or health administration. Some states had some officers with a diploma in public health. Other states had specialist doctors (eg surgeons, paediatricians) looking after maternal and child and reproductive and health and family welfare (FW). However, very few officers were qualified obgyns.

In terms of training, there were hardly any good technical courses on maternal health programme management. The general public health qualifications such as diploma in public health (1-2 years) and an MD in preventive and social medicine (3 years) were general and did not focus on maternal health. International organisations, such as WHO had not organised short training courses on maternal health or programme management for technical managers.

Delegation of Authority to Technical Top Management

As in many countries, India's top technical manager was called the Director General or Director of Health and/or Family Welfare Services. One level up was the Secretary of Health or Family Welfare, usually from the Indian Administrative Service (IAS) and sometimes the State Administrative Services at state level. Secretaries were usually generalists with no technical know-how, although they used to make technical-strategic and financial allocation decisions. Very often, the technical decisions were even made by politicians, ie at ministerial level, as this had more power than the technical level. At the state level the situation was similar. Often the higher level state administrative, non-technical staff (deputy secretary, joint secretary) became project directors of externally assisted MCH, RCH projects. As such they had more executive power but less technical insight than the technical officers (directors or deputy directors).

The number of technical officers for child health, TB, and other public health programmes was also small in the light of the large population. But for TB and HIV programmes, the officers were devoted entirely to these programmes, and did not have many other responsibilities, while those working on maternal health were responsible for child

health and reproductive health too. Only at national level was there any division exclusively devoted to maternal health.

Maternal Health and International Organisations in India

A large number of international organisations, such as the World Bank, WHO, UNICEF, UNFPA, EC and DFID had been supporting the government's family welfare, primary health care, MCH and RCH programmes, which included maternal health interventions. Over the previous 30 years, the World Bank's total contribution to health programmes in India was about \$2.6 billion US. Other agencies also spent millions of dollars on health, MCH, RCH, health reforms etc. in India every year. But none of the international organisations had any full-time technical officers committed to maternal health, with the exception of UNICEF – with a technical officer for women's health and a consultant for midwifery in Delhi, also responsible for HIV/AIDS (related to mother-to-child-transmission). UNICEF had also appointed one Assistant Program Officer for maternal health in each of its 10 field offices in India.

Most other agencies had general public health experts as technical officers, and their numbers were also very limited. For example UNFPA, with a budget of about 100 million dollars over 5 years, had only one technical officer (a public health expert) for health for the whole country. The World Bank had one technical officer with public health background looking after the entire RCH program, and the World Bank Delhi office had no technical officer solely focusing on maternal health. There was no consultant fully devoted to MH issues in India even during the running of the CSSM and RCH Programmes. The agencies hired consultants for specific work to supplement their capacities.

A World Bank Study on the Implementation Capacity of Maternal Health

In 2003, the World Bank commissioned a study on the managerial capacity of the maternal health programme in India. The report made several observations on the effect of limited technical capacity at top level on implementation and monitoring of past maternal health programmes. The limited capacity was seen in the fact that several technical functions were not performed at all or at least not systematically. In part this was attributed to the small number (three) of technical officers at the national MH Unit.

The *Child Survival and Safe Motherhood Project* (CSSM) (1992-1996) with a budget of \$300 million US, was an important undertaking. Major pitfalls in its implementation were seen in the lack of implementation of guidelines, so crucial for the complex task of making the 1,700 First Referral Units (FRU) operational. Equipment and supplies were provided and buildings were repaired, but the programme failed to create management and monitoring functions at the central level. This led to the fact that the Emergency Obstetric Care (EmOC) objectives were not met, as stated in the Bank's project completion report:

”No accurate data are available regarding the functioning of FRUs in the states. The Ministry estimated that 2,500 FRUs would be required countrywide. Of these, the location of 1,700 has been identified though only 600 are reported to have started functioning, albeit mostly without blood replacement facilities. No

information is available as to the number of obstetrical and neonatal emergencies that have been dealt with at FRUs” (World Bank 1997a, para 23/P.6-7).

The World Bank study stated that it made little sense to spend about 100 million dollars on safe motherhood, when the functionality of the basic units was not monitored. Even later, the Indian government seemed not to be able to report on how many units were operational⁸. A related problem was the lack of anaesthetists and obgyn specialists. It appeared that there were some legal and other barriers to providing the necessary training to the basic doctors in order to be able to perform anaesthesia and carry out caesarean sections. These barriers should have been addressed, but this was not done by the central government FW department.

Similarly, the monitoring of other programmes was not done properly, such as prophylaxis against nutritional anaemia with iron and folic acid (IFA) tablets, and antenatal care (ANC) or ensuring high quality abortion services. Guidelines, technical manuals or standards for maternal health services had not been developed or were poorly developed, let alone revised and improved, a task normally carried out by the central MH Division. Other management failures were seen in the failing updates of staff’s job charts, leading to lack of clarity of roles and responsibilities and affecting output and accountability. A direct consequence of this was that even though 130,000 posts of Auxiliary Nurse Midwives (ANM) had been created to provide skilled birth attendance, most appointees were not staying at their assigned post, and very few were actually carrying out deliveries, a problem which remained to be addressed. Quality improvement, even though stressed in the CSSM and other programmes, was another neglected area. Important studies on availability and use of EmOC, using international indicators were carried out in less developed countries, such as Bangladesh, Nepal and Sri Lanka but did not exist for India.

The study highlighted the lack of time available for the technical managerial staff, their excessive workload, and competing assignments, as witnessed by one participant at a technical meeting in the ministry:

”External people spend the whole day in the meeting, while the technical officers of the ministry are going in and out. When they are already so busy then, it is difficult to imagine how they can ever do any reasonable amount of field supervision and monitoring of the implementation and quality of services in the country.”

The technical officers’ shortage of time also meant that they were unable to attend training sessions, read technical materials, get updates on the latest technical developments in the field of maternal health, or attend national or international meetings. Here, often smaller countries were represented, while India was not, meaning that the Indian officers were not exposed to the new thinking and research happening in the world.

Most importantly, the necessary technical input was often not provided, such as the development of technical protocols or guidelines for MH programmes. In some states (Tamil Nadu, Kerala and Chhatisghar) these protocols were developed with the help of UNICEF, DANIDA or other agencies. And even in those states, the implementation was only partial (see **Exhibit 9**).

⁴ **GOI 2002**, Annual Report, 2001-2002, Ministry of Health and Family Welfare, GOI, New Delhi, Ch.5, p.63-72.

Data compilation was another neglected function. Analysis and preparation of meaningful annual reports of the maternal health activities at state or national level were not undertaken. The only central-level annual report by the ministry was very repetitive and contained very few data. The maternal health chapter of a recent report gave only a description of various schemes for maternal health, but failed to relate achievements, data and analysis of progress, or lack thereof⁹. And even the proposals for external funding were prepared by consultants and/or outside technical officers.

What Others were Doing: Malaysia, Sri Lanka, Bangladesh and Other National Programmes

Sri Lanka (population 19 million), and Malaysia (population 23 million) had made good progress in maternal health. Both had between two and three technical officers assigned to maternal health, taking care of planning, implementation and monitoring of programmes. Discussions with these officers revealed that they had strong authority and were highly respected. It seemed that the political level in those countries interfered little in technical matters or in routine implementation¹⁰.

The success of Sri Lanka was attributed to the development of skilled birth attendance through rural midwives, later by institutional deliveries and EmOC. The Sri Lanka Family Health Bureau (FHB) was originally set up in 1968 at national level. Three staff and occasionally-hired consultants looked after the programmes, representing good technical capacity and complementing the investment in peripheral health staff. The FHB took a range of technical actions to strengthen the maternal health programme, as can be seen in **Exhibit 10**.

The experience of the Averting Maternal Death and Disability (AMDD) Programme-supported projects in India, Bangladesh, Nepal and other countries clearly showed that lots of facilitation was needed to improve access, availability, utilisation and quality of EmOC services. The Bangladesh project tried to improve EmOC services nationally by upgrading 123 district and sub-district level facilities. Besides government officers, 19 full-time officers were appointed by UNICEF to support this project. And despite this additional technical capacity, the project still had difficulties in making the facilities fully functional.

Two global programmes, Polio Eradication and Revised TB Control, had faced limited technical capacity in India, and had additional WHO staff appointed to improve management capacity, including facilitation and monitoring in the polio programme to improve surveillance of polio cases and vaccine coverage. However, other programmes like family planning and immunisation, supported by powerful international agencies, often diverted the priority away from maternal issues.

⁹ (idem, GOI 2002c)

¹⁰ Presentation by and personal discussion with Dr. Raj Karim, ex-Director in charge of MH in Malaysia 23rd October 2003 at AMDD Conference in Kuala Lumpur.

How Expensive was Top Technical Management Capacity?

In the previously mentioned World Bank report, estimates were made of the resources required for increasing technical capacity. One technical MH officer per 100 million people at national level would mean at least ten additional technical officers. At the state level, one technical officer for 10 million people would lead to five technical officers solely working on maternal health for a state with a population of 50 million, more in larger states. Estimating the cost per year for one senior level technical officer at about 600,000 Rs (\$13,000 US) including pay, allowances and indirect expenses, the additional cost for the estimated 110 additional technical officers would amount to 6.6 crore Rs or \$1.4 million US per year, corresponding to only about 0.6% of the RCH Programme budget.

The World Bank study gave some indication of the qualifications and roles of possible additional top management officers. Important skills were a background in public health, obgyn, midwifery and related fields so as to be able to work on various technical issues, with the administrative support given. Increased financial and technical power would allow them to better plan, implement and monitor maternal health programmes, while being more sheltered from the political level and the ministerial hierarchy. The study stressed the importance of the ability of technicians to commission studies, reviews and evaluations in order to measure progress made and hire technical consultants for specific tasks. A maternal health technical advisory committee at national and state levels composed of national and international MH experts would review the progress of MH programs and give advice on future courses of action. Organisations of professionals such as the Federation of Obgyn Societies (FOGSI), the Indian Medical, Nursing and Midwifery associations and academics would be asked to give inputs in the technical processes.

The Staff Meeting

After having reviewed the note her staff had prepared, and discussing the matter with party colleagues and some medical friends, Minister Ramadevi called a staff meeting.

The joint secretary in charge of reproductive health started the meeting by presenting some data from a facility survey carried out. The data showed that many of the health facilities lacked adequate equipment, supplies and infrastructure, as seen in **Exhibit 11**. He proposed “If we want to improve maternal mortality we should first focus on improving the infrastructure. As seen from the data, the PHC infrastructure is pretty weak at PHC and CHC level. We need to improve our buildings, equipment and staffing position at the peripheral levels. I have visited some of the rural health centres and they look terrible. The roofs are leaking, walls have cracks, paint is coming off. No one would like to work or get treated in such a setting. This may be the key reason why people do not choose the public health centres for delivery or treatment. We need to invest substantially in improving the buildings and equipment. The World Bank and other donors are willing to provide support for such activities. We should take help from such international agencies”.

The Deputy Director General of Health Services for MH continued the discussion and said that the facility survey also showed that there was a shortage of specialist staff (see **Exhibits 12 and 13**). He said “I agree with the Joint Secretary that infrastructure is important. But I feel that the top priority should be given to filling up vacant posts of specialists in FRUs and CHCs. Buildings alone will not provide services – human resources are the key to good quality services. In many of our hospitals and health centres we do not

have specialists to provide EmOC services. EmOC services are to be provided 24 hours a day, 7 days a week and 365 days a year – they are emergency services. Hence even having just one specialist for 500,000 people at FRU level is not enough. We need at least 2-3 doctors who can provide EmOC services for 24 hours. Currently many districts have just 2-3 obgyns for 2 million people, hence women have to go to the district hospitals to get a caesarean section. This takes 6-10 hours and many may be dying on the way. We have great shortage of specialists working in rural areas. Most specialists want to work in urban areas and in the private practice. If we do not find specialists to work in rural government hospitals then we should train medical officers with a medical bachelor (MBBS) degree to provide EmOC services. In the past this was common. Even today in many countries in Africa it is common practice that an MBBS doctor provides EmOC services. In some countries where even MBBS doctors are not available in adequate numbers, they allow medical technicians or paramedical staff to carry out life-saving surgery after proper training. I strongly recommend that we should adopt such a system of training MBBS doctors for EmOC. This will go a long way in reducing MMR in India”.

At this point the Secretary of Family Welfare, who had taken the post quite recently, and had little health sector experience, said “I see that we have shortage of specialists in rural areas. But is this a recent situation? We have to be careful and not rush into a decision of training MBBS doctors to provide EmOC services. If something goes wrong the government will be blamed. Secondly, the obgyn specialists’ association may object to training MBBS doctors as they may then practice in urban areas as half-baked gynaecologists and compete in private practice. We should look at all the aspects of this problem and possible solutions to it. We should also take a legal opinion as to whether MBBS doctors can perform surgery or not. Why not train more TBAs as they have been doing deliveries in rural areas for many generations, have the faith of the people? I have read in the newspapers that some NGOs have been training TBAs in the past and found them useful. This step of training TBAs will be less controversial and with better skills they can save the mothers”.

Even though the deputy director did not agree at all with this statement, he held back any dissenting comments, as he did not want to contradict the secretary openly in the staff meeting chaired by the minister.

The nutrition advisor to the ministry, who was a well-known nutritional scientist, put her views. She said “Respected Madam Minister. What I have observed, and there is data to support it from the NFHS survey, is that most of our women are highly anaemic. They do not get adequate food due to gender disparity in our society. They eat last in the family and get only the leftovers. This leads to anaemia in pregnancy. Madam, anaemic women are prone to many problems including bleeding during delivery and are more likely to die in pregnancy. Thus if we concentrate our efforts on controlling anaemia in pregnancy we will avoid many deaths of women. Secondly it is very easy to do that by providing iron supplements in pregnancy. Iron tablets are very cheap and we have a national programme for that. So Madam, under your dynamic leadership, we can take up a special programme to prevent anaemia among women which will save many lives and help reduce MMR, which is what you want”.

The minister noticed that there was no consensus on what to do. She started by saying that the promotion of safe motherhood through promoting antenatal care was a very important goal. “I met with a few private obstetricians in MP State. They were very clear that the first step is to increase awareness among women so that they can take care of their health. Currently women neglect their health due to their work and social responsibilities. Hence they do not come forward for antenatal care. And poor health in pregnancy leads to

poor delivery outcomes. I want to start a special campaign to improve the use of antenatal care. We should think how to improve the health of mothers when they are pregnant. The obstetricians whom I met in MP State told me that their association is very strong with 18,000 members nation-wide. They can help in improving ANC. Why not take their help? Can we plan a programme where the private and public health facilities will provide free ANC care on a particular day? We can advertise this widely in the newspapers. This will encourage women to come forward for ANC and improve their health. The obstetricians can guide them on how to take care of their own health and prevent anaemia and other complications during pregnancy and childbirth. The infrastructure creation will take time and money. Secondly, why should we take World Bank money? I read in the newspapers that our country is already very indebted. The finance department will not allow increasing staff due to the shortages of funds. Meanwhile, this scheme of free ANC will not take much money if the private doctors agree to give free consultation times, one day a month. What do you think of this idea?"

The deputy director wanted to suggest that the minister focus on emergency obstetric care rather than antenatal care as evidence had shown that ANC alone would not reduce MMR. But before he could do that the secretary said: "Madam, This is a very good idea. We will formulate a scheme within few days and will call the obstetric association to meet with us to finalise the details".

The minister said, "I was sure that you would like this idea. This will be a very good way of achieving public-private partnership. I suggest that we plan a grand inauguration of this scheme and invite the Prime Minister to inaugurate the scheme next month. I hope all the groundwork will be done before that. I do not want any delay in this. Many mothers are dying we must do something".

The minister then left, as she had to go to a cabinet meeting. The health secretary instructed the staff to work on the new scheme of free ANC. The deputy director general was wondering, did the minister make the right decision? □

Acronyms

AMDD	Averting Maternal Death and Disability (World Bank Programme in Bangladesh)
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwives
CGHS	Central Government Health Services
CSSM	Child Survival and Safe Motherhood, World Bank Programme 1991-1996
DFW	Department of Family Welfare (Indian Ministry of Health and Family Welfare)
DH	Department of Health (Indian Ministry of Health and Family Welfare)
EmOC	Emergency Obstetric Care
FOGSI	Federation of Obgyn Societies of India
FHB	Family Health Bureau (Sri Lanka)
FP	Family Planning
FRU	First Referral Unit
FW	Family Welfare
IFA	Iron and Folic Acid
MBBS	Bachelor of Medicine and Bachelor of Surgery
NACO	National Aids Control Organisation
NFH	National Family Health
NFHS	National Family Health Survey
NIHFW	National Institute of Health and Family Welfare
PHC	Primary Health Care
RHC	Reproductive and Child Health Approach, World Bank Programme
RTI/STD	Reproductive Tract Infection/Sexually Transmitted Disease
TBA	Traditional Birth attendant

Exhibit 1

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Government Health Infrastructure in India

Level of health infrastructure (beds per institution)	Numbers (approximate) and population ratios	Staffing
Institutions of excellence (more than 1,000 beds per hospital)	About 10 – one per 100 million pop.	Super specialists
Medical colleges(800–2,000 beds per hospital)	150 – one per 6-7 million pop.	All basic specialities and some super-specialities
District hospitals (100-300 beds per hospital)	450 + - one per 2 million pop.	6-8 basic specialities (medicine, surgery, obgyn, paediatrics, orthopaedics, ENT, eye, pathology, anaesthesia...)
Community health centres (CHC) & FRUs (30-50 beds per hospital)	3000 CHCs – one per 100,000 population and one CHC for 3-400,000 population designated as FRU – 1700 FRUs	1-3 basic specialities FRU to provide comprehensive EmOC services
Primary health centre (PHC) (6 beds per PHC)	22,000 PHCs – one per 30,000 population	1-2 medical officers and other para-medical staff.
Sub-health centre (0-1 bed per sub-centre)	130,000 – one per 5000 population.	One auxiliary nurse midwife (ANM) and one male health worker.
Village level – child care centres (angan wadi)	2-300,000 - one per 1,000 population.	One part time worker and one helper
Village level – traditional birth attendants	About 800,000 – 1-2 per village	They are not government employees but some have been provided training by govt.
Urban areas – urban family welfare centres and dispensaries and hospitals	Exact numbers not available	Basic doctors (medical officers) nurses and other health and family planning workers.

Exhibit 2

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Estimates of Maternal Mortality Ratios from Various Studies

Source	Year	Methodology	Sample size	National/Region	MMR est (per 100,000 live births)	95% CI limits	Remarks
Bhat (i)	1982-1986	Model based estimate from sex differentials of adult mortality	NA	National	580	—	—
Bhat (ii)	1992-1994	Sisterhood method	NA	National	544	—	—
Bhatia (iii)	1984-1985	Special study	262	Anathapur district AP	830	—	Rural remote district
Kumar (iv)	1986	Special study	55	North India	230	—	Small study in low mortality area
Bhat (ii)	1987-1991	Model based estimate from sex differentials of adult mortality	NA	National	519	—	—
RGI (v)	1993	SRS	384	National	356	—	—
NFS 1 (vi)	1992-1993	Sample survey		National	437 R:448 U:397	334-540	not focused on MMR may underestimate
Bhat (ii)	1991-1996	Model based estimate from sex differentials of adult mortality		National	440	—	—
RGI (vii)	1997	SRS	577	National	408	—	Estimates for two states are very low
RGI (viii)	1998	SRS	498	National	407	351-463	Estimates for two states are very low
NFHS 2 (ix)	1998-1999	Sample survey		National	540 R:619 U:267	428-653	not focused on MMR may underestimate

NFHS=National Family Health Survey; R=Rural; U=Urban

CI=Confidence interval; RGI=Registrar General of India; SRS=Sample Registration System;

- i. Bhat, P.N. Mari, Navaneetham K. and Irudaya Rajan S. Maternal mortality in India: Estimates from a regression model. *Studies in Family Planning* 1995; 5 (11):217-232.
- ii. Bhat, PN Mari. Maternal Mortality in India: An Update. *Studies in Family Planning*, September 2002 ; Vol. 33(3):227-236.
- iii. Bhatia, Jagdish C. Levels and Causes of Maternal Mortality in Southern India. *Studies in Family Planning*, Sept/Oct 1993; 24(5):310-318.
- iv. Kumar R, Barik SS and Kumar V. Maternal mortality enquiry in a rural community of North India. *International Journal of Gynaecology and Obstetrics*. 1989; 29:313-319.
- v. Registrar General of India, *Survey of Causes of Death*, New Delhi, 1995.
- vi. International Institute of Population Sciences. *National Family Health Survey, India 1992-93*. Mumbai: IIPS. 1995.
- vii. Registrar General of India. *Sample Registration Bulletin*. Vol. 33 No 1, Apr 1999. New Delhi: Office of the Registrar General.
- viii. Registrar General of India. *Sample Registration Bulletin*. Vol. 33 No 1, Apr 2000. New Delhi: Office of the Registrar General.
- ix. International Institute of Population Sciences and ORC Macro. *National Family Health Survey, India 1998-99*. Mumbai: IIPS. 2000.

Exhibit 3

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Policy Commitments to Maternal Health and Maternal Mortality Reduction

Year	Document	Goals stated in policy & programme documents
1983	Health policy statement by Govt of India. (GOI 1983)	MMR reduction to 200-300 by 1990 and below 200 by year 2000
2000	National population policy (GOI 2000)	MMR reduce to 100 by 2010
2002	National health policy (GOI 2002a)	MMR reduce to 100 by 2010.
2002-2007	Tenth Five Year Plan (GOI 2002b)	MMR reduction to 200 by 2007

Sources

GOI, 1983. Government of India, Ministry of Health and Family Welfare. National Health Policy 1983 [cited 2003 Sep 19]. Available from URL <http://mohfw.nic.in/kk/95/ii/95ii0101.htm>.

GOI, 2000. Government of India, National Commission on Population. National Population Policy 2000 [cited 2003 Sep 19]; Available from URL <http://populationcommission.nic.in/npp.htm>.

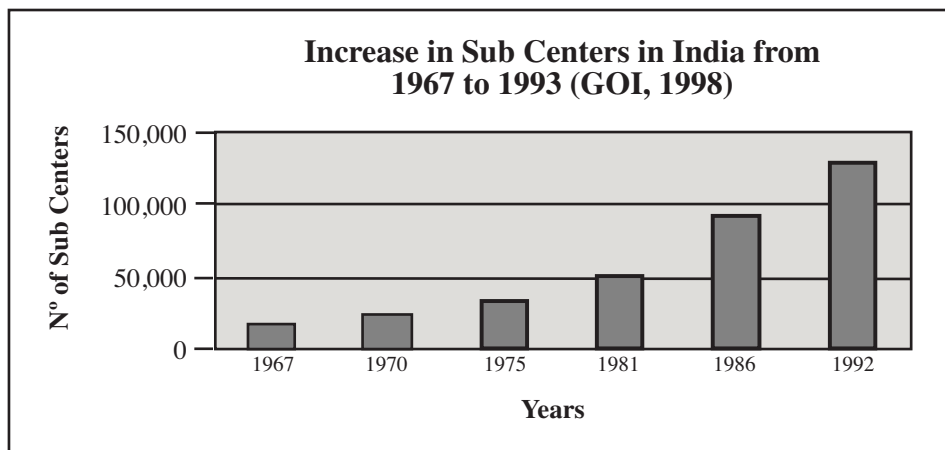
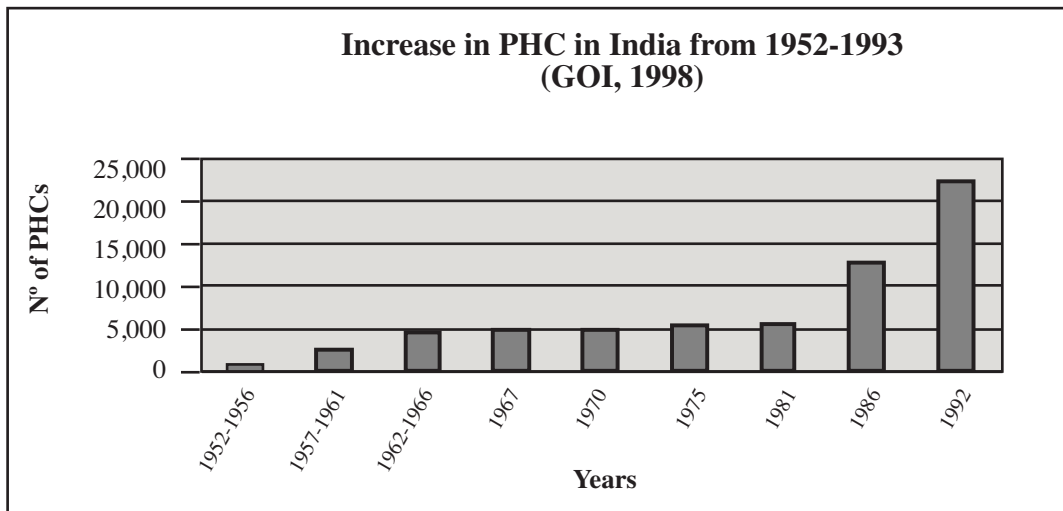
GOI, 2002a. Government of India, Ministry of Health and Family Welfare. National Health Policy 2002 [cited 2003 Sep 19]; Available from URL <http://mohfw.nic.in/np2002.htm>.

GOI, 2002b. Government of India, Planning Commission. Tenth Five Year Plan (2002-2007) Vol II Chapter 2;. Available from: URL http://planningcommission.nic.in/plans/planrel/fiveyr/10th/volume2/v2_ch2_8.pdf.

Exhibit 4

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Increase in Health Centres



Source: GOI,1998. Health Information of India 1995-96, Central Bureau of Health Intelligence, Ministry of Health and Family Welfare. Govt. of India, New Delhi.

Exhibit 5

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Maternal Health Indicators in NFHS 1 and 2 surveys
(percent)

<i>Maternal Care Indicators</i>	NFHS 1 1992-1993	NFHS 2 1998-1999
Antenatal care according to source of ANC care		
At home by health worker	12.8	5.6
Doctor	39.8	48.6
Other health professional	9.3	10.9
TBA	0.3	0.2
No ANC	36.8	34.0
Number of ANC visits		
None	36.8	34.0
1 visit	6.1	8.2
2-3 visits	29.3	27.6
4+ visits	26.9	29.5
Stage of pregnancy at first ANC visit		
No ANC	36.8	34.0
1 st quarter	24.0	33.0
2 nd quarter	27.2	25.2
3 rd quarter	11.4	7.4
Tetanus toxoid vaccination (of mother)		
None	39.0	24.1
One	7.1	8.2
Two or more	53.8	66.8
Iron and folic acid tablets or syrup		
No iron and FA acid tablet or syrup	50.5	57.6
Received supply for 3+ months	NA	82.5
Consumed all the supply	NA	80.5
Place of delivery		
Public health facility	14.6%	16.2%
Private health facility	10.9%	17.4%
Home (own)	61.6%	53.2%
Home (parents)	11.9%	12.2%
Assistance during delivery		
Doctor	21.6%	30.3%
ANM/nurse/midwife	12.6%	12.0%
TBA	35.2%	35.0%
Relative/other	29.5%	22.4%
None	0.6%	NA
Complications at delivery		
No complication	87.9%	NA
Caesarean section	2.5%	7.1%

Note: Don't know or Missing Values not given – this was less than 1% for all indicators.

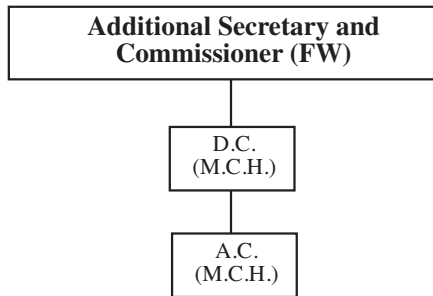
NFHS=National Family Health Survey; TBA=Traditional birth attendant; ANC=Antenatal care; NA = Not available.

Exhibit 6

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

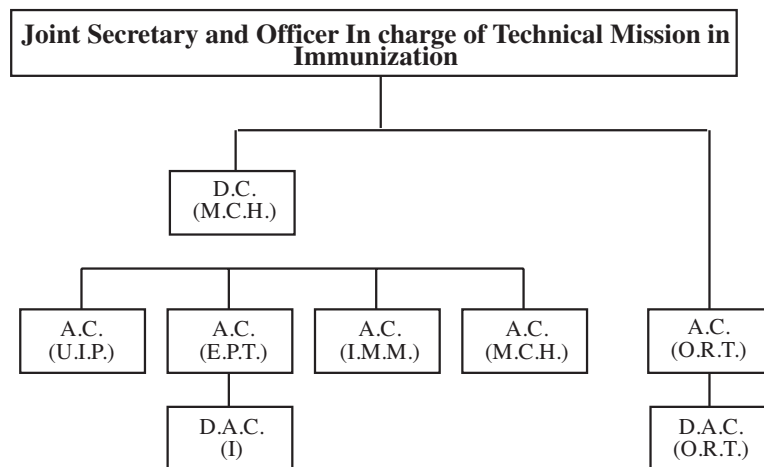
Organisational Chart of MCH Division of Government of India

Years: 1984-1985



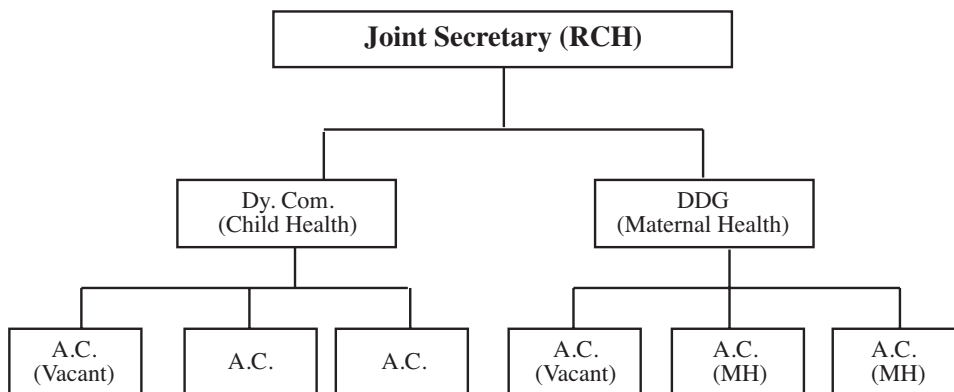
Source: Annual Report.

Years: 1992-1993



Source: Annual Report.

Years: 2002-2003



Source: Annual Report.

Exhibit 7

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Functions of the MH Division in the National Ministry of Health

- Provide technical advice to minister and secretary of health and FW.
- Design new programmes.
- Set technical standards and develop guidelines.
- Review research and develop new evidence-based strategies.
- Review training content.
- Monitor implementation and evaluate outcomes.
- Monitor programme performance including quality.
- Provide information for answering parliamentary questions.
- Provide technical information on policy, legal and other issues.
- Commission special studies, review data.
- Deal with professional organisations, NGOs and consumer groups etc.
- Interact with donors, international agencies and development partners.
- Accompany various planning and evaluation missions of donors.
- Prepare annual reports.

Exhibit 8

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

8.1 Population and Number of Health Institutions in Selected States

Facility	Kerala	Maharashtra	Tamil Nadu	Rajasthan	Chattisgarh	Gujarat	Government of India
Population (millions)	32	97	62	56	21	51	1,027
District hospitals	11	24	25	123†	16	24	
CHCs	105	295	66	287	114	256	2,935
FRUs	65	165	163	138	53	88	1,746
PHCs	933	1,695+230*	1,410	1,674	514	1,056	22,975
Sub Centres	5,094	5,546	8,682	9,926	3,818	7,274	137,270

† includes 6 medical colleges. Maha = Maharashtra, TN = Tamil Nadu, Raj = Rajasthan, CG = Chhatisghar, Guj = Gujarat, GOI = Government of India (whole country). * PHU & MCU. GOI facility data is for 1999.

8.2 Technical Officer Posts for MH in Selected States and Government of India.

	Kerala	Maharashtra	Tamil Nadu	Rajasthan	Chattisgarh	Gujarat	Government of India
Total No. of Officers	1 +(4)	(7)	(4)	(2)	(3)	(2)	4
Designation							
Additional Director/DDG	(1)	(1)	(1)			(1)	1
Joint Director		(1)	(2)	(1)	(1)		
Deputy Director	1	(2)	(1)	(1)	(1)	(1)	
Assistant director (Asst. Comm.)		(3)					3*
Consultants	(3)				(1)†		

Figures in brackets indicate that these officers are not for MH alone but are for MCH, RCH and FW, which includes MH. † appointed but not joined,*one post vacant.

Exhibit 9

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Clinical Protocols Developed and in Use in Selected States

Clinical Protocols available	Kerala	Maharashtra*	Tamil Nadu	Rajasthan	Chattisgarh	Gujarat	GOI
Yes	Yes *		Yes		Yes		
No		No		No		No	No National protocol.**
If Yes whether implemented or not			Partially implemented		Partially implemented		

* (UNICEF supplied printed protocols on EmOC and Early Neonatal Care).

** However minimum requirements are mentioned.

Exhibit 10

Technical and Managerial Actions Taken by Director of Health Services (DHS) and Family Health Bureau (FHB) of Sri Lanka

- 1951 DHS identifies need for an ambulance service with telephone facilities throughout the country with the aim of providing quick and safe transport for the sick.
- 1961 Appointment of Medical Officer of Maternal and Child Health (MOMCH) at district level for intensive monitoring of the field MCH Program.
- 1968 MCH bureau established with a director in charge.
- 1973 MCH bureau renamed Family Health Bureau.
- Reorganisation of field reporting systems.
- Enhanced reporting facilitated in intensive and regular programme review and supervision.
- In-service training programme to address deficiencies.
- 1970 Manual for midwives produced in three languages.
- 1965 onwards evaluation of MCH programmes – important function of FHB.
- Clinical protocols have been developed and circulated to all institutions.
- Hospitals sent circulars suggesting action for improvement based on deficiencies identified through maternal death reviews.
- Innovative methods of linking consultant obstetrician to peripherals doctors so as to reduce overcrowding of specialised units worked out.
- Maternal Death Investigation established and its methodology has been constantly reviewed/amended from time to time.
- Essential drug and equipment lists developed for small hospitals.
- Appointment of two obstetricians for 24 hour coverage.
- 24 hour availability of ambulances.
- Ensuring availability of blood.

Source: World Bank 2003

Exhibit 11

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Status of Infrastructure

Percentage of adequately equipped facilities and those used as referral

Sl.No.	Number of facilities	Percentage of facilities adequately equipped in					Number of facilities used as referral
		Infrastructure	Staff	Supply	Equipments	Training	
	N						
District Hospital	210	94	84	28	89		33
First Referral Units	760	84	46	26	69		34
Community Health Centres	886	66	25	10	49		25
Primary Health Centres	7,959	36	38	31	56	12	

Source: Facility Survey 1999; IIPS March 2001 p. 48, 72, 96, 124.

Exhibit 12

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Position of Health Human Resources

Health manpower working in rural areas – data at 30/06/1999
(source: Health Statistics of India 1999)

	Required (R)	Sanctioned (S)		In position (P)		Vacant (S-P)		Shortfall (R-P)	
	N	N	%	N	%	N	%	N	%
Total Specialists	11,740	6,579	56.04	3,741	56.86	2,838	43.14	7,406	63.08
Paediatricians	2,935	1,028	35.03	453	44.07	575	55.93	1,970	67.12
Physicians	2,935	1,265	43.10	585	46.25	680	53.75	1,841	62.73
Ob & Gyn.	2,935	1,435	48.89	771	53.73	664	46.27	1,652	56.29
Surgeons	2,935	1,524	51.93	809	53.08	715	46.92	1,614	54.99
Doctors at PHCs	22,975	29,702	129.28	25,506	85.87	4,199	14.14	2,306	10.04
Block Extension Educator		6,534		5,508	84.30	892	13.65		
Health Assistants (male)	22,975	26,427	115.03	22,265	84.25	4,162	15.75	4,935	21.48
LHV/Health Assistants (female)	22,975	22,479	97.84	19,426	86.42	3,133	13.94	4,323	18.82
Health Worker (male)/MP W (male)	137,271	87,504	63.75	73,327	83.80	14,177	16.20	64,590	47.05
ANMs / MPWs (female)	160,246	144,012	89.87	134,086	93.11	9,947	6.91	27,875	17.40
Pharmacists	25,910	22,871	88.27	21,077	92.16	2,409	10.53	6,990	26.98
Laboratory Technicians	25,910	15,865	61.23	12,709	80.11	3,177	20.03	13,239	51.10
Nurses Midwives	43,520	22,672	52.10	17,673	77.95	5,064	22.34	20,571	47.27

Source: Health Information of India. 1999 Ministry of Health and Family Welfare.

Exhibit 13

THE HEALTH MINISTER'S DECISION:
HOW BEST TO REDUCE MATERNAL MORTALITY

Staffing Position of District and Sub-district Facilities that Can Offer EmOC Services

Percentage of health care establishments having specific staff and training of medical officers

Sl.No.		DH	FRU	CHC
Number Surveyed		210	760	886
Staff				
1	Obstetrician/Gynaecologist	78	48	28
2	Paediatrician	78	37	19
3	RTI/STI Specialist	35	8	3
4	Pathologist	45	10	6
5	Anaesthesiologist	70	22	10
6	Laboratory Technician	93	86	74
7	Public Health Nurse	30	15	13
8	Health Assistant (male)	32	64	38
9	Health Assistant (female)	41	45	43
10	Multipurpose Worker (male)	32	37	35
11	Multipurpose Worker (female)	40	41	40
12	Staff Nurse	94	93	87
13	Pharmacist	96	92	88
Training of Medical Officers in				
1	Sterilisation	32	28	21
2	IUD Insertion	25	27	22
3	Emergency Contraception	19	17	11
4	RTI/STI	24	26	21
5	Newborn Care	21	22	17
6	Emergency Obstetric Care	19	17	11

Source: Facility Survey 1999; IIPS March 2001 p.7, done under RCH.