

Life Out

Saving Mothers' Lives

What Works



A Field Guide for Implementing Best Practices in Safe Motherhood



The White Ribbon Alliance for Safe Motherhood/India

Saving Mothers' Lives

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The White Ribbon Alliance for Safe Motherhood/India
Best Practices Sub-committee
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The reprinting of this publication was initiated by The Child Survival Collaborations and Resources Group (CORE). CORE represents a consortium of 35 PVOs implementing child survival projects which have 18 years of experience in designing, implementing, and evaluation community-based Child Survival projects that seek to reduce childhood and maternal mortality and morbidity.



ACKNOWLEDGEMENTS

In 2001, the White Ribbon Alliance for Safe Motherhood, India (WRAI) as part of one of our three goals - To Act As A Catalyst For Action To Address The Tragedy Of Maternal Deaths - felt the need to share the most recent evidenced based knowledge and practices from India, the region and around the world about what works (and what does not) to reduce maternal mortality. The WRAI decided to form a committee to produce a Field Guide on Safe Motherhood Best Practices. We would like to acknowledge our committee members for their vision, guidance, and fund-raising efforts to make this Field Guide possible:

Marta Levitt-Dayal, CEDPA
Shilpa Deshpande, ICICI Social Initiatives Group
Anisha Arur, ICICI Social Initiatives Group
Janet Chawla, Matrika
Lovelyn Johri, CARE, India
Ragini Pasricha, PRIME/INTRAH, India

Criteria for the Field Guide was get by the committee – we wanted evidence of impact but also the how to's of best practices. Often case studies tell about the best practices, but in few cases do we learn about the steps in how these were achieved or get the tools used to allow us to replicate these best practices. We wanted to put together a sort of “cookbook of safe motherhood best practices.” A call for best practices was sent out globally to the White Ribbon Alliance for the collection of current evidence-based best practices that included the how to's of implementation. In addition, a thorough search was done for information, publications, presentations and other documents on evidence-based safe motherhood and best practices. This initial process which was far more challenging than expected as though many of us do good work, we tend to not document the how to's of what we do. Thus, the recipes for our best practices “cookbook” will need to continue to be collected. We would like to thank those who responded and ask our readers to write us and send additional best practices with the how to's that will enable us to publish a series of issues on best practices.

We are thankful to Dr. Aparajita Gogoi, WRAI coordinator, CEDPA for spearheading the entire process, to Renuka Motihar for leading the search for and collection of information and published material on and examples of best practices and assisting us in defining a best practice, and to Deepika Ganju for helping us conceptualize the format of the field guide and for writing the initial drafts of the sections on Facts About Maternal Mortality, ANC and Postpartum Care.

The WRAI is most grateful to the group of WRAI members who took it upon themselves to complete this Field Guide – writing the remaining sections and finalizing drafted sections - in time for launching at the International Conference on Safe Motherhood: Saving Mothers Lives: What Works held in Delhi, Oct. 3-6 2002:

Janet Chawla, Matrika, wrote the section on Building Bridges Between Indigenous And Biomedical Practices And Practitioners

Sara Chhetry wrote the final draft of the section on Postpartum Care and first draft of the section on Obstetric First Aid

Jean Patrick DuConge, MD, MPH, Medical Advisor, European Commission Health and Family Welfare Programme, India wrote the section of Effective Referrals

Marta Levitt-Dayal, PhD, MPH, Chief of Party, CEDPA/India wrote the Introduction, Training of Traditional Birth Attendants, Skilled Attendance, and Birth Preparedness; finalized the sections on Community-Based Obstetric First Aid And Home-Based Life Saving with Rajni Ved and on Postpartum Best Practices. Dr. Levitt-Dayal also completed the final technical editing of the Field Guide.

Inga Inga Lucyna Oleksy, MPH, wrote the section on Verbal Autopsy

Shereen Penny wrote the section on Management of Labor and Delivery with Sara Chhetry.

With **Anuradha Marwah, Marta Levitt-Dayal** collated and organized the material and edited the entire document to make it as user-friendly as possible.

We would like to acknowledge the following publications in particular that this Field Guide has heavily drawn from:

1. De Brouwere, V & Van Lerberghe (Eds) (2001) Safe Motherhood Strategies: A Review of the Evidence, Studies in Health Services Organisation and Policy 17, Antwerp, Belgium, ITG Press.
2. MAQ Exchange (2002). CD Powerpoint Presentations on ANC and Intrapartum Care. USAID.
3. Ross, Susan Rae (1998) Promoting Quality Maternal and Newborn Care: A Reference Manual for Program Managers. CARE.
4. White Ribbon Alliance for Safe Motherhood (2002). Community Works: A Technical Resource Packet
5. WHO presentation on Skilled Attendance, 2002.

Finally, we would like to give our sincere appreciation to the organizations that have provided financial support for this publication: ICICI Social Initiative Group, USAID through CEDPA's ENABLE project and The MacArthur Foundation.

We hope that our colleagues in the field and those who are designing programs and policies will find this publication useful in steering us towards adopting evidence-based practices.

White Ribbon Alliance, India, 2002



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ABOUT THE WHITE RIBBON ALLIANCE

The White Ribbon Alliance for Safe Motherhood was set up in May 1999 in the US by several international organizations to increase awareness of the need for safe pregnancy and childbirth. The Alliance aims to foster grassroots efforts that complement the work of the Safe Motherhood Initiative, and to build alliances and act as a catalyst for action. Alliance members believe that a broad-based coalition can make safe motherhood a priority issue for governments, NGOs, donors and international organizations. Alliance partners collaborate to reduce maternal mortality through shared resources and experiences. These efforts have gone a long way in increasing awareness of the issue with policy makers, legislators, NGOs, health service providers families and communities. The WRA now works in 20 countries across the world.

The White Ribbon is dedicated to the memory of all women who have died in pregnancy and childbirth—to all those whose lives could have been saved.

The White Ribbon Alliance in India

Unlike general mortality and infant mortality in India, maternal mortality has not declined significantly. In India over 100,000 women die due to pregnancy-related causes every year. The recently released NFHS-2 data shows that the maternal mortality ratio (the number of pregnancy related deaths per 100,000 births) is 540, indicating no reduction in the rate of maternal deaths in the last six years. Moreover, maternal mortality is far greater in rural areas (619, according to NFHS 2) than in urban areas.

The White Ribbon Alliance Movement was launched in India in November 1999 to raise awareness among citizens, international NGOs, national NGOs and governments of the need to ensure safe pregnancy and childbirth; build alliances through wide-ranging, intersectoral partnerships; and act as a catalyst for action to reduce maternal deaths and sustain the current safe motherhood effort.

Today, the alliance in India has 58 member organizations and five state level chapters, with diverse membership from international and Indian NGOs, donors, researchers, activists and health professionals. A range of perspectives are represented, from biomedical to ethnomedical. This provides an opportunity for dialogue, exchange, and convergence of ideas.

The Alliance has been actively involved in a number of areas. Partners:

- Share existing material and best practices
- Mobilize involvement and endorsement from political figures and policy makers
- Implement innovative projects and campaigns through local partners and networks
- Disseminate messages and information through the mass media
- Decentralize coalition activities to the States and expand grassroots action

- Collaborate with different organizations and sectors to decrease maternal mortality through shared resources and experiences.
- Increase awareness of safe motherhood and related issues among policy makers, legislators, NGOs, health service providers, families and communities.
- Help local NGOs integrate safe motherhood activities within their existing programs
- Advocate through members, media, government, the private sector etc. to turn the alliance activities into a movement
- Build alliances at the grassroots level and at the state/regional level
- Build the capacity of NGOs/CBOs/service providers
- Mobilize/facilitate resources to enable grassroots NGOs to efficiently concentrate and plan activities relating to safe motherhood.
- Mobilize celebrities to talk about the issue.

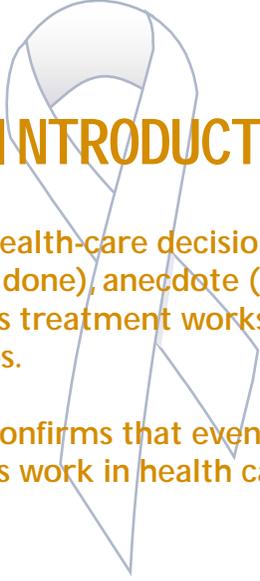
INTRODUCTION TO BEST PRACTICES

This section will help the reader to make a shift from continuing to implement safe motherhood activities as has always been done to exploring and using the evidence to make programmatic strategy decisions.

Implementers will learn:

- Why we are writing this field guide
- What do we mean by best practices
- Lessons learned from history and evidence
- Facilitating change in light of the evidence
- Social mobilization, societal change and safe motherhood





INTRODUCTION TO BEST PRACTICES

“Too many health-care decisions are still made solely on the basis of tradition (what we’ve always done), anecdote (someone once told me), and clinical observations (in my hands this treatment works well) rather than the findings of carefully conducted clinical studies.

Experience confirms that even reasoning from ...what should work is no guarantee for what does work in health care.”¹

J. Volmink, C. Murphy, S. Woldehanna, Global Health Council, 2002

“Whatever the usefulness may be for other purposes, some of the common sense activities that had been promoted for decades – risk screening at antenatal consultations, training of traditional birth attendants – proved to be of limited direct affect on maternal mortality.”²

Wim Van Lerberghe and Vincent De Brouwere, 2001

Why we are Writing this Field Guide

So many of us have worked so hard and been so committed to preventing untimely maternal deaths over the last two decades that it is hard for us to believe the latest research and large scale surveys, which consistently indicate that maternal mortality remains unacceptably high. However, we need to face these facts, as painful as they may be, and pause for reflection.

What went wrong? What didn’t work that we thought was working? What does work that we are not doing?

Fortunately some of the best minds in the world and in our region are working to unravel years of experience and evidence in order to determine scientifically what has worked and what has not. Rigorous research techniques are being applied to test which interventions are successful and replicable. Thus, with the emergence of this new body of knowledge, we owe it to ourselves, and to the communities we serve, to “go back to school” and re-orient ourselves to the latest evidence-based learning.

The members of the White Ribbon Alliance are writing this field guide to sow the seeds of current knowledge of “What Works” and weed out “What Does Not Work” in reducing maternal mortality. This is the first of a series of issues on what we have called current best practices. The learning and review of the evidence is a continuing process and we must continue to use scientific methods to test what seem to be successful interventions and eliminate what does not work.

We hope to provide brief how to’s of some of the current “Best Practices” along with some Promising/ Better Practices.

This field guide is intended for program managers and implementers working at the community level to reduce maternal and neonatal deaths. We believe it will be the safe motherhood champions - the risk-taking NGO managers, government leaders and technical experts, and health providers, **like yourselves**, open to transforming their usual practice - who will effect a change by adopting the current best practices.

What Do We Mean by Best Practice

“[Current Best Practices] reflect the best understanding, at the present time, of the most effective interventions, if appropriately applied to the local needs, to contribute to a reduction in maternal and newborn mortality and morbidity.”

Susan Rae Ross, CARE, 1998

Best Practices have the following characteristics³:

- The “Gold Standard” of practices, activities or tool that can be implemented to support program objectives
- Evidence of impact is drawn from multiple settings
- Based on objective data
- Exemplified by evidence and successes of replication

The Field Guide draws from numerous sources and includes just some of the evidence and best practices. We have tried to compile the wealth of material, simplify it, and suggest the steps in how to implement these best practices.

For further details and information on evidence-based or best practices see the following sources:

1. WHO Reproductive Health Library (RHL) which makes available the Cochrane systematic reviews of the evidence on reproductive health, including safe motherhood. To subscribe free to the RHL from developing countries send an email to RHL@WHO.INT
2. De Brouwere, V. and Wim Van Lergerghe, (Eds.) (2001) *Safe Motherhood Strategies: A Review of the Evidence*. Studies in Health Services Organization and Policy, 17.
3. Ross, Susan Rae (1998) *Promoting Quality Maternal and Newborn Care: A Reference Manual for Program Managers*. CARE.
4. White Ribbon Alliance for Safe Motherhood (2002). *CommunityWorks: A Technical Resource Packet*

Lessons from History and Evidence– What Works and Does Not in Reducing Maternal Mortality

“Where preconditions have been met and professionalisation of obstetric care has been adopted in developing countries, ... the reduction of maternal mortality was observed, be the country still poor (Sri Lanka) or wealthier (Malaysia, Thailand).”

“Those countries that managed to get doctors to cooperate with a midwifery based policy fared relatively well. Where doctors won the battle for professional dominance – and for their share of the market – women died.”

Wim Van Lerberghe and Vincent De Brouwere, 2001⁴

In the developed world, historical lessons demonstrate that significant improvements can be achieved through key interventions. In the 19th century, maternal mortality halved in Sweden as a result of a national policy favoring professional midwifery care for all births - most of which took place at home – and standards for quality of care. Midwives in Sweden were given the authority to use life saving skills as early as 1829. Strong political will, the accountability of local authorities, and appropriate information systems helped Sweden achieved the lowest maternal mortality rate in Europe at 228 per 100,000 by 1900 from a rate of 500 per 100,000 in the 1880s⁵.

In Denmark, Japan, Netherlands and Norway, similar strategies – institutionalizing professional maternity care - produced comparable results. After 1945, a drastic fall in the maternal mortality rate resulted from access to antibiotics, C-sections and safe blood transfusions.

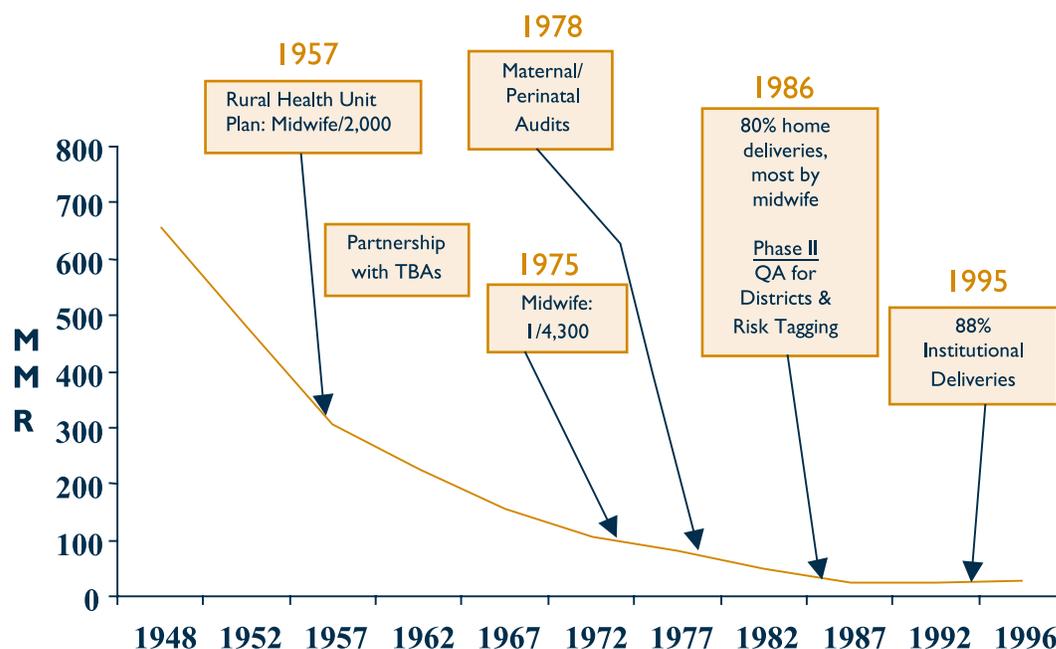
Evidence suggests that maternal mortality can be reduced without first attaining high levels of economic development. In countries such as Tunisia, Sri Lanka, Cuba, China and the former Soviet Union, for instance, levels of maternal morbidity and mortality were reduced through combined interventions. These include education for all; universal access to basic health services and nutrition before, during and after childbirth; access to family planning services; attendance at birth by professional health workers; access to good quality care in case of complications; and policies that raise women’s social and economic status, and their access to property, as well as to the labor force⁶.

In Sri Lanka, from a level of over 1500 per 100,000 live births in 1940-45, maternal mortality levels fell to 555 per 100,000 live birth in 1950-55 and continued to drop to its present rate of 30 per 100,000 in 1999. In half a decade this tremendous achievement was realized through the introduction of a system of health facilities around the country allied to an expansion of midwifery skills and the spread of family planning. Simultaneously, a shift occurred from the majority of deliveries being conducted at home by untrained birth attendants in the 1950s to 85% of all births attended by trained personnel by the end of the 1980s⁷.

In Malaysia, after introducing professional midwives at the community level, maternal mortality dropped from 300 in 1957 to 39 in 1987. This low level of maternal mortality was achieved even though 80% of all deliveries took place within the home and were conducted by midwives. Interestingly,

the initial phase included the training of Traditional Birth Attendants who worked in partnership with the professional midwives. This later gave way to the majority of women being delivered by midwives as they replaced TBAs. Only in recent years did the majority of women start delivering in health institutions.

Figure 1: Maternal Mortality Ratio in Peninsular Malaysia, Koblinsky 2000



What Have We Learned for the Future

1. A strong political will to allocate resources to reduce maternal deaths and willingness of the medical profession to permit and promote professional midwifery are essential prerequisites
2. Maternal mortality can be reduced even in economically disadvantaged communities. We do not need to wait for economic development
3. The strategy of introducing a system of professional midwives and ensuring the implementation of standards for quality care can give rapid results
4. Skilled attendants, such as midwives and nurses, need to have the authority to use obstetric first aid and life saving techniques and be backed up by a system of Emergency Obstetric Care (EmOC)
5. That even when institutional deliveries are not possible for all deliveries, results can be achieved through home deliveries conducted by well trained midwives, following accepted midwifery standards of care (again backed up by a system of EmOC)
6. Training of Traditional Birth Attendants in isolation - without linking them to a system of functioning EmOC or minus a partnership with midwives or other health personnel – will not significantly reduce maternal mortality. The Malaysia experience indicates that in partnership with midwives, TBA training can be effective.
7. Family planning saves lives by preventing unwanted pregnancies

For Additional information on the history of what has reduced maternal mortality, see the following resources:

1. WHO/UNFPA/UNICEF/World Bank (1999) *Reduction of Maternal Mortality: A Joint WHO/UNFPA/UNICEF/World Bank statement*. Geneva:WHO.
2. Van Lerberghe, W. and V. De Brouwere(2001). "Of blind alleys and things that have worked: History's lessons on reducing maternal mortality." *Safe Motherhood Strategies: A Recent Review of the Evidence*. De Brouwere,V. and Wim Van Lerberghe (Eds). Antwerp: ITGPress.
3. Koblinsky M.A., O.Campbell and J.Heichelheim (1999). "Organizing delivery care: what works for safe motherhood?" *Bulletin World Health Organization* 77 (5).
4. Loudon, I. (1992) *Death in Childbirth: An International Study of Maternal Care and Maternal Mortality 1800-1950*. London: Oxford University Press.

Facilitating Behavior Change in Light of the Evidence

"Despite huge efforts ... in synthesizing existing research evidence, there remains a gap between this information and health provider practice... information about best practice is insufficient to initiate behavior change. People need to be motivated to change and work together to organize how this actually is implemented in practice and monitored over time."

H. Smith, P. Garner, Liverpool School of Tropical Medicine, 2002

As implementers of effective safe motherhood interventions, our greatest challenges lies in our ability to accelerate life-saving behavior change among pregnant and postpartum women and their families. To do this we must be clear about what behaviors work, understand the factors which will facilitate this change and those that will act as barriers to change, and focus on key messages based on the evidence of what works in reducing deaths.

In a recent paper "Safer Motherhood 2000: Toward a Framework for Behavior Change to Reduce Maternal Deaths"⁸, key actions to accelerate behavior change to reduce maternal deaths are suggested:

1. Redesign qualitative research to focus on maternal deaths
2. Reprioritize behaviors to emphasize behaviors with most mortality reduction potential
3. Refine key behaviors into sub-behaviors and increase support and resources provided for sub-behavior
4. Promote design and use of birth preparedness card
5. Adapt and apply expanded ethnographic techniques to improve research output
6. Employ collaborative community research models
7. Explore and exploit hierarchy and networking patterns to increase improved practice among medical professionals and policy makers

We must reprioritize behavior change and communication themes based on what has the greatest potential for averting deaths and what is realistically possible given the current environment and potential for change in the near future. For example, though blood transfusion facilities may not be available for hundreds of kilometers, there might be health facilities that have doctors with access to antibiotics or drugs that treat hypertensive disorders of pregnancy. Thus, it might be decided to focus first on behaviors and communication messages related to reducing deaths associated with infection and eclampsia.

Based on the evidence, Moore recommends six themes for prioritizing behavior change⁹. We have adapted these themes to the current evidence and added a few more (changes denoted by an asterick*):

Theme one:	Birth Preparedness and *Complication Readiness ¹⁰ /Planning and for a Safer Birth.
Theme two:	Early Postpartum Care for Mother and Newborn – *first 24 hours and week
Theme three:	The “Clean Chain” – Cleanliness, Asepsis, and Infection Control at Household and Facility Level
Theme four:	Reducing the “*Four Delays” for Obstetric and Newborn Emergencies
Theme five:	Improved Patterns of Antenatal Care *and Utilization of ANC – focused ANC to detect and treat complications and medical conditions, iron folate supplementation compliance
Theme six:	Strengthening the Community Response and Social Support Networks
*Theme seven:	Skilled attendance for delivery
*Theme eight:	Obstetric First Aid and Home-based Life Saving Skills

Steps in Participatory Behavior Change Communication:

1. Review existing research results and development of new instruments to fill information gaps
2. Target audiences need to be reviewed and revised
3. Negotiate recommended behaviors to create a more acceptable core behavior set
4. Prioritize and rank behaviors according to stated criteria
5. Break down key behaviors into sub behaviors (behavior analysis)
6. Systematically validate the step by step details of exactly what is required to carry out or achieve proposed behaviors
7. Determine potential barriers, motivators, needs and resource gaps from beneficiary perspectives.

Key audiences for each reprioritized behavior must be identified:

- Pregnant and postpartum women
- Family decision-makers (this may vary by culture or household composition)
- Community opinion leaders (religious, women group leaders, locally elected leaders, others)
- Birth attendants (professional or traditional – could be Dais, relatives or friends or multiple persons having different roles in the birthing process)
- Community health providers involved in maternity care (ISMPs, community health workers, anganwadi workers)
- Health facility-based health professionals (private and government)

Social Mobilization, Societal Change and Safe Motherhood

“It is increasingly recognized that communication for behavior change must be conceptualized with an overall environment for social change.”

K.M. Moore, 2001

“The dramatic and widespread change in behavior, policy and resource allocation that the programme [in this case Safe Motherhood] anticipates require concerted efforts and action among many segments of society. *Social Mobilization* efforts have set precedents in recent history that resulted in major shifts in societal norms, policies and laws.



***Social Mobilization* involves planned act and processes to reach, influence, and involve all relevant segments of society across all sectors from the national to the community level, in order to create an enabling environment and effect positive behavior and social change.”¹¹**

CEDPA, 2000

The White Ribbon Alliance uses social mobilization, a combination of advocacy, behavior change communication, and coalition building approaches to create alliances and act as a catalyst for action in safe motherhood.

In the next eleven sections of this Field Guide, a number of evidence based practice theme areas will be summarized. For these to be effectively adopted, significant behavior and societal change will be required at multiple levels.

To facilitate these changes, each best practice module includes:

- A rationale and the evidence for the practice
- The shift or transformation that needs to take place for the best practice to be effectively implemented
- A description of the best practice
- The How to's of implementing the best practice
- Behavior change communication key messages
- Advocacy messages
- References for additional Resource materials
- Tools that will aid in implementing best practice

Resources on Behavior Change, Social Mobilization and Advocacy

1. CEDPA (2000). *Social Mobilization for Reproductive Health: A Trainers' Manual*. The CEDPA Training Manual Series. Washington: CEDPA.
2. Moore, K.M (2001) "Safer Motherhood 2000: Toward a Framework for Behavior Change to Reduce Maternal Deaths." *The Communication Initiative*. www.cominit.com/st
3. The White Ribbon Alliance (2000). *Awareness, Mobilization and Action for Safe Motherhood: A Field Guide*. Washington: NGO Networks for Health.

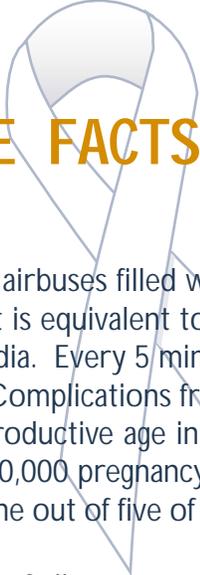
FACTS ABOUT MATERNAL MORTALITY

In this section, the reader will learn about the latest statistics on maternal mortality and the direct and indirect causes of maternal mortality to help you base program decisions on available data.

Implementers will learn:

- What is maternal mortality and how we measure it
- Causes of maternal mortality
- About the four delays
- Barriers to care
- When deaths occur
- Actions for safe motherhood





THE FACTS ABOUT MATERNAL MORTALITY

Imagine, if two airbuses filled with pregnant and postpartum women crashed each day and killed all on board. That is equivalent to the over 100,000 women who die of pregnancy-related causes each year in India. Every 5 minutes, one woman somewhere in India dies from complications of childbearing. Complications from pregnancy and childbirth are the leading causes of death among women of reproductive age in India and worldwide. The global figures are equally alarming—each year, almost 550,000 pregnancy-related deaths occur, approximately a death every minute. India accounts for one out of five of these deaths.

- 15 percent of all pregnant women in India develop life-threatening complications
- 65 percent of deliveries occur at home
- Only 41 percent of women have a skilled birth attendant at the time of delivery
- 60 percent of all maternal deaths occur *after* delivery but only 1 in 6 women receive postnatal care

National Population Policy of the GOI in 2000¹² reiterates the government's commitment to the safe motherhood programs within the wider context of reproductive health. Among the goals identified for the country for 2010 specified by the policy that pertain to safe motherhood:

- 80 percent of all deliveries should take place in institutions by 2010
- 100 percent of deliveries should be attended by trained personnel
- Maternal mortality ratio should be reduced to a level below 100 per 100,000 live births.
- Empowering women for improved health and nutrition is one of the strategic themes identified in the policy.

What is Maternal Mortality and how do we Measure it

A maternal death is 'the death of a woman while pregnant or within 42 days of termination (via delivery, miscarriage or abortion) of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes'¹³.

Three indicators are commonly used to measure maternal deaths:

- *Maternal mortality ratio*—the number of maternal deaths per 100,000 live births
- *Maternal mortality rate*—the number of deaths per 100,000 women aged 15-49 in a given period
- *Lifetime risk*—the probability of death over a woman's reproductive life. The risk is cumulative; the more times a woman becomes pregnant, the greater her risk of dying.

The number of maternal deaths and the level of lifetime risk are directly related. The greater the number of maternal deaths, the higher the lifetime risk for a woman in that setting.¹⁴

Global maternal mortality statistics reflect the widening gap between the developed and developing world. For each woman who dies in the developed world, 99 will die in the developing world.¹⁵ Moreover, a woman's lifetime risk of dying from pregnancy-related complications in developing countries is almost 40 times higher than that of her counterparts in developed countries. Over 90 per cent of maternal deaths occur in Asia and Sub-Saharan Africa, with India alone accounting for 20 per cent of such deaths worldwide.¹⁶

Complications related to pregnancy, childbirth and unsafe abortion are a leading cause of death among adolescent girls, and adolescents currently account for 21 percent of all maternal deaths.¹⁷ Two-thirds of infant deaths in the first 28 days after birth are the result of poor maternal health and inadequate care during pregnancy and delivery and the critical immediate postpartum period. The vast majority of these neonatal deaths occur in the first 24 hours and within the first week of life.

Causes of maternal death

More than 80 percent of maternal deaths worldwide are due to five direct causes:¹⁸

- Hemorrhage (severe bleeding)
- Sepsis
- Complications resulting from unsafe abortion
- Prolonged or obstructed labor
- Hypertensive disorders of pregnancy (eclampsia or pre-eclampsia)

Indirect causes of deaths are due to conditions that in association with pregnancy hasten the fatal outcome – for instance anemia, malaria, hepatitis, and increasingly AIDS.

Major Causes of Maternal Deaths

Cause	Estimated Percentages	Estimated Deaths per Year
Hemorrhage	25-31	146, 250-163, 800
Unsafe abortion	13-19	76, 050-111, 150
(PIH) Hypertension	10-17	58, 500-99, 450
Obstructed labor	11-15	64, 350-87, 750
Sepsis	11-15	64, 350-87, 750
Other obstetric complications	6-8	35, 100-46, 800
Indirect causes	15-20	87, 750-117, 000

Source:WHO, 1991, UNICEF, 1996, quoted in CARE.

Maternal deaths do not happen by chance. Underlying the medical causes of death are a range of interrelated factors. Women die because they lack obstetric care, deliver their babies on their own or without a skilled attendant; undergo unsafe or illegal abortion; or lack access to modern contraception in the first place.

In developing countries such as India, the underlying causes for maternal mortality are poverty, inadequate, inaccessible, or unaffordable health care, poor hygiene and care during childbirth, women's poor health before pregnancy, unequal access to resources, low status, restricted choices and inadequate information and knowledge for recognizing danger signs

Realities that Produces High Level of Maternal Mortality¹⁹:

- Nonexistent, inaccessible, or inadequate facility based emergency obstetric care
- Poorly developed referral linkages where facility based emergency care exist.
- Predominance of home-based care by TBAs and family members
- Acute and unpredictable nature of obstetric emergencies
- TBAs, families and communities poorly equipped to respond to obstetric emergencies
- Complexities of problem identification, recognition and detection and decision making in obstetric emergencies
- Other barriers leading to inappropriate action, delayed action or no action.

Barriers To Accessing Care

The majority of births (65 percent) in India take place at home (in some areas it is almost 92 percent), and a large proportion are assisted by unskilled personnel. In such situations, women who experience life-threatening complications may never receive the required life-saving emergency services because of what we call the “four delays”. These delays can result in maternal mortality or increase the severity of morbidity.

Delay 1: Delay in recognizing the problem (lack of awareness of danger signs)

Delay 2: Delay in deciding to seek care (inaccessible health facility, fear of costs, lack of resources to pay for services, supplies and medicines)

Delay 3: Delay in reaching the health facility (no transport available, unaware of appropriate referral facility)

Delay 4: Delay in receiving adequate treatment once a woman has arrived at the health facility (health facility not adequately equipped, lack of trained personnel, emergency medicines, blood).

Sadly, many of the mothers and newborns who died would have survived if they had received the care when they needed it.

Reasons for Delays

- Failure to perceive severity of illness
- Failure to recognize complications
- Cost considerations
- Previous negative experiences with the health care system
- Lengthy distance to a facility or provider
- Condition of roads
- Lack of available transportation
- Uncaring attitude of providers,
- Shortages of supplies and basic equipment
- Non-availability of healthcare personnel
- Poor skills of health care providers

Many of the reasons contributing to these delays are neither unpredictable or unique. This means that it is possible to anticipate and plan for them in many settings.²⁰

When do maternal deaths occur?

- 20 percent of maternal deaths occur 7 days after delivery
- 50 percent of deaths occur within the first 24 hours after delivery
- 25 percent occur during pregnancy
- 5 percent 2-6 weeks after delivery²¹

Reducing maternal mortality

While a number of health indicators have improved over the last two decades, maternal mortality rates and ratios have shown little improvement due to the absence of commitment to protecting women's health and women's low status and powerlessness in many settings.

Technically it is difficult to predict which individual women will develop a life-threatening complication during pregnancy. The three main ways of reducing maternal deaths and disabilities are by promoting:

- family planning—every pregnancy should be wanted
- skilled attendance at birth—all pregnant women must have access to skilled care
- essential obstetric care—all pregnant women must be able to reach a functioning health care facility when complications arise.²²

Interventions to reduce maternal morbidity and mortality should provide women with:

- access to essential and emergency obstetric health care and to providers with essential midwifery skills and referral, logistics, managerial and supervisory support, particularly among the poorest population groups;

- access to reproductive health and family planning information and services, including expanded contraceptive method mix and improved quality of care and the prevention and management of unsafe abortion;
- mobilization of families, communities and nations for support of women during pregnancy and childbirth including strengthened policy, legislative and regulatory framework for maternal health.²³

As stated in the Joint WHO/UNFPA/UNICEF/World Bank Statement on the Reduction of Maternal Mortality (1999), providing birthing women with a skilled attendant and with access to referral in case of major obstetric complications are the two priority interventions that, combined with family planning, led to a substantial reduction in the number of maternal deaths, in industrialized but also in some low income countries.

Reasons for Maternal Mortality: A Quick Summary

Socio-cultural factors

Harmful practices (eg, covering the ground with cowdung to disinfect it before delivering a child, pressing on the fundus)

Poor nutrition and related factors

Women's low status, participation in decision-making, empowerment

Frequent pregnancies, high fertility rates, short birth intervals

Early marriage and adolescent pregnancies

Heavy workload

Reliance on traditional medicine and healers

Desire for small babies

Emotional abuse/violence

Unmet need for family planning services due to

Traditional beliefs/practices

Lack of knowledge

Inaccessible or poor quality services

Delay in problem recognition due to

Traditional beliefs

Low perceived risk

Low knowledge of causes of death, danger signs and complications

Inadequate screening programs

Delay in deciding to seek care due to

Women's low status/participation in decision-making

Lack of birth planning/preparedness

High rates of unattended home births and untrained attendants

Poor quality (perceived or actual) of health services

continued...

Delay in reaching the health facility due to

Geographical distance

Lack of resources to pay for services

Inadequate communication/transport systems

Inadequate knowledge of where to seek care and how to get to a facility

Delay in receiving quality treatment at the health facility due to

Lack of medicines, supplies, blood and equipment to treat complications

Cumbersome administrative processes

Lack of competent, motivated personnel

Lack of adequate supervision and management Information systems

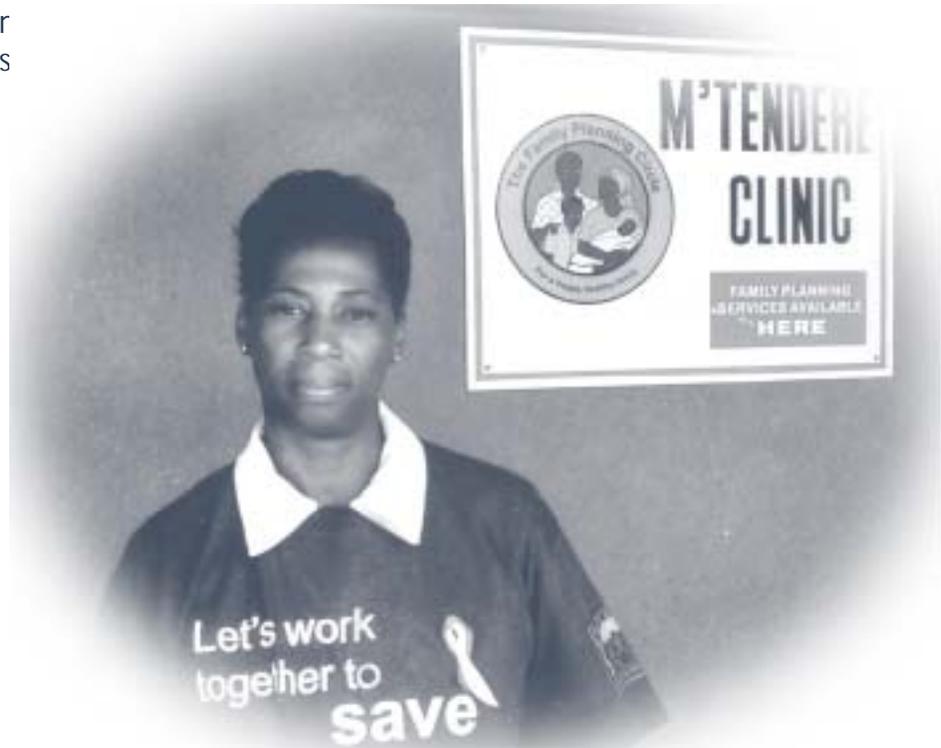
Lack of outreach and follow-up mechanisms

Source: Adapted from Promoting quality maternal and newborn care: A reference manual for program managers, CARE, 1998.

Moving Beyond Nairobi

In 1987 a conference on safe motherhood in Nairobi, Kenya helped raise global awareness about the impact of maternal mortality and morbidity. The conference launched the Safe Motherhood Initiative (SMI), which issued an international call to action to reduce maternal mortality and morbidity by one half by the year 2000.

In 1997, ten years after the Safe Motherhood Conference in Nairobi, a Technical Consultation was held in Colombo, Sri Lanka. The goal of the technical consultation was to review key lessons learned from the Initiative's first ten years and articulate a clear consensus on the most effective strategies and ways to implement these strategies at the country level. This broad consensus is reflected in the Ten Messages included in the Meeting Report "The Safe Motherhood Action Agenda".



Ten Actions for Safe Motherhood for All Women

1. Advance safe motherhood through human rights
2. Empower women: Ensure choices
3. Make a vital economic and social investment in safe motherhood
4. Delay marriage and first birth
5. Recognize that every pregnancy faces risks
6. Ensure skilled attendance at delivery
7. Improve access to quality reproductive health services
8. Prevent unwanted pregnancy and address safe abortion
9. Measure progress
10. Utilize the power of partnerships

Goals

Following from the above, a program aiming to prevent maternal mortality would have the following aims:

- Reduction in the case fatality rate in referral hospitals/units
- Increase in the number of deliveries by skilled birth attendants
- Increase in the proportion of women experiencing an obstetric complication who reach an appropriate referral facility
- Ensuring knowledge and awareness of the signs of an obstetric emergency among pregnant women and their family members
- Ensuring community awareness and support
- Increasing use of transportation for emergencies (reduced time in reaching the referral hospital)
- Ensuring availability of safe blood supply
- Reducing delays in seeking care for obstetric emergencies
- Ensuring geographic access to referral facilities where EmOC is available

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MAKING ANTENATAL CARE EFFECTIVE

In this section, the reader will be provided evidence to help them make the transition from using the risk approach in ANC that tries to predict an obstetric complication to Focused ANC that detects and treats existing conditions and complications.

The implementer will learn:

- The evidence for role of ANC in reducing maternal mortality
- Why the traditional ANC and risk assessment has not worked
- What is no longer recommended for ANC
- What works: Focused ANC
- Best practices in ANC
- What you will need to do to implement ANC best practices
- Key behavior change messages
- Advocacy messages





MAKING ANTENATAL CARE EFFECTIVE IN REDUCING MATERNAL MORTALITY

“80 percent of maternal deaths were due to conditions (sepsis, hemorrhage, shock) not detectable antenatally.”

Browne and Aberd, Lancet, July 1932¹

“No amount of screening will separate those women who will from those who will not need emergency medical care.”²

Deborah Maine, et al, Columbia University, 1991

Antenatal Care and its Role in Reducing Maternal Mortality

For those of us working to improve maternal health, antenatal care has always been pivotal. In fact, in many of our maternal health programs, antenatal care has been the prime focus of our service delivery.

For a long time we did not question the idea that routine antenatal check-ups prevent maternal deaths. We believed that by identifying those women who are at risk of experiencing complications, we could refer them for further medical treatment and avert deaths. Thus risk assessment was the major goal of antenatal care.

However, after two decades of working in the field, with increasing proportions of women receiving antenatal care in developing countries like our own, we find that maternal death ratios continue to be unacceptably high.

What is going wrong?

A number of medical researchers decided to find out. They researched medical records dating back as early as the 1750s and looked at trends of antenatal care and maternal mortality. Recently, WHO tested new strategies of antenatal care to simultaneously make it cost-effective for low resource contexts while ensuring that the most essential evidence-based ANC services are provided. This chapter explores the results of the research and the lessons learned. We will attempt to separate what works from what does not work - and thus is no longer recommended - so that our programs can shift to the current best practices in antenatal care, for which there is evidence associated with reduced maternal deaths.

The Traditional Antenatal Care: Why it Hasn't Worked

The traditional approach to antenatal care, based on European models developed in the early 1900s, assumes that more frequent ANC is better and thus quantity of care is emphasized rather than the essential elements of care.

There are two basic problems in the traditional approach. The model resulted in insignificant gains plus it was not applicable in the low resource context.

In a recent review of the evidence on ANC, Villar and Bergsjo³ concluded:

“The core of these early European models has developed or changed very little despite the increase in medical and midwifery knowledge.

To a large extent, developing countries have adopted the antenatal (ANC) model of developed countries with little or no adjustment for endemic diseases or epidemiological considerations.

Visits are often irregular, with long waiting time, little feedback to (or real communication with) mothers and little or no communication with obstetrical or labor units.”

Even when women go for ANC, they do not receive the full care as prescribed in national RCH/MCH program guidelines: Among women who attended ANC, 37% never had their blood pressure checked, 41% never had their blood tested, 45% never had their urine tested, 25% never had their abdomen examined, and 63% were never informed of any danger signs.⁴

There are many factors that act as barriers to effective antenatal care:

- Inadequate infra-structural resources
- Poor quality of care and treatment of clients
- Ignorance of the importance and value of ANC
- Not customary. In most societies there is no tradition of antenatal care
- Cultural, traditional and religious practices
- Lack of women's autonomous decision-making on their own health care seeking
- Poverty – fear of costs of transport and medical care
- Household responsibilities
- Illiteracy

Unfortunately, as it is currently being practiced in the vast majority of our programs, ANC is routine and ritualistic. It is not focused on detecting and treating pregnancy-related complications or existing medical conditions that can cause or exacerbate pregnancy-related complications.

To effect a change, we would like to share the findings of evidence-based research on practices of routine care provided during ANC which have been found to be wasteful or misleading.

No longer recommended during ANC⁵

- **Numerous visits** – 4 visits are sufficient and for pregnancies without complications additional visits to do not affect maternal or perinatal outcomes
- Measurement of **Maternal height** – is a poor tool for determining cephalopelvic disproportion as maternal height varies among societies.
- Examination for **Ankle edema** – 50-80% of women with normal pregnancies experience ankle edema. Hypertension with edema is less associated with fetal death than hypertension without edema.
- Examination of **fetal position before 36 weeks** – fetal position is not stable before 36 weeks.

Why the Risk Assessment Approach Has Not Worked

In Kasongo, Zaire, 71 percent of the women who developed obstructed labor were not identified as at risk, while 90 percent of the women identified as “at risk” did NOT develop obstructed labor.⁶

The risk assessment approach, introduced in the late 1970's, continues to be widely practiced in our programs. Health providers classify pregnant women as “high risk” – those who have greater chances of developing complications in the current pregnancy - based on physical characteristics and medical history (too young, too old, too short, number of previous pregnancies, whether they had complications in previous pregnancy). Those identified at risk are referred to a hospital for medical care and for their delivery.

A thorough review of data from around the world has now pointed out that risk assessment does not predict who will and who will not have an obstetric emergency.

Evidence suggests that the high-risk approach has failed because⁷:

- The majority of women who experience an obstetric emergency are assessed as not at risk
- It fails to distinguish who will develop complications and who will not
- Many women categorized as low risk do develop complications but are never told how to recognize or respond to them (i.e., these women may have a false sense of security and may not be prepared for an emergency)
- Many women identified as “at risk” never develop complications but utilize scarce resources (e.g., mandated hospital deliveries for women who don't really need them)
- Identification of special medical needs does not guarantee appropriate action at the referral site

The situation is calling out for a transition in our ANC paradigm.

We must shift our ANC approach and:

- Recognize that “Every Pregnancy is at Risk”
- Ensure that we use ANC as an opportunity to detect and treat existing problems
- Ensure that services are available to respond to obstetric emergencies when they occur
- Prepare women and their families for the eventuality of an emergency

The key to effective ANC is to use our powers of observation to really look at the condition of each pregnant woman, use simple and effective tests, and treat existing problems on the spot rather than trying to gaze into a crystal ball and predict who will have a complication.

What Works: Making the Shift to Focused Antenatal Care

The State of the Art Detection Device – Your Eyes

To reduce maternal deaths through antenatal care, it is critical to link care with causes of maternal mortality. As a reminder, the direct causes of maternal mortality include:

1. **Haemorrhage** – can occur anytime during pregnancy, delivery and following delivery. It has multiple causalities and thus difficult to predict. Anemia can aggravate the effects of bleeding.
2. **Obstructed labor** - difficult to predict. However women who have obstructed labours in previous deliveries have a higher chance of having an obstructed labour.
3. **Pregnancy Induced Hypertensive disorders (Eclampsia/pre-eclampsia)** – there is no way to predict who will develop PIH
4. **Puerperal sepsis/infection** – results from unclean delivery practices and reproductive tract infections
5. **Complications of unsafe abortion**

Table 1 helps us to link the direct causes of maternal mortality with the needed test and treatment during antenatal visits and indicates how each of these interventions will help to prevent maternal mortality.

For ANC to be effective in reducing maternal mortality, it must be goal oriented and focused on “screening to **detect** a problem rather than screening to **predict** a problem⁸” and on treating **any** problem that can complicate a pregnancy.

Table 1: Effective Antenatal Services to Detect and Treat Complications and Existing Conditions, Adapted from Per Bergsjö 2001 and Rooney 1992

Direct Cause of Maternal Deaths	Treatment or test	How this will help
Haemorrhage	Routine iron and folate during pregnancy	Prevents anemia which can exacerbate haemorrhage
	Malaria chemoprophylaxis (in Malaria endemic areas)	Reduces anemia
	Hemoglobin/hematocrit	Detects Hb levels/hematocrit
	Oral iron	Can raise Hb by 0.4-0.7g/dL per week
	Blood group typing	Blood group typing can save time in emergencies.
	Packed cell transfusion with safe blood.	Raises Hb immediately for an emergency.
Obstructed Labour	Regular measurements of symphysis-to-fundus	Can detect those with large fetuses and help select need for caesarian
Pre-eclampsia/eclampsia	Blood pressure	Detects hypertension
	Testing urine	Detects proteinuria, pre-eclampsia
	Referral for expert care in cases of severe pre-eclampsia	Control of disease and reduced case fatality
	For eclampsia, First aid and speedy transfer to referral unit	Reduces fatality
	Expedited delivery	Definitive treatment
	Magnesium sulphate	Reduces case fatality
Infection	Treatment for Syphilis and Gonorrhoea	Reduces fetal loss
	Two doses of Tetanus Toxoid	Prevents Tetanus infection in mother and newborn
	Counseling on preparing for a clean delivery and selecting a skilled birth attendant	Reduces risks of infection
Complications of unsafe abortion	Post-abortion care as per complication - haemorrhage or infection	Reduces case fatality
	Immediate provision of effective methods of contraception	Reduces chance of unwanted pregnancy and repeated unsafe abortion

Current Best Practice for ANC - What Is Recommended For Focused Antenatal Care⁹

- Focused four antenatal visits by skilled provider - a midwife, nurse, or doctor to detect any problems (see Table 1 above and schedule of visits below)
- Birth preparedness and complications readiness planning with family (see chapter on BP/CR)
- Detection and management of co-existing conditions and complications
- HIV – Voluntary counseling and testing (especially in areas with high HIV prevalence)
- Counseling for breast feeding, family planning, danger signs, HIV/STIs and nutrition
- Treatment of diagnosed infections, i.e. Syphilis, Gonorrhea or Tuberculosis
- Tetanus toxoid (2 doses)
- Iron and folate – for 6 months of pregnancy, 60 mg iron and 400 micrograms of folate, for areas with >40% anemia continue same dosage for 3 months postpartum¹⁰
- In select populations:
 - Iodine
 - Malaria treatment- Cerebral Malaria is associated with 50% case fatality in pregnancy. In Malaria endemic areas, trials have shown that Malaria drugs given routinely in pregnancy reduces anemia and low birth weight
 - Helminth presumptive treatment – studies have shown that eradication of hookworms can reduce moderate and severe anaemia by 41-56%

What you Will Need to Do to Implement ANC Best Practices

- Step 1:** Review current ANC practices and see how they compare with current best practices.
- Step 2:** Determine financial costs of implementing these best practices. Establish a fee or seek additional funds for any new tests/treatments required. As these are life saving measures, clients would be more likely willing to pay for them.
- Step 3:** Revise ANC guidelines, protocols, ANC health education and counseling material, supervision checklists, reporting forms, and client cards to coincide with current best practices
- Step 4:** Identify gaps in skills and knowledge of ANC providers as per new guidelines. Ensure that you have skilled health workers providing ANC.
- Step 5:** Ensure that all ANC health facilities/providers have the required supplies and equipment to enable the implementation of these new guidelines and protocols. Link with public sector programs (RCH, Malaria, DOTS, nutrition) to access free supplies and equipment whenever possible if these are reliably available.
- Step 6:** Orient and train, if new skills are required, all staff, health volunteers, and community-based health providers on new guidelines and protocols, including rationale for making these changes (MAQ presentation on ANC can be adapted for this purpose)
- Step 7:** Inform the community of the changes and the importance of ANC for survival of mother and child through key behavior change messages, using mass communication print and electronic media and folk media, campaigns, health fairs and other innovative means.

Key Behavior Change Messages

- Every pregnancy is at risk, visit your health care provider if you suspect you are pregnant
- Go for antenatal care during pregnancy to detect and treat problems – it could save your and your baby's life
- Pregnant women need four antenatal care visits (including registration) that include a physical checkup, blood and urine testing, two tetanus toxoid injections, and supply of iron folate supplementation
- Pregnant women need to take iron folate tablets every day for 6 months during pregnancy to save mother's and newborn's lives
- Ask your health care provider about the signs of an emergency and what to do if they occur
- If you think you have Malaria or hepatitis and you are pregnant, see your doctor immediately for treatment
- If you are having health problems during your pregnancy, don't wait – see your doctor right away

[Note: If your organization does not provide ANC and you are dependent on another health care facility, you will need to advocate to them for adopting these best practices.]

Advocacy Messages

- Current best practices are based on the most up to date scientific evidence of what works
- Best practices save resources in the long run by eliminating unnecessary practices and making the best of limited resources
- Implementing best practices saves lives of mothers and newborns
- Skilled providers must be made available for ANC
- Even skilled providers require technical updates so they can provide effective focused ANC based on the most recent evidence of what works



Table 2: Services to be provided for each ANC visit and the required equipment and supplies needed

Visit No./when to provide	Service to be provided	Purpose of service	Equipment/supplies needed
1st Visit or Registration (when pregnancy is suspected)	A personal medical history is taken (eg. Date of last menstrual period, symptoms of pregnancy, previous pregnancy history)	To diagnose pregnancy and identify any complications during previous pregnancies	
	Thorough physical and abdominal exam	To detect and manage any co-existing condition or complication, eg TB, malaria, vaginal bleeding, pre-eclampsia, STDs	Stethoscope
	Check blood pressure	To identify and manage hypertension	Functioning blood pressure apparatus and stethoscope
	Blood testing	Test for anaemia, STDs, blood group typing	VDRL kit; Hemoglobin-ometer
	Urine test	Test for proteinuria/albumin for pre-eclampsia and sugar for diabetes	Test tube, spirit lamp, acetic acid, Benedict solution
	Weight measured	To establish a baseline weight	Weighing scale
	Registration of pregnant woman	To effectively track the completeness of care and pregnancy outcomes	Registration form/pregnancy register
	First dose of Tetanus Toxoid	To prevent tetanus in newborn and mother	Disposable/glass syringe, spirit swabs, TT vaccine; syringe sterilizer
	Provide 3 months supply of IFA	To prevent anemia	Adult IFA tablets
	Counsel on need for 3 ANC visits, healthy diet, need for rest, and signs of an emergency	To prevent and prepare for possible complications	Flipcharts
	In endemic populations, treat for hookworm, Malaria, iodine deficiency	To prevent severe anemia	Stool test, needle, slides
2nd Visit (4 th -6 th month)	Check blood pressure	Detect and manage hypertension	
	Do an abdominal and physical exam	To detect and manage any co-existing condition or complication. Refer for expert medical care if a sign of an emergency is detected (vaginal bleeding, blurring vision with severe headache, convulsions). Repeat blood or urine tests as required to detect pre-eclampsia or severe anemia	Stethoscope or fetoscope
	Second dose of TT		
	Provide 3 additional months supply of IFA	To prevent anemia	Adult IFA tablets

Visit No./when to provide	Service to be provided	Purpose of service	Equipment/supplies needed
3rd Visit (8 th month)	Check blood pressure	Detect and manage hypertension	Blood pressure apparatus
	Do an abdominal and physical exam	To detect and manage any co-existing condition or complication. Refer for expert medical care if a sign of an emergency is detected (vaginal bleeding, blurring vision with severe headache, convulsions)	Stethoscope or fetoscope
	Provide additional IFA	To prevent anaemia	
	Assist woman and family in developing a birth preparedness/complication readiness plan - selection of birth place, skilled birth	To be prepared for a safe and clean delivery and in the event of an emergency	Sample DDK, list of the nearest referral facilities
4th Checkup (9 th month)	Check blood pressure	To detect and manage hypertension	Blood pressure apparatus
	Do an abdominal and physical exam	To detect and manage any co-existing condition or complication. Refer for expert medical care if a sign of an emergency is detected (vaginal bleeding, blurring vision with severe headache, convulsions)	Stethoscope or fetoscope
	Counsel on breast feeding and birth spacing and limiting	To prevent unwanted pregnancies and too closely spaced pregnancy	Flipcharts, sample of contraceptives
	Review birth preparedness and complication readiness plan	To prevent any delays in case of an emergency	

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BIRTH PREPAREDNESS AND COMPLICATION READINESS

This section will help the reader to introduce a promising practice of Birth Preparedness/Complication Readiness (BP/CR) into their safe motherhood activities.

The implementer will learn:

- How being unprepared results in delays that lead to maternal deaths
- How preparedness and readiness saves lives
- How to detect a complication
- The components of the BP/CR plan for pregnant women and their families
- The role policy-makers, health facility, provider, community, families and the woman have in BP/CR
- About piloting and how to implement a BP/CR intervention
- Key behavior change messages
- Advocacy messages





BIRTH PREPAREDNESS AND COMPLICATION READINESS

“...these commonly cited factors [contributing to maternal death] can be averted with advance preparation and rapid action, thus reducing the delays in seeking, reaching or receiving care. This is the essence of Birth Preparedness and Complications Readiness (BP/CR).”

Maternal and Neonatal Health Program, 2000¹¹

Being Unprepared Results in Delays that Kill

In many societies such as our own, it is considered unlucky to prepare in advance for delivery and expected baby. In fact, it is often believed that one can “invite” problems by preparing before the birth. Thus, no action is taken prior to the delivery and the family scrambles into action only when labor begins. Unfortunately, when complications do occur, as they do in 15% of the cases, the family is unprepared and though trying desperately to save the woman, inadvertently wastes a great deal of time in getting organized, gathering funds, finding transport, and reaching the appropriate referral facility – too often these delays lead to maternal death.

Delay 1: Delay in recognizing the problem (lack of awareness of danger signs)

Delay 2: Delay in deciding to seek care (inaccessible health facility, fear of costs, lack of resources to pay for services, supplies and medicines)

Delay 3: Delay in reaching the health facility (no transport available, unaware of appropriate referral facility)

Delay 4: Delay in receiving adequate treatment once a woman has arrived at the health facility (health facility not adequately equipped, lack of trained personnel, emergency medicines, blood).

1. Delay in recognizing an emergency

When an emergency occurs, in most cases it takes the woman and her family time to realize the seriousness of the situation. The majority of pregnant women and their families do not know how to recognize the signs of complications, nor do they know what to do and where to get help when an emergency occurs. Studies show that some women in India incorrectly view symptoms of an emergency as normal, such as bleeding and swelling in the body – there is a traditional belief that such signs indicate a male fetus¹². In Nepal, a study of maternal deaths discovered that less than 50 percent of families of women who died during pregnancy, delivery or postpartum recognized the problem.¹³

Ideally, antenatal care is an opportunity for the health provider to inform the pregnant woman and her accompanying family members of signs of an obstetric complication. In India, however, many women do not receive adequate antenatal care and continue to be uninformed about the danger signs of pregnancy. (See “Best Practices in Antenatal Care”)

2. Delay in Seeking Care

Once the emergency is realized, there is further delay in seeking care – the family who is unprepared wastes more valuable time deciding what to do or who to call for help, where to go, who should accompany the woman, as well as organizing transport and funds. This delay could be hours or even days. In Nepal, a study found that once it was recognized that the woman was exhibiting signs of an emergency, delays in seeking care and arranging transport ranged between 2 hours and 8 days. Yet, it can take less than 2 hours for a woman to bleed to death if she begins to hemorrhage.

Findings from Nepal¹⁴

- 36 percent decided in two hours to seek care and get transport
- 15 percent decided in 2-23 hours to seek care and get transport
- 29 percent made the decision and arranged transport 1-8 or more days after recognition of a life-threatening complication.

3. Delay in Reaching the Appropriate Health Facility

Once the family has decided to seek care, further delays in reaching the appropriate health facility can occur. The family must find transportation, which may be difficult to do at night. The only transport available might be extremely slow, for example an ox cart. Often time is lost in going to health practitioners and facilities that are unable to manage the emergency. Local practitioners might try local remedies that further delay getting to the health facility that has emergency obstetric care services. When they finally decide to seek care at a modern medical facility, they often go to community health center where emergency obstetric care is not available and then are further referred to another health facility which has emergency care – this facility might be quite far from the community-based facility.

4. Delay in Receiving Appropriate Care in the Health Facility

Once the woman and her family arrive at the appropriate health facility, other delays can occur. The family might go to the wrong section, such as the outpatient clinic, and waste time waiting on lines. The family might not agree to the treatment the doctors advise - they may not be ready to donate blood when the woman needs a blood transfusion, they may not agree to the surgery required, or they may be unable to purchase the medical supplies and medicines required. In some cases the doctor or anesthesiologist is not at the hospital and has to be called to attend the emergency, in other cases the equipment or medical supplies are not available and has to be purchased outside, or the desperately needed blood is not available.

Preparedness and Readiness Saves Lives

Therefore, despite local traditions, it is critical that pregnant women and their families be prepared for birth and the eventuality of an emergency. Being prepared for a safe delivery and ready in case of an emergency will reduce these life-threatening delays and save the lives of both mother and baby – “It is better to be safe, than sorry.”

As we learned in the ANC module, every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Since pregnancy-related complications cannot be reliably predicted, it is important to provide all pregnant women and their families with adequate information about the signs of an obstetric emergency and actions required if a complication should arise, regardless of their risk level. Birth Preparedness and Complication Readiness (BP/CR) are key to survival.¹⁵

Detection of Complications

Birth preparedness/complication readiness allows a pregnant woman and her family to plan ahead so that they can have safe and healthy pregnancy and delivery. This means that the pregnant woman and her family must¹⁶:

- Know what to expect during pregnancy, including the expected date of delivery and self-care during pregnancy (eg nutrition and reduction of workload)
- Plan the appropriate location for the delivery
- Choose a skilled provider
- Have the needed supplies to conduct a clean and safe delivery
- Make a plan for the skilled attendant to reach the home or for the woman reaching the skilled attendant at onset of labor
- Plan appropriate care for the postpartum mother and newborn
- Identify support people to help with transportation, care of children/household, and accompany the woman to a health facility in an emergency
- Be able to identify the signs of an obstetric emergency
- Know the importance of seeking care without delay when complications occur
- Have a plan to be able to respond immediately in the event of an emergency to avoid delays
- Know the location of the nearest health facility where Emergency Obstetric Care (EmOC) is available
- Have a means of traveling to this facility
- Set aside funds for medical care in advance so that the woman can reach appropriate medical facilities as quickly as possible.

By preparing pregnant women and their families, maternal and neonatal deaths can be averted by ensuring the woman receives timely and appropriate care.

What Promises to Work: Birth Preparedness/Complication Readiness (BP/CR)

Four out of ten pregnant or postpartum women will experience some complication related to their pregnancy; for about 15 percent of these women, the complication will be potentially life threatening and require immediate emergency obstetric care. Since most of these complications cannot be predicted, every pregnancy necessitates preparation for a possible emergency¹⁷.

Every pregnant woman and her family should have a Birth Preparedness/Complication Readiness (BP/CR) plan that includes¹⁸:

Birth Preparedness

- A plan of where to have the delivery – home or health facility
- A skilled birth attendant, or at an absolute minimum when a skilled attendant is not available in the area, a trained birth attendant
- Supplies needed for a clean delivery (if a home delivery is preferred) – DDK or basic items such as a clean sheet or plastic to use as a clean delivery surface, a new blade, clean thread for cord ties, soap, water
- Supplies needed for a clean postpartum period for mother and newborn – clean clothes for mother and newborn, a towel or cloth to wipe the baby, a clean wrap for the baby, sanitary pads/ cloth for the mother
- Being aware of the signs of an emergency and the need to act immediately

Complication Readiness

- A person or persons designated to make decisions on her behalf, in case she is unable to make them
- A way to communicate with a source of help (skilled attendant, facility, transportation)
- Emergency funds
- Emergency transportation
- Blood donors
- The name and location of the nearest hospital that has 24-hour functioning Emergency Obstetric Care services

Managing complications is important because the window of opportunity to treat women may be small¹⁹. For instance:

- The interval from onset to death for antepartum hemorrhage can be approximately 12 hours.
- The interval from onset to death for postpartum hemorrhage can be two hours.

“The time required to make arrangements (which could have been made prior to the emergency) may define the line between survival and mortality.”²⁰

MAQ Exchange 2001

Birth preparedness is a shared responsibility between policy makers, health care providers, families and women. Table – provides a matrix of shared responsibility for BP/CR prepared by the Maternal and Neonatal Health Program and being adapted in several countries.

“A key element of birth preparedness is identifying a skilled provider who can support a woman during labor and childbirth, and manage complications that may arise or refer the woman for higher level care.”²¹

Maternal and Neonatal Health Project, 2001

Table 3: Adapted from Birth Preparedness and Complication Readiness Matrix, Maternal and Neonatal Care Programme

Pregnancy					
Policy - makers	Health Facility	Provider	Community	Family	
<p>Creates an environment that supports the survival of pregnant women and newborns.</p> <p>Promotes health and survival for pregnant women and newborns</p> <p>Ensures ANC policies are evidence-based – focused and by a skilled provider</p> <p>Uses evidence-based information to support systems that routinely update service delivery and cadre-specific guidelines</p> <p>Ensures adequate levels of resources to support focused ANC and BP/CR and an effective emergency referral system</p> <p>Ensures that protocols are in place for clinical management, blood donation, anesthesia, surgical interventions, infection prevention, and physical infrastructure</p> <p>Advocates birth preparedness and complication readiness through all possible venues (eg. National campaigns, press conferences, community talks, local coalitions, supportive facilities.</p>	<p>Is equipped, staffed and managed to provide skilled care for pregnant women and newborns.</p> <p>Has essential drugs and equipment</p> <p>Follows infection prevention principles and practices</p> <p>Has a functional emergency system:</p> <ul style="list-style-type: none"> Communication Transportation Safe blood supply Emergency funds <p>Has job aids and service delivery guidelines to assist providers in performing focused ANC</p> <p>Ensures availability of skilled providers 24 hours a day, 7 days a week</p> <p>Is gender and culturally sensitive, friendly, and client-centered</p> <p>Reviews case management of maternal and neonatal morbidity and mortality</p> <p>Reviews case management of maternal and neonatal morbidity and mortality</p>	<p>Provides skilled care, including detecting and managing complications</p> <p>Provides focused ANC</p> <p>Assists women to prepare for birth including:</p> <ul style="list-style-type: none"> Planning the items needed for clean birth Identifying a skilled provider for birth Making a plan to reach the provider at the time of delivery Identifying support people to help with transportation, care of children/household, and accompanying the woman to the health facility Making a complication readiness plan in case of an emergency (see section on BP/CR) <p>Educates community members about birth preparedness and complication readiness</p> <p>Educates the woman and family on danger signs, nutrition, family planning, breastfeeding and HIV/AIDS</p> <p>Informs of existence of emergency funds and transport system</p> <p>Refers to higher level of care when appropriate</p> <p>Promotes the concept of birth preparedness and dispel misconceptions and harmful practices</p>	<p>Advocates and facilitates preparedness and readiness actions</p> <p>Recognizes danger signs and supports implementing a BP/CR plan</p> <p>Supports mother- and baby-friendly decision-making for normal births and obstetric emergencies</p> <p>Has a functional transportation infrastructure for the woman to reach care when needed</p> <p>Has a blood donor system</p> <p>Has an emergency fund for pregnant women who require medical treatment</p> <p>Conduct dialogue with providers to promote quality of care</p> <p>Work together with providers on expectations</p> <p>Supports the health facility that serves the community</p> <p>Advocates for policies that support skilled health care</p> <p>Promotes concept of BP/CR and dispels misconceptions and harmful practices that could prevent BP/CR</p>	<p>Supports the woman's plans during pregnancy and childbirth</p> <p>Advocates for skilled healthcare for the woman</p> <p>Adjust responsibilities to allow a woman to attend antenatal care services</p> <p>Makes a plan with woman for normal birth and complication</p> <p>Identifies a skilled provider for childbirth and the means to contact or reach the provider</p> <p>Recognizes signs of an emergency and implements BP/CR plan</p> <p>Supports the provider and woman reach the referral site, if need</p> <p>Knows transport systems, where to go in case of emergency, and supports person to accompany and stay with family</p> <p>Knows supplies to bring to facility or have in home</p> <p>Knows how to access emergency funds</p> <p>Has personal savings for costs associated with emergency care and delivery</p> <p>Knows how and when to access blood</p> <p>Identifies blood donor</p> <p>Sets aside funds in case medical treatment is required</p>	<p>Prepares for birth and seek skilled care during pregnancy and childbirth</p> <p>Attends early registration and at least three other ANC visits</p> <p>Make a birth plan with provider, husband, and family</p> <p>Decides and acts on where she wants to give birth with a skilled provider</p> <p>Identifies a skilled provider for birth and know how to contact or reach the provider</p> <p>Recognizes danger signs and implements BP/CR plan</p> <p>Knows transportation systems, where to go in an emergency, and support persons to accompany and stay with the family</p> <p>Speaks out and acts on behalf of her and her child's health, safety and survival</p> <p>Knows that community emergency funds are available</p> <p>Has personal savings and can access them</p> <p>Know who the blood donor is and her own blood type</p>

Table 3: Adapted from Birth Preparedness and Complication Readiness Matrix, Maternal and Neonatal Care Programme

Pregnancy					
Policy - makers	Health Facility	Provider	Community	Family	
<p>Creates an environment that supports the survival of pregnant women and newborns.</p> <p>Promotes health and survival for pregnant women and newborns</p> <p>Ensures ANC policies are evidence-based – focused and by a skilled provider</p> <p>Uses evidence-based information to support systems that routinely update service delivery and cadre-specific guidelines</p> <p>Ensures adequate levels of resources to support focused ANC and BP/CR and an effective emergency referral system</p> <p>Ensures that protocols are in place for clinical management, blood donation, anaesthesia, surgical interventions, infection prevention, and physical infrastructure</p> <p>Advocates birth preparedness and complication readiness through all possible venues (eg. National campaigns, press conferences, community talks, local coalitions, supportive facilities.</p>	<p>Is equipped, staffed and managed to provide skilled care for pregnant women and newborns.</p> <p>Has essential drugs and equipment</p> <p>Follows infection prevention principles and practices</p> <p>Has a functional emergency system:</p> <ul style="list-style-type: none"> Communication Transportation Safe blood supply Emergency funds <p>Has job aids and service delivery guidelines to assist providers in performing focused ANC</p> <p>Ensures availability of skilled providers 24 hours a day, 7 days a week</p> <p>Is gender and culturally sensitive, friendly, and client-centered</p> <p>Reviews case management of maternal and neonatal morbidity and mortality</p> <p>Reviews case management of maternal and neonatal morbidity and mortality</p>	<p>Provides skilled care, including detecting and managing complications</p> <p>Provides focused ANC</p> <p>Assists women to prepare for birth including:</p> <ul style="list-style-type: none"> Planning the items needed for clean birth Identifying a skilled provider for birth Making a plan to reach the provider at the time of delivery Identifying support people to help with transportation, care of children/household, and accompanying the woman to the health facility Making a complication readiness plan in case of an emergency (see section on BP/CR) <p>Educates community members about birth preparedness and complication readiness</p> <p>Educates the woman and family on danger signs, nutrition, family planning, breastfeeding and HIV/AIDS</p> <p>Informs of existence of emergency funds and transport system</p> <p>Refers to higher level of care when appropriate</p> <p>Promotes the concept of birth preparedness and dispel misconceptions and harmful practices</p>	<p>Advocates and facilitates preparedness and readiness actions</p> <p>Recognizes danger signs and supports implementing a BP/CR plan</p> <p>Supports mother- and baby-friendly decision-making for normal births and obstetric emergencies</p> <p>Has a functional transportation infrastructure for the woman to reach care when needed</p> <p>Has a blood donor system</p> <p>Has an emergency fund for pregnant women who require medical treatment</p> <p>Conduct dialogue with providers to promote quality of care</p> <p>Work together with providers on expectations</p> <p>Supports the health facility that serves the community</p> <p>Advocates for policies that support skilled health care</p> <p>Promotes concept of BP/CR and dispels misconceptions and harmful practices that could prevent BP/CR</p>	<p>Supports the woman's plans during pregnancy and childbirth</p> <p>Advocates for skilled healthcare for the woman</p> <p>Adjust responsibilities to allow a woman to attend antenatal care services</p> <p>Makes a plan with woman for normal birth and complication</p> <p>Identifies a skilled provider for childbirth and the means to contact or reach the provider</p> <p>Recognizes signs of an emergency and implements BP/CR plan</p> <p>Supports the provider and woman reach the referral site, if need</p> <p>Knows transport systems, where to go in case of emergency, and supports person to accompany and stay with family</p> <p>Knows supplies to bring to facility or have in home</p> <p>Knows how to access emergency funds</p> <p>Has personal savings for costs associated with emergency care and delivery</p> <p>Knows how and when to access blood</p> <p>Identifies blood donor</p> <p>Sets aside funds in case medical treatment is required</p>	<p>Prepares for birth and seek skilled care during pregnancy and childbirth</p> <p>Attends early registration and at least three other ANC visits</p> <p>Make a birth plan with provider, husband, and family</p> <p>Decides and acts on where she wants to give birth with a skilled provider</p> <p>Identifies a skilled provider for birth and know how to contact or reach the provider</p> <p>Recognizes danger signs and implements BP/CR plan</p> <p>Knows transportation systems, where to go in an emergency, and support persons to accompany and stay with the family</p> <p>Speaks out and acts on behalf of her and her child's health, safety and survival</p> <p>Knows that community emergency funds are available</p> <p>Has personal savings and can access them</p> <p>Know who the blood donor is and her own blood type</p>

Table 3: Adapted from Birth Preparedness and Complication Readiness Matrix, Maternal and Neonatal Care Programme

Postpartum and Newborn					
Policy - makers	Health Facility	Provider	Community	Family	Woman
In addition to the above:	In addition to above:	In addition to the above:	In addition to the above:	In addition to the above:	In addition to the above:
Promotes improved postpartum and newborn care Ensures that skilled postpartum and newborn care policies are evidence based Supports policies for management of postpartum and newborn complications Ensures adequate levels of resources to support the skilled management of postpartum and newborn care and effectiveness of an emergency referral system Coordinates donor support for improved postpartum and newborn care	Has service delivery guidelines on care of newborn and postpartum mother Has job aids to assist providers in performing appropriate postpartum and newborn care.	Provides skilled newborn and postpartum care within first 24 hours and first 7 days, including: <ul style="list-style-type: none"> Recognizing complications in newborn and postpartum mother and providing appropriate management Promoting health and preventing disease in woman, including: <ul style="list-style-type: none"> Provision of iron folate Facilitating immediate and exclusive breast feeding Provision of family planning counseling and services Counseling on hygiene and diet Promotion of bed nets in malaria endemic areas 	Supports and values postpartum and newborn care Supports and values use of skilled provider for postpartum and newborn care Supports appropriate and healthy norms for woman and newborns during the postpartum period Makes sure woman is not alone during the postpartum period Supports timely transport of woman and newborn to referral site, if needed	Supports woman's use of postpartum and newborn care, adjusts responsibilities to allow her attendance Agrees with woman on decisions in case of postpartum or newborn emergencies Supports provider, woman and newborn in reaching referral site, if needed Has personal savings for postpartum and newborn care costs Purchases drugs/supplies needed for normal or emergency postpartum and newborn care Complies with postpartum/newborn care advice given by skilled provider	Seeks postpartum and newborn care at least twice – first 24 hours and within 7 days Complies with postpartum/newborn care advice given by skilled provider

The Role of NGOs in Piloting BP/CR Interventions

As BP/CR is a promising practice and is just being piloted and tested in a select number of countries and locations, NGOs can play a critical role in adding to the body of experience, lessons learned and evidence on the impact of birth preparedness and complication readiness. Thus, NGOs can replicate and adapt BP/CR approaches to meet the local context. Important to adapting an appropriate BP/CR package to the India context is the formative and ethnographic research that will be required. We still need to understand what are the misconceptions and harmful practices that could prevent birth preparedness and complication readiness. Furthermore, it is important to use an operations research approach so that the implementation processes are well documented and impact data are rigorously collected and statistically analyzed.

How to's of Implementing Birth Preparedness and Complications Readiness

- Step 1: Collect ethnographic/qualitative and quantitative baseline information on current knowledge, attitudes, practices and beliefs regarding birth preparedness and complication readiness, including misconceptions and harmful practices that could prevent BP/CR or cultural concepts that could facilitate BP/CR, eg. Attitudes/beliefs regarding preparing for birth in advance, what items are prepared and when they are purchased/obtained, knowledge of obstetric emergency signs, costs of transportation and medical treatment for emergencies and so on.
- Step 2: Adapt existing BP/CR counseling and advocacy tools to the local realities discovered in the formative research. Refine key behavior change messages.
- Step 3: Produce locally appropriate counseling/educational tools and training curricula for program and clinical staff, providers (skilled attendants/other birth attendants), community opinion leaders and health workers, and the woman and her family.
- Step 4: Train staff and providers to educate pregnant women and their families and orient community leaders to mobilizing and advocating for BP/CR.
- Step 5: (a). Integrate BP/CR counseling and education into routine maternity care
(b). Work with the community to set up an obstetric emergency fund, an emergency transport system, and a blood donor system,
(c). Establish a system to review all maternal and neonatal deaths (see module on Verbal Autopsies).
- Step 6: Monitor services and activities to ensure they are being implemented as planned and refine as needed
- Step 7: Document the process as the pilot is being implemented, in particular lessons learned
- Step 8: Evaluate the outcome through a post-intervention quantitative and qualitative study.
- Step 9: Disseminate the findings widely so they may be added to the body of knowledge on BP/CR

Key Behavior Change Messages for Community, Family and Women

- Obstetric emergencies cannot be predicted, so we must be prepared in case they occur
- Delays in seeking and reaching care for obstetric emergencies can kill mother and child
- Know the signs of an obstetric emergency during pregnancy, delivery or postpartum/postabortion:
 - Any bleeding in pregnancy and heavy bleeding during and following delivery convulsions/loss of consciousness
 - high fever with or without abdominal pain
 - labor lasting longer than 12 hours
 - placenta does not come out within 30 minutes of the birth
- Take the woman without delay to the nearest hospital if she has signs of an emergency
- Be prepared in case of an emergency: set aside funds, arrange transport, identify a blood donor
- Use a skilled attendant for delivery and prepare items and supplies for a clean and safe delivery

Advocacy Messages for Policy-makers and Health Facilities

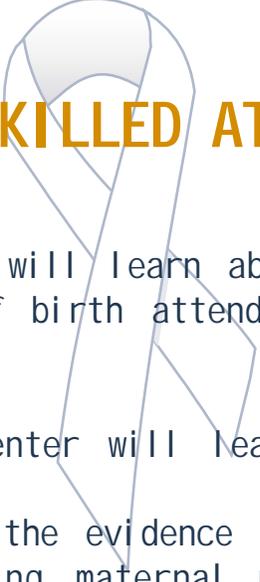
- Provide 24 hour emergency obstetric care 7 days a week
- Allocate funds for emergency transportation and medical treatment at the community level
- Ensure skilled providers for maternity and newborn care

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6. Internet *Safe Motherhood Resource Guide*, SFI.
7. White Ribbon Alliance – India (2000) *"Safe Motherhood at Home: Realities, Perspectives and Challenges—A Symposium Report."* New Delhi: WRAI.

Best Websites

White Ribbon presentation and home page: www.whiteribbonalliance-india.org



SKILLED ATTENDANCE AT DELIVERY

The reader will learn about the importance of shifting from the training of birth attendants to ensuring skilled attendants at delivery.

The implementer will learn:

- About the evidence of the role of skilled attendance in reducing maternal mortality
- What is a skilled attendant, skills required for skilled attendants and what they can do to prevent and manage the main obstetric complications
- What is skilled attendance
- Best practice on skilled attendance.
- How to incorporate skilled attendance into existing safe motherhood activities
- Key behavior change messages
- Advocacy messages





SKILLED ATTENDANCE AT DELIVERY¹

“Having a health worker with midwifery skills present at childbirth, backed-up by transport in case emergency referral if required, is perhaps the most critical intervention for making motherhood safer”²

Starrs 1997

“There are a few exceptions, but almost all countries where skilled attendance is more than 80% have MMRs below 200 (World Bank 1999).”³

Staffan Bergström and Elizabeth Goodburn, 2001

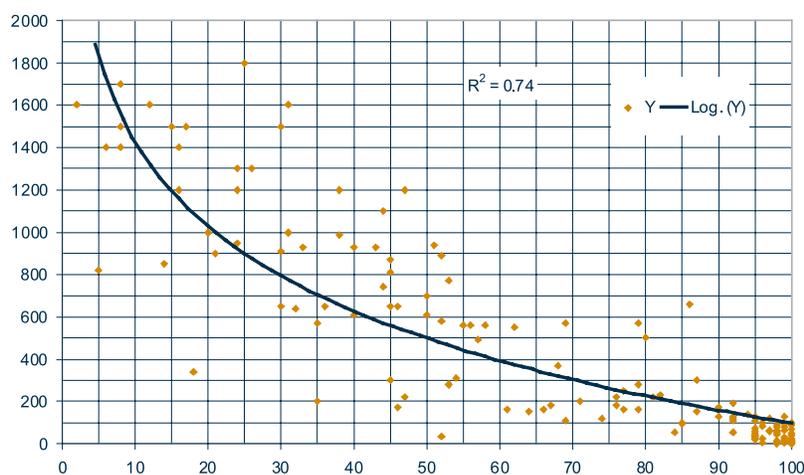
The Role of Skill Attendance in Reducing Maternal Mortality

Graham (2001) estimates that around 16% to 33% of all maternal deaths due to the main four direct causes of maternal mortality – obstructed labor, hemorrhage, sepsis, and eclampsia - may be avoided through skilled attendance at delivery. The evidence indicates that what is critical is timely access to quality maternity care and an optimal professional mix for skilled attendance:

- Doctors for comprehensive EmOC
- Health providers with midwifery skills for normal delivery and obstetric first aid
- A combination of both for basic Emergency Obstetric Care

While historical evidence from Northern Europe indicates that maternal mortality declined significantly when professional midwifery was introduced even prior to the availability of emergency obstetric care – antibiotics, surgery and life-saving drugs - recent national level evidence from developing countries is not as clear. In a regression analysis of national level data from 50 developing countries of the proportion of deliveries by a health professional – doctor, nurse or midwife - and maternal mortality ratio, a statistically significant inverse relationship was found. The greater the proportion of deliveries conducted by a professional health provider, the lower the maternal mortality ratio (see figure 2).

Figure 2: The Higher the Proportion of Deliveries by a Skilled Attendant, the Lower the Maternal Mortality Ratio⁴



However, when the data was examined separately for the proportion of deliveries with a midwife, the relationship was not as clear. In some countries with high proportions of midwifery deliveries, the maternal mortality ratio was high.

Thus, we have to ask ourselves – Who are these “midwives”? How well trained are they? What set of skills do they have? How competent are they in basic maternity care, life-saving skills and obstetric first aid? How effective are their referral systems and linkages for EmOC? It is most likely that the providers we are grouping together under the category “midwife” vary tremendously in terms of skills and access to EmOC from country to country, from state to state, and from individual to individual.

“Merely having a bigger pool of delivery attendants will not work unless they are appropriately skilled, can refer to other professionals as the need arises and have access to an enabling environment.”

Graham et al, 2001

What is a Skilled Attendant?

“Until the mid-nineties the term “trained attendant” was used by many agencies, and national statistics on coverage tended to group both professionals and non-professionals (e.g. trained TBAs) together as long as they had received some “training”. From 1996 onwards, however, the word “skilled” was employed, recognizing that someone who has been trained is not necessarily skilled (Starrs 1997). Thus “trained ” implies but does not guarantee the acquisition of and ability, whilst “skilled” implies the competent use of knowledge.”

Wendy Graham et al, 2001

Thus, a skilled attendant is not just a provider who has been trained at some point in time to perform a set of skills. Being a skilled attendant has a number of implications:

- Having a certain level of skills - that includes midwifery life-saving and obstetric first aid skills (see box 1)
- Being technically up to date on the latest evidence-based skills
- Maintaining practice in using these skills
- Having current proficiency in these skills.

A joint WHO/UNFPA/UNICEF/World Bank statement issued in 1999 helps to clarify the many terms being used today (See box 1).

Box 1: Defining Skilled Attendant: Taken from a Joint WHO/UNFPA/UNICEF/World Bank Statement (1999)⁵

“The term ‘**skilled attendant**’ refers exclusively to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, 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 setting.”

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

*“**Manage**” was added to this definition by the members of the Safe Motherhood Inter-Agency Group, which include WHO/UNFPA/UNICEF/World Bank, in recognition of the fact that skilled attendants include physicians and other medical personnel who may be able to manage complications.

Table 4: What Skilled Attendants can do to Prevent and Manage Direct Causes of maternal Mortality⁶

Cause of Maternal Mortality	What Skilled Attendants Can do to Prevent	What Skilled Attendants Can do to Manage	% Mortality Preventable by Skilled Attendance
Post-Partum Hemorrhage	Active management of third stage	oxytocics, uterine massage, manual removal of placenta, fluids and blood	30%
Eclampsia	Early identification and management of pre-eclampsia	magnesium sulphate, antihypertensives, delivery	20%
Obstructed Labor	Use of partograph	caesarean section, symphysiotomy	70%
Puerperal Sepsis	Use aseptic techniques	Antibiotic therapy, removal of infected material	50%

Skilled Attendance

In 2000, the Safe Motherhood Inter-Agency Group (SMIAG), that comprised UN agencies and international NGOs went on to make a further, and very critical, distinction between “skilled attendants” and “skilled attendance”:

“**Skilled attendance**” is defined as “the process by which a woman is provided with adequate care during labor, delivery and the early postpartum period”⁷ and requires both a skilled attendant AND an enabling environment.

An “**enabling environment**” includes adequate supplies, equipment and infrastructure as well as efficient and effective systems of communization and referral. It also includes “the political and policy context in which skilled attendance must operate, the socio-cultural influences, as well more proximate factors such as pre- and in-service training, supervision and deployment and health systems financing.”

The SMIAG has established a comprehensive minimum set of skills that is required for skilled attendants (see table 5). A review of the set of skills our ANMs currently possess and the environment in which they work in light of this redefined set of competencies and environment will be an important initial step towards ensuring availability of skilled attendance in India.



Table 5: Defining minimum and additional skills required of skilled attendants (continued)

Type of Care	Minimum Set of Skills
Immediate Postpartum and Newborn Care	<ul style="list-style-type: none"> ■ Clamp and cut the cord using aseptic technique. ■ Perform physiologic OR active management of the third stage of labor. <ul style="list-style-type: none"> ■ Perform controlled cord traction. ■ Administer oxytocic agents ■ Check the placenta and membranes for completeness ■ Check that the uterus is well-contracted and estimate total ■ Manage postpartum hemorrhage <ul style="list-style-type: none"> ■ Administer oxytocic agents. ■ Perform aortic compression or internal bimanual compression, depending on country norms ■ Provide a safe and warm environment for mother and infant, Dry the infant ■ Ensure that respiration is established. Initiate newborn resuscitative measures when indicated. ■ Encourage early and exclusive breastfeeding when health status of mother and baby are appropriate. ■ Examine the newborn baby, noting risk factors from the pregnancy and labor history. <ul style="list-style-type: none"> ■ Assess and monitor the infant in the immediate post-birth period for evidence of normal transition to newborn status; refer sick newborns to next level of care, where appropriate. ■ Monitor postpartum woman closely for the first 24 hours and one week, assessing recovery from childbirth and evidence of deviation such as hematoma and infection. ■ Educate woman and family regarding postpartum and newborn care ■ Correlate all available information; record all findings on records; advise when to return for care.
Life-Saving Skills	<ul style="list-style-type: none"> ■ Perform life-saving skills in cases of: convulsions, obstructed airway, serious infection, shock, unconsciousness, vaginal bleeding (during pregnancy or postpartum) shoulder dystocia, cord presentation and cord prolapse. ■ Make appropriate and timely referrals for emergency care; arrange for transport and care during transport. ■ Identify breech and other malpresentations, and make timely referrals in early labor. <p>Additional skills at delivery:</p> <ul style="list-style-type: none"> ■ Anticipate need for forcep delivery or vacuum extraction; perform vacuum extraction ■ Manage complications of late labor using appropriate interventions and hand manoeuvres ■ Identify and manage fetal distress and multiple births ■ Perform manual removal of the placenta ■ Utilize forceps skills for removal of the placenta ■ Identify and repair cervical lacerations
Rational prescription and or administration of drugs	<ul style="list-style-type: none"> ■ Analgesics, Antibiotics, Anticonvulsants, Antimalarials, Antipyretics, Sedatives ■ Contraceptive methods ■ Vaccines, Tetanus Toxoid ■ Iron/folate supplements ■ Oxitocics (post-delivery and post-abortion) ■ Insert intravenous (IV) lines and administer IV fluids
Management and Coordination	<ul style="list-style-type: none"> ■ Facilitate linkages between community health facility, referral settings, and the traditional care providers in that community. ■ Employ critical thinking skills (including self-assessment on and reflection of own practice)

In addition to skills and enabling environment, the place of attendance, time of attendance and extent of attendance are important to consider⁸:

1. **The place of attendance:** it appears that most documents assume that skilled attendants will practice at “the primary or first referral level.” Whether or not skilled attendance includes deliveries conducted at home is crucial for developing countries such as India. Institutionalizing all deliveries has profound resource and logistical implications and raises a number of concerns: the physical and technical capacity of health facilities to accommodate all deliveries, over-medicalization or intervention of childbirth, clients’ rights to make an informed choice of where they prefer to deliver.
2. **Time of attendance:** it is not clear whether the skilled attendant plays a role beyond the intrapartum and immediate postpartum period. The SMIAG suggests that a skilled attendant is a “proxy for health care professional who can also provide skilled antenatal, postnatal and neonatal care”. However, if the skilled attendant does not play a role in early pregnancy or after delivery, their ability to reduce deaths due to ectopic pregnancy, complications of unsafe abortion, or secondary postpartum hemorrhage is limited.
3. **Extent of attendance:** It is unclear what level of involvement in labor and delivery constitutes “attendance”. It is important to differentiate between skilled attendants who are present for the entire period of labor and delivery and those who are not. The extent to which they are involved will affect the skilled attendant’s ability to put into practice the recommended set of competencies, to provide continuity of care, and to detect early signs of an obstetric emergency. It is critical to be aware of other birth attendants who are involved in labor and delivery and what role they play.

Best Practice: Shifting from Training of Birth Attendants to Ensuring Skilled Attendance at Delivery

For the last several decades, the vast majority of our community-based safe motherhood activities have been aimed at improving the quality of basic delivery services through the training of birth attendants, in particular traditional birth attendants and other grassroots level paramedical workers. This approach, unfortunately, has not led to the significant reductions in maternal deaths anticipated. The evidence indicates that training in basic maternity care alone is not sufficient to reduce maternal mortality.

To prevent maternal deaths what is needed is a combination of¹⁰:

- **A partnership of skilled attendants** – comprised of health professionals who assist in labor and delivery such as doctors, nurses and midwives that have different skills to meet the needs of women for normal and or complicated deliveries, including obstetric first aid and life-saving skills.

In areas where a large proportion of deliveries are conducted by TBAs (*Dais*), it may be important to form partnerships between these indigenous birth attendants and the skilled birth attendants, and divide their tasks to permit the optimal use of skills for each. In fact, engaging *Dais* as mediators in this transition may facilitate the acceptance of skilled attendance within a community.

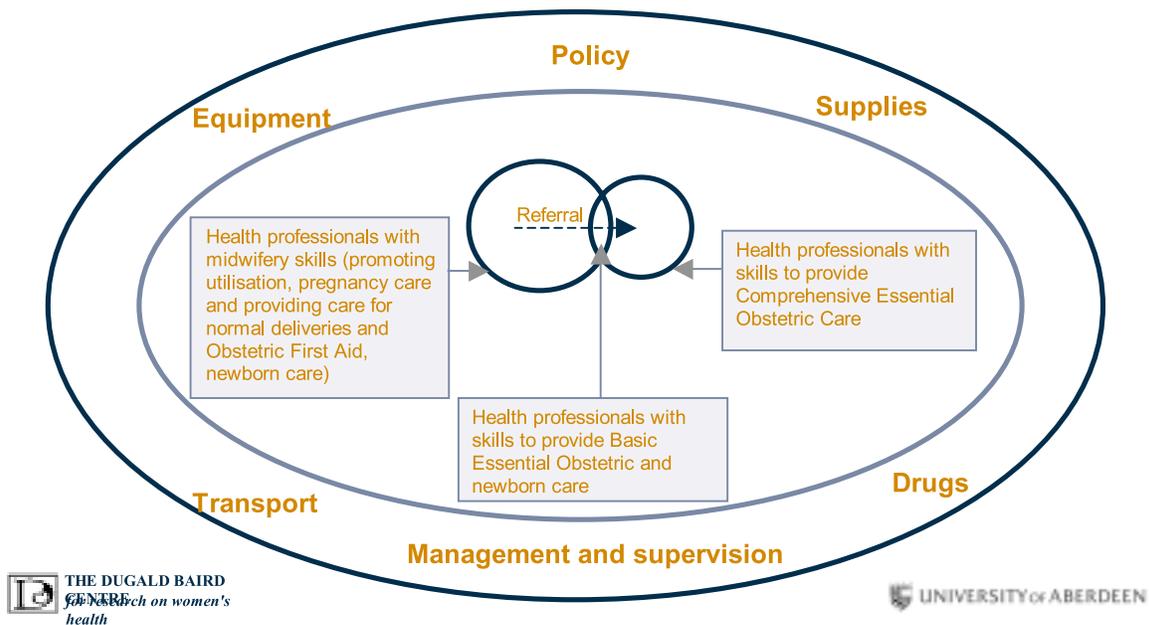
[The Indonesia experience]: “We are not ignoring the TBA’s role, but it is time that we call for a safer pattern of collaboration, by us defined as “*pendampingan dukun*”, wherein village midwives stand by the TBA... This *pendampingan* arrangement clearly divides medical tasks between the two birth attendants: provision of intrapartum care is the responsibility of the village midwife, while the clean cord-care and other post-partum mother care such as bathing and massaging are allocated to the TBA.”¹¹

Cholil, 1998

- **An enabling environment** supporting the work of the skilled attendants – supplies, equipment, and drugs; transport for referrals; supportive policies, technical guidelines and laws; cooperative communities; prepared and informed women and their family members; and mother friendly approach to service delivery
- **Back-up EmOC services** functioning 24 hours

We as implementers need to make a shift from a programmatic focus on “training” of birth attendants to ensuring presence of **skilled attendance at delivery**.

Figure 3: Skilled Attendance for Obstetric and Newborn Care¹²



How to Incorporate Skilled Attendance into Existing Safe Motherhood Activities

- Step 1:** Identify all health personnel who assist deliveries - midwives/ANMs, nurses and doctors - serving the area (whether working in sub-centers, primary health centers, CHCs/FRUs, government hospitals, private hospitals and clinics. If there are none working in the area, search for unemployed ANMs/health professionals living in the area and enable them to establish private skilled attendance service.
- Step 2:** Conduct an inventory of skills among the health personnel who assist deliveries in your project area (ANMs, nurses, and doctors) comparing their skills against the list of skills provided in Table 4. Identify the gaps in their skills. Do this separately for ANMs, nurses and doctors. Doctors will need to be inventoried for additional skills related to Basic and Comprehensive Emergency Obstetric Care (see chapter on Effective Referrals).
- Step 3:** Determine whether these gaps exist as a result of: policy or legal constraints, restrictions of programmatic technical guidelines, limitations of training, outdated skills or routine practice, lack of experience or opportunities to utilize skills learned previously.
- Step 4:** Develop and implement strategies and action plans for overcoming these gaps.
- Step 5:** Advocate to change policies, laws, and programs
- Step 6:** Revise technical guidelines and training curriculum/material
- Step 7:** Conduct or arrange for participation in competency-based training for ANMs, nurses, doctors on the minimum set of skills for skilled attendants that includes opportunities to practice the skills
- Step 8:** Create enabling environments by developing a logistics management system for procuring, storing, and distributing required supplies, drugs, and equipment and by establishing a system of transport for referrals
- Step 9:** Establish a complementary partnership between the different categories of skilled attendants, and where applicable between TBAs and skilled attendants
- Step 10:** Promote the use of skilled attendants within the community and among pregnant women and their families as part of birth preparedness and complications readiness
- Step 11:** Develop a strategy to sustain skilled attendance:
- Carry out a cost analysis for supporting on-going skilled attendance
 - Calculate and establish delivery service fees
 - Establish a community fund and management system to plan, manage, and monitor services.
 - If additional resources are required for the initial investment of upgrading skills and equipping skilled attendants, write proposals to seek additional funding.

Be aware that most donors will not be willing to pay for ongoing operational costs – these have to be built into service fees.

Key Behavior Change Messages

- Use the services of a skilled attendant – ANM, nurse or doctor - for a healthy pregnancy, safe delivery, and healthy baby
- The use of a skilled attendant can prevent deaths of mother and newborn
- Identify a skilled attendant as part of the family's birth preparedness and complication readiness plan

Key Advocacy Messages

- Skilled attendance along with a transport system to EmOC referral services are critical to saving mothers lives
- Skilled attendance is about training alone, it is about being proficient in a set of skills for labor and delivery, with an enabling environment
- A partnership based on collaboration among skilled attendants will save lives
- Skilled attendance for delivery will reduce programmatic costs in the long run as the costs needed to treat complications resulting from unskilled attendance at delivery declines
- Every woman has the right to skilled attendance at delivery

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TRAINING OF TRADITIONAL BIRTH ATTENDANTS

The reader will be provided evidence to help make the shift from training of TBAs alone as a safe motherhood strategy to (1). ensuring skilled attendance (2). creating a partnership between skilled attendants and trained TBAs and (3). ensuring EmOC backup.

The implementer will learn:

- What the evidence tells us about TBA training and the reduction of maternal and neonatal mortality
- What does not work and is no longer recommended with regard to TBA training
- What promises to work
- The how to's of TBA training
- Key behavior change messages for trained TBAs
- Advocacy messages





TRAINING OF TRADITIONAL BIRTH ATTENDANTS

"Today, whether or not to train TBAs is perhaps one of the most hotly debated issues within the global Safe Motherhood Initiative. Fortney and Smith (1997) succinctly frame the opposing sides of debate.

On the one hand, TBAs attend a significant proportion of births and from a public health perspective they should not be ignored.

On the other hand, it is claimed that TBAs cannot prevent or treat most maternal life-threatening complications thus it is a waste of resources to train them. Some even argue that investment in training only prolongs the time during which developing country women are limited to inferior care and delays the time when countries need to address the need to deliver first class care to pregnant women.

As with most debates, they acknowledge, there is truth in both sides of the controversy."¹

Lynn Sibley, 2002

"The question is...under what conditions, apart from sound programming, is TBA training likely to be most effective? In settings where home birth is the norm, given the timing and causes of maternal and neonatal death (Li et al. 1996, Save the Children 2001) we suggest that TBA training will be most effective under the following conditions: TBAs actually do attend the majority of births, not family members or other health care providers; they are trained in basic first aid or case management, as well as preventive care, focusing on leading causes of death; their role and status are such that they are influential in referral decision-making; and ideally, they are backed up by accessible, acceptable and adequate emergency services. To the extent that one or more of these conditions are not met, TBA training will be less effective and alternative community-based approaches should be considered (Sibley & Armbruster 1997, Sibley & Sipe. 2002)."²

Lynn Sibley, 2002

".... studies suggest that the crucial intervention for all domiciliary birth attendants is a reliable support system for emergencies with sufficient transport facilities available (Kwast 1992), and skilled, equipped and available support from professional midwives and other staff with life-saving skills (Fleming 1994).

None of these studies leads to the conclusion that TBA training as a single intervention can have a significant impact on maternal mortality."³

Staffan Bergström and Elizabeth Goodburn, 2001

TBA Training and Reduction of Maternal Mortality – What the Evidence Tells Us

Though the potential of working with TBAs has been recognized as early as the 1920's, it was in the 1970's and 80's that the training of Traditional Birth Attendants (TBAs) became an integral component of maternal and child health interventions⁴. Many of our programs have incorporated TBA training into our village level efforts simply due to the fact that families are using their services for delivery and there are no alternative health providers willing to be available 24 hours a day, 7 days a week to respond to delivery calls.

In remote areas, this situation has not changed significantly – in India today there are 142 districts spread out around the country identified by the Ministry of Health and Family Welfare where less than 30% of deliveries are conducted by trained personnel, this includes trained TBAs. The challenge of making skilled attendants available at the village level continues.

So what evidence has been gathered over the decades on the impact of TBA training on maternal mortality? In China between 1950 and 1980, at a time when minimally trained village birth attendants, **backed up by a strong obstetric care and emergency referral network**, conducted the vast majority of births, the maternal mortality ratio declined from 1500 to 115 per 100,000 live births⁵. In Malaysia, a policy was enacted in 1957 to gradually replace TBAs with one professional midwife per 2000 population to attend home deliveries. The evidence shows a dramatic drop in MMR from 300 to 100 per 100,000 live births between 1957 and 1973 when a system of midwives working in partnership with TBAs was implemented⁶. Gradually over a period of two decades, the midwife replaced the TBA. The China and Malaysia experiences seem to be the exception rather than the rule.

Most TBA program efforts have not strongly linked trained TBA services to a functioning EmOC referral facility or service or to a skilled attendant such as a midwife or doctor. Instead many programs attempting to involve TBAs have solely focused on training. TBAs are usually taught to adopt clean and safer delivery, cord care, and postpartum care techniques, discontinue harmful practices, identify and refer pregnant women “at risk”, and to motivate pregnant women to attend ANC, accept postpartum family planning, get themselves and their newborn immunized etc..

Where TBA training was not linked to essential and emergency obstetric care, the evidence is far less encouraging. In Bangladesh, after decades of training TBAs without a network of functioning EmOC services, maternal mortality did not decline⁷. For India, the situation appears the same. States that have shown declines in maternal mortality are generally linked to increased institutional deliveries - generally the only place where skilled attendants backed by emergency obstetric care are available.

In Ghana, though TBAs have been trained since the 70's, they continue to perform high-risk deliveries in spite of being taught to refer them to medical facilities. In some cases, they are adopting practices for which they were not trained eg. giving Oxytocics, administering IVs. These interventions have proved harmful. Another concern is that even when TBAs refer complicated

cases or adopt modern practices within their routine work, families do not always comply with the referral or accept new practices. Thus, a focus on the TBA alone will not necessarily result in behavior change of their clients.

More recently, in several developing countries a number of efforts have been implemented that combine training TBAs to recognize signs of an obstetric emergency and to refer these complications with a system of emergency transport and a backup referral EmOC facility. These interventions have shown promising results. In Burkina Faso (Wallast et al 1993), Bolivia, Guatemala, Nigeria (Kwast 1995; Kwast 1996), and Indonesia (Alisjahbana 1995), projects have demonstrated that by addressing issues of referral and emergency obstetric care within the training of TBAs and other community efforts, referrals improve and perinatal mortality is reduced⁸.

Recently a meta-analysis on the effectiveness of TBA training Effectiveness was carried out by the American College of Nurse Midwives, with funding from the USAID supported SARA Project and PRIME I Project, and the World Bank. The objective was to determine the difference between trained and untrained TBAs in terms of knowledge, attitudes, behaviors, and impact on maternal and peri-neonatal mortality⁹. The analysis was based on 63 studies from 24 developing countries, spanning from 1970 to 1999. The first phase of the study found that TBA training was *associated* with significant improvements in TBA knowledge, (90%), attitudes (74%), behavior (63%), and advice (90%) and in the behavior (74%) of women cared for or living in areas served by trained TBAs. In the second phase of the study, the authors will examine outcomes in specific outcomes for content areas related to maternal and newborn health within these broad categories (e.g., safe delivery practices, referral, etc.).

With regard to mortality, the study found that TBA training was *associated* with:

- a small but significant decrease in peri-neonatal mortality (6% fewer deaths overall, and
- a small but significant decrease in neonatal mortality due to birth asphyxia (11% fewer deaths).

The number of studies was too small to address the *association* between TBA training and maternal mortality. The authors caution that because the meta-analysis was comprised of quasi-experimental studies of varying quality i.e., no studies using a randomized controlled trial design were available to be included in the sample, it is not possible to address *causality*, only the *association* between training and the observed outcomes.

While researchers agree that we have very few studies on the impact of TBA training on maternal mortality, evidence from national level data indicate that we must go beyond TBA training to reduce maternal deaths to the levels envisioned in the safe motherhood initiative.

Evidence for Other Benefits of TBA Training

More encouraging is the impact TBA training has had on neonatal mortality and preventive health care. "Studies in India have indicated the training of TBAs in care and resuscitation can improve neo-natal outcomes (Kumar 1994, Bang et al. 1999) and that they can reduce neonatal mortality following training in management of neonatal pneumonia (Bang 1994)."¹⁰

A controlled trial of 2482 women conducted in 1982 in Bangladesh found significant differences in tetanus-specific neonatal mortality rates between the study areas one with TBA training alone and another where Tetanus Toxoid was given and a control area where neither intervention was available. The study areas showed neonatal mortality rates of 5.6 and 1.3 per 1000 live births respectively in comparison to 24 in the control area indicating that both interventions independently contribute to reductions in neonatal tetanus¹¹.

In Nepal, an extensive evaluation of the National TBA Training Program, implemented for a decade in 55 of the 75 districts around the country, found that women who utilized services of trained TBAs in comparison to those who used an untrained person, had adopted better maternity care practices¹². They had more frequent and earlier ANC, higher coverage of two doses of tetanus toxoid, were better informed about danger signs, cleaner delivery practices, cleaner cord care practices and use of a socially-marketed disposable delivery kit, higher proportion of immediate breastfeeding and essential newborn care, higher coverage of BCG, DPT3, and polio3 immunization among their newborns. The evaluation also found evidence that neonatal mortality was lower among babies delivered by trained TBAs compared to those delivered by untrained TBAs. In addition, there was interesting evidence that a number of harmful birthing practices had been virtually eliminated in districts with a TBA Program: use of a dirty implement such as sickles and knives to cut the cord, delivery in animal sheds, application of dirty substances to the umbilicus.

The Nepal TBA Program was unique in a number of ways:

- The National Program and training materials were designed based on extensive quantitative and ethnographic research. Indigenous knowledge and practice were taken into consideration when designing interventions and training curricula.
- Training materials were designed jointly by the government and NGOs and used extensively by both. This led to uniformity of training and training messages.
- Prior to training in each health post area, Auxiliary Nurse Midwives (ANMs) and Public Health Nurses conducted baseline surveys to learn about local birthing practices.
- Public Health Nurses were trained as Master Trainers and ANMs as TBA trainers.
- Training was conducted by the ANM serving the TBA's village at the local health post and the ANM served as the supervisor for the TBAs
- Selection of TBAs was based on a strict criteria (must have attended at least 10 deliveries within last year, must be approved by community), efforts were made to include TBAs from multiple castes and ethnic groups
- Training targets were set to ensure geographic distribution and appropriate TBA to population ratios – 1:1500 in the plains, 1:1000 in the hills, 1:500 in the mountains.

- Districts were phased into the program according to the potential impact: large proportion of deliveries by TBAs, large population, availability of backup referral facility, interest of District officials.
- Training was competency-based and started from encouraging the TBAs to talk about their own practice and beliefs
- Initial training was for 10-12 days on ANC, delivery, and postpartum care.
- Trained TBAs were equipped with basic delivery items and in the mid-90's a socially marketed clean home delivery kit (CHDK). A system of resupply of the CHDK was established through rural marketing.
- No stipend or honorarium was provided as the trained TBAs were considered private practitioners and thus paid by their clients (a negative repercussion of the program was that some clients discontinued to pay for their services as they thought they the government was paying them)
- To promote the Trained TBAs, a community orientation was given at the end of each training, the trained TBAs were given signboards, and information about the importance of using a trained birth attendant was incorporated into other training program, radio soap operas, and radio advertisements for the clean home delivery kit.
- TBAs were given pictorial cards to record services which was reported semiannually.
- Refresher training was provided every 6 months and included a review, supportive supervision to solve problems and each 6 months new training content was introduced:: RTIs/STIs, family planning, clean delivery and the Clean Home Delivery Kit, referring and providing simple obstetric first aid for obstetric emergencies, and neonatal essential care.
- Active trained TBAs were taken on an observation tour to the local referral hospital. They learned about EmOC services, where to bring a woman with an emergency, had an opportunity to dialogue with the medical personnel, and were given a hospital ID card. A few hospitals gave the discounts for medical care services and medicine for trained TBAs and their families.
- Once a TBA was trained, she was in the program permanently and was called upon to assist the ANM in other health activities as required.

Though this program was discontinued in 1999 due to lack of donor support, the impact on birthing practices around the country seems to be sustainable. In 2001, Save the Children did a study on the impact of the socially-marketed Clean Home Delivery Kit (CHDK) on neonatal infection. They found that the majority of rural families use clean delivery practices – either by preparing items themselves or by purchasing the CHDK – as taught in the TBA training program. For Nepal, TBA training had done what it could and it was time to move on and begin the challenge of providing skilled attendants, establishing functioning EmOC services, and introducing Birth Preparedness/Complication Readiness. Interestingly, over the course of the TBA Program, many of the daughters of the trained TBAs started to show interest and were planning to study nursing or go to ANM school. This indicates that the family tradition of birth attendance will continue and advance to the next level.

Best Practices: What May Work and What Does Not Work in TBA

What Does Not Work and is No Longer Recommended	What May Work
<p>Training TBAs as a single safe motherhood intervention</p> <p>Training “TBAs” who are not pro-actively working and do only a few deliveries each year</p> <p>Training TBAs outside of their work context with technology not available in the village</p> <p>Providing one time short-term training</p> <p>Training without follow-up, supportive supervision and monitoring</p> <p>Training TBAs without strong linkages to EmOC referral transport and medical backup</p> <p>Trained TBAs working in isolation of or in competition with other skilled attendants</p> <p>Training TBAs without orienting the community to the training and new practices we want them to adopt</p> <p>Training TBAs without providing equipment, supplies and a system of re- stocking single use supplies</p>	<p>Conduct qualitative and quantitative formative research to explore the local birthing practices and use of birth attendants</p> <p>Designing an intervention in which trained and skilled attendants work in partnership with clearly delineated tasks for each based on the optimal potential to reduce maternal mortality and the local practices identified</p> <p>Creating strong linkages for trained TBAs to referral transport and backup EmOC</p> <p>Training TBAs in simple life-saving and obstetric first aid skills</p> <p>Designing a program wherein training TBAs is an on-going process with a system of follow-up, supportive supervision and monitoring</p> <p>Training TBAs to help families make a plan for Birth Preparedness/Complications Readiness</p> <p>Orienting pregnant women, their families, and influential community opinion leaders and promoting safer delivery practices that support the new practices and eliminate harmful practices of the trained TBA</p> <p>Establishing a logistics management system that supports re-supplies to trained TBAs and other skilled attendants</p> <p>Planning for the gradual replacement of TBAs with skilled attendants: Provide training opportunities for educated daughters or sons of TBAs to study midwifery or medicine, create alternative income-generation training for TBAs, eg social marketing</p>

Training

How to's of Training Traditional Birth Attendants

- Step 1: Determine if the training of TBAs is a cost-effective and appropriate intervention through qualitative and quantitative formative research:
- Is a significant proportion of deliveries attended by TBAs or other birth attendants? If 40% or more of the deliveries are attended by TBAs, you may want to consider training TBAs. If less than 40%, another intervention such as training skilled attendants may be more appropriate to consider.
 - Are other skilled attendants working in the area? Is it necessary to train TBAs or more cost effective to promote the use of skilled attendants?
 - Is there one type of TBA who is involved in all aspects of the delivery or are the tasks divided among various providers? Who catches the baby, who cuts the cord, who provides postpartum care? Which will require training?
 - What is the status of TBA? Are TBAs influential as change agents and advisors?
 - Estimate the number of TBAs practicing
 - Identify nearest EmOC referral facilities and transport mechanisms (see section on Birth Preparedness/Complications Readiness).
- Step 2: Involve the proposed trainers and supervisors of TBAs in the collection of local practices. It is best to choose one of the locally available health personnel with midwifery skills to be the trainers of TBAs, eg. ANMs, nurses, doctors. Be sure the trainers are up to date on and competent in their midwifery skills. If not, provide a technical update for them.
- Step 4: Determine what tasks trained TBAs will do (keeping in mind a partnership with other skilled attendants) and thus in which skills they need competency.
- Step 3: Design training curricula and material that is competency based and includes basic maternity and neonatal care, home-based life-saving skills and simple obstetric first aid (appropriate to the level of TBA). Establish a schedule for regular refresher training.

- Step 4: Establish a linkage with the nearest EmOC facilities and strategies for sustaining linkages between trained TBAs and the EmOC facility.
- Step 5: Establish a mechanism/system whereby the trained TBAs call the skilled attendants for the delivery and they work as a team
- Step 6: Provide trained TBAs with equipment and supplies appropriate to the village context (using locally procured items that they can replace when necessary). Link them to any social marketing programs/outlets that have disposable delivery kits, ORS, contraceptives, iron supplementation, sanitary napkins, and other reproductive health products.
- Step 7: Provide some way for the trained TBAs to be distinguished from untrained TBAs – signboard to display outside their house, a kit or bag or uniform, a certificate (if they pass a competency-based test), ID card
- Step 8: Make a plan to prepare for the replacement of TBAs by skilled attendants:
- Training and deployment of skilled attendants
 - A transition period with a team approach for deliveries
 - Provision of income generating training for TBAs
 - Educational scholarships/opportunities for daughters or sons of TBAs to attend nursing, ANM or medical school

Key Behavior Change Messages (for TBAs)

- Be aware of your limitations and which complications you need to refer for medical intervention to save the mother's life
- Do not delay in getting the woman to the nearest referral hospital when an obstetric emergency occurs
- Always accompany the woman to the hospital to provide first aid during transport
- Know the signs of an obstetric emergency and have a plan to transport and accompany the woman to the nearest functioning EmOC facility
- Maintain good relationships with skilled attendants and the referral facility staff serving your community
- Help women have a healthy pregnancy, ensure she has at least 4 ANC checkups (including registration), 2 doses of TT, and takes her iron folate

- Help pregnant women and their families to make a birth preparedness/complication readiness plan, including instructions on when to call the birth attendant.

Key Advocacy Messages

- TBA training alone will not reduce maternal mortality.
- Trained TBAs must be backed up by a transport system and functioning EmOC services.
- Trained TBAs should not work in isolation, but in partnership with other skilled attendants
- TBA training should not be seen as a low cost, quick fix. As with any performance improvement system for skilled attendants, training for TBAs needs to be competency-based, comprehensive, and on going. TBAs need to learn their limitations and be confident in referring for emergencies. A little bit of training can be dangerous/do more harm than good.

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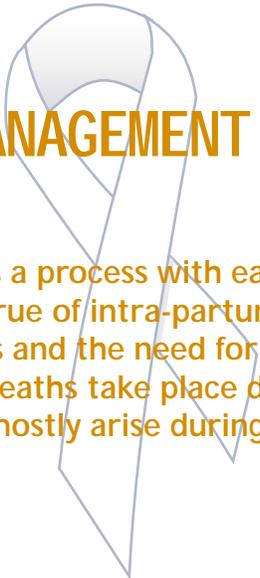
MANAGEMENT OF LABOR AND DELIVERY

The reader will be provided latest evidence of what practices works and what does not work in preventing maternal mortality during labor and delivery or as a result of delivery so that program technical guidelines can be updated.

The implementer will learn:

- The role of labor and delivery in maternal mortality
- Objectives of care in labor and delivery
- What is labor and its three stages
- Best practices in Management of the three stages of labor
- What is not longer recommended for management of labor
- Immediate care of the newborn
- How active management of labor in the third stage can prevent Postpartum haemorrhage
- Importance of close monitoring during the first 4-6 hours after delivery
- How to implement best practices in the management of labor
- Key behavior change messages
- Advocacy messages





MANAGEMENT OF LABOR AND DELIVERY

“Pregnancy is a process with each stage critically influenced by what preceded it. This is especially true of intra-partum care and immediate postpartum care, a time when complications and the need for treatment are closely linked.... Yet the great majority of maternal deaths take place during or after birth, and the events which lead to those death mostly arise during delivery.”

Carla AbouZahr and Marge Berer¹

Labor and Delivery and its Role in Maternal Mortality

Approximately 15.5% of maternal deaths occur during intra-partum – during the three stages of labor and during the delivery of the child. Maternal deaths can occur during the process of labor and delivery (e.g. Obstructed labor, retained placenta, vaginal or cervical lacerations, uterine rupture or inversion) or arise from events in labor and delivery (eg. Hemorrhage and sepsis). Simple procedures and proven life-saving techniques employed during labor and childbirth with skilful management and using evidence-based approaches combined with years of safe traditions could result in the saving not one but two lives.

Objectives of Care during Labor and Delivery

- Protect the lives of women and their newborn
- Support and respond to the needs of the woman, her partner and her family
- Implement best practices for facilitating normal labor and childbirth and encourage their adoption in practice
- Detect and manage complications in a skilled and timely manner.
- Eliminate practices that are no longer recommended²

Delays Leading to Death

A study from a large referral hospital in Karachi, Pakistan found that the 118 mothers brought in dead all had lived within eight kilometers of the hospital³. In Nepal, where distances to health facilities are often a greater challenge, a study demonstrated that following recognition of the problem, there was a significant delay in seeking treatment⁴.

What is Labor?

Labor is defined as the process of expulsion of the fetus and placenta from the uterus.

The Three Stages of Labor⁵:

- **First stage:** Lasts from the onset to full dilatation of the cervix.
- **Second stage:** Begins at full dilatation of the cervix and ends when the baby is born.
- **Third stage:** Follows the birth of the baby until the complete expulsion of the placenta
- **A Fourth Stage is suggested:** The first hour postpartum, which encourages vigilant observation for bleeding.

Best Practice: Management of Labor

<p>First Stage</p>	<ul style="list-style-type: none"> • Continuous assessment of woman in labor • Provision of plenty of nutritious fluids in labor • Place of birth to be of the woman's choice with the possibility of obtaining appropriate care when complications arise • Support in childbirth by one attendant and a companion of the woman's choice • Labor pains to be managed using non pharmacological methods wherever possible • Fetus to be monitored during labor by intermittent fetal heart monitoring • The "six cleans" to be used when preparing for delivery • Diagnosis of established labor based upon specific criteria • Labor progress to be charted using partograph or simplified tool • Position and movement during first stage to be the woman's choice whenever possible • Vaginal examination to be limited and only performed by a skilled birth attendant
<p>Second Stage</p>	<ul style="list-style-type: none"> • Diagnosis of the second stage to be based on objective criteria • Pushing to be spontaneous • Duration not rigid, based on the assessment of mother and fetus • Perineum care to be of minimalist nature to avoid excess damage • Clamping of cord based upon delivery outcome with preference for late clamping or not clamping at all¹ • Immediate newborn care to focus on preventing heat loss, ensuring establishment of respirator's cord care and infection prevention as well as establishing breast feeding.
<p>Third Stage</p>	<ul style="list-style-type: none"> • Active Management is the preferred method. However, early clamping of the cord is necessary².
<p>Fourth Stage</p>	<ul style="list-style-type: none"> • Careful monitoring of the woman for the first six hours post partum to assess for PPH.

Practices No Longer Recommended for Management of Labor⁸

- **Use of enema:** enema is uncomfortable, can damage the bowel, and does not shorten labor or decrease neonatal infection or perinatal wound infection
- **Pubic shaving:** shaving does not reduce infection and, in fact, may increase risk of infection or transmission of HIV or hepatitis to the fetus if the mother has open cuts on the perineum. Shaving may also lead to discomfort with regrowth of hair.
- **Restriction of foods and fluids during labor:** restricting food\fluid intake may be unnecessary because women self-regulate this during labor, usually limiting it to fluids.
- **Repeated or frequent vaginal examinations:** especially by more than one caregiver
- **Routinely moving laboring woman to a different room** at onset of second stage.
- **Guided expulsive efforts/sustained bearing down efforts**
- **Fundal pressure**

Best Practices: First Stage of Labor

Assessing the Onset of Labor

Assessing the start of labor is one of the most important aspects of the management of Labor. Active labor⁹ is differentiated from latent or false labor when:

- The cervix has dilated 4 - 9 cm
- The rate of dilatation is at least 1cm per hour
- The fetal descent has begun

Signs of onset of active labor are:

- The effacement and / or dilatation of the cervix (most accurate method of assessment)¹⁰
- Painful contractions with a certain regularity¹¹
- Observation of the woman, her appearance and her behavior
- The descent of the presenting part¹²

Continuous Assessment in Labor

- Physical and emotional well-being
- Temperature, pulse and blood pressure
- Fluid intake and urine output
- Pain assessment

This monitoring should be maintained until the conclusion of the birthing process¹³.

Maintaining Hydration in Labor

- Provide nutritious fluids to the woman in labor (as this helps to meet the woman's fluid, electrolyte and energy requirements during labor and childbirth)¹⁴

- Provide plenty of fluids as this is associated with a significant reduction in incidence of prolonged labor (> 12 hours) and a significant reduction in labor duration and need for oxytocin infusion by skilled attendant¹⁵

Place of Birth

Women should give birth in a place where they feel safe, and at the most peripheral level at which appropriate care is feasible and safe¹⁶, this could be at:

- home¹⁷
- small maternity clinic
- birth centre in town
- maternity unit of a larger hospital

However, it must be a place where all the attention and care are focused on her needs and safety, as close to home and her own culture as possible.

Support in Childbirth

Continuous empathetic and physical support during labor¹⁸ by the same individual, attendant or carer resulted in:

- Shorter labor
- Less medication for pain management
- Fewer Apgar scores of <7 in the neonate
- Fewer operative deliveries

These outcomes also apply to a birth companion. The birth companion should be of the woman's choice (e.g., a female friend or a relative). An individual who provides support throughout labor and childbirth is consistent with cultural practice in many traditional societies¹⁹.

Managing Labor Pain

Type of Analgesia	Outcomes ²⁰
Non-pharmacological methods of pain relief <ul style="list-style-type: none"> • Calm, gentle voice • Relaxation techniques (deep breathing exercises and massage) • Cool cloth to forehead • Encouragement, reassurance and praise • Assistance in voiding or changing positions 	<ul style="list-style-type: none"> • No effect on the neonate • Fewer operative deliveries • Reduced need for pharmacological analgesia • Less post-partum depression at six weeks
Pharmacological pain relief in Labor <ul style="list-style-type: none"> • Nitrous Oxide • Systemic Drugs (e.g. Pethidine) 	All of the systemic drugs used for pain relief cross the placenta and all except nitrous oxide are known to cause respiratory depression in the baby and neonatal behavioral abnormalities, including reluctance to breast-feed ²¹ . Diazepam can cause neonatal respiratory depression, hypotonia, lethargy and hypothermia ²² .

Monitoring the Fetus during Labor

- **Amniotic Fluid Assessment:** The passage of meconium may reflect fetal distress and is associated with intrapartum stillbirth and neonatal morbidity or death.
- **Fetal Heart Rate Monitoring:** The relationship between fetal well being and fetal heart rate has been investigated in numerous studies. It is clear that fetal distress may express itself in abnormalities of the heart rate. Fundamentally, a bradycardia is <110/minute and a tachycardia >150/minute. There are two methods of monitoring the heart rate: intermittent auscultation and continuous electronic surveillance²³.

Asepsis and Cleanliness in Labor

Infection accounts for 14.9% of all maternal deaths and 32% of all neonatal deaths²⁴. Infection risk increases during labor and childbirth and therefore it is imperative that preventive practices are adopted in order to safeguard the woman and the neonate

Six Cleans for Labor and Childbirth:²⁵

- Clean hands
- Clean perineum
- Clean delivery surface
- Clean cord-cutting instrument
- Clean cord care (clean cord ties and cutting surface)
- Nothing unclean introduced into vagina

Managing Labor Using the Partograph

WHO recommends using the partograph to monitor all women during labor²⁶:

- Provides a graphic representation of labor progress
- Encourages regular monitoring of the condition of both mother and fetus
- Guides in the early detection of prolonged or obstructed labor
- Informs decision-making in the management of labor
- Applies a specific criteria for the diagnosis of active labor to differentiate it from latent or false labor²⁷

Position and Movement during the First Stage of Labor²⁸

There is no evidence to support the encouragement of the supine position during the first stage of labor. The only exception is where the membranes have ruptured in the presence of a non-engaged fetal head. If and when the membranes are ruptured and the birth attendant has established a sufficient engagement of the fetal head, women should be free and encouraged to choose the position they prefer during labor. They will often change positions, as no position is comfortable for a long period of time²⁹.

Position	Advantages
Side-lying	Fewer perineal lacerations because of greater control of the fetal head during childbirth and greater relaxation and less tension of the perineal muscles.
Squatting	Both the transverse and anterior-posterior diameter of the pelvic outlet are bigger; results in less oxytocin stimulation, fewer mechanically assisted deliveries, fewer and less severe perineal lacerations (if the perineum was adequately supported) and fewer episiotomies.
Hands and knees	Less perineal trauma because gravity directs pressure away from the perineum and at the same time promotes fetal descent, and there is increased perineal elasticity in this position.
Semi-sitting	Maximizes thrust and direction of uterine contractions' force on fetus so as to enhance passage through the pelvic canal; resulted in fewer late decelerations and increased Apgar scores.
Sitting	Shorter duration of second stage due to increased bearing down pressure.

Vaginal Examination³⁰

- Only undertaken by skilled birth attendants
- Requires clean hands covered by sterile gloves
- Ideally only one examination necessary to establish active Labor
- Essential diagnostic method of assessment of the start and the progress of Labor.
- Maximum frequency of once every 4 hours
- Used with the partograph

Best Practices: Second Stage of Labor

The Onset of the Second Stage

- The woman feels an urge to bear down³¹
- The membranes may rupture spontaneously³²
- The presenting part descends into the pelvic cavity and this can be determined per abdomen

The Procedure of Pushing during the Second Stage

Delayed pushing did not show any hazardous effect on fetal or neonatal outcome. In the early pushing group significantly more forceps deliveries occurred³³.

Types of Pushing:

- Spontaneous pushing results in three to five relatively brief (4-6 seconds) bearing-down efforts with each contraction
- Guided expulsive efforts (exhalatory bearing down efforts) which are sustained bearing-down efforts of 10-30 second duration of and accompanied by breath holding.

These two practices have been compared in several trials³⁴. The latter method does not result in a shorter second stage of Labor and the period of oxygen deprivation to baby may cause respiratory-induced alterations in heart rate and stroke volume³⁵ and is actively discouraged.

In many countries the practice of fundal pressure during the second stage of labor is common. Apart from the issue of increased maternal discomfort the practice can cause damage to the uterus and abdominal tissue and should be discouraged³⁶.

Duration of the Second Stage

- 2 hours in nulliparous women (first delivery)
- 1 hour in multiparous women (subsequent deliveries)

Decisions about curtailing the second stage of labor should be based on an accurate surveillance of the maternal and fetal condition and the progress of labor. Evidence of fetal distress and failure of the presenting part to descend is good reason to terminate Labor. However, if the mother's condition is satisfactory, the fetus is in good condition, and there is evidence of progress in the descent of the presenting part, there are no grounds for intervention³⁷.

Care of the Perineum

Perineal damage is one of the traumas most frequently suffered by women during delivery, even during Labor and delivery that are considered normal. There are several techniques and practices aimed at reducing the damage, or modifying it to manageable proportions.

"Guarding the perineum" during delivery	Perineal tears may be prevented by this maneuver but it is also conceivable that the pressure on the fetal head could impede the extension movement of the head and diverts it from the pubic arch to the perineum, thus increasing the chance of perineal damage. There have been no formal evaluations of this strategy or of the opposite, i.e. not touching the perineum or the head during this phase of delivery so it is impossible to decide which strategy is preferable ¹ .
Episiotomies ²	Reasons for performing an episiotomy during a normal delivery: signs of fetal distress; insufficient progress of delivery; threatened third-degree tear (including third-degree tear in a previous delivery) ³ .
Tears	Perineal tears occur frequently, especially in primiparous women. First-degree tears sometimes do not even need to be sutured, second-degree tears usually can be sutured easily under local analgesia, and as a rule heal without complications. Third-degree tears can have more serious consequences and should, where at all possible, be sutured by an obstetrician in a well-equipped hospital, in order to prevent fecal incontinence and/or fecal fistulas ⁴ .
Massaging the perineum	During the second stage of Labor in an attempt to stretch the tissues is discouraged but antepartum perineal massage for up to six weeks before birth may help stretch the perineum and reduce trauma at delivery ⁵ .

Timing of Cord Clamping

Early clamping	Before the delivery of the placenta ⁴³
Late clamping	After the placenta stops pulsating
Not clamped	Cord tied after complete delivery of the placenta

Late clamping (or not clamping at all) is the physiological way of treating the cord, and early clamping is an intervention that needs justification. The "transfusion" of blood from the placenta to the infant, if the cord is clamped late, is physiological and adverse effects of this transfusion are improbable, at least in normal cases. After an abnormal pregnancy or Labor, for instance in rhesus sensitization or preterm birth, late clamping may cause complications, but in normal birth there should be a valid reason to interfere with the natural procedure⁴⁴.

Best Practices: Immediate Care of the Newborn⁴⁵

The vast majority of neonatal deaths occur either right after delivery from birth asphyxia or from care provided immediately after delivery, e.g. unhygienic cord care, washing of the newborn, delayed breastfeeding practices. Immediate Care of the newborn to prevent neonatal deaths must:

- Prevent heat loss – dry the baby and keep warm
- Establish breathing – resuscitation if necessary
- Facilitate immediate breastfeeding
- Practice infection prevention, including eye care and cord care

Best Practice: Third Stage of Labor

Care During the Third Stage of Labor

Postpartum hemorrhage (PPH) is one of the main causes of maternal mortality. A large majority of these cases occur in developing countries⁴⁶. The incidence of PPH and retained placenta is increased if predisposing factors are present, such as multiple pregnancy, polyhydramnios and complicated labors⁴⁷.

- Physiological (Expectant) Management
- Active Management

Active management of the third stage compares favorably with physiological management because PPH occurs less often and hemoglobin levels postpartum are higher. It is the result of the combined effects of oxytocics, controlled cord traction but also requires early clamping of the umbilical cord⁴⁸. However, active management was associated with an increase in maternal nausea and vomiting as well as raised blood pressure with no advantages or disadvantages to the baby and is recommended for hospital births⁴⁹.

Best Practices: Fourth Stage of Labor

In a study in Egypt, 88% of deaths due to PPH occurred within four hours of childbirth⁵⁰.

The woman should be monitored closely for the first six hours post-partum⁵¹:

- BP, pulse, lochia and firmness of the uterus
- Frequency of every 15 minutes (first 2 hours); every 30 minutes (for 1 hour) and every hour (for 3 hours)

How To's of Implementing Best Practices in Management of Labor

- Step 1** Review current Labor management practices and see how they compare with current best practices in the field.
- Step 2** Determine financial costs of implementing these best practices at the level at which you are operating and how these costs will be met.
- Step 3** Revise existing Labor ward protocols, reporting forms, partographs, and client case records to coincide with current best practices.
- Step 4** Identify gaps in skills and knowledge of the management of Labor. Ensure skilled attendants provide Labor care wherever possible.
- Step 5** Ensure that all health facilities and skilled health providers have the required supplies and equipment to enable the implementation of these enhanced protocols and guidelines, link with public sector programs and community (government hospitals, emergency transports etc)
- Step 6** Orient and train staff at all levels (from TBA's through to skilled health providers) and provide ongoing in-service training for enhancing existing skills in Labor management, life saving skills and obstetric first aid.
- Step 7** Inform the community of the changes and the importance of effective management of Labor and its impact on the survival of the mother and the neonate, encourage co-operatives for
- transport
 - payment of treatment if needed
 - blood transfusion
 - emergency care

Key Behavior Change Messages

- Women and their families should use a skilled birth attendant to ensure safe and life-saving labor and delivery
- Women and their families need to be prepared to respond if something goes wrong during labor and delivery
- The first hour after delivery is crucial and the woman should be closely monitored and never left alone.

Advocacy Messages

- Birth attendants need to be skilled and trained in evidence-based management of labor

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POSTPARTUM CARE BEST PRACTICES

This section will help the reader to make the shift to ensuring postpartum care within the first 24 hours and first week – when the vast majority of postpartum and neonatal deaths occur.

The implementer will learn:

- The role of postpartum care in reducing maternal mortality
- The magnitude of postpartum deaths in India
- Best practices for postpartum, monitoring for signs of obstetric emergencies, counseling for breastfeeding and postpartum contraception
- How to's of Postpartum and Newborn Care
- Key behavior change messages



POST PARTUM CARE BEST PRACTICES FOR SAFE MOTHERHOOD

“An understanding of precisely where to concentrate effort in each setting is the key to achieving safe motherhood”¹

Mona K. Moore, 2000

“Postpartum hemorrhage is the single most common cause of maternal death. It kills 150,000 women each year. Nearly 9 out of 10 postpartum maternal deaths take place within four hours of delivery” ... During this period prevention strategies are often lacking”.²

WHO, 1998

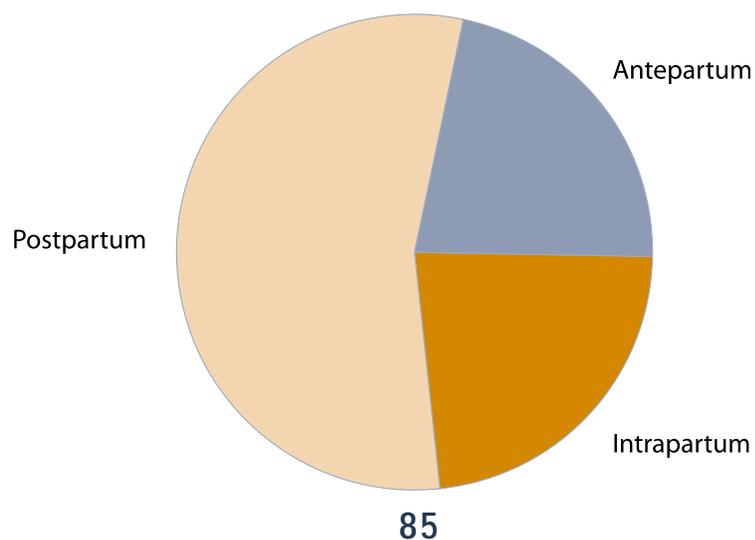
“Ironically, the traditional time for the first postpartum visit by a mother and baby is six weeks, a time when there is no longer very much danger of maternal death.”³

FHI, 1997

The Role of Postpartum Care in Reducing Maternal Mortality

Evidence indicates that the postpartum period is the most critical time for both maternal and neonatal survival (see figure 2). Yet it remains the most neglected component in maternal and infant care. In this chapter, we focus on the postpartum period: the **first hour after delivery** of a baby and placenta and up to the 42nd day after delivery. This period also includes the neonatal period: the newborn's first 28 days of life. If we shift our programmatic concentration to ensuring effective care to mother and newborn within the first 24 hours and up to the first 2 weeks, this could be – along with having functional EmOC services available and utilized – the most strategic means of reducing maternal and neonatal mortality.

Figure 4: When women die - time of maternal deaths in developing countries,
(Adapted from WHO 1998)



Magnitude of the Problem in India

Many women in India are vulnerable to complications in the postpartum period because they lack effective care. Although 60 percent of all maternal deaths occur *after* delivery, only 1 in 6 women receive care during the postpartum period. More women in India access maternal health services during pregnancy than during delivery or after childbirth.

NFHS data indicate that among the births that took place in non-institutional settings in India, where postpartum care is particularly important, only 17 percent were followed by a checkup within two months of delivery. Shockingly, among those who deliver at home only 2% receive postpartum care within 2 days of delivery and only 5% receive care within the first 7 critical days.⁴

Often the entire range of information and services is not provided to women during a postpartum visit. According to NFHS figures, only 38 percent of the women who did not deliver at a facility but received postpartum care had an abdominal examination and a mere 27 percent were given family planning advice. Information on breastfeeding and care was more routinely provided, with around 4 out of 10 postpartum women receiving this advice. This was in spite of the fact that a significant number of women reported health problems in the first months after delivery. The same NFHS data show that 23 percent of women reported problems six weeks after delivery, of which the most frequently reported were lower abdominal pain (4.4 percent), high fever (5.3 percent) and foul discharge (0.5 percent). Massive vaginal bleeding and very high fever during the two months after delivery —symptoms of possible postpartum complications—were reported for 11 percent and 12.6 percent of births, respectively.⁵ However we must remind ourselves that these data were collected from the survivors.

Postpartum Best Practice: Shifting Interventions to the First 24 hours and First 7 Days to Reduce Maternal and Neonatal Deaths

From the recent evidence, it has become clear that the first 24 hours is perhaps the most critical period for postpartum and newborn care. Women regardless of where they deliver – at home or in an institution – and their newborns need to be closely monitored for the first 24 hours. Those who deliver in an institution should remain for observation for the first 24 hour period while those who deliver at home need to ensure that the birth attendant provide close monitoring for the first 24 hours for signs of an emergency.

During this critical 24-hour period, the birth attendant needs to monitor for signs of any serious complications in the mother and newborns such as⁶:

- Hemorrhage
- Atonic uterus
- Retained placenta
- Shock/fainting – cool/clammy
- Convulsions – may be preceded by severe headache /visual disturbance
- Tears/lacerations
- Urine output decrease

- Decreased blood pressure
- Neonatal complications – birth asphyxia or labored breathing, convulsions, signs of jaundice

All of these require immediate medical attention and referral to a hospital with EmOC.

The following 6 days are next in importance for postpartum care. It is in this period that health providers must look for signs of infection in mother - foul smelling discharge, high fever/chills, hemorrhage - and in the newborn – hypothermia/skin blue, fever/chills, redness of cord, signs of tetanus -stops sucking/rigidity.

The postpartum period is also very important for providing advice to the mother and family on preventing unplanned pregnancies, on effective breastfeeding practices, importance of fully immunizing the newborn, and care of mother and baby during this period.

Thus, when we design a postpartum intervention, it essential that we include the following components for effective postpartum care: prevention and early detection and treatment of complications and disease, a system of blood donation/system for hemorrhage, a referral system and transport for emergencies, and the provision of advice and services on breastfeeding, birth spacing, prevention of infection (mother and the newborn), immunization and maternal nutrition.⁷

Care and service provision **should:** ⁸

Identify the community's perceptions of events in the postpartum and of the health system before designing services.

Explore the community's resources and involve the community itself in planning and evaluating services.

Establish the incidence and prevalence of postpartum conditions in the community.

Ensure culturally acceptable services for women and newborns.

Develop/provide home-based maternal record for all women and newborns.

Ensure care at all levels: in the community, health center (including domiciliary services), and at the referral level.

Develop, together with the community, a complete functional chain of referral from community to the district hospital and back.

Strengthen district hospitals and health centres as appropriate to their levels to cope with emergencies, including blood transfusion services⁹

Postpartum Best Practices: Monitoring for Signs of an Obstetric Emergency

1. Postpartum hemorrhage (PPH)

The first hours postpartum are especially critical in the diagnosis and management of abnormal bleeding. During the first hours after birth, the caregiver has to make sure that the uterus remains

well-contracted and that there is no heavy loss of blood. In cases where bleeding is particularly severe, blood transfusion may be the only way of saving a woman's life.¹⁰

Signs of PPH

- Heavy bleeding, e.g. soaking one pad/cloth every hour in the first 8 hours, soaking 1 pad/cloth every 2 hours in second 8 hours
- Shock (e.g. sweating, cool clammy, sweating, fainting, rapid weak pulse)
- Atonic or soft/boggy uterus
- Tears/lacerations

2. Retained Placenta

Retained placenta, defined as when the placenta is not delivered within 30 minutes after delivery. Retained placenta – either full or partial – can lead to hemorrhage or infection. There are many indigenous practices associated with removing the placenta. Some of these – pressing hard on the fundus, pulling on the cord, hanging heavy objects on the cord – can be dangerous and lead to complications. A retained placenta needs to be removed by a skilled birth attendant in a setting that has blood transfusion facilities.

Signs of Retained Placenta

- No signs of placental separation (lengthening of the cord, gush of blood) within 15 minutes after delivery
- The placenta is not delivered within 30 minutes after birth of the baby
- Atonic uterus/heavy

5. Sepsis

Puerperal infection (such as sepsis) continues to be a major cause of maternal mortality in many developing countries. Fever is the main symptom of puerperal infection and antibiotics the main treatment. Prevention by ensuring cleanliness and hygiene at delivery is the best course of action.¹¹

Signs of Sepsis

- Fever with or without chills (3-5 days postpartum usually)
- Foul smelling/change uterus
- Uterus tenderness/atonic uterus
- Convulsions/rigidity

4. Eclampsia

Eclampsia is the third most important cause of maternal mortality worldwide. A woman suffering from eclampsia or severe pre-eclampsia in the first days postpartum should be hospitalized. The treatment recommended by WHO is Magnesium Sulphate.

Signs of Eclampsia

- Facial and/or hand edema (not swelling of ankles)
- Headache, visual disturbances
- Delirium convulsions
- Decreased urine output

Postpartum Best Practices: Counseling for Breastfeeding and Contraception

1. Immediate and Exclusive Breastfeeding

The establishment and maintenance of breastfeeding should be one of the major goals of postpartum care. Although the Government of India recommends that breastfeeding should begin immediately after childbirth and that infants should be exclusively breastfed in the first four months of life, very few children begin breastfeeding immediately after birth—only 16 percent in the first hour and 37 percent on the first day. Moreover, only fifty-5 percent of children under four months of age are exclusively breastfed.¹²

Immediate breastfeeding is important for both mother and newborn. It helps to stimulate uterine contraction and can prevent postpartum hemorrhage. The colostrum – or first yellow milk – provides life-protecting immunities and nutrients needed by the newborn. Breast milk provides optimal nutrition for newborn infants, protects them against infections and allergies, and promotes mother-infant bonding. The baby should be given to the mother to hold immediately after delivery, to provide skin-to-skin contact and for the baby to start suckling as soon as it shows signs of readiness—normally within ½-1 hour of birth. In institutions, babies should be kept with their mothers and unrestricted breastfeeding should be allowed. Mothers need help and advice on how to breastfeed. Supplementary feeds and fluids should be avoided.¹³

2. Birth spacing and Postpartum Contraception and counseling services

In India, data indicate that infant mortality is nearly three times higher among children born less than 24 months after a previous birth as among children born after a gap of 48 months or more (110 deaths compared to 39 per 1,000 live births). The use of temporary contraceptive methods to delay and space births would help reduce maternal and infant mortality as well as fertility.¹⁴

During the postpartum period women need counseling on postpartum contraception. For mothers who do not breastfeed exclusively, fertility can return as soon as 6 weeks after delivery. For mothers who breastfeed exclusively with day and night feeds, fertility can return anytime after supplemental feeding begins.

Postpartum Contraceptive Methods¹⁵

a) Lactational Amenorrhea Method (LAM)

Lactational Amenorrhoea Method is an effective and reliable method of birth control. The method is well adapted to cultures where breastfeeding is practiced for long periods, and for women and couples who wish to avoid or postpone a subsequent pregnancy without using other family planning methods. There are three conditions for effective LAM:

1. The mother must be fully or nearly fully breastfeeding - at least 6 times a day, with day and night feeds
2. Menstruation has not returned since delivery
3. Less than six months postpartum

If these three conditions are met, the mother can rely on the contraceptive effect of lactation amenorrhea (LAM). After six weeks an alternative contraceptive will be required.

Combined oral contraceptives

Combined Oral Contraceptive (OC) Pills can be used by postpartum women who are not breastfeeding after 6 weeks postpartum and by breastfeeding women after the first 6 months postpartum. If women do not want to rely on lactation amenorrhea or another form of contraception, low-dose combined OCs may be started earlier, but after the first six weeks post partum.¹⁶

Progestogen-only contraceptives

These methods (pills, injectables and more recently implants) have been extensively investigated during the postpartum period. The conclusion of the study was, that the progestogen-only contraceptives used from 6 weeks post partum during lactation did not adversely affect growth and development of the infants, compared with the infants of mothers who used non-hormonal methods¹⁷ Progestogen-only pills and DMPA (Depo-Provera) injections are safe for use by postpartum women anytime after delivery and by breastfeeding women after 6 weeks.

Intra-uterine devices

Intra-uterine devices (IUDs) are reliable contraceptives with lower rates of pregnancy specially for the copper-medicated IUDs: The lowest pregnancy rate is achieved by the progesterone (levonorgestrel)-releasing IUD: 0.2¹⁸. It can normally be introduced from 4 to 6 weeks post partum; in the case of the progestogen-releasing IUD it is advised to introduce it from 6 weeks. It is possible to introduce an IUD within 48 hours post partum, but there is an increased risk of expulsion and/infection in developing countries.

Female sterilization

Female sterilization in the postpartum situation is usually accomplished by minilaparotomy and surgical ligation of the fallopian tubes. Tubal ligation is a minor operation, which can be performed under general or local anesthesia, on one of the first days post partum. It is very effective and safer¹⁹. However, it is important that the woman and her husband are thoroughly counseled preferably during pregnancy. Method and the permanent nature should be explained to people who are certain that they do not want any more children.

Male sterilization

Male sterilization (vasectomy) can be performed when the couple are sure they do not want additional children as this is a permanent method of contraception. The operation is simple and can be performed under local anesthesia as an outpatient procedure. Complications are rare, and there are no proven long-term health effects. The postpartum period may be suitable for a vasectomy, because generally after the operation a period of some weeks is necessary as waiting time until a test shows that there are no sperms in the ejaculate. Good counseling is as important here as in the case of female sterilization, particularly given that male acceptance of sterilization is far less than that of tubal ligation by females.

How to's of Postpartum and Newborn Care²⁰

Providing postpartum care is a shared responsibility between the provider, community, family and woman.

The provider should:

- Recognize complications in the newborn and postpartum woman and provide appropriate management
- **Promoting health and preventing disease in woman, including:**
 - Make provisions for Iron Folate supplementation
 - Facilitating immediate and exclusive breast feeding
 - Make provisions for contraceptive counseling and services
 - Counseling for woman and family about danger signs, diet and self care
 - Promotion of bed nets in malaria endemic areas
 - Promoting health and preventing disease in newborn, including:
 - Thermal protection
 - Promotion of breast feeding
 - Eye care
 - Cord care
 - Immunization
 - Provide Vitamin A and iodine in areas of deficiency
 - Inform the woman and family of the existence of emergency funds
 - Refer to higher levels of care, when appropriate

The community should:

- Support and value the use of a skilled provider during the postpartum period
- Ensure that the woman is not alone in the postpartum period
- Recognize the danger signs and support implementation of the complication readiness plan (see section on Complication Readiness)
- Support mother- and baby-friendly decision-making in case of newborn emergencies
- Support timely transportation of woman and the newborn to the referral site, if necessary
- Have a functional blood donor system
- Have access to facility and community emergency funds
- Educate community members about complication readiness

The family should:

- Ensure the mother and newborn are able to recuperate in a clean room with limited visits from outsiders to reduce the risk of infection, are provided clean clothes and clean change of sanitary pad/cloth.
- Support the woman's use of postpartum and newborn care, and adjust responsibilities to allow for her attendance
- Recognize complication signs and facilitate implementing the complication readiness plan
- Agree with the woman on the decision-making process in case of postpartum or newborn emergency
- Know transportation systems, where to go in case of emergency, and support persons to stay with in the family
- Support provider, woman and newborn in reaching referral site, if necessary
- Know how to access community and family emergency funds
- Have personal savings for costs associated with postpartum and newborn care
- Purchase drugs or supplies needed for normal or emergency postpartum and newborn care
- Know how and when to access a community blood donor system
- Identify blood donor

The woman should:

- Seek postpartum and newborn care at least twice in the first week of delivery —within 24 hours and within the next six days (calls a skilled provider to provide a home visit or obtains money and transport to seek care in a health facility)
- Recognize danger signs and implements the complication readiness plan
- Speak out and act on behalf of her and her child's health, safety and survival
- Know transportation systems, where to go in case of emergency, and support persons to stay with the family
- Have access to community and facility emergency funds
- Have personal savings and access these in case of need.

Key Behavior Change Messages

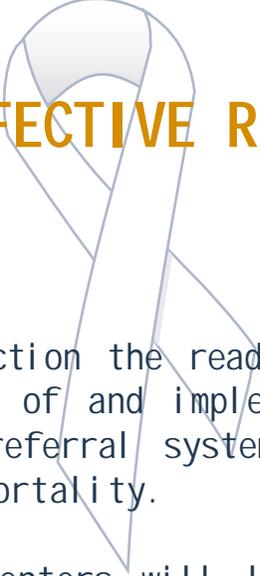
- The first 24 hours and the first week is when most postpartum and newborn deaths occur.
- Ensure the mother and newborn are kept in a clean room with clean clothes and clean sanitary pad, and few outside visitors to prevent infection
- Families need to ensure that postpartum care by a skilled provider is provided during the first 24 hours after delivery and during the first week
- Ensure that the postpartum woman is not left alone during the first 24 hours
- Know the signs of postpartum emergency – bleeding, fever/chills, convulsions, retained placenta after 30 minutes – and have a plan for responding without delay to an emergency
- Ensure the newborn is kept warm at all times, is breathing well, is put to the breast within one hour of birth, and is not given any other fluids besides breastmilk
- Never put any substance on the cut umbilicus – keep it dry and clean
- Seek care at a medical facility immediately if the newborn is not well – is blue/cold, has difficulty breathing, has fever, is very small and cannot suck, stops sucking or has convulsions or rigidity
- Ensure the newborn is given immunization as per schedule

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EFFECTIVE REFERRALS FOR OBSTETRIC EMERGENCIES

In this section the reader will be provided the evidence for the criticality of and implementation plans for establishing an effective referral system for obstetric emergencies to reduce maternal mortality.

- Implementers will learn:
- What is meant by effective referral and obstetric emergency
- About the levels of obstetric care, including Essential Obstetric Care (EOC) and Emergency Obstetric Care (EmOC)
- Best practices in treating complications
- About referral services of obstetric emergencies
- The how to's of planning for an effective referral system
- Monitoring the efficiency of a referral system
- About a case in Uganda where a system of effective referral was developed and the steps taken to develop this system





EFFECTIVE REFERRALS FOR OBSTETRIC EMERGENCIES

Because there is a potential risk of developing life-threatening complications in every pregnancy, and these cannot be reliably predicted, maternal mortality cannot be successfully reduced until all pregnant women have access to quality obstetric services.

There is historical evidence that two interventions have contributed substantially to the reduction of maternal mortality: one is the development of *professional midwifery*, and the other is *hospital-based management of obstetric emergencies*.¹ In this chapter we discuss effective referrals and suggest ways of developing a system of referrals for obstetric emergencies that would significantly reduce maternal deaths.

What do we mean by effective referrals?

Referral services, while carrying the image of a sophisticated level of care, were a key element in the *Primary Health Care* model adopted in Alma Ata in 1978. The concept is particularly palpable in the context of obstetric care, where most cases can easily be taken care of at village level, but where the survival of a minority (complicated cases) is largely decided by whether or not women have access to a higher level of care.

Too often, referrals are understood as cases admitted in the referral facility. For others, at the other end of the chain, a referral means that advice has been given to a patient to consult elsewhere, whether the patient has benefited from a higher level of care or not. A referral should rather be conceptualized as an active process, which *begins at the doorstep of the patient's household*, and which in theory would end at the same place, after a transitory journey to the referral facility. Since in developing countries many deliveries still take place at home, most emergency referrals are *self-referrals* (decided by the patient, her family, or a community agent). *Institutional referrals* are those resulting from professional advice, and should be ideally coupled with *first aid obstetric care* for stabilizing the patient.

For health managers, an *effective* referral should mean more than a life saved. Many painful and permanently disabling morbidities, neonatal and infant deaths, and consequent social suffering, can be avoided by effective referrals.

The ideal hospital would be a 24 hour-service facility, with skilled staff, and adequate equipment, drugs, etc offering a number of medical interventions. However, for a woman and her community, geographical accessibility, affordability, and *perceived* quality of care of hospital-based services are

important determinants of an effective referral. Any attempt to measure referral effectiveness must take those criteria into account.

What do we mean by obstetric emergencies, and who should be referred?

By *obstetric emergencies*, one means life-threatening conditions resulting from a pregnancy, whether before, during or after delivery. It is commonly agreed that approximately 15% of all pregnant women will develop serious complications. Of the women who die during pregnancy and childbirth, 75% of them die due to causes related *directly* to their pregnancies and childbirth, and 25% due to *indirect causes* such as malaria, hepatitis, and other diseases. There are five major direct causes of deaths: hemorrhage, sepsis, obstructed labor, hypertensive disorders, and unsafe abortions. Most deaths (roughly 60%) will occur in the postpartum period, and there is now evidence that major causes of maternal death can be neither detected, nor averted during pregnancy. (See 'Best Practices in Antenatal Care')

The table below illustrates the fact that, apart from hemorrhage, the average interval from onset of major obstetric complications to death allows for enough time for a woman to be saved, supposing four frequent causes of delay are limited: delay in recognizing the problem, delay in seeking care, delay in reaching care, and delay in receiving care.

Table 6: Estimated average interval from onset of complication to death for major obstetric complications²

Complication	Average time to death
Antepartum hemorrhage	12 hours
Postpartum hemorrhage	2 hours
Ruptured uterus	1 day
Eclampsia	2 days
Obstructed labor	3 days
Puerperal sepsis	6 days

All complicated cases should be referred as soon as possible. While it is now commonly agreed that the high risk assessment approach taken in antenatal screening is neither specific nor sensitive enough to predict complications with any reliability, it is still recommended to electively refer pregnant women with previous caesarean section, breech presentation, transverse lie, multiple gestation, hypertension, and severe anemia, for delivery before any complication arises³.

Levels of obstetric care

Various levels of care can be proposed when facing an obstetrical emergency. Two levels of care are classically proposed, depending on the availability of medical specialists and blood at the referral facility, as described on the following page.

Essential Obstetric Care (EOC) refers to the minimum package of services that should be made available to all pregnant women, i.e. prenatal care, safe delivery, post natal care, identification of complications and referral to emergency services, *and* Emergency Obstetric Care.

Emergency Obstetric Care (EmOC) is the term to be used to describe the elements of obstetric care needed for management of complications arising during pregnancy, delivery and the postpartum period.

Actually a third level, allowing for initial stabilization of the patient through *First Obstetric Aid* can be proposed, while proper referral towards the referral facility is being organized and during transport.

Referral facility-based Basic EmOC comprises the following:

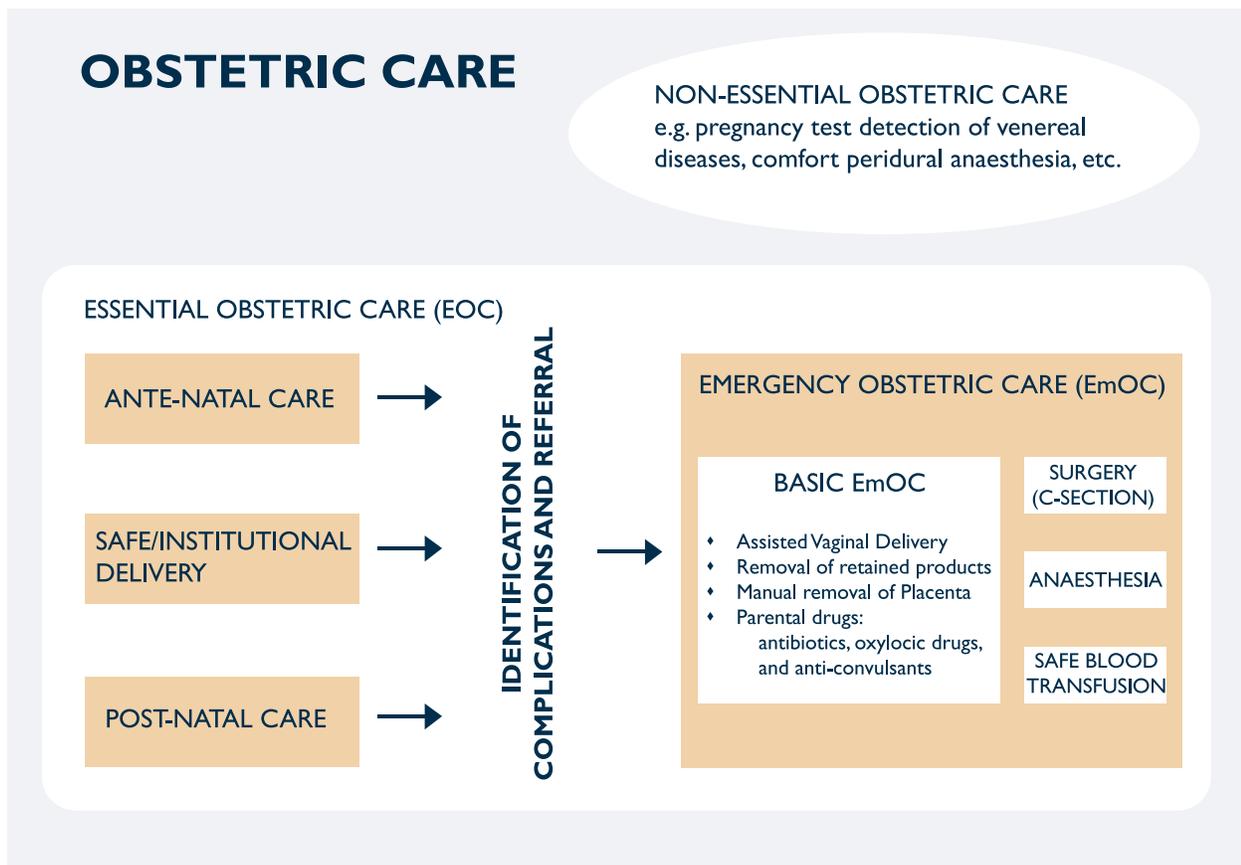
- Parenteral (intravenous or intramuscular) antibiotics.
- Parenteral oxytocics (drugs which make the uterus contract to stop bleeding).
- Parenteral sedatives or anticonvulsants (for eclampsia).
- Manual removal of placenta (to stop hemorrhage).
- Removal of retained products of conception (to prevent bleeding and infection).
- Assisted vaginal delivery (to alleviate prolonged labor).

Hospital-based Comprehensive EmOC comprises Basic EmOC plus the following:

- Surgery (Caesarean section).
- Anesthesia.
- Blood transfusion.

In absence of medical specialists (surgeon, ob-gyn, and anesthetists), and blood facilities, the majority of obstetric cases can still be saved through the provision of basic EmOC. This is why basic EmOC is essential wherever possible.

Figure 5: Definitions Around Obstetric Care



Best Practices: Treating Obstetric Complications

There is now a wealth of information and consensus on what needs to be done, when, where and by whom, and which procedures are the most effective in treating obstetric complications. Some of the key lessons learned from research in developing countries in the past decade⁴ are summarized in the following table:

Table 7: Lessons Learned in Treating Obstetric Complications in Developing Countries

<p>Postpartum hemorrhage</p>	<p>Putting the newborn baby to the nipples, and stimulating it to suck has been found inefficient. It is rather recommended to actively manage the third stage of labor by the use of injectable oxytocin, early cord clamping, and controlled cord traction.</p> <p>Methylergometrine can be a substitute for oxytocin for women who are exempt of hypertension.</p> <p>The use of prostaglandin E₁ analogue misoprostol, which can be given orally, vaginally, or rectally, is promising.</p> <p>A manual compression of the abdominal aorta, a forgotten procedure, can be effective in such emergencies.</p>
<p>Obstructed labor</p>	<p>The use of partogram as a diagnostic technology is always recommended.</p> <p>The pandemic of rising Caesarean section (CS) rates in the world should be a matter of concern, for both medical and economic reasons. Normal rates of CS should not be over 5% of total births. Mortality figures following a CS are around 1-3% in low-income countries. 25% of uterine ruptures, and consequent deaths can be estimated to be caused by ruptures of old CS scars. In some settings, abdominal delivery is regarded as a reproductive failure on the part of the woman.</p> <p>In remote settings, where general anesthesia is not available, a local anesthesia of the abdominal wall using e.g. lidocaine-adrenaline, or spinal anesthesia can be used. In countries where doctors are not available, responsibility of CS has successfully been delegated to assistant-medical officers, who are trained to carry CS in emergency.</p> <p>In situations where there is no access to Caesarean section, in cases where only a moderate foeto-pelvic disproportion exists, the baby's head deeply engaged in the pelvis, and vacuum extraction has been unsuccessful in spite of adequate maternal expulsion efforts, symphysiotomy (surgical widening of the symphysis) has been found a judicious and safe alternative to CS.</p> <p>For instrumental vaginal extraction of the baby, the use of vacuum extractor (VE) is a safer method than forceps in the hands of inexperienced staff. VE is safe for the mother, but can be lethal for the baby if misused. Indications of vacuum extraction are a delay in the pelvic floor stage, fetal asphyxia, maternal distress, or fetal distress with the second twin with cephalic presentation, and can be combined with symphysiotomy. Non-cephalic, face and brow presentations contra-indicate the use of VE.</p>
<p>Puerperal Sepsis</p>	<p>Recent studies found a correlation between low-birth weight deliveries, congenital infection of the newborn, and puerperal sepsis, suggesting systematic vaginal washing with antiseptic solutions.</p>
<p>Hypertensive disorders</p>	<p>The drug of choice in treating eclamptic patients is magnesium sulphate, since this drug gives fewer recurrent convulsions than diazepam.</p>

Issues around the delivery of effective referrals

Issues around the delivery of effective referrals can be grouped into:

1. **Patient/family/community** perceived condition of emergency, perceived benefit of treatment, preparedness in emergency situations, and readiness to save the mother's life. *Pregnancies and birth are embedded in cultural norms and traditions, concerning (among others) the place of birth and the caregivers, thus interfering with referral. In addition, there is a gap between biomedical and traditional concepts of causation of complications⁵.*
2. **Environmental factors:** geographical and financial accessibility, availability of communication and transport.
3. **Management of health services**, and consequent case management capacity. Reasons for non-functional referral services are widely documented, and are worded in terms of lack of: lack of skilled staff, lack of blood bank, lack of ambulance, lack of equipment, etc, but operational difficulties owing to the poor functioning of health systems can make emergency obstetric care ineffective even where facilities exist. Many resources have remained unused, others have rapidly become non-functional because not maintained, and the provision of new inputs usually creates the need for evermore-additional resources. The unavailability of health personnel in rural areas is rather due to an inequitable distribution, rather than an absolute shortage of staff. Furthermore, people have become highly dependent on outsourced inputs, instead of creatively organizing the provision of some kind of services with available resources. Hospitals and local administrations are also usually very limited in their initiatives, with regard to the little decision and financial powers they are attributed. Routine procedure such as transferring personnel, appointing a driver, maintaining a building, purchasing consumables, getting rid of unused, obsolete equipment or expired consumable often lead to administrative nightmares.
4. **Abusive legislation** on consumer protection or restricting the use of specific medical equipment/products/blood, or the practice of specific interventions to specialized staff, can sometimes be the source of partial availability of services.

Rethinking Referral Services For Emergency Obstetric Care

Internationally, "*First Referral Services*" (FRS) for obstetric care usually means the first level where intervention capable of Caesarean section is available. Significantly, the WHO fact sheet from which the definition above is derived, equates the "first referral level" as the District hospital. But there are several issues around the FRS model:

- In many countries, the operationalization of FRS has been conceived as a vertical program. Adopted by central governments, the FRS model is too often projected onto the periphery, with little consideration for local needs, or room for local planning. It ignores the early stages of the referral process, the lack of awareness, readiness, and preparedness from the community, and the patient transfer itself. Lack of community and field staff ownership follows.

- It usually focuses on a unique level of care (Comprehensive EmOC), and sets standards so high that very few facilities can actually fulfill them. There is now among field workers a belief that emergency obstetric care can only be provided by medical specialists, backed-up by sophisticated equipment, which has led to an on-off attitude on the part of unqualified and/or unequipped personnel.
- The FRS model focuses around EmOC, which rightly constitutes a priority on the United Nations and other donors' agenda, but ignores the pressing need for tackling other emergencies that could economically justify the resources needed for adequate emergency obstetric care. At small scale, maternal deaths remain rare events, in both relative and absolute terms. Small in numbers, they still account for a negligible proportion of all deaths. In a population of 50,000 for example, with a Crude Birth Rate of 30 per 1000, a Crude Death Rate of 10 per 1000, and an MMR of 400 per 100,000, one is expecting 225 complicated obstetric cases, and 6 maternal deaths per year, as part of the overall 500 expected annual deaths, out of which probably 150 deaths of under fives, 45 deaths resulting from accidents, and 55 deaths from cardio-vascular diseases.
- Finally, the FRS model has focused minds on the *inputs*: facilities and corresponding resources, rather than on the *outputs*: actual services to be rendered to the population. Norms were defined for certain types or levels of facility, instead of certain types of services to be rendered. In order to deliver, the facility has to have the appropriate resources. If these requirements are not met, then the facility does not deliver. Staff does not feel responsible for problem solving to provide as good a service as possible with the resources that are actually available.

These considerations should lead us to rethink our approach to referral services:

- **Any programmatic response should apprehend the issue of Emergency Care in a holistic manner, taking the client's perspective, and considering the emergency from its onset.**
- **Moving from the specific comprehensive obstetric services FRS model to a system delivering various levels of emergency obstetric care.** Roughly three levels of obstetric care can be proposed: *Obstetric First Aid* (where life-saving skills and emergency readiness/preparedness can be taught to community members and field workers), *Intermediate Basic Emergency Obstetric Care* (skilled personnel, with limited equipment and support services), and *Hospital-based Comprehensive Emergency Obstetric Care* (services requiring specialist doctors, with reasonable equipment and comprehensive support services, e.g. surgery, anesthesia, and blood storage facility). Setting norms for Emergency Care should be done by levels of care rather than by type of facility, as it is today. As the level of care is adapted to existing resources, rather than the opposite, emergency care becomes an integrated part of every facility's mission. Gradually, with time, experience, and resources, some facilities may reach the next level up.
- **Integrating Emergency Obstetric Care into the context need for general emergencies.** Emergency services should not be restricted to pregnancy-related complications. For need of advocacy, rationalization of resources, and impact. Advocacy for round-the-clock Emergency Services at referral facility level will definitely get support from communities, field staff, and health

managers, because it responds to daily needs. A package of holistic emergency services justifies the presence of high-skilled staff, expensive equipment, and sophisticated care. Where emergency services are functional, obstetric emergencies will be taken care of. In certain circumstances however, obstetric referral may provide a good starting point or an opportunity for improving the existing system for referral.

- **An operational referral system should be seen in the larger context of the District health system.** It cannot be planned, nor built in a vacuum, or as a vertical program. Responding to local environment and specific community needs implies local District planning.

Emergency services should not to be confined to hospitals. Every health facility, everyone should be prepared for such cases, from community to hospital level. In order to respond to local needs comprehensive referral systems able to manage emergency cases from their onset, rather than specific facility-based services should be planned and implemented at District level.

What You Can Do To Plan For An Effective Referral System

Following are some guidelines to help planners to design effective referral systems. A summary table follows:

1. Plan at District level

Some kind of emergency care is probably already in place, but often in a fragmented, dysfunctional way. Districts should then be given a chance to rethink, plan, manage, and monitor according to their needs. District planning is supposed to put all the pieces of the puzzle back together. From this exercise will emerge local responses to local problems, demand-driven services, and increased local ownership. Inputs to accompany this shift from centralized planning to District planning are discussed below.

2. Plan for the population

Health planners usually have strong medical, hospital, public sector, urban, and gender biases, which makes it difficult to grasp all facets of a population's concerns around emergency care. Consultative meetings should be held at the very onset of strategy planning, and allow for the client's perspective, the field worker's perspective, the rural population's perspective, the private sector's perspective, and women's perspective to be expressed. As a consequence, early consultation in the District must take place.

Planners should rather take the client's perspective, consider emergencies from their onset, and respond to the four delays mentioned above. Community awareness and preparedness to emergencies, community-based management of emergency cases, communication, transfer of patients, financial accessibility, emergency blood donation, cultural issues, and alternative sources of care should all be discussed.

Planners should take into account those women who do not have access to Government facilities, those do not usually seek care in these facilities, and those who consult in the private sector, by choice or by necessity.

3. Plan strategically

Good planning should start with strategic thinking, before getting into the operational details. A *vision* should first be discussed for the District (What is the goal? And when should it be attained?). A *strategy* (One way to get to this goal) then needs to be agreed upon. There are many issues to be responded to, and one has to prioritize. There are several ways to achieve an overall objective, and one must make choices. Then only a *plan of activities*, in line with the agreed-upon strategy, can be developed, along with a time-frame, needed resources, budget, and responsibilities. Strategic planning should first try to analyze the deeper roots of the problem (Why are women currently not consulting in case of an emergency? Why are some women dying at the hospital?), considering the traditional/cultural angle as much as the biomedical angle.

4. Plan with method

Good planning builds on *evidence*, and one needs to have an idea of the burden of diseases and the expected caseload by type of emergency for proper planning. A simple review of hospital registers can give a hint for the needs, even if biased by the type and quality of services offered by the facility. When *facility-based data* is not available, and a *community-based needs-assessment* is felt too long and costly, data from a comparable district, or data from the literature can be used as a base for planning.

Planning starts with a *comprehensive mapping* of the population, of existing facilities and workforces, including those of the private sector. Public and private sectors, whether for-profit or non-profit, can play complementary roles in the referral process and the delivery of emergency services. Setting a district emergency services network provides an opportunity for engaging public-private partnerships of various kinds: from the simple reference to sharing, subsidizing, out-contracting, or privatizing services.

It will take some time to reach ideal population coverage by emergency services, and it is advisable to plan by stages. The following table illustrates how a District may want to move gradually from one stage to another, rather than naively planning for the ideal situation (stage 3) at once:

Table 8: Illustrative stages for improving the availability of emergency services

Stage 0 (year 0)	Stage 1 (year 1)	Stage 2 (year 3)	Stage 3 (year 5)
Currently comprehensive EmOC is uncertain in the District. Basic EmOC is available at District hospital level & urban private clinics only.	EmOC will still be mainly limited to urban and peri-urban areas, but the District hospital will be offering 24-hour comprehensive EmOC.	A network of facilities will be offering comprehensive and basic EmOC in the District.	A comprehensive network of First Aid and basic EmOC will exist in rural areas, and will be backed-up by several facilities offering comprehensive EmOC.

5. Plan for systems

Because of the biases mentioned above, District managers will tend to favor hospital care, plan facility-wise, and in a compartmentalized way. However, when planning starts from the patient's home, it naturally focuses on the flow of referral, allowing the patient to reach the appropriate level of care on time. **A tree of referral options should be drafted from the base (community level), rather than from the top (hospital level).** These plans should be seen as an integral part of the District health system.

Even for local planning, strong support from the Government may be necessary:

Shifting from centralized management, reliance on external resources, and ready-made solutions to local planning, and changing District managers' mentality from assisted executants to visionaries, competent, and pro-acting managers may not be easy. Allowing districts to plan and manage successfully may require to define a National framework for emergency services, to build districts' management and planning capacity, and to show a clear commitment to somewhat reforming the health sector.

Developing norms for Emergency Services is the first requirement for setting-up services. What should be done? Where, how, and by whom? As suggested above, emergency service mix, norms and standards, and management algorithms should be set for each level of care, rather than by facility type. The description of the referral system, and referral protocols are equally needed.

A serious look at District-level officials planning capacity, let alone overall management capacity is required. In the long term, some short training in public health and management should be introduced,

and later be made mandatory for those who are eligible for holding management positions at District level. In the short term, some assistance for planning activities, and on-the-job training may be required from central Governments.

Central Governments need to streamline the use of human resources, and the distribution of specialist doctors. Where specialists and other doctors cannot be found, Governments can encourage a better use of local mid-level workers, by either creating new cadres of personnel, such as nurse anesthetists, rural doctor-assistants, etc, or by upgrading the skills and responsibilities of existing ones. At facility level, an "emergency culture" should be instilled, by encouraging emergency personnel to work in teams, in order to bring accountability and continuity into the provision of services. The classic hierarchical structure usually leads to non-operational services in absence of the leader.

In order to respond to local needs, to plan, implement, and monitor accordingly, Districts and lower levels of the health care delivery system need to be delegated more administrative and financial powers than they currently have. Local community management boards should also be encouraged to participate in the monitoring of the referral system, and to possibly invest financially in local solutions.

As a last effort towards decentralization, mechanisms encouraging public-private partnership for emergency care should be looked into. It can take the form of out-contracting for support services (e.g. ambulance services) to the private sector, sharing costly diagnostic, imagery, laboratory, or blood bank services, creating private wards have been created in public hospitals to subsidize regular beds, hiring private practitioners on a call basis, or sometimes privatizing a public facility for the benefit of the population.

Dealing with a wide range of program dealing with emergencies may also require challenging the frequent balkanization of the health sector, and to improve integration, and coordination between health program, between administrative departments, and between administrative levels.

Table 9: How To Plan For An Effective Referral System: Summary Table

<p>Plan at District level</p>	<ul style="list-style-type: none"> ❑ Encourage local responses to local problems, demand-driven services, and local ownership. ❑ Get upper administrative levels' support and technical assistance if necessary.
<p>Plan for the population</p>	<ul style="list-style-type: none"> ❑ Get rid of classic planners biases. ❑ Organize an early consultation in the District. ❑ Plan from the client's perspective, consider emergencies from their onset, and respond to the 4 delays. ❑ Take into account those women who do not have access to public facilities, those do not usually seek care in these facilities, and those who consult in the private sector, by choice or by necessity.
<p>Plan strategically</p>	<ul style="list-style-type: none"> ❑ Start with strategic thinking: analyze the deep roots of the problem, considering the traditional/cultural angle as much as the biomedical angle. ❑ Develop a phased vision, and strategies to get there. ❑ Finally get into the operational details: develop a <i>plan of activities</i>, with a time frame, needed resources, budget, and responsibilities.
<p>Plan with method</p>	<ul style="list-style-type: none"> ❑ Search evidence: what is the burden of diseases and the expected caseload by type of emergency? What are the needs? ❑ <i>Make</i> a comprehensive mapping of the population, of existing facilities and workforces, including those of the private sector. ❑ Plan by gradual stages.
<p>Plan for systems</p>	<ul style="list-style-type: none"> ❑ Draft a tree of referral options from the base (community level), rather than from the top (hospital level). ❑ Plan as an integral part of the District health system. ❑ Plan for a system, rather than for individual facilities. ❑ List the needed support from upper administrative levels: <ul style="list-style-type: none"> National framework for emergency services. National norms for emergency services, referral protocols, service mix, norms and standards, and management algorithms. Support to decentralized planning. Capacity building for decentralized planning. Creating new cadres of personnel, such as nurse anesthetists, rural doctor-assistants. Upgrading the skills and responsibilities of mid-level workers. Delegating more administrative and financial powers to the Districts.

Monitoring The Efficiency Of A Referral System

In the absence of comprehensive and accurate registration of births and deaths, coupled with medical certification of cause of death, measuring the maternal mortality ratio is complex, resource intensive and imprecise. Proxy indicators for assessing maternal mortality, such as the *indirect sisterhood method*, have their own drawbacks. While these indicators can point out problems, local information is nevertheless needed to supplement assessment and planning. To remedy the lack of such basic data in developing countries, a joint UNICEF/WHO/UNFPA initiative has proposed to use indirect *process indicators*, and has set international standards for monitoring the *availability and use of obstetric services*, summarized in the following table:

Table 10: Process Indicators For Monitoring the Availability and Use Of Obstetric Services⁶

	Indicator	Acceptable level
1.	Number of EmOC facilities - Basic EmOC - Comprehensive EmOC	For every 500,000 population: - At least 4 basic EmOC facilities - At least 1 Comprehensive EmOC facility
2.	Geographic distribution	Minimum level is met in sub-national areas
3.	Percentage of all births in EOC facilities	At least 15% of all births in the population take place in EOC facilities.
4.	Met need for EmOC	All women with obstetric complications (estimated as 15% of all births) are treated in EmOC facilities.
5.	Quantity of critical services - Caesarean section rate	Not less than 5% and not more than 15% of all births in the population delivered by Caesarean Section.
6.	Quality of care - Case fatality rate	Not more than 1% of women admitted with obstetric complications admitted to EmOC facilities die.

These process indicators should be used to assess the current state of obstetric referral services (Comprehensive EmOC in particular) and monitor their operationalization. Comprehensive guidelines and tools for data collection have been published and field-tested by this initiative⁷. In light of what has been said above, it is recommended that districts develop their own set of indicators, on the basis of this *essential* list. Improving general emergency services would for instance require additional indicators measuring the availability, the use, and perhaps the quality of such services. Indicators looking at initial stages of the referral, like community preparedness, community workers having life-saving skills, availability of communication and transportation in case of an emergency, etc. can also be useful to measure improvement of the referral system over time.

Annex: Development of a System of Effective Referrals in Uganda

Rural Extended Services and Care for Ultimate Emergency Relief (RESCUER)

Any attempt to reduce maternal mortality should have at its core, improving women's access to prompt and effective treatment of obstetric complications. Such a system was set up on a pilot basis in Iganga district in the eastern part of Uganda in 1995 with funding from UNFPA. A collaborative effort between UNFPA, MOH and Iganga district administration, the system called RESCUER (Rural Extended Services and Care for Ultimate Emergency Relief).

The MMR in Uganda is still unacceptably high (500-750 per 100,000 live births). A variety of factors contribute to Ugandan women dying in pregnancy and childbirth, but they can be classified into three main groups:

1. Poor access to health care, which is determined by availability of appropriate facilities and services in the area, distance between existing health facilities and the home of the pregnant woman, transportation means, financial capability of the woman's family and the status of women.
2. The quality of care at the health facility, which is determined by the number, training and motivation of health workers; availability of equipment and supplies; and the availability of a referral mechanism.
3. Individual characteristics of the woman predisposing her to complications.

RESCUER addresses the three main problems of communication, transportation and quality emergency services, which constrain referrals in most parts of Uganda.

In the initial pilot district, the communications component utilized hand held walkie talkie radios, distributed to selected TBAs in various villages and base station radios, located at 10 selected first level referral units as well as in two hospitals. The communications component enables:

- Residents of communities to call for transport when emergency occurs;
- TBAs to seek advice from health units when faced with a difficult problem;
- Staff of lower level health units to contact hospitals; and
- The staff of referral unit to have time to prepare to receive cases in time

The transportation component consisted of 1) tricycles to transport patients from their home to the first level referral unit, and 2) ambulances to transport patients from lower level health units to hospitals. In the pilot district, boats were purchased to transport patients from outlying islands.

The service delivery component paid attention to:

- Training of community members and TBAs to recognize signs and symptoms of obstetric complications;
- Number and qualification of health workers at the referral units;
- Availability of equipment and supplies; and
- Physical infrastructure of the service delivery points

Implementation Experience

The initial evaluation of the pilot project after one year revealed that the concept embodied in the RESCUER was appreciated at all levels. A number of lessons were learnt and challenges faced. Key among these was the need to set up an effective, efficient, cost-effective and flexible system. It was also learnt that the need to have community and district leadership, and not just the health sector, involved from the planning stages cannot be overemphasized.

Funding Issues

The initial set up of the RESCUER involved a large input of funds, and, for most developing countries, donor assistance would be required. The funds are utilized for feasibility studies; orientation and refresher training of service providers; medical equipment; renovation of health facilities where necessary; radio and transport equipment.

Role of Districts (Local Government)

The district plays an important role in recruitment and maintenance of required staff, procurement of supplies, project implementation, monitoring and evaluation.

Transport Modality

One of the lessons learnt from the pilot district was that the tricycles introduced for use in transporting patients from home to first level referral unit, although cheap, were generally unsuitable for the terrain and the road conditions. The following were modified criteria for selection of the referral vehicle:

As cheap as possible in terms of cost of vehicle, maintenance and fuel consumption 4-wheel drive vehicle

- Can be easily modified to carry a stretcher;
- Provide enough room at the back for the attendant to the patient; and
- Have easily accessible spares in Uganda.

Expansion Plans and Process

After the initial successful pilot in one district, it was decided that every year MOH would select at least three new districts in which to introduce the system. In the new districts, the referral system follows the model of the pilot district, with modifications depending on feasibility studies and decisions of the districts. The number of districts was limited to approximately three per year to ensure adequate financial and technical support to the districts.

The criteria for selection of districts take into consideration geographical distribution, maternal health indices, and readiness of districts to implement the referral system and the level of the district

budget for health services. An average of six health units is selected per district to serve as referral centers.

Several steps are involved in the process of expanding RESCUER into new districts. These are

1. Consultations with districts;
2. District-based feasibility studies;
3. Formation of district task force;
4. Community sensitization and mobilization;
5. Human resource development (recruitment and training);
6. Selection of health units;
7. Procurement of required equipment;
8. Health unit renovation;
9. Implementation; and
10. Monitoring and evaluation.

Consultation with Districts

According to the decentralization policy, planning, resource mobilization and allocation and decision-making for health care are the responsibility of the district, hence, the critical importance of consultations. The main objective of the initial consultation meeting is to sensitize the district authorities about RESCUER, to generate their interest in developing and supporting a referral system and to assess the district interest and commitment to such a system. The initial consultation also brings together the various stakeholders in the district, including NGOs.

Feasibility Study

A feasibility study is done to provide baseline information that will guide project design, implementation, monitoring and evaluation. It looks at the three main components of the referral system, namely communications, transport and health service delivery.

For the first component, the feasibility study looks at possible communications systems that can be used in the district, taking into consideration the terrain of the area, the location of health units, the available communications network in the district, for example, the availability of telephones and of electricity in the units. It also identifies the community persons who will be the point of contact.

The objective of a feasibility study for the transport component is to identify and develop a suitable transport system for the referred cases. The study looks into the geographical terrain, the road network and condition of the roads, the availability of public transport and community willingness to support a transport system.

The health service delivery component looks at number and geographical distribution of the health units by type; the types of services being offered; the staffing levels in the health units and staff qualifications; training needs for the various cadres of service providers; the relationship between the community level service providers, for example, TBAs and the formal health sector; equipment level in the health units; as well as the physical state of the health units.

The need assessment aims at:

- Assessing the level/quality of health service delivery in the district;
- Documenting the health service utilization patterns;
- Identifying factors that affect service provision and utilization;
- Assessing readiness of the district health services to handle referrals;
- Identifying gaps to be filled; and
- Identifying the units that may be offering or has the potential to offer emergency obstetric care.

The various stakeholders including potential donors, the district authorities, the MOH and NGOs operating in the district then discuss the findings of the study. After the feasibility study, the other steps in the expansion process can then be carried out simultaneously, depending on availability of resources.

Formation of a District Task Force

The district is encouraged to form a multi-sectored task force to oversee the planning, implementation, monitoring and evaluation of the system. The task force is charged with the responsibility of district planning, budgeting and implementation of the referral system; sensitizing and mobilizing communities to support the referral system; monitoring and evaluating progress; and liaison between the various departments of the district on issues affecting the referral system.

Community Sensitization and Mobilization

Community sensitization and mobilization are one of the responsibilities of the district task force. As community involvement and support for the referral system is critical for its success, sensitization starts early and is continuous. The main objective is to generate community support and demand for quality RH services and to improve community capacity to promote RH and support prevention and management of obstetric emergencies at the household and community levels. Specifically, it aims at:

- Increasing the awareness of the community on problems of maternal health;
- Increasing the awareness of communities about signs and symptoms of complications in pregnancy and the need to take action early;
- Accessing community inputs and views on the implementation of the referral system;
- Making communities aware of the referral system and their role in its implementation and maintenance; and
- Promoting a sense of ownership of the system in the community.

Human Resource Development

This includes recruitment of some cadres of staff, for example, drivers and the reallocation of others, as well as training. It is crucial to have 24-hour quality service in the units. The objectives of the human resource development are to:

- Recruit additional staff where necessary, for example, midwives, drivers, etc.

- Carry out appropriate training for health workers at the various levels, from the TBAs to nurses and midwives.
- Life savings skills training is critical for midwives.

Selection of Health Units

The health units selected by the district serve as first level referral, while hospitals usually serve as the second level referral. It is expected that the first level referral units should provide basic emergency obstetric care while the hospitals provide comprehensive emergency obstetric care. Under the health sub-district system, each health sub-district would have one comprehensive EMOC facility.

The other steps of expansion, i.e. procurement, health unit renovation, implementation and monitoring and evaluation, are done according to the findings of the feasibility study. It needs to be emphasized that close monitoring of implementation is very important, as it would ensure that problems are identified early, discussed and dealt with.

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COMMUNITY-BASED OBSTETRIC FIRST AID AND HOME-BASED LIFE SAVING SKILLS

This section provides evidence and technical guidelines for implementing first response measures to obstetric emergencies that occur at home or on the way to a health facility, including obstetric first aid and home-based life-saving skills. It also discusses the training of skilled attendants¹ in obstetric first aid and home birth attendants² in home-based life saving skills.

Program Implementers will learn:

- What an obstetric emergency is and how to respond
- The signs of an obstetric emergency in pregnancy, in labor and delivery, in the postpartum period, and post-abortion
- Better practices of community-based obstetric first aid
- General first aid measures that apply to obstetric emergencies
- What the home or community birth attendant should not do in case of an obstetric emergency
- Key behavior change messages
- Guidelines for community-based obstetric first aid





COMMUNITY-BASED OBSTETRIC FIRST AID AND HOME-BASED LIFE-SAVING SKILLS

Despite increased efforts to reduce maternal deaths, more than 500,000 women die each year from pregnancy-related complications and for every woman who dies, 30 to 50 suffer injury, infection, or disease. The most common causes of maternal mortality are severe bleeding or hemorrhage (during pregnancy, labor, and after delivery), infections or sepsis, obstructed labor, eclampsia,³ and complications from unsafe abortions. Most maternal deaths in the developing world occur at home or on the way to the hospital or health facility and are preventable. Many women who do reach the hospital or health facility alive do so in such a critical state that even skilled health providers with supplies, equipment, drugs and capacity for surgical intervention can do little to save their lives.

In the event of an obstetric emergency, the capacity of the woman to make independent care-seeking decisions is compromised. At this critical time, the ability of the woman, her family and the birth attendant to make timely, informed emergency care decisions can mean the difference between life and death.⁴

Obstetric emergencies require prompt medical management in a hospital with functioning Emergency Obstetric Care (EmOC) services. Yet, in the vast majority of cases, obstetric emergencies occur at home. Decisions and actions to seek EmOC need to be made promptly and appropriately if the lives of the mother and the baby are to be saved. In order for a woman to reach the referral facility in a stable condition, certain decisions and plans need to be made during the pregnancy and life-saving actions need to be performed during preparation at home for referral and during transport to the health facility. During the pregnancy, the TBA/attendant must help the family prepare in case of an emergency so when the emergency is identified the family can go to the hospital without delay. The life-saving measures provided within the home by birth attendant(s) are referred to as home-based life saving skills.⁵

Obstetric Emergency and the First Response ⁶

Obstetric emergencies are life-threatening situations, which require **urgent action** and **immediate referral and transfer** to an equipped hospital. They can occur suddenly, without warning during pregnancy, delivery or up to 6 weeks postpartum or after an abortion. The signs of an obstetric emergency are:

- any vaginal bleeding⁷ with or without retained placenta,
- swelling of the face and severe headache or convulsions,
- fever and pain in the abdomen,
- unconsciousness,
- labor lasting longer than 12 hours, and/or
- foul-smelling vaginal discharge.

When obstetric emergencies occur, certain first aid measures performed at home and during transport to the hospital, including general first aid for the treatment of hemorrhage, unconsciousness and shock, can help stabilize the woman's condition and increase her comfort.

The ability to first recognize obstetric emergencies early and then respond promptly and appropriately is essential to save women's lives. The skills necessary to perform essential home-based life saving actions and to provide obstetric first aid can be provided through the education and motivation of trained birth attendants (TBAs), women, family members and their communities.⁸

Signs of Obstetric Emergencies:⁹

It is important to recognize and focus on the crucial areas where appropriate prompt actions are needed in order to stabilize the woman before and during transport to a referral hospital.

Table 11: Signs of Obstetric Emergency in Pregnancy, Delivery and Postpartum

Stages	Signs of Obstetric Emergency
Pregnancy	<ul style="list-style-type: none"> ■ Bleeding from the Vagina¹⁰ ■ Fits or loss of consciousness ■ Severe pain in lower abdomen during early pregnancy ■ No recent fetal movement (in pregnancies more than 22 weeks)
Labor and Delivery	<ul style="list-style-type: none"> ■ Prolonged labor (the woman has been experiencing labor pains for 12 hours or more without delivery)¹¹ ■ The mother has not delivered within 4 hours of membrane rupture.¹² ■ Baby's head not in position when it is time for labor to begin ■ Fits or loss of consciousness ■ Any bleeding from the vagina ■ The placenta does not come out after delivery of the baby and the mother is hemorrhaging. ■ The placenta does not come out for 30 minutes after the delivery of the baby and the mother is not hemorrhaging ■ The woman shows signs of distress such as fever, exhaustion, excessive sweating and very dry mouth
Postpartum or Post abortion	<ul style="list-style-type: none"> ■ Fits and loss of consciousness. ■ Steady or heavy bleeding or fist-size clots from the vagina ■ Fever along with pain and tenderness to touch in the lower abdomen ■ Foul-smelling vaginal discharge

Practice and Principles for Implementing a Community-based Obstetric First Aid Program

Obstetric first aid should be made available at home and at community levels. This needs to be done through education and by motivating the Trained Birth Attendants, women and family members to facilitate effective obstetric first aid to save lives.¹³ However, “training alone, in absence of backup from a functioning referral system and support from professionally trained health workers, is not effective in reducing maternal mortality.”¹⁴

The goal of the intervention “*Obstetric First Aid in the Community: Partners in Safe Motherhood*” is to increase women’s access to safe and effective obstetric first aid.¹⁵ We, as program implementers, need to focus on strengthening community level resources to respond to obstetric emergencies that can occur without warning at any time during pregnancy, delivery, following the delivery (in particular the first 24 hours and the first two weeks)¹⁶ and after an unsafe abortion.

“Sibley and Armbruster have tried to develop an innovative community-oriented strategy designed to reduce maternal mortality. This strategy targets women, families, and TBAs and uses two mutually complementary training interventions, reflecting the idea that the training of professional and paraprofessional health workers in emergency obstetric care is essential and that the education and mobilization of families, communities, and TBAs must complement it.”

Staffan Bergstrom and Elizabeth Goodburn, 2001¹⁷

To improve first responses to obstetric emergencies, training interventions should aim to:

- Increase the number of home/community birth attendants and families with an understanding of and the ability to recognize early the seriousness of the life-threatening complication and agree on the obstetric emergency response, including immediate transport to a referral facility.
- Ensure that home/community birth attendants correctly perform home-based life saving skills
- Ensure that family members correctly perform home-based life saving actions
- Ensure that skilled attendants correctly perform obstetric first aid

In addition to training, the following are essential:

- Available and accessible facilities with 24-hour functioning EmOC services.
- Early recognition of the emergency.
- The least possible delay from problem recognition to the decision to refer.
- The least possible delay from the decision to refer to arrival at the health facility.
- A home/community birth attendant—who has been trained/oriented in obstetric first aid—to accompany the woman to the referral facility.
- A birth preparedness/complication readiness action plan prepared by the family and community in case of an obstetric emergency and includes a plan for transportation to the referral facility.

Better Practice: Adding on Community-based Obstetric First Aid to other Safe Motherhood Interventions

As program implementers and managers, we need to take the following steps to add this life-saving intervention to existing safe motherhood initiatives:

- Step 1: Map and establish effective linkages with the nearest functioning EmOC facilities (see section on Effective Referrals).
- Step 2: Identify home and community birth attendants (ANMs, TBAs, family members, neighbors, and in some cases the woman herself) and to whom families first turn in case of obstetric complications (Indigenous System of Medicine Practitioners, ANMs, TBAs, other local providers).
- Step 3: Hold community orientation/sensitization meetings on birth preparedness and complication readiness (refer to previous section), including obstetric first response.
- Step 4: Train the identified home and community birth attendants (and other providers first accessed by families in case of obstetric complications) on obstetric first aid and home-based life saving skills using competent trainers and tested training modules.¹⁸ Training should include the guidelines described in the annex to this section.
- Step 5: Facilitate, support, and formalize continuing interaction between trained home and community birth attendants and the referral facilities.
- Step 6: Establish systems for reinforcement and feedback to improve practices of trained home and community birth attendants through follow-up of referred cases. In case of maternal death, conduct a verbal autopsy (see section on Verbal Autopsy).
- Step 7. Facilitate monitoring and evaluation activities in order to provide current and appropriate feedback.¹⁹

General First Aid Measures that Apply to Obstetric Emergencies

The home or community birth attendant should do the following when an emergency occurs:

- Make a rapid assessment of the situation, the woman's physical condition and state of consciousness observing the woman's perineum without touching it in order to decide what care and actions are urgently required.
- Scrub hands using infection prevention techniques and use hand protection of gloves or plastic bags.²⁰
- Instruct the family to immediately arrange for transportation to the functioning EmOC facility
- Provide appropriate, timely, correct first aid measures
- Reassure the woman, maintaining calm and performing necessary observations and tasks in a gentle and caring manner.
- Ensure that the woman has plenty of warm fluids and light meals if appropriate.
- Ensure that the woman is kept warm and comfortable.
- Ensure that if the woman is unconscious she is placed on her side and that her airway is clear.
- Ensure that, if the woman is having convulsions, she is protected from injury, which includes turning her on her left side, protecting her from falling or hitting something; as well as ensuring that no one puts *anything* in her mouth or tries to hold her still. .
- If the newborn baby is not crying or breathing, initiate mouth-to-mouth resuscitation including gently clearing the oral and nasal airways, and drying, warming, and stimulating the baby.

- Ensure immediate referral and transfer to the hospital and ensure that departure is not delayed for herbal, spiritual or other traditional treatment or medicine.
- Ensure that the woman and newborn are kept clean and dry and that her dignity is maintained during transfer.
- Brief hospital staff on arrival giving a description of events and care given.

CAUTION: What the home or community birth attendant should not do in case of an obstetric emergency²¹:

- ***DON'T delay in any of the four stages: problem recognition, the decision to seek care, reaching the care facility and in receiving adequate care.***²² Delay can lead to deaths.
- ***DON'T assume every woman can have the same amount of blood loss.*** Remember that any amount of blood loss may be significant for the mother. The blood may be staying inside the abdomen or coming outside. Keep in mind that if a mother has a very low hemoglobin such as 6 grams and loses 150 cc of blood after delivery, the blood loss is more significant for her than for a mother with a hemoglobin of 12 gm.
 - During prolonged or obstructed labor, ***DON'T*** push on the abdomen to make the baby come out, don't give any injection to make birth pains get stronger, don't put anything in the birth opening—this can hurt the baby, may cause infection and/or may cause the uterus to rupture.
 - ***DON'T pull on the breech baby during delivery.*** A breech presentation can be dangerous, especially in a first-time delivery, because the baby's head may not pass properly through the birth canal
 - ***DON'T force the placenta to come out.*** A woman whose placenta is not delivered within half an hour, after simple intervention by the attendants, should be referred immediately to the health facility. The TBA or birth attendants must ***NEVER FORCE*** the placenta to come out.
 - ***DON'T delay if a baby doesn't cry or breathe at birth.*** The attendant must QUICKLY dry and cover to keep baby warm, check that its mouth and nose are clear, quickly try physical stimulation and if unsuccessful, start mouth-to-mouth resuscitation.
 - ***DON'T separate mother and baby.*** Placing the baby skin to skin with the mother and covering with a blanket helps to keep it warm and promotes breastfeeding. This is even more important if the baby is born small because they are especially susceptible to infections and hypothermia.

Key Behavior Change Messages

- The woman who is experiencing an obstetric emergency needs to be kept in stable condition in preparation for and during transport to the hospital, this requires providing life-saving first aid care
- Providing timely, appropriate obstetric first aid may keep the woman alive until she reaches the appropriate referral hospital.
- Obstetric first aid measures require life-saving knowledge and skills learned by home or community birth attendants. Some supplies found in the home are needed. No technical equipment is required.
- Obstetric first aid is a measure to keep the woman stable until she gets life-saving EmOC services.

Annex: Guidelines for Community-Based Obstetric First Aid for the Main Causes of Maternal Mortality²³

I. Hemorrhage

Hemorrhage is the most **urgent** emergency during pregnancy, delivery, postpartum and postabortion. A woman can die within 2-3 hours once a hemorrhage starts. To save a woman's life, it is essential to identify signs of hemorrhage quickly, give first aid, and provide an **immediate referral** to a hospital with blood transfusion facilities. Signs of bleeding too much are:²⁴

- Excessive bleeding, 500 mls or more.²⁵ Large fist-size clot(s)
- Signs of distress including weakness and fainting, can not stand alone
- Placenta does not come out after delivery of the baby and the mother is bleeding too much.
- Placenta is retained for 30 minutes after delivery of the baby, the mother is *in danger of bleeding too much* even though no bleeding is seen.
- Severe pain in lower abdomen during early pregnancy

What can happen if there is hemorrhage during pregnancy, delivery, postabortion and postpartum up to 6 weeks?

- A woman may die if she hemorrhages during any stage of pregnancy or postabortion. If she hemorrhages during pregnancy, the baby may die as well.
- Hemorrhage in the first four hours after delivery accounts for the single largest number of maternal deaths.²⁶ Hemorrhage may occur within 24 hours of delivery or it may be delayed and occur more than 24 hours and up until 6 weeks after delivery.²⁷

How can you tell if hemorrhage could be a problem?

- After the baby is born, the uterus does not stay hard (contracted)-
- After the baby is born, the bladder is full
- Retained placenta (the entire placenta or a small piece of the placenta can remain in the uterus which prevents the uterus from contracting)
- A tear in the perineum or inside the vagina or in the opening of the uterus
- When the baby can not come out of the uterus, the uterus itself can rupture
- During the first 7 months of pregnancy, a woman may bleed too much if she has a spontaneous or induced abortion.
- During the last part of the pregnancy, a woman may bleed too much if the placenta is too low in the uterus or separates from the uterus before the baby is born.
- Women who are severely anemic can die even from normal blood loss. Therefore, it is important for a woman who is very pale, weak, and/or has shortness of breath to deliver in a hospital where hemorrhage can be managed and she can get a blood transfusion in case she is in need of one.

What need to be done if a woman is hemorrhaging?

1. Prevent Delays: Prepare and refer hemorrhaging women to hospitals immediately.

- During pregnancy, the attendant must convince the family to prepare money, transport, helpers, and some one to give blood in case of an emergency.
- As soon as the sign of hemorrhage is seen, the attendant must ask the family to call for helpers, get the readied money and transport to take the woman immediately to a hospital without any delay.
- As soon as the sign of hemorrhage is seen, the attendant gives first aid for Hemorrhage
- If there is a Primary Health Care Center nearby, call the doctor, nurse or ANM and inform them of the hemorrhage case and to bring the necessary medicine for hemorrhage while waiting for the transport to go to the hospital.
- When the transport arrives, go to the hospital immediately and continue first aid on the way to the hospital. Do not delay going to the hospital or health facility to wait for a local doctor or nurse.

2. Obstetric First Aid for Hemorrhage

When a hemorrhage occurs, there are some actions that the attendant can take to aid to save the mother's life and provide comfort to reduce the danger of the emergency. In every case, the mother *must be referred* to the hospital and first aid continued on the way to the hospital.

Get family to arrange transportation to the hospital immediately. While waiting for the transportation, helpers, money and blood donors; and during transport the birth attendant and/or family can do the following life-saving measures.

If the woman has delivered her baby and is bleeding too much, perform life saving actions:²⁸

- Ask the woman to empty her bladder
- Prevent shock:
 - Position the woman so that her head is lower than her feet.
 - Keep her warm and covered with a blanket, as she will feel chilled even if the weather is warm.
 - Offer her fluids if she is conscious
- Gently but firmly rub the womb to push out any blood clots and stimulate it to contract
- Do external bimanual compression by:
 - Keeping one hand above the fundus
 - Keeping the other just above the pubic bone
 - COMPRESS and HOLD the womb between the two hands to slow the bleeding. Continue this until reaching the hospital.
- Put the baby to breast or roll nipples to help the uterus contract
- Put a pad firmly between the legs; on place that is bleeding using more pressure than when using a pad or cloth for menstrual blood.

- Do not put anything in the birth canal.
- Give her sweet drinks or ORS—at least 1 cup of fluids every hour—to keep her from becoming dehydrated too quickly. During transport to the hospital, continue to feed fluids and provide first aid.
- If the woman becomes unconscious:
 - DON'T give her anything to eat or drink as she cannot swallow or protect herself from choking.
 - Position her on her side or at least turn her head to the side so she doesn't choke on her own saliva or vomit.

If the woman is pregnant and is bleeding too much (hemorrhage) perform life saving actions:

- Call for help.
- Ask the woman to empty her bladder
- Prevent shock according to general first aid measures below.
- Do not put anything in birth canal

General first aid measures

- Blood loss in a body must be replaced by plenty of fluids to keep the body from becoming dehydrated too quickly. During a hemorrhage, give sweet drinks or oral rehydration solution (ORS) at least 1 cup of fluids every hour. During transport to the hospital, continue to feed fluids and provide first aid.
- If the woman becomes **unconscious**, she cannot swallow:
 - *DO NOT GIVE ANYTHING TO EAT OR DRINK* as the person cannot swallow or protect him or herself from choking.
 - Position her on her side or at least turn her head to the side so she doesn't choke on their own saliva or vomit.
- During a hemorrhage, a woman can go into shock. **Shock** is extreme weakness from loss of blood. She may feel cold or sweat and look pale. In case of shock:
 - Position the woman with her head lower than her feet. This position makes it easier for the heart to pump blood.
 - Keep her warm and covered with a blanket, as she will feel chilled even if the weather is warm.
 - Offer her fluids if she is **conscious**

Prolonged Labor

The World Health Organization defines prolonged labor for women as “labor pains for 12 hours or more without delivery”.²⁹ Labor may be prolonged because:

- The uterus is not contracting well
- The woman is exhausted

- The membranes (bags of water) ruptured without labor pains · The baby (fetus) cannot move down the birth canal because something is stopping it.³⁰ This is called obstructed labor, which can be caused by:
 - Full bladder
 - A baby that is too large for the birth canal
 - A baby that has abnormal presentation: brow, shoulder, breech, and so forth
 - A baby that is not normal: hydrocephaly, twins
 - A birth canal that is not normal: tightness of birth opening (possibly due to female genital mutilation), tumor, cervix not fully dilated, tightness of birth canal.

What can happen if there is prolonged labor ?

- The uterus can rupture.³¹
- The baby and/or mother can die.
- There can be damage to the mother's tissue that results in one or more bladder or rectal fistulas³²
- If the membrane has ruptured and labor has not started within four hours, the mother or fetus may suffer a serious infection, which may lead to death.

How can you tell if labor is prolonged or obstructed?

- The labor lasts more than 12 hours (a day or a night), and the baby is not born (contractions may become weaker and irregular).
- Labor has not begun within four hours of membrane rupture.
- The baby's head is seen, but after pushing for one hour, the baby is still not born

What needs to be done if labor is prolonged or obstructed?

The woman must be taken to a hospital where they can do an operation immediately. The sooner she gets to a hospital, the better the chance both she and the baby will survive. Delays in going to a hospital may result in: a serious infection, the death of the baby in the uterus or soon after birth, and the death of the mother.

While waiting for transportation to go to the hospital, someone should help the woman:

- Empty her bladder.
- Change positions so that she is comfortable. Semi-sitting, side-lying, or squatting, or another position may help her feel more at ease.
- Feel better: wipe her face with a cool cloth, rub her back, hold her hand, talk to her and reassure her.

Care During Transport

The birth attendant or another health worker should accompany the woman to the hospital to provide treatment in case she begins to bleed or another problem develops. The family should also accompany the woman to reassure her and provide her with support. In addition, the birth attendant should:

- Give her sweet fluids or oral rehydration solution (ORS) to prevent dehydration.
- Put cool wet cloths on her head if she feels hot
- Treat for shock if necessary (keep covered and put feet higher than head).
- If the umbilical cord is coming out, position the woman on her side with her buttock higher than her head to keep the fetus from pressing on the cord.

Eclampsia and Convulsions

Eclampsia is one of the major causes of maternal deaths during pregnancy or immediately following delivery. The exact cause of eclampsia is not known. However, there are things that can be done to help a woman with eclampsia. It results in convulsions (fits) followed by unconsciousness, which can occur at any time during pregnancy, at the time of delivery, or within a few hours after delivery. Convulsions are very harmful for both the woman and the baby. Women with Eclampsia usually have high blood pressure. Eclampsia is a life-threatening condition that requires *urgent* action and *must* be referred to a hospital. Fits can be controlled by medicine found in hospitals. The TBA or home birth attendant can provide first aid during fits to prevent the woman from hurting herself and must convince the family to immediately take her to a hospital as soon as the fit stops.

Signs of a convulsion

- The eyes roll or stare
- The face and hand muscles may twitch
- The woman loses consciousness
- In severe cases one might see stiffening of muscles, the woman stops breathing, her back arches, teeth clench, eyes bulge, foaming at the mouth, the tongue may be bitten

What can happen if there is eclampsia (convulsion)?

- The woman becomes unconscious, and may fall and hurt herself
- The woman can choke and die.
- The woman may deliver very fast and danger the baby
- The woman can hemorrhage

How can you tell if a woman has signs before eclampsia (Pre-Eclampsia)?

During the antenatal period a woman may develop eclampsia if she has:

- Severe headache
- Visual disturbances (trouble seeing and can see spots)
- Swelling of face and hands
- Very sudden, steady pain high in stomach like bad indigestion
- Protein in urine (proteinuria), found by a trained health worker.
- Trained health worker says blood pressure is high .³⁴

This condition is called pre-eclampsia. If not treated, the woman may develop eclampsia (pre-eclampsia complicated by convulsions). Convulsions are very harmful for both the mother and baby.

What needs to be done for Pre-Eclampsia and Eclampsia?

1. Obstetric First Aid for Pre-Eclampsia Signs

A woman with pre-eclampsia signs should see a trained health worker as soon as possible to:

- Have her blood pressure taken; and
- Learn to help prevent Eclampsia
- Rest as often as possible, lying down on side
- Drink liquids often and eat 5 small meals a day if possible include beans, meat or egg each time
- Plan birth with trained health worker at facility

2. Obstetric First Aid for Eclampsia and Convulsions

When a woman has convulsions, the home or community birth attendants should take the following life-saving actions:

- Call for help to give care and get transport for referral
- Protect her from injury against sharp corners, sharp items, the stove
- Do not put anything in the mouth during a convulsion.
- Do not try to hold the woman down, just protect her from falling off of a bed or hitting something and hurting herself. If possible, it is good to assist her to the floor or ground
- Guard her head against hard knocks
- Clear her mouth of any secretions when seizure has finished
- Position her on her side
- Transfer her immediately to a hospital
- Watch for signs of labor and for baby to be born very fast.
- Be prepared for hemorrhage and care of baby
- Maintain a quiet, calm manner
- After she has regained consciousness and can talk and knows where she is, give her sweet drinks to restore her energy

The community birth attendant should not:

- Try to give her anything to eat or drink during a convulsion
- Leave her unattended as the convulsions can recur.

Abortion: What it is and why it happens

When a pregnancy terminates before 28 weeks (seventh month) it is called an abortion. At least 15% of all pregnancies end in spontaneous abortion, or miscarriage. In addition, many women choose to terminate their pregnancies via an induced abortion, which is defined as the termination of a pregnancy by a deliberate intervention. Induced abortion is an extremely safe medical procedure when carried out by qualified personnel according to health policy guidelines.³⁵

However, 20 million unsafe abortions (an unsafe abortion has been defined by the World Health Organization as the termination of a pregnancy carried out by someone without the skills or training to perform the procedure safely, or in a place that does not meet minimal medical standards, or both³⁶) are performed each year, causing the deaths of at least 75,000 women annually, or one in eight pregnancy-related deaths.³⁷ Unsafe abortions often result in severe infection or sepsis (from the insertion of non-sterile equipment or objects such as knitting needles, herbs, or roots into the uterus), perforation of the uterus and/or the bladder or other internal organs, and severe bleeding or hemorrhage.

What are the dangers of Unsafe Abortions?

- Injury to internal organs from pressure applied to the abdomen
- Permanent damage to organs of reproduction and the vagina which hinders further sexual relations
- Permanent damage to bladder or bowel which causes chronic problems with elimination
- Permanent infertility
- Death from complications including infection and hemorrhage

How can you tell the danger signs of complications resulting from Abortions?

Any woman with the following signs and symptoms must be sent immediately to the hospital for treatment:

- Skin clammy, cold or hot to touch, flushed
- High fever, headache
- Pulse fast and weak
- Low abdominal tenderness
- Vaginal bleeding or clots
- Vaginal discharge offensive smelling and pinkish
- Vaginal discharge may be scant if infection has spread inside pelvis

As the condition worsens:

- Body may be feverish but extremities cold
- Nausea, vomiting and diarrhea
- Scant urine output
- Delirium and loss of consciousness
- Death

What needs to be done for women with complications from an abortion?

Any woman with signs of an unsafe abortion needs help very quickly or she will die. Many women who ask for help are refused care or treated very poorly. Some are made to feel ashamed or unclean. These women need compassion and care. Losing a pregnancy (spontaneous or induced) is something a woman will never forget. The woman may be afraid to answer questions. She may have become pregnant due to rape, failed contraception, lack of contraception. She may be afraid you will turn her in to the police, tell her family or friends. She may be afraid of expulsion from family, marriage, or school. She may fear being beaten. Help her understand that you want to help her and that you are ready to listen to her. While transporting the woman to the health facility, a close friend or family member should be with the woman all of the time.

The following care should be given:

- Have the woman lie flat with head lower than body, if possible.
- Cover to keep her warm
- If she is bleeding but conscious, give her 1 cup of fluids, ORS if available, every half to one hour
- If she is bleeding but NOT conscious, do not try to give her anything to drink.
- Have her wear a clean sanitary cloth (save the soiled garments to show the health personnel)
- Someone able to help and support the woman and someone to donate blood should accompany her to hospital

Table 12: First Aid Measure that Can be Implemented at Home

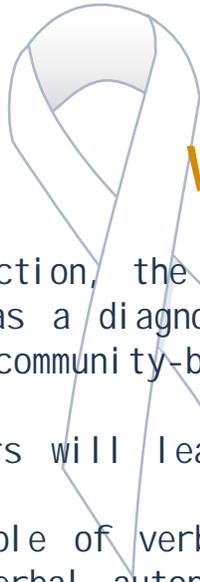
Obstetric Emergencies	First Aid Measures by the home or community birth attendant
<p>If the woman is bleeding too much after the baby is born (hemorrhaging)ⁱ</p>	<p>Call for help Make womb hard; rub womb, nipple stimulation or put baby to breast Instruct woman to squat and pass urine Do a two-hand hold of womb Firmly press on tear or place that is bleeding with a pad Do not put anything in the birth passage (no hands, no material) Wear hand protection to prevent infection and prevent touching any blood² Refer immediately to the hospital Give her plenty of sweet fluids or ORS Keep her warmly covered Try to estimate how much blood the woman has lost</p>
<p>If the woman is unconscious</p>	<p>Position her on her side, preferably, or if not possible at least with her head turned to the side so secretions will drain out from her mouth Keep her warmly covered</p>
<p>If the pregnant woman is having convulsions</p>	<p>Protect her from injury by sharp corners, sharp implements, fire, etc Be prepared for fast birth of baby Be prepared for care of baby Be prepared for postpartum hemorrhage</p>
<p>If the baby's cord is prolapsed Reference: ACNM Life Saving Skills Manual for Midwives pg 10.7</p>	<p>Position the woman with her buttocks higher than her head Wash hands Get transportation to health facility Gently wrap cord in a clean cloth Do not try to place the cord back in the vagina Be ready for baby to be born during travel to health facility If unable to transport support woman during labor Sadly acknowledge that there is a good chance the baby will die.</p>
<p>If the placenta is retained WITH bleeding</p>	<p>Call for help Cut the cord and put the baby to breast Have the mother empty her bladder Gently massage the fundus Stimulate the nipples if baby is not sucking Have the woman in a semi-sitting position Do a two-hand hold of womb Put a pad firmly to press on tear or place that is bleeding Do not put anything in the birth passage (no hands, no material) Wear hand protection to prevent infection and prevent touching any blood.³ Refer immediately to the hospital with baby Give her plenty of sweet fluids or ORS Keep her warmly covered.</p>
<p>If the placenta is retained for 30 minutes without bleeding.</p>	<p>Cut the cord then put the baby to breast Have the mother empty her bladder Gently massage the fundus Stimulate nipples if the baby is not sucking well Have the woman in semi-sitting position and push to see if the placenta will come out If the placenta does not come out, transport the woman and baby to the health facility as soon as possible.</p>
<p>While transporting the woman to the health facility</p>	<p>Keep the woman at a comfortable temperature Keep her as clean and dry as possible if she is bleeding Gives her sweet fluids frequently Continue obstetric first aid care on the way to the referral facility</p>
<p>If the newborn does not cry or breathe</p>	<p>Call for help Dry and cover baby (including the head) to warm with a dry cloth Rub the back to encourage baby to breathe Clear the mouth and nose with a dry, clean cloth Position the baby on a flat surface with the neck slightly extended.ⁱ Physically stimulate baby: flick the soles of the feet with your finger or quickly and firmly rub the baby's back. ⁱⁱ Encourage the baby to breathe without harmⁱⁱⁱ Do mouth to mouth resuscitation</p>

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VERBAL AUTOPSIES

In this section, the reader will learn how to utilize verbal autopsies as a diagnostic tool for designing and revising more effective community-based safe motherhood activities.

Implementers will learn:

- The role of verbal autopsies in reducing maternal deaths
- Why verbal autopsies are useful
- The difference between a death audit and a verbal autopsy
- The definition of verbal autopsy
- Where verbal autopsies have been used
- Applications of verbal autopsies to improve program strategies
- How to do a verbal autopsy





VERBAL AUTOPSY: A DIAGNOSTIC TOOL FOR DESIGNING MORE EFFECTIVE SM PROGRAMS

“Decision-makers at all levels – political, economic, social, religious, and household – must foster the perception that pregnancy and childbirth can and should be made safer. ... Involving communities and decision-makers in the regular analysis of maternal deaths and “near misses” and promoting mechanisms for local accountability help to ensure that commitment is maintained over the long term and that resources are allocated as needed.”¹

WHO/UNFPA/UNICEF/World Bank, 1999

Verbal Autopsy and its Role in Reducing Maternal Mortality

When a maternal death occurs in the community the tendency is for everybody to hush up and people become silent as if in hope to forget it and to move on. Far too often communities believe that such deaths are unavoidable, are a matter of fate and represent low status of women in general. Such beliefs only rationalize a passive approach to maternal health issues and further perpetuate an unacceptable status quo of very high maternal mortality rate. By learning that most of maternal deaths are preventable we can turn each sad event into a learning opportunity to understand what went wrong and to help bring forward changes that would prevent such deaths from being repeated over and over again.

Most maternal deaths are avoidable and preventable if families and birth attendants are aware of danger signs, make timely decisions to seek care, have a mode of transportation to a health care facility with life-saving equipment and appropriate standard of care provided at the facility.

Verbal Autopsy is a community-based tool aimed to: study each maternal death in detail, analyze all factors leading to it, extract lessons learned and help identify culturally acceptable ways of addressing them. By learning from the immediate family member(s) about the circumstances of the death, we gain the invaluable clients' perspective on care-seeking behaviors and decision-making processes behind them. Subsequent application of that knowledge into our SM programs may be essential to make them more acceptable to the community, and ultimately, more effective.

Why is Verbal Autopsy useful?

After more than a decade of the safe motherhood initiative, it has become clear that just providing services and telling people to use them does not work. Health care seeking behavior in general remains a complex process, and is even more complicated when it comes to women's health issues, as women's health is so intricately intertwined with the socio-cultural beliefs of female modesty,

honor, etc. To make our programs more effective, we must look into community based barriers to preventing maternal deaths and make our safe motherhood interventions “more strategic”.

“Too often, safe motherhood communication interventions continue to be designed and implemented from top down, and do not allow for any true community participation. The discrepancy between knowledge, risk awareness, and actual behavior is well recognized. That discrepancy needs to be continually addressed, particularly in behavior change communication focused on maternal mortality reduction. To reduce maternal deaths, not only medical risks must be considered, but social risks as well.”²

Mona K. Moore, 2000

To better understand the complex web of these new socio-cultural contexts, we must utilize community based research tools to help us design more responsive programs. Verbal autopsies can be a powerful tool that allows us to utilize real life situations to refine our programmatic interventions in safe motherhood, by identifying existing barriers to life-saving treatments.

Death Audit versus Verbal Autopsy

Death Audit is a clinical assessment of death **in the hospital** aiming to understand the entire process of treatment that each deceased woman went through in the hospital and identify what went wrong.

Verbal Autopsy is a diagnostic tool by which a similar analysis of all the factors contributing (directly and indirectly) to maternal deaths in the community is conducted. It is meant to assess the entire progression of pregnancy period, process of maternal care seeking behavior, and sequence of events immediately prior to maternal death in the community (outside of formal facility).

Working / Practical Definition

“Verbal Autopsy is a technique developed to ascertain the cause of death in situations where access to medical care is limited and where a significant proportion of maternal deaths occur at home in the absence of trained medical personnel. It is the consensus that a postmortem interview to ascertain causes of death should address the non-medical circumstances leading to death as well as the obstetric/medical causes of death. **The description of all the events surrounding each maternal death is important because it serves as a basis for development of more comprehensive strategies for prevention.**

The interview consists of: 1) Verbal autopsy interview with relatives (or neighbors) of the deceased to reconstruct events prior to death in order to reach a medically accepted, obstetric/medical diagnosis; and 2) Verbal determination of the non-clinical causes of death is a reconstruction of factors associated with care-seeking behavior and access to and delivery of services.”³

“Purpose: Results from a verbal autopsy are most useful for:

- Identifying factors that cause delays in receiving appropriate care
- Providing key information for maternal health advocacy by evaluating the magnitude of MM in a target community/population
- Identifying populations of women at higher risk for maternal death so that health care and social services programs can be designed to help prevent deaths
- Assessing the need for improvement of quality of health care services and access.”⁴

Where has Verbal Autopsy been used?

Countries where VA was utilized: India, South Africa, Bolivia, Guinea-Bissau, Egypt, Mexico, Senegal, Tanzania, Ethiopia, Ghana. Organizations that have used it extensively include CARE, MotherCare, CASP, CEDPA, MEASURE Evaluation, WHO, Matrika.

Among organizations active in SM programming, CARE/India has done most extensive work in elaborating the tool and applying its results in their community-based programming. Preliminary evidence shows that it has been a very effective approach. They have embraced an approach that encompasses:

1. Comprehensively assessing the local situation;
2. Identifying locally defined barriers to accessing maternal health services; and
3. Strategically selecting the most critical interventions, in cooperation with local partners, for implementation in the community and health systems.”⁵

The Application of VA to Improve Programmatic Strategies

The following two cased studies from India demonstrate the information collected during in the Verbal Autopsy questionnaire and its practical application into the existing Safe Motherhood programs. From that perspective, VA can also be seen as a monitoring tool that enables continuous learning from the on-going programs and provides basis for incorporating feedback to further improve, fine-tune the existing intervention.

Box 2: Example of CARE/India from their urban slum project in Allahabad

Case Study 1: Anjana, 20 years old, died, giving birth to her first child. She was married at 18 and the marriage was consummated a year later and she became pregnant. Her husband is illiterate – makes sacks for a living. She was fine until 3-4 months of her pregnancy and had an antenatal check-up. After that she developed jaundice and then generalized swelling and was given sugarcane and palak (spinach) juice. She was taken to the hospital where they prescribed medicines but as these had no effect, she stopped taking them. Only traditional medicines were used to treat the jaundice.

The pregnancy progressed and one night she went into labor and was taken to Hospital where the doctors said she required blood. No one accompanying Anjana was willing to donate. She was shifted to a private nursing home where transfusion was given but the blood coagulated (blood in the bottle was getting spoiled). Her mother took her home after the transfusion at 6 PM. After midnight, her condition deteriorated and she had severe shivering. She was then taken to another private hospital around 12 midnight, and brought home where she expired the next day at 4 PM. The baby was a full term still born one.

Anjana 's relatives only thought she had swelling. Even now, it is only because they have heard people say that she had weakness because of jaundice that they realized that the pregnancy was complicated.

Conclusions: Anjana was very young, it was her first baby, generalized swelling could mean severe anemia, or beginnings of toxemia, further complicated by jaundice (hepatitis) and prolonged labor. Actual time of delivery is not known, but much time was wasted in moving from one hospital to another, inability on the part of the relatives to decide the next steps. She came from a very poor socio-economic class, where families sustained themselves on daily wages. According to them, donating blood meant weakness and inability to work the next morning thus resulting in wage loss."

After writing up the above Verbal Autopsy, information extracted from this case led to the following recommendations in the program area:

- Greater emphasis on postnatal care, identification of danger signs, decision making and action in both TBA and health worker training,
- Include discussion on hepatitis in pregnancy during all trainings and meetings with the providers and the pregnant women,
- Increase provision of iron folate and counseling for pregnant women on the necessity of taking the full 100 tablets of IFA during the pregnancy,
- Help community establish a system of group savings for medical emergency transport purposes,
- Develop a workable participatory communication strategy by segmenting the audiences within the slums, to ensure reaching all those "with special needs". That should include individual counseling of pregnant women, their husbands and families.

- Organize blood donation camps in the slums with district authorities and the local Red Cross chapter. They have a provision of issuing cards, which can be used for getting blood for an emergency transfusion.
- Work closely with identified private practitioners (specialists) serving target slum population; educate them about danger signs in emergency and stress appropriate referral channels.”⁶

Box 3: Example of CASP⁷/India from their urban slum project in Delhi

Case Study 2: Kamala, a 24 year old pregnant woman living in an urban slum of Delhi died. Shanti, a Community Health Guide (CHG) working in an urban slum of Delhi learned how to do Verbal Autopsies as part of a project operated by CASP through funding and TA by CEDPA and PLAN International. The CHGs got together with the doctors of the project and discussed Kamala’s death.

When Shanti, the CHG, visited Kamala who was 7 months pregnant, she noticed that Kamala did not look well – she complained of being very tired. The Health Guide advised her to visit the clinic, which she did several days later. Her hematocrit was very low at 5.0. She was advised to go to the hospital as she needed prompt medical attention. Her husband and his friends took her to the hospital, where the doctor told them that Kamala needed a blood transfusion. As part of hospital policy, one person needed to donate blood in order for Kamala to receive blood. The husband refused and their friends told them that they knew a “doctor” in their neighborhood who could help her without a transfusion. They returned home and Kamala died a few days later.

After hearing the case, the CHGs and their clinic doctors discussed the factors leading to Kamala’s death – severe anemia, unwillingness or lack of preparedness to donate blood, belief that the transfusion was unnecessary and distrust of medical advice in the hospital. Next, the CHGs and doctors discussed what could be done to prevent such deaths in the future.

Based on the information coming from this Verbal Autopsy, the CHGs and CASP staff came up with the following recommendations in the program area:

- Increase provision of iron folate and emphasize counseling for pregnant women on the necessity of taking the full 100 tablets of IFA during the pregnancy,
- Strengthen a BCC intervention stressing the importance of educating and involving husbands and family members in being prepared for a complication in pregnancy,
- Establish a blood donation system for the community
- Help establish better communication and counseling skills among the hospital staff (among themselves and with the clients), so they could counsel and encourage blood donations in emergency cases.

Design of Verbal Autopsy - How to do it?

So now that we have described VA in practical terms and made a case how useful it is in designing more responsive, client-oriented Safe Motherhood programs, how do we go about it? We will attempt to walk the reader through the actual practical steps of conducting Verbal Autopsy and applying its results for programming. It must be remembered, however, that our guidelines demonstrating the steps to follow will remain generic, and that the enclosed questionnaire can only be illustrative at this point, as our example comes from CARE/India and is specific to India conditions. We cannot stress enough that the strength of this methodology lies in the specific adaptation to each country/ regional/ local socio-cultural conditions.

Implementation and Training for VA

"The local study coordinator needs to be familiar with general survey methodology including questionnaire development or adaptation, data collection techniques including interviews and interviewer training, data input, and analyses. The first step for the implementers is to review the Verbal Autopsy questionnaire and customize as necessary (refer sample at the end of this chapter).

Training requirements depend on the skills, knowledge, and experience of the interviewers and on the size of the study. Non-clinical interviewers must be directed to complete the questionnaire, and be taught how to probe for further clinical information on a specific symptom (for example, severity of hemorrhage). For all interviewers, training is essential to:

- Ensure an informed consent to the interview is acquired;
- Provide communication skills to appropriately acknowledge grief exhibited by the family;
- Ask questions in a non-leading, non-judgmental manner; and
- Record the answers objectively and legibly."⁸

Process of conducting Verbal Autopsy (as currently used by CARE/India)

Step 1 Contact either nearest relative of the deceased women or her neighbor if relative, he/she should be residing in the same house as was deceased.

Step 2 Introduce yourself, purpose of the visit, convey your condolences about the news and why you are here to talk about it. Explain that the information they provide can help prevent other women from dying.

Step 3 Enquire about the interviewee, her family what she does. Try to build a rapport with her before you discuss the case of the deceased.

Total time required for step II, III – 20 minutes. Same checklist should be used when talking to relative, neighbor and TBA."⁹

Step 4 Ask questions as outlined in Verbal Autopsy Questionnaire. Probe for the time it took between each action and for the sequential order of events (see sample VA questionnaire in Annex to this Chapter)

“Step 5 Write up a summary about each case, including some conclusions regarding most probable direct cause of death and identify which of the four delays have been involved.”¹⁰

Next Steps

The dissemination of information should take place in the community to sensitize other community members to avoidable nature of the death. A community- based process to identify locally and culturally acceptable interventions to address the disclosed barriers should follow.

Four Delays Model for Maternal Health

Usually in all the maternal death cases there is a basic issue of delay that has led to individual death. These include the following:

- Delay in identification of problem by birth attendants
- Delay in decision making by family and birth attendants
- Delay in arranging for transport and referral to a health facility
- Delay in getting emergency care at the facility level because of:
 - Moving from one health facility to another
 - Getting blood transfusion
 - Getting appropriate medical care

Additional Illustrative Case Studies

Additional two case studies are enclosed below for learning purposes. Readers may utilize them for the training purposes for teaching how to conduct Verbal Autopsies.

Box 4: Case Study of 30 Year Old Woman

Case 3: Manju, 30 years (CARE/India). “It was evening by the time I reached Manju’s home which was in the middle of the slum. The trained TBAs and CARE’s field officer accompanied me to her home. Her aged mother was sitting on a cot with a four-month old baby girl in her arms. The baby was marasmic and probably grade 4 malnutrition level. There were six other children standing next to the old woman with a lost look on their faces - the oldest was an 11-years old girl. On enquiring, we were told that their father had gone to work. He makes paper bags for a living.

Manju has delivered normally at home and was assisted by the mother-in-law (untrained) of the trained TBA. She came everyday for the next one week after the delivery for giving Manju a body massage and knew that Manju was having a fever. The only advice given was to avoid bathing. On inquiring about any trip to a hospital, Manju’s mother replied that they never did it. During the antenatal period, Manju attended the hospital once – it had cost them Rs 250. After that she never went to the hospital again.

Conclusion: Manju died of puerperal sepsis. She was very poor, malnourished, was susceptible to infections and could not afford treatment. The TBA did not have the skills to detect puerperal sepsis and was very casual about the whole thing. Manju was too weak and poor to reach any hospital. If she went to the hospital where would the money come from and who would do the cooking for the family.”

Box 5: Case of 35 Year Old Maternal Death

Case 4:¹¹ “Partudi, 35 years, third wife of Dallaram, lived in a village in Rajasthan. The village has a government subcenter, an ayurvedic dispensary, and an unqualified practitioner. Partudi had given birth to 6 children, out of which only 2 had survived. She became pregnant for the seventh time, she did not have any prior illness and did not receive any antenatal care. During pregnancy, she suffered cough, heavy breathing and breathlessness. She also lost weight, but did not seek any treatment for these problems. Partudi delivered at home all by herself. The placenta came out in time. After delivery, she became breathless, for which her husband called the local vaid (government ayurvedic physician). The vaid dispensed some medicines and injections and advised that she be taken to Udaipur to manage fluid collection in the lungs. However, the auspicious day for Partudi to be able to leave her home was determined as the 9th after delivery. She remained at home till 9 days had elapsed, during which time the Vidraj was again consulted

On the 10th day Dallaram pawned his wife’s jewels for Rs 1000, borrowed Rs 500 from friends, and then took his wife to Udaipur by bus. They reached the city 2.5 hours later where treatment commenced – it comprised IV fluids, some injections and drainage of fluid from the lungs. However, she did not improve, and died 6 days after admission. Her hospital treatment had cost Rs 1500, and the vehicle to bring her body back to the village cost another Rs 700.

Comment: Partudi did not seek treatment for her problems, nor did a health worker approach her at any point during her pregnancy. She was not taken to the city hospital in time, as per the ayurvedic physician's advice – it appears that a custom related to the auspicious day was partly responsible for the delay. It is however evident that lack of money with the husband was another major deterrent to seeking timely care at the government hospital in the city. There are government schemes for providing free health care to the poor, but Partudi and her family were unable to access them."

ANNEX: Verbal Autopsy: How to Do It?

Practical Steps, Guidelines and Questionnaire (adapted from CARE/India)

In this technique relatives of the deceased woman are interviewed regarding the circumstances leading to death. Information on the signs and symptoms preceding the death is used to reconstruct the immediate illness leading to death and to assign the most possible causes of death.

Practical Steps and Guidelines

- Step 1 Contact either nearest relative of the deceased women or her neighbor if relative, he/she should be residing in the same house as was deceased.
- Step 2 Introduce yourself, purpose of the visit, convey your condolences about the news and why you are here to talk about it. Explain that the information they provide can help prevent other women from dying.
- Step 3 Enquire about the interviewee, her family what she does. Try to build a rapport with her before you discuss the case of the deceased.

Total time required for step 2, 3 – 20 minutes. Same checklist should be used when talking to relative, neighbor and TBA.

VA Questionnaire:

A. Basic individual statistics about deceased woman/ her husband:

1. Name of the deceased _____
2. Age (years) _____; Date of birth _____
3. Education level of deceased: _____; Her occupation _____
4. Name of her husband _____; Religion / caste _____
5. Education level of husband _____; His occupation _____
6. Overall, socio-economic status of family _____

B. Maternal/Health History:

7. Number of living children of deceased M_____ F_____
8. Age of youngest child/sex _____
9. Number of total pregnancies (Abortions/SB/LB/Child mortality 0-5) _____
10. Information on any previous pregnancies (especially problems) _____

C. Details on this (last) Pregnancy:

11. Antenatal Status of last pregnancy of deceased (Narrative); including:
 - a) ANC registration and subsequent visits, (when ?) _____
 - b) TT injections, (when, how many?) _____
 - c) Iron/Folate tablets, (when, how many?) _____
 - d) Nutrition and signs of anemia _____
 - e) Rest and level of household activity _____
 - f) Edema of hands, feet, face _____
 - g) Breathlessness, cough _____
 - h) Bleeding _____
 - i) Convulsions _____
 - j) Headache _____
 - k) Domestic violence _____
 - l) Visit(s) to hospital for any problems during the antenatal period _____
12. Duration of pregnancy when she went into labor _____
13. When did labor pains start – (AM, PM)
14. Describe the process, if possible.
15. When did they notice that there was a problem? What symptoms did she have?
16. When did they realize that some help was needed? Who was contacted first?
17. What were their options (perceived / real) for seeking care.
18. Where did they go 1st, 2nd, 3rd. Note all temporal factors associated with it.

19. When did they call the TBA or go to the hospital (e.g. immediately, or when frequency of the contractions increased)

20. What did the TBA advice and do; note a sequence of events and timing

D. Details on this (last) delivery:

21. Note down details of delivery;

- a) duration of labor _____,
- b) level of hydration of woman, any bleeding _____,
- c) any variation in labor pain _____,
- d) when the waters broke and time gap between this and baby's birth;
waters broke: _____, *baby was born:* _____,
- e) when did baby cry _____,
- f) expulsion of placenta and membranes (within ½ hr of birth or NOT?)
_____,
- g) any bleeding in next 2 hours _____,
- h) Any convulsions during delivery _____,
- i) any injections given and name _____.

E. Postpartum period; Condition of mother:

22. Condition of mother post delivery (immediately) period.

- a) 1st hour _____,
- b) 4 hrs later _____,
- c) 8 hrs later _____,
- d) 1 day later _____,
- e) 1 week later _____.

23. Condition of mother in postnatal period:

- a) Bleeding _____, Fever _____,
- b) foul smelling discharge _____,
- c) pain in abdomen _____,
- d) convulsions _____, jaundice _____,
- e) other associated illness) _____.

F. Neo-natal period; Condition of baby:

24. Condition of baby; alive _____ or still born _____;

If alive:

- a) Cry _____, Color _____,
- b) Feeding _____, Respiration _____,
- c) Baby weight (how to estimate?) _____

G. Final Summary / Conclusions: Draft a brief summary paragraph about this death, including:

25. Social reasons (for this death)

26. Medical reasons

27. Main social cause/s
28. Main medical cause/s
29. Period of Maternal death
 - a. Early pregnancy
 - b. Late pregnancy
 - c. During delivery
 - d. Postpartum:
 - Within 2 hours of delivery
 - Within 7 – 14 days of delivery
 - Within 15 – 42 days of delivery
30. Consequences of her death on family
31. How could we have prevented the death of Mrs. "X". What program modifications need to be made to prevent death like this in the future?

Signature of the interviewer _____
 Name _____
 Date _____

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BUILDING BRIDGES BETWEEN INDIGENOUS AND BIOMEDICAL PRACTICES AND PRACTITIONERS

In this section, the reader will learn the importance of collecting indigenous knowledge and practices and learning from indigenous practitioners in order to develop more appropriate and effective safe motherhood interventions and training designs and material.

Implementers will learn:

- The role of indigenous knowledge
- Why focus on indigenous practices and practitioners
- Relationships between modern and indigenous understanding of factors affecting safe motherhood
- Why and how to build bridges between the indigenous and biomedical
- Innovative methods of collecting indigenous knowledge and practice





BUILDING BRIDGES BETWEEN INDIGENOUS AND BIOMEDICAL PRACTICES AND PRACTITIONERS

“Despite enormous investment in training, infrastructure, salaries and outreach, the medical system has failed to ‘deliver’. We have millions of medically trained personnel—gynaecologists, obstetricians, nurses, auxiliary nurse-midwives. Yet, their practice has remained confined to the middle and upper classes. The poor—in urban and rural India—continue to access the system they are familiar with.”

Deepti Priya Mehrotra¹

They also continue to die at childbirth at unacceptable rates...

“Linking modern with traditional understanding and practice can be a despairing task.... At times, we just cannot do it. This may be because we see something wrong, anti-woman, in a tradition being followed with devotion by many women. Or, we may feel we do not know enough or anything at all about a set of practices and the belief system behind them.”

Dr. Mohan Deshpande²

The Role of Indigenous Knowledge

Collecting indigenous knowledge of the physiology and anatomy of pregnancy and birth, the ethnomedical practices, concepts and beliefs associated with pregnancy, labor and delivery, the postpartum period, newborn care, obstetric emergencies, and the cultural implications of maternal death is critical to building community-based partnerships and enabling behavioral transitions to reduce maternal deaths. We must try to understand the reasoning behind decisions made by pregnant women, their families and the indigenous practitioners to whom they turn in times of pregnancy-related complications. What might seem irrational and a waste of valuable time to the biomedical provider and safe motherhood implementer, may be perceived as life-saving to the indigenous provider and the clients they serve.

How do we bridge these diverse realities and begin to listen, learn and develop a collaborative partnership based on mutual understanding and respect that will lead to the reduction of maternal deaths? This section explores the rationale for collecting indigenous knowledge and provides an innovative framework for collecting indigenous knowledge.

Creating linkages, conceptual and practical, between formal and informal health care systems is a best practice in Safe Motherhood initiatives. Indigenous birth practitioners (traditional birth attendants (dais in India), cord cutters, experienced family members and others.), are locally available, culturally accessible, affordable and sustainable, and are appreciated by the women whom

they serve. As implementers of Safe Motherhood programs, we need to build our capacity to evaluate local practices and personnel, indigenous resources and realities, and skilfully mediate between models of care.

We as implementers can compile an inventory of indigenous practices, and intelligently compare what is already being practised with the biomedical model. Direct efforts to change indigenous (those beneficial and neutral) practices, because they are somehow foreign to our modern sensibilities, is counterproductive, resulting in cultural alienation and detracting from the communication of life-saving training messages. The exercise of building bridges between indigenous and biomedical, then, involves careful attention to the context of the situation and locally available resources.

Effective building bridges requires effective cooperation and coordination between two models of care—indigenous and modern, incorporating elements of both into a more holistic approach to assisting birth process. Parallel processes can function simultaneously and symbiotically, for example: locally available resources and traditional methods can be administered while the family is arranging transport to a medical facility. Similarly, while providing emergency care to the mother, doctors and nurses can exhibit a more understanding attitude by encouraging families and indigenous practitioners to perform their birth rituals – providing they do not interfere with the medical process - and to give emotional support to the mother. It is important to understand that the facility will be considered user-friendly, only when medical personnel are perceived as welcoming and culturally sensitive to clients' needs. **In many countries, unfortunately, the perception of hospital as a modern, foreign, frightening place with rude and alienating providers remains one of key barriers to accessing necessary care.** NGOs and implementers must promote this kind of cooperation.

In order to reduce the perceived cultural distances between the communities and modern health care systems we must understand better the indigenous practices and practitioners, because they represent their clients' cultural background and because they could provide us with valuable clues on how to bridge the existing gap. Ultimately, that knowledge should help us design more responsive safe motherhood initiatives. Indigenous practices and practitioners must be evaluated in their own contexts since creating linkages is context dependent. For this reason it is not effective approach to develop absolute, centralized 'do's and don'ts' without considering local realities. Advocacy for First Referral Units and training about delays, cleanliness, and emergency obstetrical care are no doubt needed to make these life-saving connections. But without cultural sensitivity and awareness of local realities, women and their families/communities may not (and do not) avail themselves of the necessary biomedical facilities.

The Churel

It is sometimes stated by safe motherhood implementers that families in India do not care if a woman dies in childbirth, because the husband can easily get another wife (and often does). However, research on indigenous beliefs demonstrates that that is not necessarily always the case. Actually, many traditional villagers in North India are horrified by maternal deaths. The deceased woman is believed to turn into an angry ghost, called "Churel", capable of causing much harm and

problems to the husband, his new wife and the entire family. As project implementers we use statistics, biomedical diagnostics and Safe Motherhood language to represent the seriousness of the problem of maternal mortality. Local women, families and communities possess their own cultural understanding of maternal deaths. The churel displays memories and attachment to the dead woman and their horror at the fact that women die while pregnant, during labour and post partum.

Often, in India and elsewhere, project implementers misunderstand these beliefs and thus tend to be biased against them. In our attempts to train personnel and deliver services we either ignore or attempt to reform traditions—dismissing them as ‘superstitious’ or gender biased - without informing ourselves about their inner rationale and possible benefits. **When we remain ignorant of the cultural legacies of women and their families, we risk alienating those whom we are attempting to serve.**

Why The Focus On Indigenous Practices And Practitioners?

Researcher and gender consultant Dr. Deepti Priya Mehrotra writes:³

Although the state has focused on creating a modern infrastructure that virtually bypasses indigenous practitioners the majority (over 65%) of births in India still take place at home, with traditional birth attendants.

The indigenous system has the advantage of low cost, accessibility and sustainability. The methods are woman-friendly, low-tech and non-invasive. Clients experience mutual respect, shared cultural understanding and a continuum of care that is not possible in the medical set up.

Medical methods are perceived as invasive. Relatives, neighbours or friends are not permitted to participate in the birth. Familiar with birthing amid a circle of trusted women, women feel wretched when deprived of this. They report neglect and lack of care in government establishments. Private medical facilities charge high rates, speed up labour and undertake Caesareans that may actually not be needed.

The reality of South Asia's maternal health is that majority of maternal health care providers (those assisting most births) represent the widespread indigenous system of dais, cord cutters, unnani and ayurvedic practitioners and a host of other women who cannot be dismissed. By far the majority of births in the country continue to occur at home with indigenous practitioners or ‘other’ women. This reflects a global phenomenon—the differences between the rich and the poor in utilization of delivery care services.⁴

Current Indian realities include:

- Indigenous diagnostics and therapeutics; massage and herbal therapies; emotional and social support—are all part of a culturally prescribed package of services provided by local networks of practitioners, neighbours, family members. The quality of these services has deteriorated for various reasons, partly from neglect and inadequate linkages with public health services
- Traditional beliefs provide a conceptual framework for understanding these practices (see Appendix, Fundamental Principles of Indigenous Practices)
- Limitations are imposed by scarce financial and human resources available for providing quality institutional medical care among underserved populations
- Lack of recognition of the essential services that indigenous midwives continue to provide to poor women and their families—and the fact that these services are culturally appropriate, accessible and sustainable
- Lack of information about the expertise that some indigenous midwives possess because their model of birth and reproductive processes differs from that of biomedical obstetrics
- Lack of efficacy of programs to train and deliver services to traditionally oriented women, which may, in part, be attributed to the over reliance on the biomedical models.

Safe Motherhood advocacy increasingly focuses on Human Rights as a tool. This approach asserts the rights of women to all aspects of health including the right to culturally acceptable maternal health care—wherever deliveries occur.

All health facilities, goods and services must be respectful of medical ethics and culturally appropriate, i.e. respectful of the culture of individuals, minorities, peoples and communities, sensitive to gender and life-cycle requirements...and improve the health status of those concerned.⁵⁵

Furthermore evidence shows that over-medicalization of maternal care is a problem not only in the developed world. The misuse of medical resources in unnecessary interventions aggravates the already existing challenges facing Safe Motherhood programs.

We conclude that the epidemic of C. Sections continues in Latin America and extends into Asia. In addition there are signs of a worldwide epidemic of other obstetrical interventions. There is an urgent need to build strong strategies to promote evidence-based interventions.⁶

Our best practice of more effective interfaces between indigenous and biomedicine is another strategy to promote more effective use of limited obstetrical resources. We must be involved in efforts to prevent routine and inappropriate medical interventions such as routine episiotomy, epidurals, etc.

Building Bridges

We need to learn about and understand indigenous ethno-medical practices and principles in order to converse with them. A woman, her family, and indigenous practitioners, in their interactions with biomedically trained personnel, should recognize that their traditional health seeking behaviour is seen, understood and dialogued with. Health messages will be more effectively delivered—leading to more increased cooperation and skilful decision-making in choice of health modalities. Community and family partnerships in Safe Motherhood programs are based on mutual respect and collaborative efforts. Childbearing women need to be served by the best of both worlds (indigenous and biomedical) not the worst—which is often the present scenario. Partnerships based on mutual respect and understanding will overcome the cultural barriers to accessing life-saving care.

Examples of Relationships between Modern and Indigenous Understandings of Factors Affecting Safe Motherhood

Safe Motherhood programs are implemented effectively when NGOs have an in-depth understanding of their client communities. **The impact of culture on health and health seeking behaviour cannot be over-emphasized.** MATRIKA research methods executed the following paradigm shifts in their interactions with dais and generated rich and varied data:⁷

- From biomedical to cultural
- From training to interactive ‘conversation’ workshop process
- From allopathic to indigenous systems of medicine
- From focus on TBA as trainee to dai as indigenous health practitioner

Dais in all of the research areas stated, appreciatively, that this was the first initiative to call them together to listen to their experience and knowledge, rather than to ‘teach’ them about biomedical childbirth. In all these areas dais used the terminology of ‘the opening body’ (labour); ‘the open body’ (birth); and ‘the closing body’—a terminology which reflects the empirical basis of their knowledge. The following table provides a sample of findings as they relate to handling of birth and complications.

Table 13: Examples of Relationships between Modern and Indigenous Concerns Affecting Safe Motherhood in India

Elements of Safe Motherhood Issues	Indigenous Concerns and Beliefs Associated with Them
Resistance to Birth Preparedness	<ul style="list-style-type: none"> ▪ Fear of Nazar (evil eye—often involving jealousy of the good fortune of birth)
Obstructed Labour	<ul style="list-style-type: none"> ▪ Nazar ▪ Conflict in the family causing emotional disturbance in the woman. ▪ Effective contractions involve ‘heating’ of the body. ▪ Experienced attendants recognize transverse lie and either perform external version or seek medical help.
Adequate Nutrition	<ul style="list-style-type: none"> ▪ Fear of a ‘big’ baby that might get stuck during labour causes women to eat less. ▪ Food ‘taboos’ like not eating papaya which has abortifacient qualities (seeds are ground and used to induce miscarriage).
Cord cutting	<ul style="list-style-type: none"> ▪ Not cutting cord until placenta is delivered ▪ Cord cutting a ‘sin’, a degraded and ritually polluting act. (see Narak in Appendix) ▪ If newborn is not vital, the placenta—while still attached to baby—is stimulated by heat in order to transfer ‘jee’ or life force from placenta to baby.
Eclampsia-convulsions	<ul style="list-style-type: none"> ▪ Burra hawa (bad wind) associated with malevolent spirit forces, and emotional-mental upset. ▪ Can be caused by nazar or the woman having been afflicted, while moving about, by negative forces at a crossroads or from seeing a dead body.
Haemorrhage	<ul style="list-style-type: none"> ▪ Need to expel ‘bad’ blood, black blood (see Narak) ▪ ‘Hawa-gola’ (literally air-ball) needs to be dealt with postpartum, related to contracting uterus ▪ Putting baby to breast immediately after birth is a prophylactic against haemorrhage. This is not done because colostrum is considered bad for newborn. Rituals for family feeding of first substance to infant and ‘cleansing’ of mother’s nipples sometimes performed by baby’s ‘bua’ (father’s sister) after 2-3 days
Postpartum care	<ul style="list-style-type: none"> ▪ No cold air or wind should touch the woman’s body. ▪ An empty space (the suddenly empty womb) is present and needs to be dealt with. ▪ All things cold and dry should be avoided. ‘Cold’ will negatively affect the nadis or energy channels. ▪ ‘Confinement’ of woman and baby. Woman’s body is ‘open’-- she is vulnerable and should not go out. Fear of malevolent forces could prevent them from seeking outside health care.

How To Build Bridges—First Steps and Guidelines to Appropriate Methods of Collecting Indigenous Knowledge

So now that we understand the rationale behind collecting indigenous knowledge relating to pregnancy and maternal health care seeking behaviors, let's take a step back and take off our "Western, biomedical" hat, try to leave our biases at the door-step and enter the world of indigenous knowledge. Let's ask ourselves "what we can learn" from those indigenous practitioners that can help us design programs that would help save women's lives.

Step 1: Crucial role of community-based women

The first step in bridging the gap between indigenous and biomedical practices and practitioners is information gathering—researching local beliefs and practices. Locally- based community women—dais, anganwadi workers, members of mahila mandals, village health workers or respected neighbourhood elders, are invaluable resources for collection of data. They have an in-depth understanding of traditional culture and can act as mediators and translators between the two models. It is also important that at least some of the research team be fluent in the local dialect—the intimate experiences of birth are spoken of in the mother tongue.

Step 2: Avoid direct translations from ethno-medicine to biomedicine

MATRICA's research methods were workshop-based, holding a series of focus groups with the same dais over a one-year period. This offered an opportunity to probe more deeply and clarify what we did not understand. Making direct equivalents between indigenous terms and those of obstetrics isn't useful. Just because dais were talking of 'bad blood' did not mean they meant haemorrhage. Just because they were talking of the threats of 'hawa gola' (literally ball of air) did not mean they were referring to embolisms. (We did, however, consider those possibilities). We must remember that in contrast to our bio-medical physiological model (with bodily organs), their knowledge and understanding of the body can be benchmarked with other indigenous Indian Health systems, such as Yoga, Ayurveda, and Tantra.

Step 3: Recognize that indigenous cultural modalities often focus on 'energy' not on allopathic anatomy and physiology

Researchers should keep in mind that indigenous diagnostics often refer to energy phenomena and not the literal organ. For example, a retained placenta is said to 'go up into the chest'. Trainers try to convince dais that the placenta cannot go up through the diaphragm into the chest. But the dais often mean that the **energy** which should be going down and out of the body, along with the placenta, is actually moving up, and thus the woman's body is unable to expel the placenta.

Step 4: Researchers' attitude must be receptive, respectful and in the spirit of mutual learning.

Because traditionally oriented women and practitioners have often encountered the negative and superior attitudes of health trainers and medical service providers, investigation of local knowledge and practice can only be effective if researchers establish trust in their informants. Most indigenous practitioners know the power of scientific medicine and are ready to learn. Researchers should display sincerity in their efforts to learn about indigenous knowledge. They

can emphasize that they want to learn because it will help them cooperate and coordinate with traditionally oriented practitioners and families.

Step 5: Recognize the fact that both biomedical and indigenous medical knowledge are dynamic and always changing.

Routine episiotomy, enema, restriction of movement fluids, food during labour—all used to be considered best practices in obstetrical medicine. World Health Organisation now considers these practices unnecessary and sometimes harmful practices. Cord cutting used to be performed with sickles, bamboo, arrowheads—all kinds of traditional implements. NGOs report a significant behaviour change with new razors being used extensively. On the down side however, the use of oxytocin injections (by Rural Medical Practitioners, Compounders, and even dais) for labouring women is endemic in rural areas—and can be seen as the ritual of choice to facilitate labour!

Learning about Indigenous Practices—How To

Step 1: Learning rather than teaching

Service providers' and trainers' interactions with traditionally oriented people has usually been based on the assumption that "I have knowledge and you don't, so let me give it to you". We are reversing that method and saying "You have your own culture and knowledge of birth. It is different from our medical one. Will you tell me about what a woman needs when she is in labour?"

Step 2: Start with normal pregnancy/labour/birth/postpartum and move on slowly to complications

It is always a good practice to begin an interaction focusing on the positive and the normal and only then, after having established rapport, moving on to the problems and the abnormal. This is especially true with indigenous practitioners and the communities they serve because they tend to want to establish common ground and avoid criticism or disagreement, particularly with people they view as in positions of power.

Step 3: Respect for the contribution of indigenous systems

Inform yourself, your team and researchers about the value of indigenous knowledge systems. Ayurveda, Chinese and Tibetan medical systems are increasingly popular among the global elite. Make materials available or bring in presenters on these indigenous healing modalities as well as on herbal therapies, massage, mind body healing, ritual healing practices—in order to build the capacity of the organization to absorb local data and place it in a larger context.

Step 4: Encourage researchers to be innovative in thinking of ways to utilise the information they are gathering

Gathering information on traditions is like brainstorming. When women are contributing their customs and knowledge, we take everything in and learn at a rapid rate. Personnel involved with data collection and assembly should be facilitated to begin to make programmatic linkages. How might this data be used to enhance training programs and delivery of services?

Step 5: Utilize persons familiar with local practices as resource persons or investigators to help decode and understand data.

Caste, class, education and gender hierarchies all place local body- knowledgeable women at the bottom of the heap. Often low caste, poor, non literate—these women are the cultural repositories of their communities' maternal health modalities. They have learned by attending many childbirths and apprenticing with older, more experienced women. Doctors, nurses and those of us who are educated in educational institutions where books are the primary media of instruction often have difficulties in conversing with women who use natural imagery and religious idioms in their expressions. Local women with some exposure to this way of thinking and expressing are invaluable resources in helping us to understand the language and meanings of indigenous cultural forms.

Step 6: Shifting to indigenous ways of thinking and avoiding immediate temptation to look for bio-medical equivalents

It is essential to set aside our critical thought and analytic processes initially when listening to and recording ethno-medical data. We should simply try our best to enter into the world view, customs and explanatory frameworks which are presented. At all costs we should resist the impulse to 'train'. This is not to say if something absolutely dangerous is reported, we should not express our grave reservations.

Table 14: Workshop or focus group methods for non-literate women's expression of indigenous knowledge and practice

Focus Group Methods	Further Elaboration on Practical Steps of Applying the Methods
Discussion of a topic in a small group. Then rehearsing and performing role plays. Followed by further discussions, explanation and clarification.	First of normal pregnancy labour, birth, postpartum needs. Then moving on to complications, diagnostics and therapeutics. Researchers can also role play their births in hospitals—difficulties and joys—this is real participatory research!
Birth songs (sohars)	Sohars sung at birth celebrations give expression to women's experiences of their bodies, sexuality and motherhood, problems with in-laws, etc. in artistic and symbolic manner. Harmonium and percussion instruments are useful. Cultural material that is not stated is often sung.
Asking open-ended questions	Asking a direct question will get a direct answer, maybe. Open-ended questions allow the group or individual to determine the focus of the answer. Asking questions obliquely ('What does a woman need during labour?' Rather than 'What do you do for a woman during labour?') is often more effective
Expert facilitation involving 'active listening'	Good facilitator/facilitators are essential to guide group discussion. 'Active listening' involves rephrasing your understanding of what has been said in order for the speaker to clarify any misunderstanding or go more deeply into the subject.
Demonstrations	Demonstrations of sourcing and preparing herbal concoctions, fomentations, etc. Researchers can offer to play the role of the pregnant/postpartum woman in a demonstration of massage techniques. Explanations, discussion and evaluations can follow.
Birth narratives of giving and attending births	Women from all cultures love birth stories. Inhibitions and censoring prevent 'truth-telling'. If trust has been established and permission given for freedom of expression without criticism the sharing of experiences giving birth and attending births will have its own momentum. It is helpful if researchers share their own experiences.
'Myths' and stories	Traditionally oriented peoples do not distinguish between the above category of personal experience and the interventions of divine and demonic personas who may intervene during the perinatal period. Remember that malevolent forces and demons may be used as diagnostic categories. Suspend suspicion, pay attention and take notes.
Document workshops and generate a glossary of terms	Documentation can be done by tape recorder (if it is not too obtrusive) or by taking notes. Post workshop review of notes both to ensure important data was recorded and to select relevant data for later use is necessary. A glossary of local terms for anatomy and physiological processes will be useful,
Ritual drawings done at post birth celebrations	'Chatti' is celebrated in many communities and ritual symbols are drawn. Paper and felt pens can be supplied to workshop participants to draw the symbols associated with birth.
Role plays of rituals at birth and postpartum	Role plays of these rituals provide the cultural context of maternal health care. Traditionally oriented peoples do not differentiate between the categories of 'religion' and 'medicine'.
Discussions about other indigenous practitioners and their relevance to maternal health	Benchmarking with other indigenous systems of medicine and practitioners in the local area will provide implementers with a more thorough knowledge of the health seeking behaviours of the community

Relevance of Data on Indigenous Practices—Some Examples

Hemorrhage

Indigenous Model: If traditionally oriented women hold the belief that “bad blood” must leave the mother’s body, and that this “bad blood” or “black blood” is the sign that a certain energy is leaving the body, then the possibility exists that training will not speak to that concern and belief.

Biomedical Model: In training manuals and presentations postpartum haemorrhage is presented as life threatening.

Trainers and materials can deal with that concern if it is articulated, but not if it remains hidden. The shift to a discussion of the **perceptions** of the indigenous practitioners can lead to more effective handling of the postpartum period—distinguishing between normal and excessive bleeding and other signs of complications.

Cord Cutting

Indigenous Understanding: The practice of cutting the cord only after the placenta is delivered is traditionally observed throughout the Indian subcontinent. Almost all dais wait until the placenta is out before tying and cutting the cord. This is considered a strongly polluting practice, with one Rajasthani dai said that it’s serious sin equating to the killing of a 100 cows. Indigenous practitioners consider the infant-cord-placenta as a package. They have been together for nine months, cord and placenta functioning to nurture the fetus—why should they be severed too quickly? But dais handle these bodily parts and respect the function that they play in growing the infant. Dhapo, in her assertion that she never cuts the cord, and that cutting the cord is a great sin, gives us a clue as to an impulse behind the distaste with which cutting the cord is viewed. Something alive, having jeevan—life, is being violated by being severed.

Indigenous midwives say that they use the placenta a tool to revive an infant who is not breathing and that the placenta is easier to deliver if still attached. One dai in Rajasthan said that in hospitals you have machines and medicines—here we don’t have those means to deal with a newborn who isn’t breathing—we need to be able to use what means we know. **Dai training is often not taken seriously by dais because it teaches dais to cut the cord before the placenta is out.** This is so contrary to all that the dais know that it undermines other valuable aspects of training. We have heard of **dais who adopted this early cord-cutting being shunned by their communities for incorporating such alien practices.**

Biomedical Understanding/Practice: Standard medical practice involves the cutting of the cord before the placenta is delivered. The biomedical reasoning behind this practice is rather obscure—most doctors are not aware of the rationale behind it. Many nurse-midwives in the west are questioning the need for quick cord-cutting. Although obstetricians consider the placenta-cord-membranes as waste products they are highly ritualised by traditional peoples, considered occasions for pollution in the sacred texts and by high caste peoples.

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www.parteras.org

(Website of Grupo TICIME, an organization working with indigenous Mexican midwives)

contact person: Laura Cao Romero

email ticime@laneta.apc.org

www.ilcanet.com

(website of the Instituto Lengua y Cultura Aymara, working on indigenous Andean knowledge and culture—including birth knowledge—in Spanish)

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Jo Murphy Lawless: jo.murphylawless@oceanfree.net

[http://www.who.int/reproductive-health/publications/RHR_01_5.advancing midwifery today.com](http://www.who.int/reproductive-health/publications/RHR_01_5.advancing_midwifery_today.com)

an Enews service with indepth articles, birth information from around the world, news and reviews of medical and nursing journals

www.mana.org

(website of midwifery center based in Antigua, Guatemala—“creating partnerships to strengthen women’s health care” and training indigenous midwives)

Film

Born At Home

60 Min. PAL; Directed by Sameera Jain; Produced by MATRIKA and Sublunar films.
sameeraj@bol.net.in. janchawla@hotmail.com

This film creates an experience of the dais and their work, evoking a sense of the practice and the tradition. While showcasing the voices and visions of the dais, the film takes into account other points of view, acknowledging critical perspectives and conflicting interpretations. “Born at Home” provides insights into dais’ techniques and skills; methods of diagnosing and classifying obstetric complications; dialogues with dais and women who use their services; use of imagery and ritual during labour and post-partum; indigenous mapping of the female body and bodily processes; body and symbolic language traditions; safety and hygiene; as well as health delivery services at the local level.

APPENDIX

Fundamental Principles Of Indigenous Indian Birth Practices¹⁰

Narak

Girls are considered holy before puberty. The marriage of a young girl (who has not had her periods) is performed with her sitting on her father's lap. After puberty the woman is considered unclean, and is unholy, because she bleeds, and this is Narak. (Basmatia)

Although often translated as hellish or demonic place, Narak can be understood as the site/energy of the unseen inner world - of the earth and of the body. Narak has the connotation 'filth' but also signifies the fertility or fruitful potential of the earth and the female body. 'Pollution taboos' are related to narak—where the idea of the sacred is radically separated from the reproductive potential of the female body.

The concept of narak is a foundational idea which also allows for a host of therapeutic interventions. Narak seems to signify the inner world of the body, which is invisible to the eye—particularly to the mysterious procreative power of the female body. This concept is a mode of understanding which allows practitioners and therapeutics which can affect the inner body without violating the integrity of the skin/body/life force. The dais' health modalities are high-touch (massage, pressure, manipulation); use natural resources (mud, baths and fomentation, herbs); and application of 'hot and cold' (in food and drink, fomentation etc.); isolation and protection (from household work and maternal and sexual obligations).

In the context of postpartum care narak also is connected to bad blood (see Narak sections) or that energy of the maternal body which is associated with growing the baby—which is signified by the black blood. **The understanding and use of this concept in dai training would significantly improve communications on controlling hemorrhage postpartum.**

Placenta-cord

The cord is cut only after placenta delivery, and after the child cries. If cord is cut before placenta is out it is harmful for the mother because the placenta (phool) may go up. (Basanti)

The practice of not cutting the cord until the placenta is delivered is common in all the areas we have studied. It seems as though dais consider the infant-cord-placenta as a package. They have been together for nine months, cord and placenta functioning to nurture the fetus—why should they be severed too quickly?

The act of cutting the cord usually comes across in anthropological studies as a highly polluting act and looked down upon as dirtying and degrading. In fact a lot of young women from dai communities are not learning dai work precisely because of these attitudes being held by society at large and their own aspirations for modern, higher status jobs. Again, this is where caste and

gender biases intersect. The female body and the by-products of conception as well as the work of birth are denigrated.

But dais, as mentioned above, handle these bodily parts and respect the function that they play in growing the fetus. Dhapo, in her assertion that she never cuts the cord, and that cutting the cord is a great sin, gives us a clue as to an impulse behind the distaste with which cutting the cord is viewed. Something alive (having jeevan or life) is being violated by being severed. The moral right to perform that act is seen as the mother's prerogative. This assumes that the mother herself aware, awake and an agent in the process of birth. Within her body the baby grew; she gave birth; and now it is she who has role of finally separating this new life from her body.

Standard medical practice involves the cutting of the cord before the placenta is delivered. The biomedical reasoning behind this practice is rather obscure—most doctors are not aware of the rationale behind it. Furthermore, nurse-midwives in the west are questioning the need for quick cord-cutting. Particularly important here is the practice of using the placenta a tool to revive an infant who is not breathing. Although we have no physiological understanding of how this practice might work, we must assume that, being so widespread it must be effective, at least sometimes.

Hawa-gola

After the baby is born, the sharer (vagina is meant here) is open. In our place a clean cloth is made into a thick pad, it is warmed and placed on the shareer. So that hawa (cold wind) does not come. (Malati)

After birth of the baby, woman has gola pains. Because when the baby is in the womb then bache ka rakshak vo gola hota hai (gola is the protector of the baby). Gola is located beside the baby. After birth gola is left alone so it looks for the baby in the womb. And this gives pain to the new mother. Therefore we immediately give warm seera (halwa, sweet mixture made out of flour, sugar and ghee) to eat and this foment the gola. Warm pot is placed on the abdomen for fomentation. This eases her pain. (Ratna Devi)

It is clear that in all Matrika's research areas hawa-gola are considered threats to the woman's well being postpartum. Our current understanding is that hawa-gola, often referred to together, are some kind of matter, force or energy which must come out of the body (through the vagina or birth canal), and by all means not go up into the upper part of the body. Thus the concern about the anwal or placenta going up in the body (medically speaking, a retained placenta). It seems that although the dais are literally referring to the placenta going up, they are signifying an energy of the body (i.e. that of growing the fetus) that must not be retained within the body. If this energy (hawa-gola) remains within the maternal body, then it is considered a cause for pathology.

Interestingly one of the synonyms dais gave for hawa-gola was 'mamta' which means mother's love. Here is an active notion of the space the baby has occupied and the feelings of the mother for the child are connected to the biological process of pregnancy. The gola is 'the baby's home'. It 'searches for the baby' after birth. Interestingly both sensation and perception are attributed to the uterus/woman. What in bio-medical language is termed 'involution' of the uterus, is considered a phenomenon

experienced by the whole body/person. The pain of the contracting uterus is understood to be caused by this 'search' for the baby. The space which was previously occupied by the baby is now empty and must be dealt with or it will become a site for the pathology of 'hawa-gola'.

Bemata

Bemata is an old woman, has white hair and walks with the help of a stick. She stays under the earth and makes putle (puppets) and gives them to people. She gives to some people and does not give to others. When a baby smiles, it is believed that Bemata is making her smile. (Deepta)

Bemata is a powerful and creative divine persona invoked at the time of childbirth, with some variation in names, throughout North India. She is the special patron of dais and parturient women, lives underground and creates beings out of earth - breathing life into them. She writes the destinies of newborns, shortly after their birth. Bemata is immanent in all nature, grows and protects the baby in the womb, but also seems to be responsible for complications if she does not 'exit' the mother's body via post partum bleeding. She is understood to leave the birth home at Chatti—and she is thanked for growing and protecting the baby. But she is also sometimes blamed and held responsible for diseases of mother and child in the postpartum period. It is interesting that the presence of the same force which is seen as benign and fecund at one time (pregnancy and birth) becomes destructive and dangerous at another, post birth, if she/it is not in the process of diminishing or leaving. Thus, finally, the meaning of Bemata is entirely contextual and time-dependent. The Bemata concept encodes a process orientation towards birth and postpartum. Just as the Apgar score records the wellbeing of the newborn 3, 5 and 15 minutes after birth in terms of color, muscle tone, breathing ability, etc., so Bemata provides a process tracking of bodily processes postpartum.

Ji (Life force or vital energy)

The word 'ji' is undoubtedly related to 'jeevan', the Hindi word for life. Bio-medicine has no equivalent to the notion of ji. Chi or Ki in Chinese and Japanese medicine; vital force in homeopathy; prana in Ayurveda and pranic healing—are all similar concepts connoting life energy. Health modalities and therapeutic systems which are based on facilitating and augmenting ji mainly concern themselves with removing blockages to the life force and maintaining or restituting balance in the body. Removing blockages in the pathways (nadis) which are conduits for ji is one of the functions of Indian forms of massage. Whereas western massage therapies use strokes promoting venous return (up the arms and legs, towards the heart), Indian massage involves moving negative energies or blocks down the limbs and out of the body. The underlying concept of bodily functioning is different. Maintaining or restoring balance in the body is conceptualized as working on the following axes: hot and cold; up and down; open and closed, etc. Restoring balance of the panch mahabhuta (five elements), earth, air, fire, water and space, is also part of indigenous therapeutics work of promoting ji.



Chapter Notes

Introduction to Best Practices

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- 3 www.advanceafrica.org/best_practices/
- 4 Van Lerberghe,W. and Vincent De Brouwere.(2001). "Of blind alleys and things that have worked: History's lessons on reducing maternal mortality." *Safe Motherhood Strategies: A Recent Review of the Evidence*. De Brouwere,V. and Van Lerberghe,W. (eds). Antwerp: ITGPress.
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- 2 World Health Organization, 1992
- 3 Panos
- 4 Panos
- 5 UNFPA, 1998-99.
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- 8 Sibley and Armbruster, 1997
- 9 Ross, 1998. CARE
- 10 UNFPA, 1998-99.
- 11 UNFPA1998-99.
- 12 UNFPA 1998-99.

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- 1 De Brouwere,V and Wim Van Lerberghe, 2001.
- 2 Maine, D., 1991
- 3 Villar J and P Bergsjo, 1997.
- 4 IIPS and ORC Macro, 2000.
- 5 MAQ, 2001
- 6 MAQ, 2001
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- 8 MAQ 2001
- 9 MAQ 2001
- 10 Stoltzfus RJ and ML Dreyfuss. 1998.

Birth Preparedness and Complication Readiness

- 1 MNH, 2001.
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- 4 MAQ, 2001.
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- 6 *Adapted from "Safe Motherhood Resource Guide". SFI website and CARE Reference Manual.*
- 7 MNH, 2001.
- 8 MNH, 2001
- 9 Ross, CARE, 1998.
- 10 MAQ Exchange, 2001
- 11 MNH, 2001

Skilled Attendance at Delivery

- 1 This section heavily draws on the article: Graham, W., Bell, J.S., and Bullough, H.W. "Can Skilled Attendance at Delivery Reduce Maternal Mortality in Developing Countries?" *In* De Brouwere and Van Lerberghe, 2001.
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- 3 Bergström, S. and Goodburn, E. "The Role of Traditional Birth Attendants in the Reduction of Maternal Mortality." *In* De Brouwere and Van Lerberghe, 2001.
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- 12 WHO/SEARO, 2002. Also in De Brouwere and Van Lerberghe, 2001.

Training of Traditional Birth Attendants

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- 2 Sibley L, Sipe T.A., 2002.
- 3 Bergström, S. and Goodburn, E. 2001.
- 4 Minden, M. and M.J Levitt., 1996
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Management of Labor and Delivery

- 1 AbouZahr, et al.
- 2 www.who.org.
- 3 Jafarey et al, 1993.
- 4 MAQ, 2001

- 5 MAQ 2002
- 6 In the case of active management, early clamping is advisable. WHO recommend late or no clamping in the case of physiological management of the third stage.
- 7 WHO, 1999.
- 8 Neilson 1998;WHO 1999
- 9 Thornton, et al, 1994.
- 10 Contractions may be felt long before Labor actually starts, and cervical dilatation may be present weeks before the end of pregnancy, and may progress slowly to the time of Labor (Crowther 1989).
- 11 WHO 1999
- 12 WHO, 1999
- 13 WHO,1999
- 14 Randomized controlled trial of 195 nulliparous women in normal labor showed that restriction in Labor of oral intake can lead to dehydration and ketosis.This is commonly treated by an intravenous infusion of glucose and fluid. The maternal effects of this treatment have been evaluated in a number of randomized trials (Lucas et al 1980, Rutter et al 1980,Tarnow-Mordi et al 1981, Lawrence et al 1982).The rise in mean serum glucose levels appears to be accompanied by a rise in maternal insulin levels (and a reduction in mean levels of 3-hydroxybutyrate). It also results in an increase in plasma glucose levels in the baby and it may result in a decrease in umbilical arterial blood pH. Hyperinsulinism can occur in the fetus when women receive more than 25 grammes of glucose intravenously during Labor.This can result in neonatal hypoglycaemia and raised levels of blood lactate.The excessive use of salt-free intravenous solutions can lead to hyponatraemia in both mother and child (WHO, 1996).
- 15 Garite, et al., 2000.
- 16 FIGO 1992
- 17 If birth does take place at home or in a small peripheral birth centre, contingency plans for access to an adequately staffed and equipped referral centre should form part of the antenatal preparations.
- 18 Klaus, et al, 1986.; Hodnett ED, 1989.; Hemminki, et al, 1990.; Hofmeyr et al, 1991.
- 19 Madi, et al. 1999.
- 20 Neilson, 1988.
- 21 Dalen et al 1969, Catchlove and Kafer 1971, Flowers et al 1969, McCarthy et al 1973, McAllister 1980
- 22 WHO, 1996
- 23 Continuous electronic fetal heart monitoring.The sensitivity of the method with respect to the detection of fetal distress is high, but the specificity is low (Grant 1989).This means that the method results in a high rate of false positive signals, and a concomitant high number of (unnecessary) interventions.
- 24 Save the Children / Saving Newborn Lives (2001) cited in MAQ Exchange (2002)
- 25 The sterility required in an operating theatre is not necessary in normal childbirth. In regions with a high prevalence of HIV and hepatitis B and C virus protective clothing is useful to protect the caregiver from contact with contaminated blood and other materials (WHO 1996).
- 26 MAQ 2002
- 27 Lauzon, L & Hodnett, E (2000). Caregivers' use of strict criteria for diagnosing active Labor in term pregnancy, Cochrane Review, Oxford provided empirical evidence to support the need for specific criteria to diagnose active. If the diagnosis "start of Labor" is made erroneously, the result may be unnecessary interventions, such as amniotomy or oxytocin infusions.
- 28 MAQ 2002
- 29 WHO 1996
- 30 WHO 1996
- 31 The amniotic sac or the presenting part protrudes through the dilated cervix and presses against the rectum.
- 32 Under normal conditions, the membranes remain intact until full dilatation in 75% of the cases (Schwarcz et al 1995).
- 33 Buxton et al 1988.
- 34 Barnett and Humenick 1982, Knauth and Haloburdo 1986, Parnell et al 1993, Thomson 1993.
- 35 Eason, E et al, (2000).
- 36 Eason, E et al 2000
- 37 Yancey et al 1991
- 38 WHO 1996

- 39 There is no reliable evidence that liberal or routine use of episiotomy has a beneficial effect, but there is clear evidence that it may cause harm. In a normal delivery there may at times be a valid indication for an episiotomy, but a restricted use of this intervention is recommended (Sleep et al 1984, Signorello, LB et al, 2000).
- 40 WHO 1996
- 41 WHO 1996
- 42 Eason, E et al, 2000
- 43 This may have effects on the mother and the infant (Prendiville and Elbourne (1989) Care during the third stage of Labor in Chalmers I et al (eds). *Effective Care in Pregnancy and Childbirth*. Oxford, Oxford University Press) however, according to Dunn et al 1966, Botha 1968, Nelson et al 1980, there was no evidence of the timing of cord clamping on the incidence of postpartum haemorrhage or on fetomaternal transfusion.
- 44 WHO 1996
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- 46 Kwast 1991
- 47 Augmentation of Labor, obstructed Labor or vaginal operative delivery (Gilbert et al 1987)
- 48 Prendiville et al (1988), Harding et al (1989), Begley (1990), Thigalathan et al (1993).
- 49 Prendiville, et al 2002..
- 50 Kane, et al, 1992.
- 51 MAQ 2002

Postpartum Care Best Practices

- 1 www.commitnit.com/st2001/sld-3263.html, Safer Motherhood 2000
- 2 WHO, 1998
- 3 FHI, Summer 1997
- 4 International Institute for Population Studies and ORC Macro, 2000
- 5 International Institute for Population Studies and ORC Macro, 2000.
- 6 Adapted from CARE, 1998.
- 7 WHO, 1998
- 8 WHO, 1998
- 9 WHO, 1998
- 10 WHO, 1998
- 11 WHO, 1998
- 12 International Institute for Population Studies and ORC Macro, 2000
- 13 WHO, 1998
- 14 International Institute for Population Studies and ORC Macro, 2000
- 15 WHO, 2000.
- 16 WHO, 2000.
- 17 WHO, 2000
- 18 WHO, 2000
- 19 WHO, 1998
- 20 Maternal and Neonatal Health, 2001

Effective Referrals for Obstetric Emergencies

- 1 Van Lerberghe, Wim & Vincent De Brouwere 2001.
- 2 UNICEF/WHO/UNFPA. Guidelines for monitoring the availability and use of obstetric services. Geneva, 1997.
- 3 Jahn, Albrecht and Vincent De Brouwere, 2001.
- 4 Berstrom, Staffan, 2001.
- 5 Jahn, Albrecht and Vincent De Brouwere, 2001.
- 6 UNICEF/WHO/UNFPA, 1997.
- 7 UNICEF/WHO/UNFPA., 1997.

Community-Based Obstetric First Aid and Home-Based Life Saving

- 1 The term “skilled attendants” refers to people with midwifery skills (for example doctors, midwives, nurses) who have been trained in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric emergencies. 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 setting”. Traditional birth attendants, trained or untrained are not included. WHO (1999b) Reduction of Maternal Mortality. A joint statement WHO/UNFPA/UNICEF/World Bank.
- 2 A home birth attendant is anyone (trained or untrained) who gives care to a woman in the woman's home during labor and birth, during and/or after pregnancy. Buffington, S.T., et.al. (2003) Home Based Life Saving Skills 1st Edition
- 3 Sepsis includes sexually transmitted infections (which are markers for HIV risk since they are contracted the same way); and malaria – a major cause of high maternal and infant mortality and is linked to increased mother to child HIV transmission via placental infection. Israel, E. and Kroeger, M. (2003). *Integrating Prevention of Mother-to-Child HIV Transmission into Existing Maternal, Child, and Reproductive Health Programs*
- 4 www.comminit.com.st2001./sld-3263.html
- 5 Home Based Life-Saving Skills Community Meetings, created by the American College of Nurse-Midwives (see references) were pretested in Kanpur in 1999; these materials are being finalized through the Community Partnership for Safe Motherhood Project, Shramik Bharti in Kanpur in collaboration with Prime/INTRAH.
- 6 Nepal TBA Program, 1997
- 7 It is **not normal** to see any blood during pregnancy. It is **normal** for a woman to bleed a small amount after the birth. It is **not normal** to bleed too much after the baby is born. When the bleeding is any amount of continuous bleeding, or large fist-size clots, or the woman has weakness and fainting, it is very serious. Buffington, S.T., et.al. (2003) Home Based Life Saving Skills, 1st Edition. Community Meeting 5.
- 8 Sibley and Armbruster 1997.
9. Nepal TBA Program 1997
- 10 It is **not normal** to see any blood during pregnancy. Buffington, S.T., et.al. (2003) Home Based Life Saving Skills, 1st Edition Community Meeting 5.
- 11 Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors, WHO/RHR/00.7
- 12 “If the bag of waters ruptures or has been ruptured, delivery should occur in less than 4 hours. This does not mean automatic aggressive induction. Providers should first try ambulation, nipple stimulation, giving fluids, position changes, and providing emotional support to help labor progress normally.. HIV transmission [mother to child] increases about 2% for every 24 hours of the bag of water being ruptured.(European Collaborative Study, 1994).” Israel, E., and Kroeger, M. (2003). *Integrating Prevention of Mother to Child HIV Transmission into Existing Maternal, Child, and Reproductive Health Programs.* “HIV transmission [mother to child] increases about 2% for every 24 hours of the bag of water being ruptured.(European Collaborative Study, 1994).
- 13 Sibley and Armbruster 1997.
- 14 www.who.int/rht/documents/reduction-of-maternal-mortality...02-nov-00
- 15 Sibley and Armbruster 1997.
- 16 Hemorrhage in the first four hours after delivery accounts for the single largest number of maternal deaths. Report of the MotherCare Task Force for Postpartum and Neonate Care, August 1994.
- 17 Staffan Bergstrom and Elizabeth Goodburn 2001.
- 18 Home Based Life Saving Skills manual has been tested and is being finalized through the Community Partnership for Safe Motherhood Project, Shramik Bharti in Kanpur in collaboration with ACNM and Prime/INTRAH
- 19 Home Based Life Saving Skills – 1 st Edition (2003). See references
- 20 “Protecting [helpers] from the risk of transmission [of HIV/hetatitis] through exposure to [blood and body fluids] is an important precaution.” Israel, E. and Kroeger, M. (2003). *Integrating Prevention of Mother-to-Child HIV Transmission into Existing Maternal, Child, and Reproductive Health Programs.*
- 21 Nepal TBA Program, 1997
- 22 Ross, S. (1998) *Promoting Quality Maternal and Newborn Care: A Reference Manual for Program Managers.* Cooperative for Assistance and Relief Everywhere, Inc. (CARE). P.1.13. and *MotherCare Matters* (October 1997). Learning in Action in the First Decade: The MotherCare Experience. John Snow, Inc. Arlington, VA. Volume 6, No.4.

- 23 This section is taken from the "Safe Motherhood And Simple Management And Referral Of Obstetric Emergencies: 2 Day Supervision Meeting Package". National TBA Programme, Ministry of Health, Kathmandu, 1997 which was simplified down and adapted from the Life-Saving Skills Manual for Midwives(1998), and the Home Based Life Saving Skills Manual, 1st Edition (2003) American College of Nurse Midwives, Washington, D.C.
- 24 After the baby is born, the placenta usually is pushed out by the womb pains and the woman pushing a little. The placenta usually comes out a few minutes after the birth of the baby but sometimes it may take up to 30 minutes. Then the womb gets smaller, hard, and the bleeding slows.
- When the placenta remains in the womb longer than 30 minutes **with hemorrhage**, this is a serious obstetric emergency. The woman can bleed to death in 2-3 hours. Action must be taken and the woman must transfer to a referral facility as soon as possible.
- When the placenta remains in the womb longer than 30 minutes **without hemorrhage**; this is called a retained placenta without hemorrhage. A woman with a retained placenta without hemorrhage, is not in immediate danger however, she must transfer to a referral facility for removal of the placenta.
- 25 Remember that any amount of blood loss may be significant for the mother. The blood may be staying inside the abdomen or coming outside. Keep in mind that if a mother has a very low hemoglobin such as 6 grams and loses 150 cc of blood after delivery, the blood loss is more significant for her than for a mother with a hemoglobin of 12 gm with the same 150 cc blood loss. *Life-Saving Skills Manual for Midwives, 3rd Edition (1998).*
- 26 *Life-Saving Skills Manual for Midwives, 3rd Edition (1998)*
- 27 Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors, WHO/RHR/00.7, S-25
- 28 Attendant and family helpers wear hand protection to clean woman, wash blood stained clothes, and for safe disposal of bloody items. Wash hands with soap and water when removing hand protection. Home Based Life Saving Skills 1st Edition (2003). Community Meeting 5, p. 10.
- 29 Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors, WHO/RHR/00.7
- 30 Obstructed Labor Module, Maternal Health and Safe Motherhood Program, Family and Reproductive Health, WHO/FRH/MSM/96.3
- 31 Uterus may break or tear. The cervix may tear. This causes hemorrhage and probably death for the baby and the mother.
- 32 Fistula is a hole between the bladder and vagina or between the vagina and rectum.
- 33 Signs and symptoms of severe pre-eclampsia according to *Varney's Midwifery*, Helen Varney, 3rd Edition, 1997, when associated with hypertension, proteinuria, or edema include (a) hyper reflexia, (b) headaches, (c) visual disturbances, (d) epigastric pain, (e) liguria, and (f) increasingly elevated blood pressure and greater proteinuria.
- Swelling of the ankles, hands, or feet is very common and is usually no problem during pregnancy. Moderate edema occurs in 50-80% of *healthy normal pregnant women*. This edema of pregnancy is often confined to the lower limbs, but it may also occur in other sites, such as the fingers or face, or as generalized edema. Edema in women with pre-eclampsia may appear rather suddenly...however it cannot be differentiated clinically from edema in normal pregnancy. *A guide to effective care in pregnancy and childbirth*, Murray Enkin et.al., 3rd edition, 2000.
- 34 Swelling of hands and face with severe headaches are signs of danger. The pregnant woman must see a trained health worker as soon as possible. Buffington, S.T., et.al. (2003) Home Based Life Saving Skills, 1st Edition Community Meeting 2 and 8
- 35 Family Planning Handbook for Health Professionals: The Sexual and Reproductive Health Approach. International Planned Parenthood Federation, London, 1997
- 36 Complications of Abortion: Technical and Managerial Guidelines for Prevention and Treatment. World Health Organization (WHO), Geneva, 1994
- 37 Life-Saving Skills Manual for Midwives, 3rd Editon, Module 10, p. 44
- 38 ACNM and PRIME, 2001.
- 39 Home Based Life Saving Skills, 1st Editon (2003). ACNM
- 40 Home Based Life Saving Skills, 1st Editon (2003). ACNM
- 41 Positioning the baby – correct position to make sure the airway is open – on a flat surface (bed, table, your arm, mat). The neck should be slightly extended. Home Based Life Saving Skills, 1st Editon (2003) ACNM.
- 42 Drying and suctioning produce enough stimulation to help most newly born babies breathe. If the baby still is not breathing after drying with a towel or gentle rubbing of the back, flicking the soles of the feet may help the baby breathe. Adapted from 2000 American Academy of Pediatrics and American Heart Association: Neonatal Resuscitation- Circulation 2000;102 (supplement I): I-343-I-357.

- 43 The baby can be hurt, or get weaker or colder when slapped on the back, squeezing chest, putting baby in hot or cold water or blowing air on face or body. Abstracted from Bloom, R.S. et al., Textbook of Neonatal Resuscitation, American Academy of Pediatrics and American Heart Association, 1994, p 2-27

Verbal Autopsies

- 1 WHO/UNFPA/UNICEF/World Bank (1999) *Reduction of Maternal Mortality*:
- 2 Moore, 2000.
- 3 MMR Organization of Investigation.
- 4 MEASURE Evaluation.WHO.
- 5 Ross, S, 1998. CARE
- 6 Adapted from Johri, 2001.
- 7 CASP
- 8 MEASURE Evaluation.WHO.
- 9 Adapted from Johri, 2001.
- 10 Adapted from Johri, 2001.
- 11 Ivengar, Kirti et al, 2000.

Building Bridges Between Indigenous and Biomedical Practices and Practitioners

- 1 Mehrotra, 2001
- 2 Women and Health Programme, 1996
- 3 Mehrotra, 2001
- 4 See Anton E Kunst and Tanja Houweling, "A Global Picture of Poor-rich Differences in the Utilisation of Delivery Care" in Studies in HSO&P, 17, 2001
- 5 Advancing Safe Motherhood Through Human Rights, Appendix 7, p 3 http://who.int/reproductive-health/publications/RHR_01_5.advancing
- 6 Buekens,P.,2001
- 7 MATRIKA, 2000
- 8 Data and analysis presented here are drawn from MATRIKA's "DAIS' GOOD PRACTICES LIST" distributed at their Dai Mela

Ribbon of Life

