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Strengthening Midwifery Services in India based on lessons Learnt from Sweden and Sri Lanka

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Strengthening Midwifery Services in India based on lessons Learnt from Sweden and Sri Lanka

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Abstract

Objective

The objective of the paper is to know how India can strengthen midwifery services to reduce maternal mortality based on the lessons learnt from Sweden and Sri Lanka.

Method

The paper is based mainly on the literature review, field visit to Sweden and interaction with maternal health experts from Sweden and Sri Lanka.

Conclusion

High maternal mortality in India is due to absence of skilled attendance at the time of delivery and poor post-natal care. Seventy percent Indian population is rural and it is not possible to have doctors for all births. Adopting evidence-based interventions such as developing a skilled cadre of locally available midwives backed up by efficient referral and emergency obstetric care services like Sweden and Sri Lanka will help India achieve the goal of reducing maternal mortality with the existing resources.

Analysis also shows that establishing quality training, independent regulating body and standardizing midwifery practices in India requires sustained efforts from government, professionals and society, and reorganization of health systems. Creating the scope for career advancement will help to improve status of midwifery as a profession.

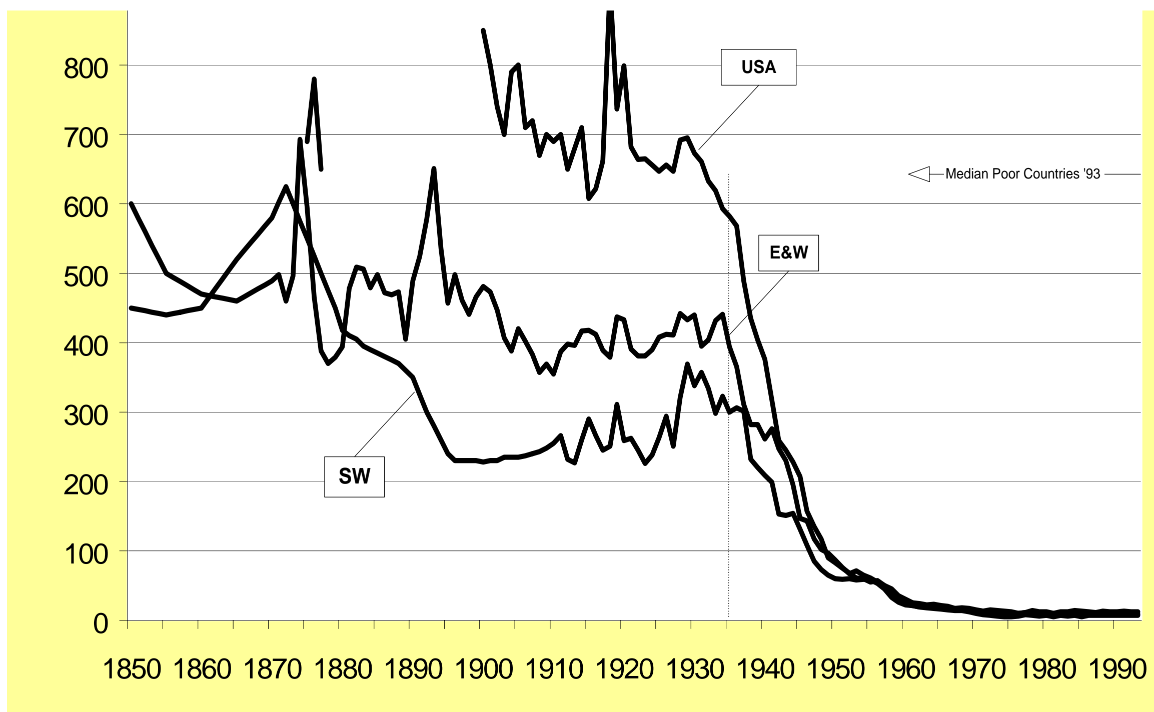
Key Words: Maternal Mortality, Midwifery, India, Sweden, Sri Lanka, ANM

Introduction

Prevention and treatment of life threatening complications of child birth is the primary health care need of any country. Even in this era of scientific achievements, about half a million mothers lose their lives every year in child birth and related conditions all over the world. Out of these, 99% of maternal deaths occur in developing countries due to preventable causes. (1) Majority of maternal deaths are due to hemorrhage, sepsis, pregnancy induced hypertension and abortion related complications. The principal reason for high maternal mortality in developing countries is absence of skilled attendance at the time of delivery. (2) This problem is compounded by overdependence on doctors for delivery and postnatal care and ignorance of paramedical personnel for the same. It has been proved that providing skilled attendance at the time of delivery and developing good referral networks reduces maternal mortality significantly even in resource poor settings. Countries like Sweden were very successful in reducing maternal mortality rate significantly way back in 18th century. (3)

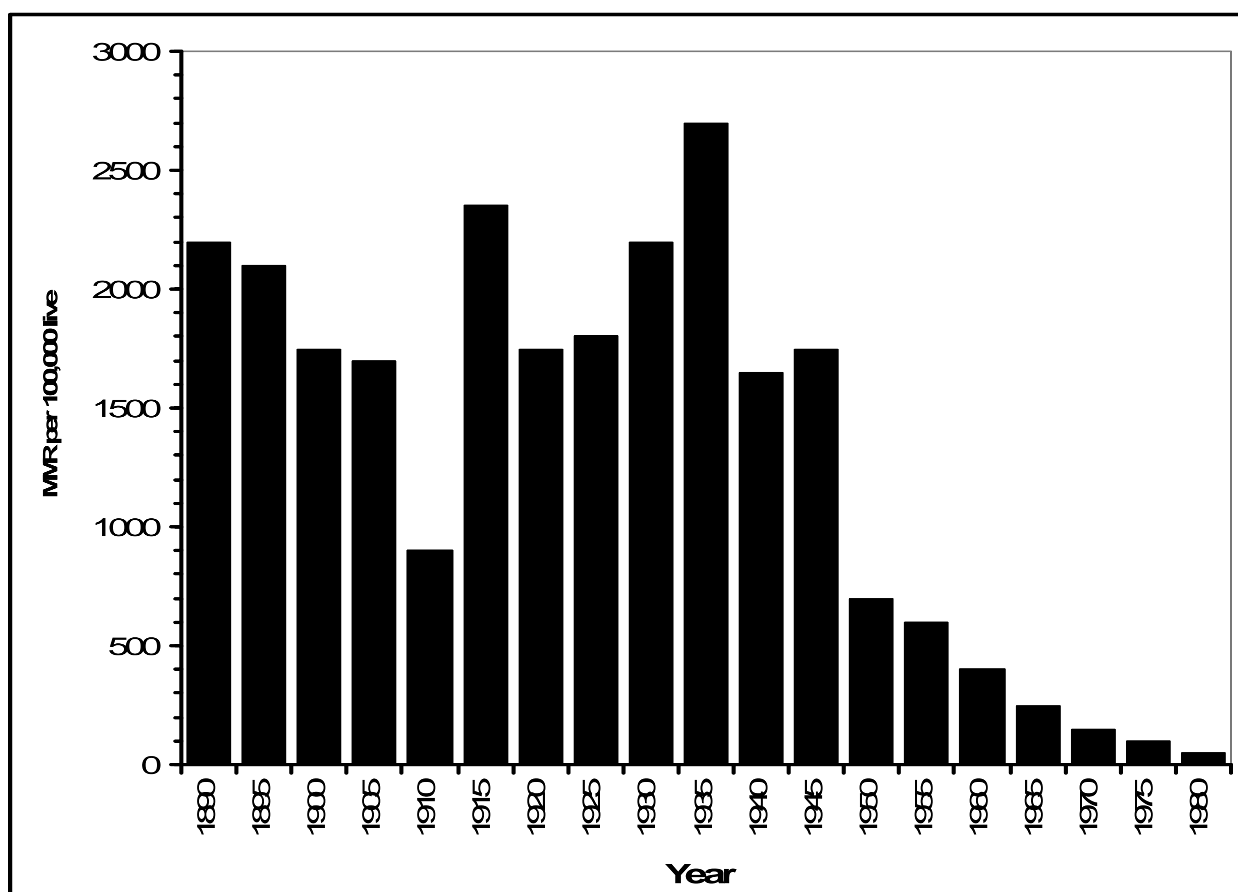
Developing countries like Sri Lanka and Malaysia have reduced maternal deaths by adapting evidence based strategies like skilled birth attendance at all the births in last few decades. (2) Prerequisites for reduction of maternal mortality rates globally are early awareness regarding the magnitude of the problem, acknowledgment that most of the maternal deaths are avoidable, and mobilization of professionals and society. (2) The duration taken for reducing maternal mortality depends on strategies adopted to ensure skilled care at all the births, extent of accountability of professionals responsible for maternal health and willingness of the decision makers to take the responsibility. (4)

Graph-1: Maternal Mortality trends in Sweden (SW), USA. England/Wales (E&W) (Source: Dr M. Islam's presentation at AMDD workshop, 2004)



As seen in graph-1 Sweden was among the first developed countries to achieve low maternal mortality by 1900 much ahead of United Kingdom and United States. The majority of reduction of maternal mortality was achieved in Sweden by the beginning of 20th century before advent of antibiotics and cesarean section and this is believed to be the result of developing a cadre of highly competent and locally available midwives. (3) The decline in maternal mortality was more pronounced in the 19th century (2/3rd reduction) than in 20th century (1/3rd reduction) when blood transfusion and antibiotics were made accessible to all. The overall reduction was from 900 deaths per 100,000 live births in 1750 to 6 deaths per 100,000 live births in 1980. (5)

Graph-2: Maternal Mortality trends in Sri Lanka (Adapted from Dr A. Jayathilaka's presentation at AMDD workshop, 2004)



As seen in graph-2, more recently, Sri Lanka witnessed significant reductions in maternal mortality in a relatively short period. From a level of over 1500 per 100,000 live births in 1940-45, maternal mortality fell to 555 per 100,000 in 1950-55, 239 per 100,000 within 10 years, and 95 per 100,000 by 1980. The figure is now 30 per 100, 000. (6) These improvements followed the introduction of a system of health facilities around the country allied to an expansion of midwifery skills and the spread of family planning. (7)

Factors responsible for maternal mortality reduction in Sweden

1. Establishment of vital registration system

Sweden was one of the first European countries to establish a reliable vital registration system as early as 1750. The office of the Registrar General was founded in 1749 where national statistics were compiled as census and causes of death registration. Although definition of maternal death has changed over time, reasonably reliable data is available in

Sweden regarding trends of maternal mortality from 17th century onwards. Although some of the historians have questioned the reliability of the available data due to above mentioned reasons, most agree that existing data gives fairly good idea regarding mortality rates and the trend of decline. Thus, Sweden established a reliable vital registration system very early on that gave accurate picture of maternal health situation, based on which corrective steps could be taken.

2. Development of maternal health system based on Midwifery

According to Loudon a medical historian, the rapid decline in the maternal mortality rate in Sweden after 1875 was mainly due to three factors (3):

1. Improved standards of maternal care associated with increased numbers of trained midwives
2. Introduction of antisepsis and asepsis from about 1880.
3. A decline in virulence of streptococcus (a natural event/process).

Last two factors mainly reduced deaths from sepsis which was the major cause of maternal death in urban areas and institutional deliveries. In rural areas, the major decline occurred due to presence of well trained midwives before, during and after delivery.

The roots of well-developed system lie in a government funded public health program that has an equity perspective by reaching out to the poor rural population to make free health care accessible to them. From the beginning efforts were made to improve training for physicians and midwives and to implement a system of surveillance of midwives at local and national level. (8)

3. Professionalization of midwifery services

Sweden is a vast country with sparse population and many remote inaccessible rural areas. This made medical care by doctors unavailable to rural population in the past hence a midwifery based maternal care system was developed to have skilled attendance at the time of delivery by locally available midwives. Early 18th century saw professionalization of

birth assistance in Sweden when a government decree required midwives to undergo 2 years training with experienced midwife and passing examination given by Collegium Medicum. By late 19th century, midwifery became legitimate profession for women from all walks of life and rural areas. Table-1 gives list of events which led to efficient midwifery system in Sweden.

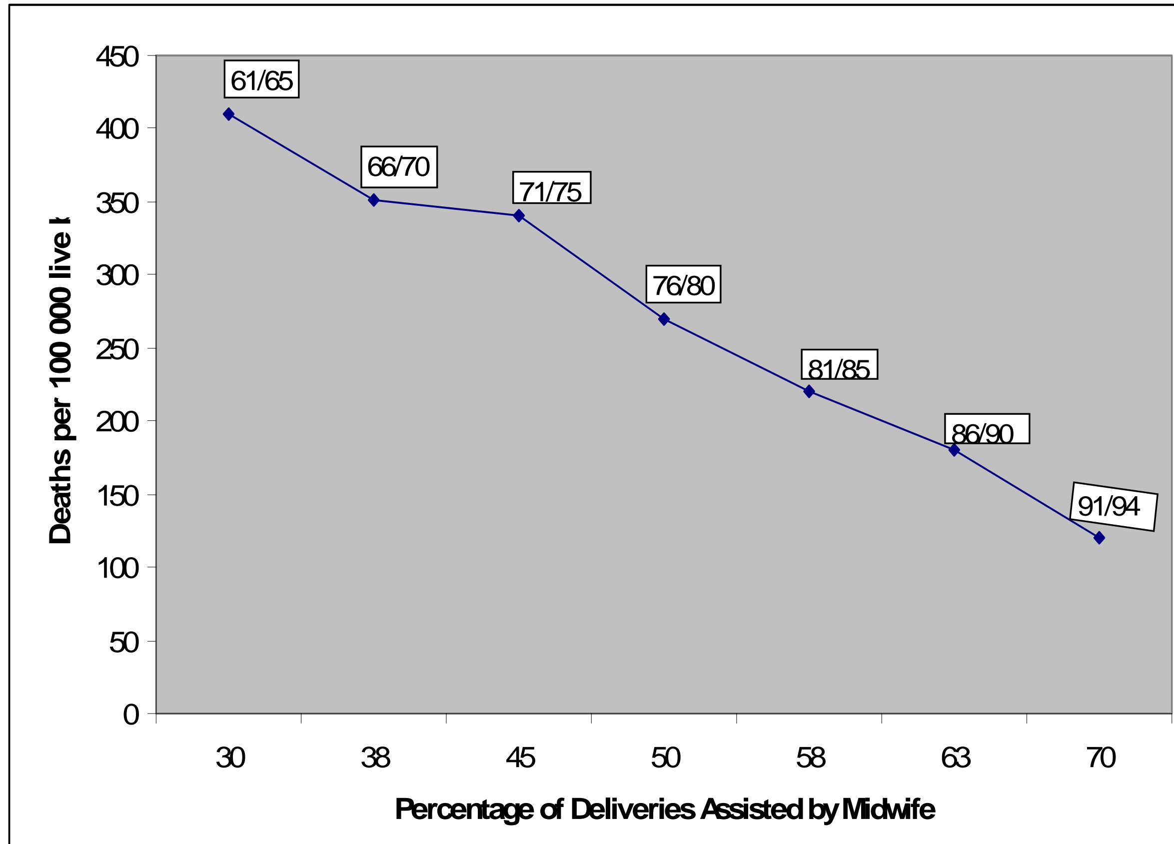
Table-1: History of regulation of midwifery services in Sweden and role of legislation (Source: Ref. 3)

Year	Activity/Laws
1663	Collegium Medicum established with the support of the king
1711	Formal training of midwifery began which included instructions on use of instruments
1777	Regulation that allowed midwives to use instruments only when doctor was not available in time
1819	Regulation allowed parishes to employ only trained midwives
1829	Regulations laid for use of instruments by midwives in presence of a witness. They were required to write a report signed by local medical officer of health whenever instrumental delivery was undertaken
1861	Clergy were required to enter whether woman was attended by trained or traditional midwife
1908	Swedish municipality were required to employ only trained midwives

Total number of deliveries attended by trained midwives and doctors were less than those attended by traditional midwives till mid- nineteenth century in spite of laws. This slow acceptance of trained midwives is similar to current situation in many developing countries and in USA in the past. (3) To overcome this barrier strong, healthy and respectable women were selected and trained well. These midwives were better trained hence safer birth

attendants than traditional midwives as the main purpose of regulation and rigorous training standards was to save lives of mothers. The trends in maternal mortality in Sweden (Graph-3) show that as the number of deliveries by trained midwives increased the maternal mortality rate fell from 1861 to 1894.

Graph-3: Midwifery service in rural areas in Sweden and maternal mortality (septic deaths excluded) for the years 1861 through 1894 (Source: Ref.8) (the points designate level of mortality in indicated 5 years)



4. Complementary roles of midwives and doctors and equal status of midwives

The early reduction in maternal mortality in Sweden was mainly because of teamwork of physician and highly competent midwives who were locally available. This fact is reflected in a remark by an American physician in an address to American Medical Association "Scandinavian midwives are proud of being associated with an important community work and whose profession is recognized by medical men as an important factor in the art of obstetrics, with which they have no quarrel." (3) He attributed the lower mortality rates in Sweden to a carefully supervised system of instruction and practice of midwifery.

Antagonism and conflicts between the medical profession and traditional birth attendants were posing difficulties in the professionalization of birth attendance in Sweden until 19th century. In Sweden doctors did not undertake normal deliveries in the 18th and 19th century which were sole responsibility of the midwives. Thus although midwives were supervised by doctors, both were working towards the same goal and complemented rather than competed against each other. This partnership was facilitated by population distribution in Sweden in 19th century when 90% population lived in rural areas which had locally accessible trained midwife, the indisputable birth attendant. Doctors were probably not available in rural and remote areas. The trained midwife was able to undertake most of the home deliveries and perform instrumental delivery when the doctor was not available as she was respected by the state and sanctioned by the law. (8)

5. Training and supervision

The two years long midwifery training in Sweden was detailed and spent considerable time in theoretical and practical instructions. Under supervision of the head midwife or trained sister, the student midwife was required to deliver 100 to 125 women during the training, which gave high degree of skills and confidence to conduct child birth. The final approval came after a month's trial period. The midwife was supervised by local medical officer for instrumental deliveries. Until age of 50 midwives were required to undertake regular review courses. From the beginning the midwifery system has been under firm control of state and medical profession. The strict regulation came at the beginning of midwife's career but she was independent once she was trained and satisfied the examiners who were also medical doctors.

Community midwifery in Sweden was based on regular review and close supervision. The midwives were required to report to general practitioners and the report was detailed to give information about all the deliveries attended and outcome of the mother and child. The standardized protocols for management of birth complications were to be followed. The report included reasons for intervention and the outcome which had to be signed by the county physician and was registered at the national health bureau. The midwife carried a diary in which detailed records were made for each delivery and postpartum period including temperature chart. This was checked by the supervising doctors periodically. The

Swedish midwifery association exercised control over the professional conduct of midwives.

Factors responsible for maternal mortality reduction in Sri Lanka

1. Establishment of vital registration system

Sri Lanka, a low income country established civil registration system in 1867 as voluntary system of birth and death registration which was made compulsory by an ordinance passed in 1885.(7) The civil registration system has reasonably accurate reporting of mortality which is confirmed by past surveys. Maternal death reviews started in 1980s is a formal system of inquiry into maternal deaths with quarterly and annually reviews conducted at central and district level. The purpose is to identify preventable factors/causes and take corrective measures not a fault finding exercise. (7) In 1989, maternal death was declared notifiable event which made the system more robust. Thus, an efficient vital registration system helped Sri Lanka know the magnitude of maternal mortality and trace the progress made to reduce it.

2. Development of maternal health system based on Midwifery supported by appropriate policies

Sri Lanka was perhaps the first country in Asia to establish a maternity hospital in1879 followed by first training school for midwives 1881. Legislation passed in 1887 required registration of all the midwives. Efforts were made from the beginning to provide quality midwifery services at the community level. (8)

Sri Lanka has well developed midwifery system starting in 1906 when six trained midwives were appointed in Colombo Municipality who were hospital based till 1926. After 1926, with establishment of Health Units, training of Public Health Midwife (PHM) commenced who stayed in community and provided antenatal, natal and postnatal care. (7, 8) These midwives were backed by good referral system and efficient health system for timely management of maternal complications. During the 1950s most births in Sri Lanka took place at home with the assistance of untrained birth attendants. By the end of the 1980s over 85% of all births were attended by trained personnel mainly community based midwives. (6) Numbers of trained midwives increased from 347 in 1941 to 7394 in 2000. (8)

As commented by former head of safe motherhood programme in Sri Lanka, social policies such as free health services, subsidized transport along with specific maternal health policy decision to focus on recruiting and training public health midwives instead of training traditional birth attendants played significant roles in reduction of maternal mortality. (9)

3. Training and supervision

Training of public health midwives which commenced in 1928 had midwifery and public health components.(7) At present, hands on skills training is given to midwives for 18 months which includes six months of field training at community level. Although unlike her Swedish counterpart, she is not allowed to use instruments and has to refer such cases to higher facilities. She keeps record of her activities and reports performance and vital events to medical officer. (7) In Sri Lanka, public health midwife is supervised by Medical Officer of Health who also conducts field clinic once fortnight to provide health care to mothers and children. (7)

4. Accountability and human resource management:

Sri Lanka has systematic posting and transfer policy that ensures posts of public health midwife and doctors are filled regularly in remote areas. The government also ensures that staff stays at the place of posting and provides free services. The basic needs of staff and their family are taken care of in return along with assurance of career advancement. (10) There is also fairly strict and systematic supervision by various levels of managers to ensure accountability and quality of work.

Thus multiple factors were responsible for rapid decline of maternal mortality in Sri Lanka; table-2 lists the major factors.

Table-2: Factors responsible for maternal mortality reduction in Sri Lanka in pre and post independence era (Source: Ref.17):

	Pre independence era(1930 to 1950)
1.	Expansion of health facilities with infrastructure development for MCH services and provision of maternal care by skilled health workers
2.	Provision of free health services by the state which made health care equally accessible to all socioeconomic groups
3.	Control of malaria infection
4.	Introduction of other welfare measures like free education, subsidized food rations and subsidized transport
5.	Improvement in social status of women and Necessary political commitment
6.	Improved transport system due to better network of roads
	Post independence era (1950 onwards)
1.	Greater coverage of maternal care services throughout the country: both domiciliary and institutional with emergency obstetric care (EmOC) services available within reasonable distance
2.	Improvements in the quality of maternal care services and use of improved medical technology
3.	Expansion of blood transfusion services to most of the major hospitals in the districts
4.	Functioning of effective referral systems for easy referral to higher level of care
5.	Better supervisory and monitoring system for maternal care throughout the country
6.	Improved communication between higher level referral centers and other health care facilities within the district
7.	Establishment of an active Maternal Death Surveillance System

Change in role of midwives in present scenario in Sweden and Sri Lanka:

Midwife's role was expanded in Sweden and Sri Lanka as the maternal health improved and fertility rates went down. In both countries as the number of institutional deliveries increased and home deliveries became rare; midwives took on wider role in reproductive and child health. In Sri Lanka now the public health midwife has mainly (a) prenatal care with emphasis on early registration, immunization, linking mothers to clinics to ensure trained assistance at delivery, helping them to plan for delivery, (b) postnatal care and care

of new born (c) infant care and immunization (d) family planning and (e) general health education (7). Now most of the deliveries are conducted by medical officers and institution based midwives at the health units.

In Sweden, midwives are providing antenatal care at community level, post natal care, newborn care, health education, regular gynecological check ups including screening, adolescent care and family planning. The deliveries are conducted at selected centers by institution based midwives in consultation with obstetrician. (11) The major difference between Sweden and Sri Lanka is that Swedish midwives are still in charge of normal deliveries while doctors are conducting majority of deliveries in Sri Lanka today. In Sweden midwives also play an active role in policy making through their association as well as health advisors to political parties. They are also active in public health and international assistance.

Midwifery practice in India:

In spite of having a long history of programs to improve maternal health due to lack of consistent policies and absence of focus on evidence based interventions, India has not achieved its goal of reducing maternal mortality. (12) Although there have been efforts to establish midwifery practice in India in the past even in the British times (13, 14, Table-3) even today midwifery is not recognized as a separate profession by law, society, medical and paramedical professionals.

India has very low nurse midwife to population/patient ratio compared to Europe. Out of about 200,000 auxiliary nurse midwives who are supposed to be the community midwives, it is estimated that only 10% are working in rural areas (15).

Table-3: History of Midwifery and nursing practice in India (Source: Ref. 13, 14):

Year	Event
1840	Angelican community of St. John sisters started formal midwifery training in a maternity hospital
1877	Zenana Missionary Society started first training school for Dais
1899	Zenana Missionary Society started training school for Nurses
1902	Establishment of the central board of midwives
1922	Establishment of Trained Nurse Association of India (TNAI)
1986	Inclusion of midwifery in the GNM course

1. Status of Midwifery as a profession

Midwifery and nursing are still regarded as paramedical professions to provide support to doctors and not as autonomous clinical professions. They are not given due recognition by their own fraternity, medical professionals and the state. Even within nursing profession there is resistance in recognizing midwifery as a specialized training and giving midwives their due status. This is the situation in spite of efforts by British to promote midwifery for delivery care in pre-independence era. The midwives do not have separate professional body or representation in nursing council or trained nurses association of India (TNAI). Society of Midwives in India has been formed only recently.

There are no official positions of community or institution based midwives. The Auxiliary Nurse Midwives who are as community midwives are not trained to use lifesaving drugs and procedures in case of obstetric emergency; although recently government has liberalized drug policy and allowed them the use of certain drugs for birth complications. (Module for ANMs, Ministry of Health and Family Welfare) They are not given much administrative, research or clinical skills. There are no career advancement prospects for midwives to attract educated women from all the classes to this profession.

2. Training in midwifery

The original training course for ANM was for two years which had midwifery component of 6 months. From 1980 the training duration has been reduced to 18 months with less emphasis on midwifery and with very less practical component of midwifery. There are no separate midwifery schools in India as there is no position of midwife any where in the whole health system. Most of the ANM training schools do not have required qualified teaching staff for midwifery training or adequate training facilities. (15) The midwifery component of ANM training lacks adequate practical training even in the hospital set up and there is little midwifery training in the field. The nursing courses have about 3-6 months posting in the labor rooms of attached hospitals but student nurse does not get any hands on experience of midwifery as there are trainee doctors who are given preference. The midwifery training in India does not involve management of birth complications or use of instruments. After training the ANMs or midwives are registered with nursing council as

there is no separate registering body for midwives. There is no data available on numbers of practicing midwives in India.

There is no scope for continued education or refresher training for midwives or nurses and there are limited opportunities for career advancement. The Indian Nursing Council (INC) has limited powers over state nursing councils to ensure quality nursing/ midwifery training and adherence to protocols in practice in the country.

3. Monitoring and regulation of midwifery

As mentioned earlier, there is no data on practicing midwives in India and midwives are registered with nursing council as there is no separate registering body. There are no standard protocols for management of obstetric emergencies or guidelines on how and when to intervene for midwives. Emphasis on family planning and immunization has shifted the focus for ANMs and health system from delivery care. At present ANMs are conducting only 11% of deliveries in India. Even for those 11% there is no detailed reporting or supervision regarding quality of care provided.

District public health nurses who are supervisors of ANMs are not trained for the responsibilities and do not have facilities to carry out field supervisions. At the state and national level there are hardly any nursing/midwifery management posts.

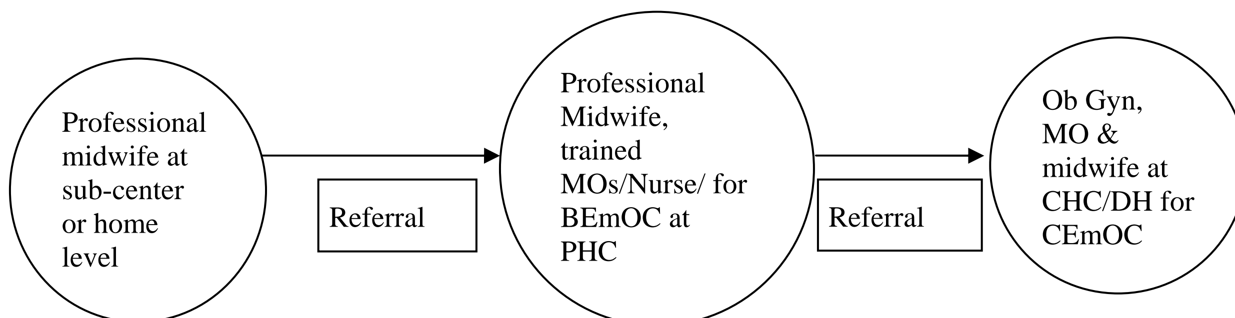
The maternal mortality data in India is unreliable as the country has paid little attention to development of the vital registration system. The projected maternal mortality rates at state and national level are underestimates which make it difficult to judge the magnitude of problem and know the extent of progress made.

Recommendations to strengthen Midwifery:

International evidence, especially from Sweden and Sri Lanka shows that midwifery based maternal health service backed by referrals and emergency obstetric care services was successful in reducing maternal deaths in resource poor settings during the 19th and 20th century. Based on the review of various frameworks for maternal health and the experience of Sweden and Sri Lanka we suggest a simple framework which links midwifery, referral

and EmOC at three levels in rural areas (See Figure 1). Here we make specific recommendations to improve midwifery services, recognizing the importance of other two components.

Figure-1: Framework for maternal health services to reduce maternal mortality



Specific recommendations for strengthening midwifery services in India are:

1. Status of midwifery as a profession should be improved in India. The ANM should be upgraded to Public Health Midwife as in Sri Lanka. Both government and society should recognize midwifery as an important independent profession. As done in Sweden and Sri Lanka training young, strong, healthy women from urban and rural area, giving them quality midwifery training and having strong regulations will help improve status of midwives in society. Medical professionals should work as a team with midwives for increasing accessibility of quality delivery and neonatal care as providing care by specialists for 60 to 70 % Indian rural population is not possible. Separate registering and regulation bodies (councils) for midwives will facilitate establish it as an independent profession.

2. Standardization of protocols for management of common obstetric emergencies and interventions for midwives need to be established along with good reporting system. Close supervision and regular refresher training would help enhancing skills of community midwives and maintain quality delivery services in rural areas. Detailed reports of all the deliveries attended along with management of obstetric emergencies will help in monitoring skills and regular reviewing of midwives.

3. Training of midwives should be of adequate duration with good practical component. Competency based training should be given in both institutional and community setup to give midwives the required skills and confidence to manage delivery care in rural situation. The training should be given under supervision of senior nurse or midwife for normal and abnormal labor. Certification of the midwife must be done after trial period in the field. Regular refresher courses should be mandatory for midwifery practitioners.

4. Institutional and community based midwife posts should be created in both government and private set ups to look after normal deliveries and basic EmOC. Both the sectors should be regulated by a regulating body consisting of senior midwives and medical professionals. Midwifes role should be expanded to include family planning, MVA, STD and HIV counseling, adolescent health, women's reproductive health outside of pregnancy and child birth etc.

5. India needs to establish a reliable vital registration system and maternal outcome monitoring system to have an accurate picture of maternal health situation. This will also help asses the work of midwives on maternal mortality and morbidity.

Conclusion

Present maternal health situation in India is similar to the situation in Sweden in 18th century and Sri Lanka in early 20th century. Seventy percent population of India is rural and it is not possible to have doctors for all births. Reforming maternal health services by development of quality midwifery services backed by referrals and emergency obstetric services will help to provide locally accessible skilled assistance for all the births in India to reduce maternal mortality significantly. Establishing midwifery training schools, independent regulating body and standardizing midwifery practice requires continuous efforts on the part of government, medical and nursing professionals and society. Creating posts for midwives at institutional and community level with the scope for career advancement will help to attract women for all the walks of life which in turn will help to improve status of midwifery as a profession.

Sri Lankan experience shows that when maternal health is provided by public health midwives supported by doctors and referral system it is possible to rapidly reduce maternal mortality with modest public expenditures (16). If India still neglects midwifery development and keeps focusing on ineffective strategies of TBA training, training community volunteers or half-baked efforts through short training of ANM without fundamental restructuring of rural midwifery services maternal mortality may not decline rapidly. Adopting a skilled cadre of midwives backed up by referral and EmOC will help India to achieve the goal of rapidly reducing maternal mortality with the existing resources.

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