

Acknowledgement

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**An outline of safe motherhood programs:
International and Pakistani Experiences**

Table of Contents

Executive Summary	3
List of Abbreviations	4
Strategies for Maternal Mortality Reduction	7
Developed Countries	7
Developing Countries	8
Pakistan	10
TBA Training Programs	13
Developing Countries	14
Pakistan	15
Skilled Care during Childbirth	16
Conclusion	17
References	19

Executive Summary

It is estimated that annually 585,000 women die worldwide from complications of pregnancy and childbirth. In 1987, the World Bank in collaboration with WHO and UNFPA, sponsored a conference on safe motherhood in Nairobi, Kenya to help raise the awareness about the impact of maternal mortality and morbidity. The conference launched the Safe Motherhood Initiative that issued an international call to action to reduce maternal mortality and morbidity. Fifteen years after the launch of the Safe Motherhood initiative, more than 1500 women die every day in the developing world from pregnancy related complications. The death toll is greatest in Sub-Saharan Africa and South Asia, where the maternal mortality ratio is as much as 200 times higher than those in industrial countries. In Pakistan, it is estimated that 18–25,000 women die each year due to pregnancy and birth related causes. Maternal mortality is not the only adverse outcome of pregnancy. Well over 40 % of pregnancies in developing countries result in complications or permanent disabilities for the mother. In developing countries like Pakistan, professional birth attendants are not available for both the rural as well as the poor urban population, despite a heavy investment in maternal health through training of traditional birth attendants.

This overview looks at available literature and provides insights into the approaches adopted in the developed as well as developing countries for lowering maternal mortality. The review also includes details of the various interventions introduced by the Government of Pakistan. Experiences of providing refresher training to Traditional Birth Attendants as well as developing a cadre of skilled birth attendants for various South East Asian countries has also been included.

The review shows that there is a lack of evidence to cogently illustrate the impact of providing training to traditional birth attendants in lowering maternal mortality. Most authors have suggested that TBA's can however, play a role in community mobilization and health education of families.

One of the important millennium development goals highlights the need for increasing the number of births conducted by skilled birth attendants. Evidence from the developed and developing countries shows that the placement of skilled birth attendants ranging from midwives to doctors can have a significant impact on maternal outcomes. Evidence from Malaysia points that although the placement of skilled birth attendants is time consuming and labour intensive. In Pakistan in order to ensure that deliveries are conducted by skilled birth attendants we need to put in to place a mechanism that recruits appropriate candidates, provide competency based training and monitor performance through supportive supervision.

List of Abbreviations

CBWs	Community Based Workers
GoP	Government of Pakistan
LHVs	Lady Health Visitors
LHWs	Lady Health Workers
JPMC	Jinnah Post Graduate Medical Center
MMR	Maternal Mortality Ratio
SMI	Safe Motherhood Initiative
TBA	Traditional Birth Attendant

Introduction

Motherhood should be the time of expectation and joy for a woman and her family. However, for vulnerable women in developing countries, childbirth may often appear disguised as a time of sorrow as unforeseen complications often results in mortality or severe morbidity among mothers and the newborn. A maternal death usually occurs at the prime period of a woman's productive and reproductive lives from hemorrhage, sepsis, convulsions, obstructed labor and consequences of unsafe abortion. Worldwide, it is estimated that 515,000 women die annually from complications of pregnancy and childbirth while as many as 300 million women currently suffer from short or long-term illness relating to pregnancy and childbirth.

In 1987 the World Bank in collaboration with the World Health Organization (WHO) and the United Nations Fund for Population Activities (UNFPA), sponsored a conference on Safe Motherhood in Nairobi, Kenya to help raise awareness about the high toll of maternal deaths on mortality among women in the reproductive age group. The Safe Motherhood Initiative (SMI), an alliance of co-sponsoring agencies, currently including the WHO, UNFPA, the United Nations Children's Fund (UNICEF), the International Confederation of Nurse Midwives (ICNM), the International Federation of Gynecology and Obstetrics (FIGO), the International Planned Parenthood Federation (IPPF), the Population Council, the World Bank, Regional Prevention of Maternal Mortality Network (Africa) and Safe Motherhood Network of Nepal with Family Care International (FCI) as the secretariat was introduced at the conference in Nairobi as the Safe Motherhood Inter-Agency Group (IAG). IAG's role is to raise international awareness about safe motherhood, set goals and programmatic priorities for the global Safe Motherhood Initiative, support national Safe Motherhood programs, stimulate research, mobilize resources, provide technical assistance, and share information to make childbirth and pregnancy safer.

Fifteen years after the launch of the Safe Motherhood Initiatives, more than 1500 women still die every day in the developing world from pregnancy related complications¹. The death toll is greatest in Sub-Saharan Africa and South Asia, where maternal mortality ratios (MMR) is as much as 200 times higher than those in industrial countries. The death of a woman of reproductive age translates into substantial economic and social hardships for her family and community. By ensuring that women receive sufficient maternal care, many of these deaths can be avoided. It has been estimated that some 53% of maternal deaths could be averted through a small number of relatively low technology interventions². Maternal mortality is not the only adverse outcome of pregnancy. Well over 40 % of pregnancies in developing countries result in complications or permanent disabilities for the mother³. Though approximately 15% of women who become pregnant experience a life threatening complication during pregnancy or immediately after delivery and require emergency care⁴, nearly 40% of pregnant women need professional care for a pregnancy related complication⁴.

The experience of developed countries has shown that maternal mortality cannot be reduced by socioeconomic development alone but rather requires an integrated program to improve the health infrastructure and quality of care offered by all levels of health care providers⁵. Studies from developing countries have demonstrated various approaches to be beneficial in reducing maternal mortality⁶. For example, in Malaysia efforts at raising contraceptive prevalence rates and training and deployment of midwives have been shown to be an effective strategy for reducing maternal deaths⁶. Demographic factors such as maternal age and parity do not necessarily predict complications during pregnancy, delivery or in the postnatal period. Most obstetric complications occur among women without these risk factors and hence timely, accessible and appropriate obstetric services are needed to address maternal mortality. Other significant factors include improved post-abortion care, reproductive health services for adolescents, and family planning.

Strategies for Maternal Mortality Reduction

Historically in developed and developing countries there has been a remarkable plethora of programmatic strategies that have been implemented for reducing maternal mortality. Some of these, Sweden and Malaysia, for example have demonstrated that with significant political will reduction of maternal mortality is achievable despite unavailability of blood transfusions or cesarean sections (Sweden) or by gradually replacing traditional birthing practices with those of skilled birth attendants (Malaysia). Others, for example the focus on TBA training or the World Bank Community Midwifery Program in Indonesia have shown none or slight improvement in maternal mortality.

Developed Countries

The pattern of maternal mortality reduction in several developed countries in terms of speed and timing varied considerably from one country to the next generally based on the programmatic strategy adopted. These varied from stagnation without significant gains [United States]; an intermediate pattern [England & Wales] and early reduction with a major drop as early as the 19th century [Sweden] determined largely by the modality of skilled care during childbirth strategy that was implemented by the public health care system in the respective countries.

Around the 1850s MMRs in the United States, England & Wales and Sweden were below 700 per 100,000 livebirths, similar to the median of poor countries today. Reductions in MMRs closely followed programmatic strategies adopted by Sweden, England and Wales and United States. Swedish ratios showed a clear downward trend from as early as 1870, stabilising at 250-300 per 100,000 livebirths between 1900 and 1940. England and Wales showed a slow downward trend, and stabilised around 400-450 by the late 1930s. MMRs in the United States, on the other hand, remained in the 600-800 range till the mid 1930s, thereafter depicting a steady but rapid decline. A brief overview of the different programmatic strategic approaches adopted by Sweden and England and Wales are illustrated below.

Sweden

The marked decline in maternal mortality in Sweden during the period 1750-1900 parallels the development of midwifery as a profession and the increasing use of professional midwives by women in childbirth⁷. Public health authorities started training midwives to make sure that qualified personnel would attend all home births and were supervised by the local public health doctor, who could be called upon in case of serious complication and who was held accountable for official reports. Training the large number of midwives needed was a slow and progressive process. Results were obtained only because there was a strong political will to tackle the problem of maternal mortality. By 1861 the number of births attended by 'professional' (certified) midwives was 40%, rising to 78% in 1900, with a corresponding reduction in the number of home deliveries carried out by traditional birth attendants (60% in 1861, 18% in 1900). The reduction in maternal mortality closely followed the expansion of midwifery coverage in that period⁷.

England and Wales

In England and Wales there was no active policy to generalise and professionalize midwifery before the twentieth century and hence with the same level of technical knowledge, progress in reducing maternal mortality was relatively slow. In 1929, the Royal College of Obstetricians and Gynaecologists was founded with the aim to organise the speciality of obstetrics. Loudon remarks that the time-lag in the battle against maternal mortality in Britain was certainly due in part to the government's indecision and to the fact that the funding of the necessary measures was left to the local authorities "*who spent as little as possible on maternal and child health*". Another factor in slowing down the development of midwifery was competition between general practitioners and midwives for access to the delivery-market. However, with the advent of antibiotics for infections, blood transfusions for hemorrhage and improved surgical techniques for cesarean section a decline in maternal mortality was apparent from the late 1920's. Modern family planning and safe abortion services further helped in reducing maternal mortality and morbidity⁸.

Developing Countries

A few developing countries including Sri Lanka, Malaysia and Tunisia have shown a decline in MMR. However most of the decrease took place during the 1970s and early 1980s. Since then progress appears to have slowed despite the increased interest generated around the SMI in 1987⁹. It is interesting to note that almost all countries where skilled birth attendants cover more than 80% of all deliveries, MMRs are below 200¹⁰.

Illustrative examples from a few developing countries that have achieved a significant decline in maternal mortality through investments in skilled birth attendants coupled with strong political will (Sri Lanka and Malaysia), others that have achieved a

modest decline (Indonesia and Bangladesh) through various programmatic strategies are described below. Pakistan's struggle with improving maternal health where policies have been in place but lack of effective implementation stymies the reduction in maternal mortality that the health policies envisage demonstrates the mismatch between well-defined policies and its effective implementation.

Sri Lanka

Sri Lanka has achieved considerable success in reproductive health, with a maternal mortality rate of 23/100,000 live births in 1996, falling from 1,650/100,000 in 1945¹¹. Furthermore, the majority of women have access to antenatal and delivery care services and the corresponding utilization is remarkably high¹². Data regarding maternal health services utilization patterns during the 1990s shows that approximately 97% of pregnant women received antenatal care and 94% of pregnant mothers were delivered by a trained birth attendant. The success can be attributed to the strong primary health care infrastructure established in 1926, a well-established and widely distributed network of health facilities providing maternal and child health services, into which the family planning programs easily integrated; to the commitment of a well educated workforce; combined with high levels of female education. At a policy level, almost 30% of the government budget is spent on social welfare activities such as free education, health and poverty alleviation programs, despite changing economic circumstances¹².

Malaysia

Maternal mortality has fallen dramatically in Malaysia over a period of 60 years, from 1,100 per 100,000 live births in 1933 to 39 deaths per 100,000 live births in 1995^{13, 14}. A central factor in this decline has been high-level government commitment to ensuring that quality maternal health services are accessible to the vast majority of the population, particularly in underserved and rural areas. In 1932, legislation was introduced to regulate the practice of midwifery. Midwives as a cadre of health personnel were trained, certified, and legally registered based on demonstrated competency in a defined list of clinical skills. They were deployed as front-line community health workers to provide maternal care¹⁴. Between 1949–1997, the percentage of live births attended by a skilled health provider increased dramatically – from approximately 30% to over 95%¹⁴. During this period, government midwives increasingly conducted home deliveries and demand for childbirth in public sector hospitals expanded considerably¹⁵. Subsequently, from 1955, within the context of supportive policies and legislation to improve maternal health, a series of phased interventions to expand access of the rural poor to health services and increase the quality of existing services through improved management and community mobilisation. Rural health clinics were built, public hospital services expanded, and increased numbers of skilled providers (principally midwives and nurses) were trained and deployed to serve rural communities. All professional health personnel received midwifery training that emphasized hands-on practical experience and mastery of clinical skills. Furthermore, based on a supportive,

competency-based approach, monitoring and supervision strategies were implemented according to established standard protocols and manuals that are periodically upgraded. A written supervisory checklist, covering such areas as facility maintenance, record keeping, and interpersonal skills, guides the supervision of midwifery personnel. Supervisory staff provides on-the-spot feedback on clinical and programmatic matters; visits take place on a regular, preset schedule, though surprise visits are also conducted. The system for monitoring maternal deaths evolved over a period of 40 years – from informal, sporadic investigations to the systematic program in place today¹³.

Indonesia

There has been a steady though slow decrease in maternal mortality in Indonesia despite several large scale government projects; The country is still struggling with the MMR of 390 per 100,000 live births¹⁶. In the 1970s, traditional birth attendant (TBA) training, strengthening the partnership between TBAs and village midwives and establishing maternity huts had been undertaken with minimal impact on MMRs. During the late 1980s TBAs provided 40-60% of delivery care. Training TBAs to refer high-risk mothers based on the risk approach proved inadequate as a larger percentage of referrals were either missed or misreported. Moreover, the quality of referral system was compromised by poorly equipped facilities and inadequate transport mechanisms¹⁷.

Other Safe Motherhood programs such as the World Bank assisted program of training 54,000 midwives in 6 years from 1993 to 1999 and deploying them at the community level combined with upgrading the technical skills of hospital staff did not meet with much success as the quality of the midwifery training was compromised due to the emphasis on numbers of midwives trained rather than on quality of the training, inadequate life saving skills training, reluctance of young midwives to go to the field and acceptance of young midwives by the community among other factors¹⁸. Furthermore, decentralization of health care services, development of provincial maternal, infant and child health and nutrition programs, strengthen district referral systems for maternity care and strengthening the partnership between National Family Planning Coordinating Board (BKKBN) and Ministry of Health are currently on-going. Evaluation of these innovative approaches will provide guidance for upscaling these programs¹⁹.

Bangladesh

The MMR for Bangladesh, currently quoted as 420 per 100,000 live births, has not changed markedly in the past twenty-five years (620 per 100,000 live births in 1980) despite significant improvements in its contraceptive prevalence rates²⁰. The Matlab Maternity Care project from 1977-1985 emphasized family planning, home-based delivery and referral for pregnancy complications through door-to-door services by female village health workers. The contraceptive prevalence rate rose from 8% in 1975 to 25%²¹ in 1985 but there was minimal impact on maternal mortality. Hence a home-based maternity project was implemented in 1986 that provided nurse-midwives at community level to supplement the TBAs and to ensure timely referral to an appropriate facility offering emergency obstetric care. A community midwife was posted in each

health post covering a population of 20,000. Evaluation conducted in 1991 demonstrated that posting of community midwives at health posts was effective in reducing maternal mortality in the test site (MMR 440 per 100,000 live births in 1986 to MMR 140 in 1989 as compared to the control site MMR 390 per 100,000 live births in 1986 to MMR 380 per 100,000 live births in 1989)²².

Gambia

An innovative approach, implemented in the Farafenni project site, evaluated the impact of TBA training on the pregnancy outcomes and maternal mortality. The content of the intervention strategy included a 10 week intensive TBA training program, distribution of birth kits and referral of pregnancy complications to the nearest midwife run health center, a basic emergency obstetric care unit. The baseline data was collected in 1982-83 and evaluations conducted in 1986 were impressive regarding birth attendant at delivery (deliveries with trained TBAs increased from 0 to 65% though the difference in MMRs in the test site (2716 to 1051) and control sites (from 1,498 to 963) were not statistically significantly²³.

Pakistan

The maternal mortality ratio [MMR] officially quoted for Pakistan is 200 per 100,000 livebirths¹³ a significant decline from earlier reports of 500 per 100,000 livebirths²⁴. However, small-scale hospital and community-based studies report much higher MMRs as well as a national estimate based on the sisterhood method. The average MMRs as reported by 20 public hospitals in Pakistan for the year 1989 – 1990, collated by the Society of Obstetricians and Gynecologists of Pakistan, was 740 per 100,000 livebirths²⁵. Community-based studies from selected clusters in the provinces of Sindh, Balochistan and NWFP [1988 – 1992] ranged from 756 in the remote hilly regions of Balochistan to 281 in the urban squatter settlements of Karachi²⁶. More recently, Hakim et al using the sisterhood method estimated the MMR to be 533 in 1990²⁷. However, the most convincing indication demonstrating a lack of a significant change in MMR for more than 25 years is reflected in the evidence from Jinnah Postgraduate Medical Center [JPMC], a large public health tertiary hospital in Karachi, where the MMRs during the past twenty years has not changed - 710 for the period 1981-90; 883 for the period 1991-99. In fact, the MMR for the period 1960 – 69 was about the same as for 1991-99²⁸.

Government of Pakistan SM programs

The Government of Pakistan (GoP) since 1947 has implemented several policies and programs related to Safe Motherhood specifically family planning and maternal health services. These include:

- Maternal and Child Health (MCH) services through female paramedics such as Lady Health Visitors (LHVs) and midwives. (First Five Year Program (FYP)1955-1960)²⁹

- Promotion of family planning (FP) by introducing FP services through support to NGOs and allocation of budget through government facilities via creation of a separate division within Ministry of Health (Second FYP (1960-1965)³⁰.
- In subsequent years and especially during late 1970s, the FP program came to a virtual halt. The early eighties witnessed the creation of Population Welfare Division that in 1990 was given an independent status as the Ministry of Population Welfare (MoPW). During the 1990s FP services was expanded by introducing mobile services and the village-based family planning (VBFP) workers.
- The eighth FYP (1993-1998) was successful in achieving the targets of growth rate from 2.7 to 2.4%, TFR from 5.7 to 5.3% and CPR from 12 to 24%.
- Provision of MCH services (Third FYP (1965-1970)³¹ focusing on establishing a rural health center (RHC) male and female doctors, LHV and midwife to serve a population of 50,000 achieved its target of training of doctors but otherwise met with little success in terms of deployment of female health professionals at RHCs.
- Expansion of health infrastructure at all levels (Fourth FYP (1970-1978)³² and Fifth FYP (1978-1983)³³; by providing access to entire population to a health facility within a 3-4 km radius and a three-tier system comprising a doctor, a paramedic and a community health worker (CHW) met with limited success as only 18% of the targeted CHWs were trained due to budgetary cuts.
- Specific safe motherhood initiatives began with the Sixth FYP (1983-1988)³⁴ by training one TBA in each village for safe deliveries. TBAs (30,000) were trained without being monitored and evaluations depicted minimal differences between trained and untrained TBAs³⁵. However, these minimal differences were not discussed in report.
- The Seventh FYP (1988-1993)³⁶ envisaged improving delivery services at the Basic Health Unit level by provision of a labor room, an anesthetist and obstetricians. However, at the end of the program it was found that even posting of obstetricians and anesthetists at all THQs and DHQs to provide emergency obstetric services were not successfully accomplished.
- Introduction of the Lady Health Workers (LHWs) program in the Eighth FYP (1993-1998)³⁷ to provide door-to-door services especially in the rural areas for MCH-FP services was a new programmatic approach by the Ministry of Health. The program is currently being implemented in almost all districts of the country with a field force of about 45,000 Lady Health Workers (LHWs). The government intended to expand the number upto 58,000 by 2001. Over 9100 trained health facility staff and 1300 supervisors are involved in training and supervision of the LHWs. Selection and training of another batch of 433 supervisors is under way. This program needs to be evaluated in detail. However, preliminary reports have shown that each LHW is suppose to serve a population of 1000 people providing maternal and child health care services, family planning services, immunization, nutrition and treatment of minor ailments. Establishment of Directorate of Reproductive Health (RH) in Directorate of Health. The new health policy broadened the scope of services

offered by MCH units of Ministry of Health and Directorate of Health in the form of a service package which includes prenatal care, safe delivery, FP and all health needs of women and children³⁸.

- Strengthening of existing health facilities for providing MCH and FP services including Emergency Obstetric Care funded by the Asia Development Bank has recently been operationalized in several districts in Punjab, Sindh, NWFP and Balochistan³⁹.
- Promoting Interventions for Safe Motherhood (PRISM) will assist the GoP in training selected CBWs from National program in PHC/FP in midwifery skills⁴⁰. This new cadre of community midwives will be deployed to cover a catchment area of about 2000-5000 rural population depending on the geographical considerations. As currently the district coverage of CBWs is 30% on an average, the project will expand within the focus districts with the expansion in the coverage area of National Program. In-service refresher training for midwives will also be conducted. In addition, the project will assist in community sensitization on maternal health issues, developing a referral system and curriculum for training of CBWs, up-gradation of selected health & population facilities for basic and comprehensive EOC, training necessary staff and strengthening of district midwifery schools. The project will be implemented by the National Program on PHC/FP under the aegis of the Ministry of Health.

The overview of GoP's maternal and family planning program content for each successive five year plan illustrates the GoP's acknowledgement of maternal health especially Safe Motherhood and Family Planning as a national public health priority. Though provision of antenatal care has risen to 50% in 2000²⁷ and contraceptive prevalence rate is now at 28%²⁷ there is minimal impact on maternal mortality, MMR of 533 per 100,000 livebirths reported by Hakim etal²⁷ estimated by sisterhood method.

Other SM Programs

Programs implemented by non-government organizations, academic institutions, UNFPA or UNICEF has also focused on SM. These include:

- The Faisalabad Obstetric Flying Squad (FOFS), created in 1988 under the aegis of the Mother and Child Welfare Association of Faisalabad and the dynamic leadership of Dr Altaf Bashir, implemented a SM program in Faisalabad and its peri-urban area. The content of the intervention strategy included intensive TBA training/refresher, free obstetrical flying squad, community education and antenatal examination in street camps⁴¹. Evaluation of the project revealed that demonstrating an impact on maternal mortality was not possible due to small numbers though the FOFS strategy has the potential to be an effective project to improve maternal health⁴².
- The Korangi SM project aimed at training reproductive health care providers and community-based information, education and communication campaign for early recognition, initial management and timely referral of the four main obstetric complications - antepartum and postpartum hemorrhage, eclampsia, obstructed/prolonged labor and puerperal sepsis. IEC materials, training

- manual⁴³ and a video film illustrating selected essential obstetric skills for primary health care practitioners were developed. Though the 29 month duration of the project was insufficient to demonstrate change in behavior and impact on maternal mortality but change in knowledge regarding obstetric complications by women and men; and change in knowledge regarding management of obstetric complications by primary health care providers was significant^{44,45}
- Balochistan Safe Motherhood Initiative (BSMI) has been implemented in Khuzdar. The intervention strategies include IEC to women and their husbands, training of TBAs in life saving skills, training motivation and monitoring of owners of private transport for referral of women in need of emergencies and introduction of reliable telecommunications to connect the TBAs with government health facilities having an ambulance. The results are awaited though preliminary reports suggest significant improvement in perinatal mortality. (Personal communication. Farid Midhet)
 - The Health-Oriented Preventive Education (HOPE) - an NGO working for community development - in collaboration with Asia Foundation, has replicated Balochistan Safe Motherhood Initiative for selected rural population in Sindh, aiming to improve access to emergency obstetric care. The impact of interventions introduced in selected areas of Thatta and Malir would be measured⁴⁶. A unique feature of the above two programmatic strategies is the “Walkie-Talkie” system that enables trained birth attendants and health workers to facilitate getting an ambulance from the far-flung health outlets.

TBA Training Programs

TBAs, a relative or even no one currently attends around 60 million births annually⁴⁷. TBAs are generally older, illiterate women⁴⁸. Though they tend to be a cheaper option than professional midwives, TBAs are respected community members, perform important cultural rituals and provide essential social support to women during childbirth⁴⁹⁻⁵¹. The workload of TBAs varies from place to place though it is unusual for a TBA to deliver more than 20 women a year. (WHO 1992). Several SM intervention programs have specifically targeted TBA training though the results have been generally disappointing.

Developing Countries

A review of the decades long TBA training program conducted by the government of Bangladesh illustrated minimal impact of the program, as MMRs still remained high. The study however cited the absence of accessible essential obstetric care as the main reason for lack of significant change in the MMR⁵².

Trained TBAs in Bangladesh were significantly more likely to practice hygienic delivery than untrained TBAs, (45% versus 19.3%) though the level of postpartum infection was not significantly different when deliveries were conducted by trained as compared to untrained TBAs⁵³.

In Nigeria, training TBAs to identify, record risk conditions in childbirth by utilizing pictorial cards and refer high risk mothers demonstrated that 70% of the 107 TBAs who completed the training program could recognize all the symbols on the antenatal card. However, the TBAs referred only one quarter of women who would be considered at risk by modern obstetric criteria⁵⁴.

In Ghana, though mothers attended by trained TBA were less likely to experience postpartum fever and retained placenta as untrained TBAs but there was no significant association between training and other morbidity symptoms or referral rates⁵⁵.

Evaluation of a TBA training program conducted two years later identified significant improvement in knowledge about high risks pregnancies, hygienic deliveries but not about postpartum hemorrhage. However, structural deficits in the health delivery system such as infrequent supervision, few supplies and inadequate referral system were factors identified as undermining the success of the training program⁵⁶.

In rural West Java, an intervention project targeting various components including training at all levels of health care systems and establishing birthing homes in villages to make services more accessible demonstrated that in the study area one third of those with intrapartum complications delivered in a health facility as compared to one tenth in the control area though most deliveries in either area were conducted by TBAs⁵⁷.

An evaluation of three communities in Mozambique, one with good access to trained TBAs, one with no access to trained TBAs and one with good access to functioning maternity homes showed a preference for health facility delivery among women with good access to trained TBAs⁵⁸. Among women with good access to trained TBAs, one third reported giving birth by a trained TBA, 43% reported giving birth at health facility and 24% reported giving birth by untrained TBA.

An overview assessment of the impact of TBA training programs lends support to the notion that this intervention strategy has resulted in marginal decrease in maternal mortality though conflicting evidence on the effect on reducing maternal morbidity especially postpartum infections is a cause of concern. However, a common theme throughout these studies identifies the lack of an efficient and functioning referral system for emergency obstetric care.

Pakistan

- The GoP with support from Unicef initiated a TBA training program from 1981 to train 50,000 TBAs - one at least per village. Though at least 30,000

TBAs were trained, very little is known about the current activities of the TBAs³⁵.

- The GoP's Family Health Project, financed by World Bank, provided training to 650 TBAs in 10 districts in Sindh on a) safe and clean delivery and b) recognizing high risk pregnancies for timely referral⁵⁹. An evaluation of the 7-year project reported that though training enhanced the knowledge and skills of TBAs in providing broader health care services and they enjoyed greater community acceptance and consumer satisfaction but without an integrated effective referral system backed by well-equipped emergency obstetric facilities the TBA program was not successful in reducing maternal mortality.

Skilled Care during Childbirth

After the launch of SMI in 1987, the IAG spearheaded international advocacy efforts to raise awareness of maternal mortality. At the tenth anniversary of the Initiative, a technical meeting was held in Colombo, Sri Lanka in 1997, where ten key action messages were identified as major strategies for reducing maternal mortality. “Ensure skilled attendance at birth” was identified as one of the most important interventions as an estimated two-thirds of maternal death occurs in late pregnancy, during delivery and the first two days postpartum⁶⁰. At present, only 53% of deliveries in developing countries are attended by a health professional⁶¹. The lowest levels are in South Asia (29%) and Sub-Saharan Africa (37%)⁶¹. Following the Colombo meeting, regional and international advocacy meetings are being held sponsored by IAG and the White Ribbon Alliance to encourage developing countries to prioritize skilled care at birth and to promote the Millennium Development Goal to reduce MMR by 75% by 2015 from the 1990 levels and to meet the international development target of 80% all births assisted by skilled attendants by 2005¹.

Skilled Birth Attendant refers to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries, diagnose and manage or refer complications. Ideally, the skilled attendants live in, and are part of, the community they serve. They must be able to manage normal labor and delivery, recognize the onset of complications, perform essential interventions, start treatment and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in the particular setting⁴.

Skilled Care during Childbirth (Skilled Attendance) refers to the process by which a pregnant woman is provided with adequate care during labor, birth, and the postpartum and immediate newborn periods, whether the place of delivery is the home, health center, or hospital. For this process to take place, the attendant must have the necessary skills **and** must be supported by an *enabling environment* at the various levels of the health system. This includes a supportive policy and regulatory framework, adequate supplies, equipment, and infrastructure, and an efficient and effective system of communication and referral/transport⁴.

Midwifery skills are a defined set of cognitive and practical skills that enable the individual to provide basic health care services throughout pregnancy and the period of the peri-natal continuum and also to provide first aid for obstetric complications and emergencies, including life saving measures when needed⁴.

Competency based skills for the Skilled Birth Attendant/midwife includes a range of specific behaviors and essential skills that the birth attendant must be able, at minimum, to perform competently to be classified as “*skilled*”. These include supportive care during normal labor, birth and the immediate postpartum period, essential skills and competencies for the major causes of maternal and neonatal mortality and attitudinal (interpersonal and cultural sensitivity) and cognitive (problem-solving and decision-

making) skills (Safe Motherhood InterAgency Group. 2002. *Skilled Care during childbirth. A review of the evidence.* (Draft). New York. Family Care International).

Conclusion

The overall evaluation of TBA training programs and the lack of evidence that cogently illustrates the impact of TBA training in reducing maternal mortality as reported in this review paper has led even the WHO to temper its enthusiasm for TBA training. By themselves, TBAs cannot reduce maternal mortality, whether they are trained or not⁶³. They need skilled, equipped, and available support at all levels of the health care delivery system but especially with midwives, doctors and obstetricians to be operationally effective.

Several studies do report that TBAs practice what they have learnt during their subsequent work in the community^{64,65} though adoption of improved practices is not universal⁶⁶ and the extra confidence gained from the training experience may lead to higher incidence of dangerous procedures and in some cases delay in referral⁶⁷. Moreover, training does not substantially alter their deeply rooted belief system and hence will have little impact on their traditional practices⁶⁸. Consequently, based on the current evidence, a Safe Motherhood program that is restricted to TBA training will not contribute significantly to MMR reduction.

Although the TBAs are not the skilled providers, they hold a special position in the communities and should be considered part of the community's informal health care system. TBAs should be involved in community education and mobilization efforts. They can be a source for conveying vital information to families and communities in a culturally acceptable way. Moreover, they can help the families in understanding how to recognize the danger signs during pregnancy and when to seek health care. Since women and the communities look to TBAs for advice and information, TBAs must be given correct information and supported in their understanding of safe motherhood messages. Hence, health planners, health care professionals and other members of the formal health care system should respect the TBA as a link between the community and the health care system. When the TBA arrives at the health facility or the skilled birth attendant arrives at client's home, the skilled provider should involve the TBA in supporting the woman and her family throughout her pregnancy, labor and in the postpartum period.

The emphasis on skilled birth attendant by the IAG and its acceptance by the UN agencies including the proportion of births conducted by a skilled birth attendant as a Millennium Development Goal highlights the program priorities for developing countries committed to reducing maternal mortality. Lessons learnt from developed and a few developing countries that have substantially reduced maternal mortality through skilled birth attendants present a range of optional approaches. These include skilled midwives deployed at the community level supported by doctors (Sweden); deployment of community midwives, phasing out of TBAs especially in rural communities and a high risk approach (Malaysia); and facility births conducted either by midwives (Sri Lanka) or doctors (United States).

TBAs, relatives or no one conduct currently most births in rural areas of Pakistan. The shift to having all births in Pakistan conducted by a skilled birth attendant will take a considerable number of years. The case study of Malaysia cited in this review paper argues that it can take upto thirty years to achieve this goal but has demonstrated that the goal is achievable and will result in reduction in maternal mortality¹². In the current scenario in Pakistan, it is important to make use of the immense potential of the TBAs but alter their responsibility in a user-friendly fashion in order to be an effective link between the parturient mother, the skilled birth attendant and the formal health care system.

Pakistan does have a midwifery program and there are several midwifery schools in operation. However, one of the major drawbacks has been the quality of the training, and the lack of monitoring and supervision of the midwives and their deployment. Strategies are needed to put greater emphasis on the quality of the midwifery training program emphasizing competency-based skills; managerial skills for midwifery supervisors; training of midwifery tutors; and the development of a system to monitor the quality and coverage of the training programs and the delivery services.

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