A Book of Case Studies
Women's Right to Life and Health
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Women's Right to Life and Health
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Introduction to Women's Right to Life and Health

The Women's Right to Life and Health Initiative (WRLH) was developed within the context of South Asia, based on global evidence, principles and guidelines for reducing maternal death. Representatives from governments, donor agencies and technical partners worked together with UNICEF to design and implement a maternal mortality reduction strategy to increase the availability and utilisation of emergency obstetric care (EmOC). The strengthening of EmOC services targeted select districts of seven countries — Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. Between December 1999 and December 2003 the projected allocated and utilised almost $11 million in its efforts to reduce maternal deaths and demonstrate substantial improvement in the indicators for availability and utilisation of EmOC.

Amidst traditional cultures of entrenched patriarchy and low status of women and girls, early marriage, teenage pregnancies, lack of formal education, unskilled home deliveries and a dearth of obstetric care services have prevailed. Coupled with the widespread rural-urban disparity and the inequitable distribution of services, women and girls in rural areas are at even greater risk of dying from complications of pregnancy and childbirth.

The design
This South Asian profile reflects the urgency not only for addressing maternal mortality and morbidity but using principles that are based on social development. With the focus on women, creating access to obstetric care services from a rights-based perspective provides the milieu for change. Imbuing rights-based thinking and action that builds effective management and accountable governance, leadership and teamwork has made a generous contribution to quality outcomes, consolidating gains for the poorest and most marginalised women, that will assist in sustaining results and their contribution to reduced inequity.

In December 1999 and January 2000, two regional stakeholder meetings — Governments, Columbia University, technical experts and UNICEF — were held to develop a regional vision, mission and goal and guiding principles and strategies to be contextualised and implemented at the country level. The design envisioned the convergence of management, technology and human rights values as the means of operation for the core life saving strategy — emergency obstetric care — which would in turn strengthen the capacity of hospitals to provide improved services to their communities.

**UNICEF South Asia developed a five-step process to ensure these results:**
**Step 1:** A vision, mission and goal — a call to action — to put women's right to life and development and their autonomy and participation at the fore.

### Situation in South Asia
- 30 per cent of the world's maternal deaths
- 155,000 women every year: ~1 woman every 3 minutes
- Male child preference leads to repeated pregnancies
- 15 per cent of maternal deaths in some areas related to violence
- Over 70 per cent of pregnant women are anaemic
- Increasing HIV/AIDS in young married women
Step 2: A values framework that creates the thinking and motivation for a rights approach.

Step 3: The strategies for change that articulate what is to be done that reflect the diversity and depth of the efforts required to save women’s lives and incorporate the three key project components — human rights, management, and technology.

Step 4: A ‘systems’ approach to service delivery describes how to link with the existing hospital systems to strengthen services and open possibilities for working at scale.

Step 5: Measuring progress and driving change by using the standard UN process indicators for the availability and use of obstetric services and a quality assessment.

The vision, mission and goal

**Vision:** The self-determination and dignity of all women are universally valued, and this value is reflected in each woman’s realisation of her right to a safe, life-enhancing pregnancy and birth.

**Mission:** To nurture a transformation of individuals, societies and systems that results in a reduction of maternal mortality as the right of every woman and enhances her status, dignity and self-determination.

**Goal:** A sustained reduction in maternal mortality and related disability.

The human rights framework gave impetus to the values and principles that would unpin the work ethics and modalities in mobilising action at all levels — national/sub-national, district/hospital, community, and household — for emergency obstetric care.

Slide with values TMR and EmOC

Receiving appropriate timely emergency obstetric care is dependent on many factors. The Three Delays Model, which analyses the diverse issues and barriers that affect prompt utilisation of life saving care, guided project design. The strategies were linked directly to the critical junctures that increase the likelihood of maternal death — the delay in deciding to seek care, the delay in reaching a medical facility and the delay in receiving appropriate care at the facility. They included direct investments with technical support and guidance, advocacy, and the importance of promoting and forging partnerships at all levels and between different stakeholders.

### Areas of action in management, technology and human rights:

<table>
<thead>
<tr>
<th>Management</th>
<th>Technology</th>
<th>Human Rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthen capacity of individuals and groups to fulfil responsibilities</td>
<td>Provide 24-hour quality EmOC services</td>
<td>Build accountability at all levels for saving women’s lives</td>
</tr>
<tr>
<td>• Acknowledgement of past achievements and success factors</td>
<td>• Equipment</td>
<td>• Support policy change</td>
</tr>
<tr>
<td>• Shared vision</td>
<td>• Drugs supplies</td>
<td>• Champion women’s right to life saving care</td>
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<tr>
<td>• Team work</td>
<td>• Competency-based EmOC training</td>
<td>• Mobilise broader accountability</td>
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<tr>
<td>• Result-based actions</td>
<td>• Standards and protocol</td>
<td>• Acknowledge risk-taking champions</td>
</tr>
<tr>
<td>• Regular reviews</td>
<td>• Infection prevention</td>
<td>• Support innovations in hospitals and community</td>
</tr>
<tr>
<td>• Planning based on best practices</td>
<td>• Quality improvement</td>
<td>• Invest in people for transformation</td>
</tr>
<tr>
<td></td>
<td>• Data collection reporting</td>
<td>• Build partnerships</td>
</tr>
<tr>
<td></td>
<td>EmOC indicators</td>
<td></td>
</tr>
</tbody>
</table>

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2
Facilitating change from the regional perspective

In early 2000, countries completed a needs assessment, creating a baseline and the evidence required for the project designs. Findings and designs were presented and discussed in a regional workshop with governments, AMDD and UNICEF and by mid-year the work plans were underway. While countries were hiring staff and preparing to launch activities, the regional office for South Asia (ROSA) was preparing a project document as a concise guide to the WRLH initiative. An advocacy package was developed and disseminated, and a micro planning process was outlined to assist countries with systematic implementation.

Development of processes for managing change

Leadership and commitment for saving women’s lives and supporting the medical/technical core of programming was supported through a series of human development workshops, which contributed to the accountability of district and hospital managers and staff.

Hospital and community facilitation for emergency obstetric care were designed and introduced and at the country level they were further refined and adjusted to fit the particular context. The capacity of country-level facilitators was built through technical workshops and on-site coaching over two-years, to strengthen competency and skills in workshop and interview design. Processes that acknowledged the domains of hospital and community, and culminated in their convergence, led to a relationship of mutual respect and acceptance between the medical and lay communities at the district level. Manuals were produced for hospital and community stakeholder facilitation.

Technical support

Technical support was provided in response to specific gaps in capacity in country-level programmes, for example:

Linked strategies with the three delays

Factors affecting utilisation and outcome

- Social, cultural & economic factors
- Accessibility of facilities
- Quality of care
- Political commitment & political will

Delays

1st Delay: Deciding to seek care

- Preparedness of men and women
- Increased knowledge
- Urgency for action

2nd Delay: Identifying and reaching the health facility

- Schemes: blood, money, transport
- Champion human rights-based action
- Referral systems

3rd Delay: Receiving adequate and appropriate treatment

- Quality 24-hour EmOC services
- Champion human rights-based action
- Accountability of whole facility

Overarching delay: National level policies & financial & human resources

Build partnerships & accountability for saving lives

- Support risk-taking champions
- Invest in human resource development
- Link to ANC, PNC, nutrition, HIV/AIDS & VAW
- Support innovations and change

Strengthen leadership & accountability
An assessment process for obstetric supplies was developed with UNICEF’s Procurement and Supply Division (PSD), country offices and ROSA. Initially, there were unforeseen delays in procurement, as country teams, with the exception of Bangladesh, were unfamiliar with the obstetric supply lists and the specifications of instruments, equipment, and consumable supplies as well as procurement options. PSD worked closely with the WRLH staff and supply personnel to prepare a room-to-room Obstetric Supply Assessment process that would simplify the assessment at facility level, the understanding between programme and supply staff and facilitate both the procurement at country level and supply from PSD.

Competency-Based Training (CBT) for EmOC was introduced through AMDD’s technical partner John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) in response to concerns raised by the countries. Although Bangladesh had already begun a one-year EmOC course for doctors, training was a new undertaking for the other countries and they were finding the training of service providers a challenge. Placement in refresher courses for in-service providers was proving extremely difficult and programme managers were finding that current global standards, protocol and procedures in basic and comprehensive obstetric care were unfamiliar to many trainers and service providers.

An opportunity to attend the CBT training course developed by JHPIEGO in Indonesia convinced Governments, AMDD and UNICEF that this would be a worthwhile investment for South Asia. A regional review of a draft EmOC of the curriculum for obstetricians, anaesthetists and midwives was followed by an initial training of trainers in Dhaka, Bangladesh of country teams — obstetricians, anaesthetists and midwives — from Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan, and subsequently in-country training sites were established.

Based on the protocol guidebook *Managing Complications in Pregnancy and Childbirth*, the curricula for CBT for EmOC for both trainers and participants were developed by AMDD and JHPIEGO as the standard tools for training.

**Monitoring and quality improvement**

Tracking progress using the semi-annual monitoring forms was introduced in December 2001. This allowed for the systematic documentation of the process of bringing hospitals to functional EmOC level. The introduction of the UN process indicators for obstetric care — amount and geographical distribution of comprehensive and basic EmOC facilities, proportion of women using facilities for delivery and obstetric complications, the percentage of Caesarean sections and the case fatality rate — demanded improvement in the recording and reporting processes in facilities and encouraged more regular reviews of progress. Now incorporated into the Health Management Information Systems in several countries, these data provide strong evidence for decision-makers. All project areas collected hospital level data every six months and reviewed functionality based basic and comprehensive signal functions.

Tools developed by EngenderHealth for infection prevention and quality improvement in EmOC were distributed and utilised, and AMDD’s Criterion-based Audit was incorporated into quality management processes in some facilities. Regular reviews of improvements and gaps in technology, management and rights-based perspectives helped address bottlenecks, consolidate progress and accelerate implementation. This also allowed for regular clinical monitoring and mentoring and the acknowledgement and appreciation of accomplishments by peers and partners.

A quality assessment, which allowed for more qualitative data collection at different levels —
national, policy, district, hospital, community and household — was prepared by UNICEF/South Asia with country teams and carried out in Bhutan, India, Nepal and Pakistan.

**Annual review meetings**

*Annual review meetings* brought programming teams — Government and UNICEF — together to share successes and challenges, establish important areas of learning, as well as identify areas of priority and action for the coming year. Country teams were inspired by each other's results and found great solace in the fact that other countries were facing similar constraints and issues. The reviews were also used for sharing innovations and factors of success, for discussing challenges and ways to address bottlenecks, and for introducing and disseminating tools.

**Site visits and country level meetings**

National workshops and conferences provided opportunities for facilitating broader change in countries and regular site visits enabled discussion on topics of interest and identification of specific areas for action. Experiences from the field were collected and documented.
Managing Change — Investing in People

Introduction

The knowledge and evidence on how to prevent maternal death exists and the medical technology is readily available, yet women and their newborns continue to die from complications of pregnancy and childbirth without ever receiving care.

Medical and technical skills must be applied with urgency and competency in an obstetric emergency and skills training with the guarantee of medical supplies are the priority interventions for emergency obstetric care (EmOC). During the design phase of the Women's Right to Life and Health (WRLH) Initiative, governments, with Columbia University and UNICEF, unanimously agreed that a shared commitment to making emergency obstetric services available required responsible management teamwork at district/hospital level.

For UNICEF, human rights principles underpin all development processes. Operating a human rights-based approach to programming for the availability and utilisation of emergency obstetric care should imbue non-discrimination, participation, respect, accountability and hold the right to life and development at the core of responsible change. To reinforce these principles, interdependence and compassion were included to underscore management processes and reinforce life saving efforts.

Issues

The issues around managing change in EmOC in peripheral facilities

Hierarchy is still deeply entrenched in South Asia and the government hospital is a microcosm of this construct. The lingering of traditional top-down administration coupled with rigid patriarchy has fostered an environment of limited sharing of information and minimal participation in decision-making, particularly by women and lower cadres of staff. The lack of understanding about why decisions have been taken and why tasks and responsibilities are to be carried out in a particular way has led to a general frustrated acceptance of the status quo. These perceptions and attitudes have contributed to an environment of low morale and motivation and a general lack of innovation and ownership.

Issues common to hospitals

Issues that commonly arise in meeting the challenge of 24-hour EmOC services include:

Staffing: Staff are usually inadequate to cover services around the clock and although posts have been allocated, staffs have not been deployed, may not be willing to go to peripheral posts or have not been replaced due to frequent unexpected transfers.
The need for human resource development:
Regular updating and upgrading of clinical skills has been neglected. Similarly, there has been limited effort to assure that outdated and broken equipment is repaired, proper equipment installed and consumable supplies required for improved performance made available. Consequently, service providers have been ‘making do’ with what they know and what they have, which has resulted in a general lack of competent care.

Improvement in infrastructure:
Inadequate conditions such as poor water and electricity supply, lack of public toilets and waiting/shelter areas for family members, leaking roofs, impractical and underutilised space.

Teamwork:
Staff lacks confidence in dealing with emergencies and fear punishment if a patient dies. As a result they are less likely to take responsibility for a difficult or emergency case, so referral, even when it means certain death, is not uncommon. There is little confidence that colleagues will support life saving risk taking.

Care and respect:
Many health facilities are generally unkempt and lack rigorous infection prevention procedures. In maternity sections, considerations for comfort and privacy during labour and delivery are sorely missing.

The common issues for the community the hospital serves
Timeliness and quality of treatment; cleanliness; privacy; and information about procedures, the costs involved and the choices available are all issues that draw women to utilise services.

Women are not prepared for a complication during pregnancy and childbirth. They don’t know what can happen; the signs that mean they are experiencing a life threatening complication; where they need to go, how they will get there; or how much it will cost. They haven’t planned on where to get blood if required, or put some money aside ‘just in case’.

Women do not know what the hospital is like and what will happen to them once they get there. They fear they will not be able to afford the treatment and/or the additional costs of tests and procedures and medicines and supplies ordered by the medical staff. When families are poor, the decision to seek care as opposed to ‘waiting it out’ or trying local, low-cost alternatives is a difficult one; this decision is further influenced by the value placed on the woman’s life.

Intervention
Tackling the issues and taking appropriate action
Hospitals are social living systems that form an integral part of the health system. As they are dependent on the performance of people — managers, clinicians, technicians, administrators, guards, cleaners, store-keepers etc — to function, they definitely possess the potential to create and drive appropriate change. To address the management of EmOC services, ‘investing in people and building social capital’ was identified as a core strategy for achieving the availability and utilisation of obstetric services that save, protect and enhance the lives of women.

The first thing was to make EmOC a priority by acknowledging the urgency required to save the lives of women and newborns. If the priority was to reflect in action then stakeholders at every level had to be involved and motivated to make the change from the status quo to a state of life-saving readiness. Clearly, processes were required to manage that change and achieve the expected results — the availability and utilisation of 24-hour emergency obstetric care services at peripheral hospitals.
Improvements

Improved management of life-saving EmOC

Facilitating participation in managing change
Firstly, government and UNICEF programme staff participated in a week-long regional orientation workshop to prepare them as mentors and facilitators for EmOC in their countries. They in turn, conducted advocacy meetings at national, sub-national and district levels to sensitise and prepare leaders, managers and programmers. The meetings were designed to increase understanding of why women die, what is required to avert avoidable deaths and disabilities, and how it is possible to bring about change by working together towards the common goal of maternal mortality reduction.

Preparing facilitators and building capacity in the region
Following this, each country selected a group of facilitators — government, NGO, and UNICEF — to attend preparatory workshops that provided an orientation to the hospital planning and review cycle, and, by going through the process themselves, assisted them to internalise the level of thinking and participation required. They were then mentored through a process of facilitation to enable them to guide hospital managers and staff through a similar process in hospitals.

A planning and review process using appreciative inquiry in hospitals
Training of facilitators — government, NGOs and UNICEF — in managing change using appreciative inquiry was new, exciting, and already a major shift from the norm of administrative management. The facilitators’ workshops were conducted in-country and abroad (Nepal, India and Bangladesh) and included pre-workshop interviews, facilitation during the workshop, on-going coaching and regular reviews.

Facilitators then provided orientations for hospital and district leaders, and scheduled pre-workshop interviews and whole site workshops at a number of hospital sites in selected districts in each country. Uniquely, the process brought together all hospital staff. For many, this was the first time they had ever been in a workshop or had sat and conversed with more senior staff. The process, which began by sharing and drawing on each person’s best experiences, opened doors of communication to discover the human heart of the hospital as a social living system.

Together staff envisioned the hospital they wanted to work in and explored ways to create that environment — an achievable and desirable future — around the priority of saving women’s lives. Together, they decided what needed to happen, formed thematic teams, mapped out annual work plans, and prepared monthly action plans. The teams held regular meetings and hospitals decided on review schedules to assess progress towards desired results. Annual assessment, review and planning are also a requirement.

As far as possible, all hospital staff was involved in management for EmOC.

- **Self-assessment interviews** were used to identify gaps in knowledge, attitudes and practices at every level of hospital function and a shared vision for the hospital was prepared based on the agreed upon best practices.

- **Teamwork** — team-based planning, action and regular reviews — for EmOC were incorporated into the annual hospital process.

- **Annual work plans with measurable results** were drawn up by hospital teams.

- **Checklists for room-by-room set-up** were used for procurement and supply and for micro-level 24-hour readiness.

- **Community stakeholders** were invited into the process to provide support to the site re-organisation and to address specific issues at the district and hospital level.
The whole site process requires two workshops in the first year, followed by the annual review. If the staff interviews are included in ‘day one’ then, the first workshop is conducted over five-days. Four to six months later, a second workshop is conducted for three days; and then the annual planning workshop for three days is held at the end of the year — for a total of 11 days. If interviews are conducted separately from the first workshop, an additional seven working days is required to conduct the interviews; review the stories; and prepare the report. In some instances, the second and third workshops were shortened to two days.

After completion of the first year, the hospital conducts an annual assessment, review and planning exercise using the same process — hospital facilitators will lead their annual review workshop to revisit the shared vision for the hospital, identify priority results for the coming year, and plan team breakthroughs.

For hospital transformation to occur it is essential that staff performance and effectiveness are enhanced, that management respond to the interests and needs of the staff, and that a more decentralised network of leadership is developed. Coaching by internal and external facilitators provides an additional input to strengthen staff capacity for creating continuous change. It assists them with the confidence to make necessary improvements in internal processes and systems and for building on knowledge and actions that lead to new levels of impact.

Hospital Action Plan (HAP) as a micro planning process in Bangladesh

UNICEF, Bangladesh had taken on 123 hospitals, many of them at Upazilla Health Complex (UHC) level, so although they piloted whole-site management in 18 facilities, they also developed a five-step micro planning process called Hospital Action Plan (HAP). HAP was designed to reach more facilities in a shorter time, while paying attention to team building and the details of 24-hour EmOC readiness. In contrast to using appreciative inquiry HAP uses self-assessment to improve individual performance and capacity for emergency response. It was conducted in 71 facilities and reviewed in 29 by the end of 2003.

HAP was developed as a participatory process focused on advocacy and action for management of 24-hour services with specific objectives to:

- **Overcome delays in establishing EmOC services** by focusing on each step necessary to achieve functioning facility status.
- **Organise and build the EmOC team** for effective management and performance of quality EmOC services
- **Organise and set up the facility** room by room with equipment, instruments, drugs, linen and other supplies.
- **Create readiness** in each room to respond to obstetric emergencies around the clock
- **Strengthen the record-keeping**, reporting and review functions
- **Improve basic functions** such as cleanliness, infection prevention practices and ensuring privacy for patients.

HAP requires the formation of an EmOC team — guard, cleaner, nurse, doctor, lab technicians. The aim of the team is to improve collective action through planning, defined roles and responsibilities of team members, and periodic review meetings. In HAP the investment is in the local EmOC team, which is a substantial number of staff at UHC level. It takes four days to complete the five-step process, including assessment of one's knowledge and skills; room-to-room readiness and site-set up for emergency action; preparation of a plan of action; allocation of responsibilities; and monthly team reviews. As plans are completed, new ones are formulated and tasks undertaken that will continue to drive quality improvement and ensure maintenance of hospital systems that support EmOC.
Quality Care through productivity in Sri Lanka

In Sri Lanka, a management process was developed to improve quality care to increase utilisation of obstetric services. The process called Quality Health Care through Productivity features customer focused organisation, performance excellence and total quality management with specific objectives to reorganise the hospital based on the 5S systems theory, improve efficiency using productivity concepts such as work improvement teams, suggestion schemes and Kaizen techniques (small, gradual improvements that lead to overall positive change), and improved quality of care through total quality management.

The 5S system (in Japanese, seiri, seiton, seiso, seiketsu, shitsuke) includes:

- **Clearing** — systematically removing all unwanted items
- **Orderliness** — placing wanted items/services in order with appropriate storage containers, labelling, and colour coding
- **Cleaning** — infection prevention practices, cleanliness and neatness of external environment, creating a pleasant, considerate and comfortable place for women and babies
- **Standardisation** — establish and prepare standards and guidelines and monitor them regularly
- **Self-discipline and training** — frequent awareness building, in-service refresher training

The process begins with an assessment and analysis of the hospital services i.e. infection rates, maternal and neo-natal death reviews, and public image. The problems are then identified and documented in reports (situational, performance etc), photographs, customer surveys (including letters from the public), and staff satisfaction surveys.

The strategies include human resource involvement, human resource development, mistake proofing, quality of work life, and organisation of the hospital systems.

The activities involve meetings and dialogue with all staff to create awareness about the importance of quality management and to build their understanding on the use of the 5S system to enhance productivity and efficiency. Work Improvement Teams are then formed (one for each unit with 12 persons per team) and responsibilities allocated for the application of 5S. The team leader is responsible for recording and reporting on the monthly progress.

Productivity indicators are prepared and regularly monitored by the management team. Leadership plays an important role and at each shift a manager is designated for each unit. Maternal and infant death reviews are conducted regularly to track quality of care and a reward scheme is established to acknowledge the best run wards, most productive teams etc.

Results

What are the results of these investments?

Leading to measurable results for EmOC services and for women

For Bangladesh, the results of the whole site management using AI and the HAP have not been separated. Overall, analysis of functionality and performance in 123 hospitals across the country reveals a 38 per cent in births in facilities, 125 per cent increase in the complications treated and a 50 per cent increase in the number of C-sections. Met need has doubled since baseline 1999. In the project sites of India, Pakistan and Nepal met need have increased substantially.
### Table: Met need in project sites:

<table>
<thead>
<tr>
<th>WRLH project site</th>
<th>December 2001</th>
<th>December 2003</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>4.12</td>
<td>9.22</td>
<td>123 facilities nation-wide</td>
</tr>
<tr>
<td>Bhutan</td>
<td>37.0</td>
<td>48.6</td>
<td>16 facilities nation-wide</td>
</tr>
<tr>
<td>India — State of Rajasthan</td>
<td>4.4</td>
<td>27.0</td>
<td>3 districts</td>
</tr>
<tr>
<td>Nepal</td>
<td>2.6</td>
<td>15.38</td>
<td>4 districts — 12 facilities</td>
</tr>
<tr>
<td>Pakistan — Sindh Province</td>
<td>10.0</td>
<td>38.0</td>
<td>4 districts — 27 facilities</td>
</tr>
</tbody>
</table>

#### Measurable change based on work plans

In Bhutan, the teams at Bajo hospital achieved 100 per cent of their tasks in the six months following the whole site workshop. By the end of the third quarter it was a little less, at 33 per cent but the staff remained confident that they would complete all the planned outcomes by the end of the year.

> “I have observed changes in the physical environment and in the attitude of staff, particularly in the way the staff come forward. They may have done things to improve quality before…but now they are doing more than required, more than the responsibilities in their job descriptions.”

—— An obstetrician/gynaecologist with the Ministry of Health in Bhutan

In Sindh Province, Pakistan, the number of breakthrough tasks identified by staff during the workshops ranges between 10 and 17. Of the six facilities where whole site appreciative management was introduced, two have achieved all breakthroughs and four have achieved 80 per cent of their planned breakthroughs. All facilities have staff willing to be trained as EmOC services providers, including operation theatre technicians training, and four have already completed their training.

In Sri Lanka, quality changes in Castle Street hospital using the 5 Step process have led to a 30 per cent increase in the number of women using the hospital, coupled with a substantial decrease in avoidable maternal deaths. Post LSCS infection rate of 2002 (1.75 per 100 surgeries) is half that of 2000. Of the 14 maternal deaths in 2002 none were classified as avoidable, compared with five of the 17 deaths in 2000.

In hospitals, managing change is leading to shifts in staff attitudes

> “Before these workshops I couldn’t have imagined the stories that the staff would come out with. I didn’t realise what they have to do and the importance of these EmOC services.”

—— Assistant Programme Officer with the Health Department, Bhutan

The **Whole-site Hospital Facilitation** has been introduced to more than 30 facilities in the region. The **Hospital Action Planning** has been used in 65 facilities in Bangladesh and the 5 step process has now been successfully introduced in several Sri Lankan hospitals. Staff find the 5-step process pragmatic for hospital managers.

The three key elements that have influenced the change are:

1. Improved hospital leadership
2. Increasing accountability of hospital staff in fulfilling their duties
3. Community stakeholder involvement

In India, overall changes in the way people are working together have been observed. For example, the mindset of the hospital staff —
demonstrating the power structures and behavioural norms — are beginning to change:

- All staff are involved in planning, not just senior management, and staff are articulating their desired outcomes.
- People are performing better as individuals and taking action. By working in teams with specific roles and responsibilities, they are beginning to share accountability and the fruits of their individual and group efforts.
- As individuals, staff members are coming up with ideas and innovations to improve the quality of care and comfort of patients and relatives.

The attitudes of and conversations among hospital staff are also beginning to change:

- Team members and peers are more confident working together.
- Senior staff are more appreciative of the contributions made by junior staff.
- Staff are more open, sharing their ideas, achievements and concerns; they take part in meetings together.
- Staff are more understanding of how patients feel and are taking time to explain and talk to them more and talk to them in a manner which is more respectful than before.

**Participatory management**

In India, the project support staff note that a *more decentralised, participatory management system that prioritises the provision of emergency obstetric care services* is operational throughout the hospitals. Responsibilities have been delegated to teams, thereby increasing everyone’s participation and their accountability for particular roles and responsibilities. In India, small funds were allocated to teams to complete activities planned and prioritised for investment by the members. This has increased the autonomy of and innovation by the hospital staff.

The process was seen as a means of *sustaining practices of best hospital management* in Pakistan. Effectiveness was identified in the opportunity for staff to analyse the strengths and weakness in their hospital and to design more adequate structures, working procedures and staff allocation to enable the achievement of desired objectives. Internal cooperation, coordination and facilitation of the roles of administration have been strengthened. Quarterly reports show increased interaction between administration and medical staff, greater teamwork and commitment to achieving breakthrough tasks. Supervisor reports show evidence of behaviour change among staff — a willingness to improve the quality of their performance and more transparent distribution of tasks. Emergency Response Teams (ERTs) have been formed and meet each month to review the level of emergency response readiness of each hospital.

**Physical environment and innovations**

In the 76 facilities where management processes were introduced in Bangladesh, improvements to meet the requirement of obstetric emergencies initially focused on room to room readiness in maternity and OT. These areas were systematically set-up and are maintained for 24-hour obstetrics and emergencies. Emergency drugs are now incorporated into the medical supplies register.

"It has motivated and inspired workers to find the most efficient and effective ways to serve the facility. It has also helped me to lead and bring new changes. At first I was worried that it would be difficult for me to lead the whole team and manage it but I found that the process created a common foundation that I and the other members could build on — it made many committed and willing to initiate the change that was required for the facility to function better".

Dr. Sushma Panday of Jhalawar Hospital in India
In several cases separate obstetric units were established and consultants are providing their services beyond normal working hours and duty rosters for emergencies and surgery are maintained. Although not all hospitals have a blood bank, 24-hour blood transfusion services supported by blood donor camps and donor lists are a priority. Uniforms were provided to cleaning staff and in some facilities, infection prevention practices are improving, although similar to other countries infection prevention practices require continuous, long-term investment.

In Bhutan, reorganising and setting-up a woman friendly environment that is always ready for an emergency, has been the priority and data on obstetric services are showing a positive increase in utilisation. Paro Hospital is a 55-bed hospital in a busy district of Bhutan, and was one of two sites selected for the whole site management process. The EmOC Team has rearranged the beds to allow for more privacy and the Maternity Team is providing a maternity unit orientation to women at 34 weeks gestation. They have sign-posted the hospital to direct women to the emergency and maternity areas and are assisting women to prepare their birth plans during routine antenatal visits, so they know the danger signs and know what to do and where to go in an obstetric emergency.

Similarly, in Pakistan they rearranged their facilities to provide 24-hour emergency care, including surgery, laboratory and blood bank services. They also improved signboards, reception areas and operating theatres. In India, some of the innovations brought about by the more judicial use of funds for minor activities has included stretchers, housekeeping trolleys, a central oxygen system, and site renovations including waiting areas for relatives. These are simple, yet commendable achievements. All facilities have mobilised community and private sector funding for hospital improvements, and three hospitals have introduced Patient Welfare Committees to support donations in kind and cash, including blood donation and several hospitals have built shelters for relatives, and established midwifery and EmOC training facilities, including quarters for trainees.

For Sri Lanka, the example of change is based on the results from the past two years that have led to reorganised and refurbished hospitals.

These changes include:
- **A central unserviceable items store.** Damaged items are no longer in rooms scattered throughout the facility
- **The establishment of a central sterile supplies room** has made a tremendous difference to staff efficiency as previously each unit was responsible for sterilising their own items on-site.
- **The establishment of a central linen supply unit** that was benchmarked on hotel linen services. Supermarket trolleys are used to distribute clean linen to each bed.
- **A waste disposal system** that provides separate bins are colour coded for all types of waste and a colour code chart is on the wall above each waste disposal area.
- **A patient identification system** that codes by colour means that during the busy ante-natal care clinics first visit mothers are separated from women in their last month of pregnancy,
- **A new clinic booking system** and separate user-friendly checklists for emergency cases, admission and discharge make it easy for all staff to make sure they cover every item for every woman.
- **The use of data** relevant to quality of care, monitoring of improvements and annual reporting of progress.

**Supply systems**

In Paro hospital, Bhutan, the Maternity team has increased the number of delivery packs, updated their neonatal resuscitation procedures and is
maintaining a continuous supply of consumable supplies. The blood bank team have procured the equipment required including transfusion sets, and collection supplies, negotiated with MoH to provide a trained lab technician to manage the bank and initiated a blood donor system. Together, they mobilised an emergency blood donor network, which now had 50 potential donors tested and registered.

In Nepal, the Medical Superintendent of Saptari Zonal Hospital, Dr A Mishra, made the commitment that "No woman would die due to lack of medicine", and in Dang District Hospital staff have worked on improving services through establishment of a Central Sterilisation Unit. Internal resource mobilisation has also resulted in the supply of much needed hospital equipment.

Using data for quality improvement
Improved record keeping and reporting from all facilities with EOC boards that display updated emergency care data is being maintained in Bangladesh facilities, and scientific seminars and new hospital libraries are enhancing knowledge, and the use of data.

In India, the management process has brought consensus for action so that many things, which should have but were not happening before in district hospitals in Rajasthan and Maharashtra are actually happening now. Clinical teams are conducting regular analysis of the hospital data and decision making is based on the results. In some maternity units this is done weekly, and in Rajasthan new processes were put in place to ensure timely availability of blood resulting in a substantial increase in the use of blood in maternity sections. This is leading to a sharp decrease in maternal death due to haemorrhage.

In district hospitals in Nepal, improved recording systems have been set up with the use of the partograph for monitoring progress of labour. Weekly Continuing Medical Education (CME) sessions have begun as well as adherence to standards through implementation of the Clinical Protocols for Reproductive Health.

One of the doctors at Castle Street hospital stated enthusiastically, "The best thing is that these changes are based on what our clients want".

Patient privacy has improved with the use of screens and curtains and the repositioning of beds. Health education to patients and attendants has been strengthened — more consistent and improved in quality.

Community stakeholder involvement

The staff said, "We have encountered challenges as we try to do what is best for women. We want to improve quality; we need to address infection prevention. We need to involve the community stakeholders more and we need to have more support from resource persons to assist us with follow-up and guidance".

In Bhutan, there have been results in strengthening community awareness and referral systems and in building a blood donor network. Members of the Women Volunteers Association are maintaining a register of pregnant women; arranging counselling sessions in the community by doctors and nurses; and mobilising blood donors and emergency transport for pregnant women at any time of the day or night.

In India, the involvement of community stakeholders was identified as a priority in both the establishment of the EmOC facility and its utilisation. Stakeholder involvement in the hospital management process helped to bring commitment and support from the Rajasthan Medical Relief Society by:

- **Raising the issue of the injustice** of maternal death -- as a priority issue to be addressed — at the district and community level.

- **Budgetary support for making improvements** in the hospitals came readily. For example, provision of a separate electrical feeder, water-huts, platforms, air-conditioner, taking
responsibility of maintenance of a particular ward, etc.

- **Community stakeholders accepted a vital role** in supporting blood donation and building blood donor networks.

In Nepal, while hospital staff have accepted the role of stakeholders, stakeholders view the hospital as “Our Hospital”. A revolving fund for EmOC has been set up through community contributions amounting to Rs 45,000 while UNICEF has contributed Rs 1,00,000 to community stakeholders activities/contributions. Other contributions in support of the hospital also include:

- Support for construction of a dispensary counter & tickets counter *(S Parajuli)*
- Repair of all hospital electrical wiring *(BP Academy)*
- Hospital wall painting *(cost contributed by CDO, NRCS)*
- Hospital sanitation campaign to dispose hospital waste *(Hospital Support Groups)*
- Cabinet for toys- HUCODEC
- Six dust bins *(Prem Thapa ASI)*
- Functional ambulance service — through 50 per cent discount for EmOC patients *(Pathivara Taxi Samiti)*
- Blood donor club

The Kapilvastu workshop in Nepal, focused on inclusion of women from the marginalised and minority groups, as stakeholders in the health system. The presence of the so called low-caste illiterate women, participating in the same forum with highly placed local government officials was initially considered unacceptable. However the high degree of participation of these village women, encouraged dissenters to accept them eventually.

The hospital staff and stakeholders view availability of EmOC services as the right of all women in the district of Dang. The community stakeholders have mobilised internal resources with the District Council allocating Rs 2,00,000 for the establishment of a Blood Bank.

In Bangladesh, support mechanisms have been put in place for poor patients that include a drug bank and income generation activities to increase social welfare funds. Increased political commitment is encouraged with the support of the district development coordination committees (DDCC), which hold regular meetings with an EOC agenda and local members of parliament have been involved in furthering the development of services.

**Conflict Resolution**

Dang district, Nepal, despite a very turbulent history in recent years due to political instability, continues to make steady progress following the first AI workshop. The AI workshop helped resolve conflict between two high level local government officials, through acknowledgement and appreciation, rather than analysis of problems and their solution. Resolution of this conflict has helped development programmes in the district move ahead.

**Lessons Learnt**

*What have we learned from these experiences?*

**The importance of leadership in hospital management**

When hospital managers are not willing to invest in management change it is extremely difficult to move forward. On the other hand, when the hospital leadership is committed to making quality changes in the hospital remarkable progress is possible.

The hospital director at Castle Street is convinced by the efficiency and cost effectiveness of the process. "We have made all these changes with the resources we already had available. We didn't require extra funds because by having more
Committed leadership and continuous encouragement by hospital managers are key to maintaining the change processes and the enthusiasm of staff. Investment in leadership is an important requisite.

Regular follow-up and tracking of change by senior staff and on-site coaching by staff members selected and trained as facilitators/managers is important to identify both the challenges and issues that arise and new tasks for furthering change.

**The value added by participation**

The participatory process nurtures leadership qualities of providers and the community alike. It makes interdependence more apparent and stimulates local responsibility and action for saving women's lives.

Hospital management processes for assessment, planning, action and review are essential but they are not sufficient to guarantee 24-hour quality EmOC services. Processes have been backed up by the increased provision of competent EmOC providers, and essential supplies and equipment, investment in personal development, clinical support and intensive monitoring.

"The key changes that I have observed over the past two years are the improved cleanliness, the level of teamwork and the improved attitudes of the staff"

senior staff manager, Castle Street Hospital, Sri Lanka

**The benefits of different management models**

Different management tools have different benefits, however, participation in decision making, teamwork and regular review processes are common processes that have demonstrated positive results.

- Sri Lanka found the 5 step process simpler and easier to manage. The process is a clear and easy to follow blue-print for change.
- The Hospital Action Plan process requires limited resources, and less person time as it involves representatives from all cadres of staff in one EmOC team. It does not require the investment of skilled facilitators.
- Whole site management using appreciative inquiry requires a more substantial investment. For scaling up of this process competent facilitators are required. Programming requires the training of trainers and the buy-in of dedicated people to train others and follow through on ensuring the competence of facilitators. On the other hand, it has led to substantive changes in staff attitudes and levels of individual and collective accountability. It has also led to a variety of innovations in the workplace and fundraising activities to support local improvements and priorities.

In conclusion, it is important to note that management is inextricably linked to quality improvement. Accepted standards are therefore vital to ensuring the quality levels of EmOC, general patient care and management are achieved and maintained. Reaching acceptable levels of quality takes time but with the use of benchmarks, and consistent, regular use of criterion-based audits in technology, management and human rights, it is possible to strongly influence and hasten the changes required.

Efforts to refine and streamline the processes need to be sustained to allow for strategic programming and scaling-up. Sustainability factors will be reviewed in the longer-term.
Initiating Competency-based Training

Introduction

Over the past decade there has been a growing body of evidence that points to the need for global standards of maternity care founded on evidence-based practices. Such standards are required to ensure skilled attendance at delivery and emergency obstetric care that is vital to global efforts that address the persistent burden of maternal death and disability. Two factors common to most countries for the stagnation in maternal mortality reduction are "...failure to focus on effective interventions and inadequate political commitment and resources".¹

In 1999, the Women's Right to Life and Health Initiative, a partnership between the Columbia University Averting Maternal Death and Disability (AMDD) programme and UNICEF in South Asia, made resources available in the region for emergency obstetric care (EmOC) programming, the most effective intervention for saving the lives of women with life threatening complications of pregnancy and childbirth. The needs assessments conducted in early 2000, by the countries involved in the programme, drew attention to the dearth of skilled providers at the periphery, and as implementation began, the urgency for an EmOC training strategy became apparent.

Establishing and/or expanding availability of EmOC services - at selected facilities or nation-wide - requires effective management throughout the health system, to ensure infrastructure development; availability of equipment, supplies and drugs; information and monitoring systems; and most importantly, to ensure sufficient skilled human resources. Without them women's lives cannot be saved.

Issues

Insufficient skilled staff at the periphery

Eighty per cent of maternal deaths result from direct obstetric complications of pregnancy and childbirth. These complications cannot be predicted and most cannot be prevented². Thus the availability and use of quality emergency obstetric care services is essential to reduce maternal mortality in South Asia. To ensure the availability of these services 24-hours a day, 7-days a week, sufficient numbers of competent staff — obstetricians, anaesthetists, midwives and OT nurses and lab technicians — are required. In addition, these providers are needed in the periphery, at district hospitals and primary health care centres, so that women experiencing obstetric complications can access appropriate life-saving care 'in time'. However, most South Asian countries currently lack a sufficient number of skilled staff to meet this need.³

Apart from Bangladesh, where the National Safe Motherhood Programme already had a one-year EmOC training programme operational, none of

³ Ibid, p. **
the countries involved had an in-service EmOC training process. In Afghanistan, during the regional level review and planning process, the training of service providers was identified as the key priority. Bhutan’s priority is skilled human resource development, but they are reliant on external training due to the insufficient caseload for training obstetricians in comprehensive EmOC. Nepal had initiated the Safe Motherhood Programme some years earlier, which meant the limited number of trainee positions were already taken. In India, although specialists are deployed at First Referral Unit level, the lack of available anaesthetists results in frequent transfer of emergency surgical cases. In Bangladesh, the anaesthetists calculated that at the current level of training capacity it will be 18 to 20 years before sufficient anaesthetists will be available to meet the national need.

An issue regularly identified by country programmers was that even when available, clinical providers lacked competency because there was a gap between traditional training methods, which rely heavily on theoretical training, and the skills actually required in an EmOC facility. Consequently, many providers lack confidence, and when an emergency arises the first reaction is to refer the patient on to another more equipped facility. When the time comes to perform life saving procedures the protocol used by clinicians are inconsistent and the range of capabilities is wide and unsupervised.

The introduction of the WHO publication, *IMPAC: Managing Complications in Pregnancy and Childbirth - a guide for midwives and doctors* and its endorsement by several leading development agencies, provided the global technical standards for care. The appropriate training to match these evidence-based standards was imperative.

**Programme**

**CBT: The process at the regional level**

Towards the end of 2001, the AMDD Programme entered into a partnership with JHPIEGO which had already developed a tremendous bank of experience, knowledge and expertise through their Maternal and Neonatal Health (MNH) programme. This USAID-supported initiative aimed at saving the lives of mothers and newborns by promoting the use of skilled health care services, and JHPIEGO had also prioritised improved accessibility and quality of services, as well as an increased emphasis on results with an expanded focus on performance improvement. With this technical partnership, building a foundation for competency-based training, using evidence-based practices for emergency obstetric care became possible.

*Competency-based training is the learner-centred mastery of specific knowledge and skills performed to specified standards*

**Phase one, curriculum development:**

November 2001, marked the introduction of competency-based training for EmOC into the Women’s Right to Life and Health Initiative and the facilitation of a series of workshops, led by JHPIEGO’s technical team. The draft curriculum for doctors and midwives was reviewed and refined by government specialists from Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka and an anaesthesia curriculum for EmOC was developed.

**Phase two, information sharing and outlining of a step-wise process:**

AMDD, JHPIEGO and UNICEF worked together to formulate a step-by-step process for countries that would ensure the required result — an operational training site for competency-based EmOC training in each country. This process included the following:

- Agreement by national/sub-national governments to initiate CBT
- Selection of training site
- Selection of trainers based on specified criteria
Commitment of trainees and training institutions to initiate CBT

Site assessment

Site preparation and set-up

Training of trainers

Plan of action for standardisation of skills and training of service providers

Monitoring and ongoing mentoring of service providers

Training of service providers and training of more trainers

Phase three, facility assessment and site set-up

Facility assessment and site set-up was initially done prior to the TOT by JHPIEGO in Dhaka, and by hospital teams in other countries using the JHPIEGO site assessment tool. Team members assessed the training sites using comprehensive checklists. After sharing the findings with stakeholders, the facilities were prepared for conducting training. Facility staff members were also oriented on evidence-based practices to facilitate standardised case management and practices at the facilities.

Phase four, training of trainers:

With a focus on mastery and competency-based learning methodologies, EmOC teams from Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan participated in a three-week regional training for EmOC and anaesthesia service providers, in Bangladesh, to update clinical knowledge and acquire competency and/or build proficiency. Following seven additional weeks of self-directed clinical practice at their home country hospitals, the participants returned to Dhaka for further supervised practice and to attend a two-week Clinical Training Skills Workshop, in preparation for in-country training.

Phase five, ongoing support for development of in-country training capacity:

Ongoing regional support was provided to develop and strengthen in-country capacity — both material and human resources — for training. Preparation of the resource training site(s) included co-ordination with AMDD/JHPIEGO for obtaining anatomical models and training materials. JHPIEGO continued to provide facilitation through two follow-up sessions at country level. This support included site visitations for review of the development of trainer skills, site standardisation efforts, and suggesting ways to address gaps in capacity. Support was provided to UNICEF country offices, as requested, for in-country advocacy for CBT with policy makers, programme officers and hospital management. Regional meetings provided valuable opportunities to share improve knowledge and build understanding of what was required by countries to initiate CBT for EmOC. The curricula were finalised and published by AMDD and JHPIEGO and distributed to each country in hard copy and on CD ROM. Algorithms for the treatment procedures were developed and shared with countries.

Phase six, advocacy for expanding from only in-service training to pre-service training:

The need for in-service training to achieve and maintain standards of care was promoted and accepted as an urgent need. However, shifting the focus to the long-term human resource requirement for national maternal mortality reduction efforts required calculations based on the projected maternity needs and the number of years it would take to have the required number of skilled professionals — obstetricians, anaesthetists and midwives — given the current rate of training. Advocacy continued to encourage national governments to revise legislation and policy, collaborate with training institutions, and drive in-service and pre-service competency-based training for EmOC.
In 2003, JHPIEGO led an Advance Trainers Skill course for CBT/TOT graduates, who had the proficiency and the commitment to begin training other trainers, so that a core group of master trainers are now available as a national and regional resource.

**Action**

**CBT: Action at country level**

AMDD and JHPIEGO prepared a paper that clearly outlined the process for initiating competency-based training for emergency obstetric care. The paper, *Training District EmOC Teams: Strategy for Maximizing Investment in Training* was shared with each country and the teams at country level began the process of investing in training as outlined in Table 1.

**Building consensus**

Consensus building with stakeholders at all levels regarding the vital need for EmOC services as a core strategy for reducing maternal mortality and development of EmOC training plans was required. The level of effort needed to gain this consensus differed by country. Bangladesh has an established sector-wide approach to programming, and partners in Safe Motherhood were quick to support the government in this case. The major stakeholders at the national level were involved in all major steps taken to initiate competency-based training to ensure consensus. In Nepal, the Safe Motherhood sub-committee supported the government move to launch CBT, and with the support of the director of the maternity hospital in Kathmandu, the Nepal Safe Motherhood Programme began an adapted basic EmOC course as soon as the curriculum was made available.

**Developing national standards and protocols**

The state of country level development or adoption of national standards and protocols varies greatly between countries. In Bangladesh and Bhutan, national protocols for essential obstetric care were already drafted and promoted as core to the safe motherhood strategy. Updating was required however, to achieve the global standards for emergency obstetric care.

Bhutan organised a revision of their midwifery standards and plan to include the relevant learning guides from the EmOC curriculum. The dissemination of the revised standards will follow next year with both knowledge update and clinical skills practice with models either regionally or in selected districts.

In Afghanistan, although national protocols are yet to be drafted, consensus has been reached at national level and with the obstetrician-gynaecologists to adopt current, evidence-based practices as per the IMPAC reference manual.

**Adoption of standardised in-service curricula for essential and EmOC services**

Based on the global standards for EmOC, *Managing Complications in Pregnancy and Childbirth - a guide for midwives and doctors*, the
curricula for EmOC were finalised and introduced into each country. In turn, the countries needed to adopt and/or adapt them according to context. In several countries — Afghanistan, Bangladesh, Bhutan and Nepal — these were adopted at national level. In India and Pakistan, however, it was at sub-national level that the curricula were introduced and adopted.

**Development and standardisation of training sites and service delivery packages for EmOC and anaesthesia**

In each country — each training site — a very comprehensive site assessment was conducted to identify areas that required strengthening and upgrading prior to training. These clinical facilities were assessed for physical infrastructure; equipment, supplies and drugs; obstetric and midwifery practices; infection prevention standards; operating room practices; and teaching facilities. The EmOC course uses behaviour modelling as a fundamental approach to adult learning, an approach that demands standardisation of the facility and adoption and standardisation of practices. Standardisation was initiated through the site assessment, with the findings guiding change. The staff at the training sites began to make changes, based on the newly accepted standards.

Strengthening training sites is an important step that may take from three to six months to accomplish. In the case of Bangladesh, it took 50 days to prepare the site with support from the JHPIEGO trainers. Within this time frame, JHPIEGO conducted a follow-up visit to each country training site that included assessing the site set-up and its stage in the process. The site visit included an evaluation to ascertain readiness for training and to ensure that clinical sites were not only better able to train EmOC teams, but were also able to offer improved services.

"The greatest personal change has been in the practical (or clinical) area. Before these training programmes started, there was no standard of practice... I would do one thing and another doctor would do something else. With the adoption of standards [IMPAC], everyone is now using one way. This is good for the patients, good for the trainer and good for students."

Dr. Amina from Afghanistan on what has been the greatest change she has seen or experienced as a CBT trainer

**Nepal**: Prasuti Griha Hospital is the leading training site for maternity care, including training focused on essential and emergency obstetric care, during which doctors and nurse midwives from the districts are provided both a knowledge update and clinical skills training. Basic emergency obstetric care (BEmOC) training started at the hospital in March 2002, using structured competency-based modules to expand the pool of competent doctors and midwives providing EmOC services in district hospitals. After several batches of BEmOC training for doctors and nurses, it was decided to initiate Midwifery Refresher Training for Prasuti Griha Hospital nurses. Upgrading the knowledge, skills and practices of maternity hospital nurses is an essential activity for achieving standardisation of evidence-based practices throughout the hospital, as was recommended by JHPIEGO following their site evaluation visit.

**Development of national training team**

The importance of developing a national team of trainers was underscored by the lack of available specialists to be trained as trainers, and subsequently to obligate their time and effort to competency-based training. Trainers need to articulate the evidence base for the training and train large numbers of people very soon. The training process and criteria may be different but the priority was to find specialists who would continue to do this training for many years to come. Consideration was emphasised on the issues of sustainability, effectiveness, efficiency and
“The knowledge update was beneficial. As a full-time clinical practitioner it is not possible to undertake such a knowledge update on my own. Being good at clinical skills does not make you a good teacher. The TOT gave me training skills. I learned to focus on the students, by putting myself in their place, to be sure they benefit from the classes. Now if I am called to teach again at the Royal Institute of Health Sciences (RIHS) I know much better ways of teaching, as we learned the methods described in the clinical skills training handbook. The second part of the TOT was on ‘conducting’ the training. Before, the methods I used were ‘all wrong’. They were not interactive. The teaching was one-way. These methods are much better. I feel more confident ‘teaching the right thing in the right way’. You can see the trainees are excited, and of course, using different methods breaks the monotony.”

Dr. Duptho Wangmo of Bhutan, on her experience attending the TOT

“I am very happy about the things I have learned and about teaching others, to transfer the new knowledge and skills. I have a great responsibility now. And I am happy to do this!”

Dr. Najiba of Afghanistan describes how it feels to be a trainer

Initiation of in-country training of EmOC and anaesthesia service providers and trainers
The first in-country training resulted from a co-ordinated effort between Ministries of Health, the designated training institution, and other programme partners. Most countries decided to offer the basic EmOC course first, to allow the trainers to strengthen their confidence with teaching the basic EmOC procedures. Budgets processes that will work in each country according to context and need.

Dr. Raffat from Pakistan felt she had gained the confidence required to begin teaching others. Having acquired more new knowledge and skills from the Clinical Training Skills (CTS) workshop she felt ready to conduct the EmOC and CTS training for her colleagues at Qatar Hospital and other EmOC facilities.

“CBT is a new approach. After getting the TOT I have identified it as very different from other training. It is totally skills oriented. All the skills are very common but the approach is different. We have to learn by doing and emphasis is placed on practice but theory. Every participant needs to perform each skill in standardised manner. Thus, the learning is uniform for all. When I received the CTS and ATS, I got skills on how to train new trainers and service providers. The process of training has a positive impact on our attitude and training skills.”

Dr. Salma Rouf, CBT trainer (obstetrics), DMCH

“Initially, before the TOT and training of service providers, I did not believe that it was possible to train others on spinal anaesthesia in 4 months. But after the TOT and implementation of CBT for service providers my attitude has totally changed. Now, I am confident that it is possible and we have done it successfully. This has become possible because of special techniques adopted in CBT. TOT has empowered me in different training methodologies. I, therefore, feel very confident in training others. I would be very happy if I could train more MOs in anaesthesiology using CBT, as there is a great need of anaesthesiologists in our country.”

Dr. Tamdra Rani Shadhu Khan, CBT trainer (anaesthesiology), Maternal and Child Health Training Institute (MCHTI), Dhaka
were drawn up along with plans for accommodation of trainees. Arranging for staff to leave their posts and their temporary replacements to be deployed required a reshuffle by human resource managers. This could be done as soon as it was decided who should be trained first and from where, with non-functioning EmOC facilities to be given priority.

Certification requirements meant that selected senior specialists were to use the standard checklists for performance and that participants were certified on the basis of having achieved the required level of performance, not just having completed the course. Sustained advocacy, orientation and teamwork were necessary to make this happen.

Bangladesh was the first country to initiate and undertake the 17-week in-country training on EOC — three weeks of knowledge update and 14 weeks of clinical training sessions with practice. The knowledge update incorporated training in evidence-based practices, skill acquisition and achieving competency using anatomical models. This was followed by two weeks of clinical practice under direct supervision and 12 weeks of self-directed practicum. Six trainers shared the responsibility of training the first teams — four medical officers in obstetrics, three medical officers in anaesthesiology and six nurses — all from upazilla health centres and district hospitals. Practice on the anatomical models encouraged the trainees and smoothed the way for confident use of skills in the clinical setting. Clinical performance was assessed both on models and then with patients using the relevant checklists and individual logbooks that measured set targets. On the mid-course knowledge assessment 87 per cent of the participants achieved a score of at least 85 per cent. Repeat tests were conducted for the remaining trainees.

“We are not the best, but we try our best. Since the training we are seeing about 60 per cent change in the hospital. In some practices we are up to an international standard. In the beginning though, we had problems. The doctors did not want to learn from us (the midwives). Even some midwives didn't want to learn from us. But we accepted this and got on with the work. We convinced everyone (with the evidence and practice), that we were not looking to find what was wrong in the hospital. That they know themselves. Before, we were sad, thinking we couldn't conduct the training, but now we have their respect.”

Gulalai, a nurse midwife from Afghanistan, describes her experience as a trainer

“CBT is the most wonderful training I have ever attended in my life. Here, I am learning the skills by doing. It is the most practical training. We have first practiced our skills on models and then on patients. The trainers provide continuous support in performing on models and on patients till we are competent. They are always by our side and I have learned almost all the skills to manage obstetric cases.”

Hosnearn, nurse (service provider and CBT trainee), Roumari UHC, Kurigram

Adoption of evidence-based practices for midwifery, EmOC and anaesthesia services

One major responsibility of each of the trainers was to constantly strive to improve and maintain the standards of their individual practice and the practices of their colleagues. It required a commitment to achieve standardised quality care and to become a mentor.

Revitalisation of efforts to improve infection prevention practices at designated EmOC facilities

One of the most inspiring of efforts that involves all hospital staff is improving infection prevention practices. It involves everyone — administrators, cleaners, technicians, doctors and nurses. It not
only assures safety and protecting for both staff and patients, but it improves the whole physical and visual environment, which influences staff morale and patient satisfaction.

Dr. Rahim the anaesthetist trained in CBT for Afghanistan, feels the most important thing to change is infection prevention practices. “We have to do this. We want an IP committee for the hospital. It doesn’t depend on having money; it depends on us doing it. I am ready to help with any non-anaesthesia work.”

Achievement and Lessons Learnt

Established training sites and core teams
In only two years each country has an established CBT training site and a core team of trainers certified by JHPIEGO’s master training team. By the end of 2003, Bhutan and India will have completed one batch of service provider training, and Bangladesh, Nepal and Pakistan two batches. Afghanistan’s challenge to achieve EmOC functionality in all provincial hospitals has led them to invest in a continuous, full-scale CBT training programme for in-service providers and pre-service midwives. Course evaluations and the experience from the country-level training show that trainees felt sufficiently confident to perform their new skills on completion of the CBT course. As a result, we now have a growing body of skilled EmOC and anaesthesia service providers and competent trainers of these skills. In turn, this has led to the strengthening of EmOC facilities. Experience gained through standardisation and operation of EmOC practices, training and service delivery packages is positively affecting and/or strengthening capacity of health system and facility managers.

“When we returned, I shared the new things I had learned with the director, the administration and with my colleagues. I had full support from them. Now, since implementing new practices, they can see the results themselves.

- The way we initially manage shock is new. I have helped the anaesthetists and midwives learn this approach. The response of the patients is also very different; we are having a positive clinical result.
- We are using spinal anaesthesia and getting good results particularly with our pre-eclampsia and eclampsia patients. We didn’t do spinal anaesthesia before and we had problems with managing general anaesthesia in these cases. Now, because of the results, all the staff believe in this; they believe in me.

Dr. Rahim at Malalai Hospital in Afghanistan, says the proof is in the results.

“The training was different from the usual. The practice on the models gave me confidence with the skills and I learned many new things. I am using the new practices that I learned, for example, partograph, delivery in the squatting position, restricted use of episiotomy, and vacuum extraction delivery. Already the doctors and midwives openly accept these new practices.”

Dr. Shabnum from Qatar Hospital, Pakistan describes some of the EmOC training methods that have changed the way she works

We had problems before. For example, we were not trained in breech delivery; did not know the mechanisms or what to do. When managing a breech case we would grasp the baby’s abdomen and pull. We did not know how to deliver the head. Now we follow all of the steps; we wait to see the shoulder girdle before we assist with the delivery. We hold the baby by the pelvis (she gestures while describing this) and lift the body to deliver the head.

Dr. Kaukab Nawab, from Pakistan, is already experiencing great changes since the training at Qatar Hospital
Implementation of CBT has also influenced other training in Bangladesh. For example, in the regular EOC courses and skilled birth attendants training (supported by UNFPA and WHO), the trainers are now including checklists and the use of the humanistic approach by perfecting skills on models first. It has also attracted the attention of JICA to contribute to further CBT training.

**Extend the practicum if needed**
An insufficient caseload for providing experience with particular procedures may hinder acquisition of skill and proficiency. Making sure that trainees achieve the required level of competence is vital for standardisation and for ensuring availability of capable providers at peripheral hospitals. In Bangladesh, the trainees from Upazilla Health Centres suggested that they continue their self-managed practicum at their local district hospitals until they were fully confident to perform all skills independently. Technical skill, or competency, is a necessary yet not sufficient factor in assuring availability of EmOC services. Skilled providers must also possess both the confidence and the readiness to provide services 24-hours a day. We must be flexible when it comes to preparing teams for such exceptional life saving service.

The concern of service providers is that acquiring sufficient hands-on experience to acquire competency and confidence in performing caesarean section takes time. Particularly, the high number of ‘learners’ at the medical colleges relative to the number of cases (even though the caseloads are usually high) tends to reduce opportunities to practice. Specifically, the ‘hierarchy of learners’ limits junior level medical students and short-duration trainees from gaining access to the complicated cases. The schedule of medical examinations and trainee postings adds to the difficulty. This concern highlights several pivotal issues, including the need to obtain a commitment at all levels to the CBT methodology and the importance placed on the development of competency in a manner that nurtures confidence through self-directed learning and ongoing mentoring and supervision.

**Trainer commitment is essential**
Candidates for EmOC and anaesthesia training must be willing and committed to adopt evidence-based practices. Without this we will quickly lose our investment. In Bangladesh, the trainer attrition rate was high. They lost two obstetricians after the initial training, even though the obligation to train others was made prior to training. The criterion clearly states a two-year commitment from those trained as trainers. Resistance to the introduction of new ways of doing things is to be expected and requires patience and perseverance. The mentoring of colleagues by trainers compels others to adopt new practices. In some cases, trainers worked many long nights beside their colleagues to ensure the adoption of protocols and procedures. When there is less accountability for standardisation of practices in the hospital, the process of site set-up is hindered.

“Conducting training of six weeks or more is a full time activity which requires a lot of planning and coordination. So a trainer must be allowed to get involved in the training completely and must be exempted from regular duties of the hospital during the time of the training. Most government obstetricians have a private practice in the evening, which is hampered during the time of the training and looses momentum even after the training is over. To maintain trainers it is important for training institutions to provide ways of compensating this.”

Dr. Meera Upadhaya, obstetrician and master trainer from Prashuti Griha maternity hospital, Kathmandu who conducted 1 CEOC, 5 BEOCs, 1 TOT and 1 midwifery refresher training in 2003 after completing the TOT in Dhaka

**CBT builds accountability for quality obstetric services**
As a result of the CBT programme there is improved capacity of the health system to support 24-hour delivery of operative and emergency services (including blood transfusion) in district
hospitals. In fact, the impact goes beyond obstetrics and impacts on other hospital services — building a foundation of quality care in the hospital — through updated knowledge and expanded surgical practices; broadened anaesthesia skills; strengthened operation theatre and general nursing skills; improved infection prevention practices; and the heightened importance given to emergency readiness. In general, the perception that evidence-based practices, standardised protocols, competency and teamwork are all important, is making a difference to the way service providers work, and is making their work more meaningful.

**Adopting a CBT methodology requires strong advocacy at all levels**

The concept of CBT, and the advantages or added value of the CBT methodology must be clear to the involved policy makers, professionals and educators, e.g. guidelines from government of Nepal. From this foundation of understanding, it is critical to achieve endorsement of the principles of CBT and practice by:

- the government statutory body,
- medical and midwifery professionals, and
- the medical and midwifery education system.

In Bhutan, functioning centres are dependent upon the availability of skilled providers. Bhutan is now creating opportunities for providing pre-service and in-service training in-country, e.g. the 17-week BEmOC course for all new doctors at the Jigme Dorji Wangchuk National Referral Hospital prior to posting to district hospitals is now policy. They are also considering BEmOC training for additional midwives to demonstrate their capacity to perform vacuum extraction delivery.

**Rapid expansion requires skilled trainers**

Rapid expansion of the number of competent EmOC and anaesthesia providers requires an adequate number of skilled trainers. Although it is important for these trainers to maintain clinical skills proficiency through practice, they must also have sufficient time designated for training activities, including site visitations.

> "It is advantageous for Bhutan that JHPIEGO came into the process and a regional effort was undertaken. The commitment is there (now from the RGOb). But it takes time to implement due to the human resource constraint. We have conflicting priorities (e.g. since there are so few obstetricians in the country it is very difficult for Duptho to be away from clinical service for extended periods of time during the training. This also complicates her efforts to do adequate on-site follow-up with the hospitals and trainees). We must make short-term concession for long-term benefit.

Dr. Duptho, Bhutan

Again this highlights a concern facing trainers in the early stages of a CBT initiative. Those monitoring need to be conversant in the practices and be able to mentor others. Although monitoring teams have been broadened to include members of the associations of obstetrics and gynaecology, the responsibility of follow-up site visits initially falls on the trainers. Accepting that building a team of master trainers sufficient in size to address training and monitoring needs will take time, never-the-less there is an urgency to train more trainers.

In Bangladesh, Nepal and Sindh in Pakistan, professional obstetric and midwifery associations have been vital partners in the development and implementation of revised standards of practice. In Pakistan, where there are over 90 midwifery training institutions, the Association of Nurses and Midwives were swift to update the practices in the 2002 edition of their training curriculum. In Bangladesh, a close collaboration was forged early in the national EmOC programme between the Association of Obstetricians and Gynaecologists and the training institutions. They worked side-by-side to refine EmOC training and their technical and monitoring support has continued for CBT.
The need for the supportive role of professional societies in obstetrics, anaesthesia, and nursing/midwifery cannot be over-emphasised in the endeavour to bring CBT into the nationally accepted method for training both in-service and pre-service providers.

Incentives for both trainers and participants
Similarly, the question of incentives for both trainers and participants persists, as many of them are engaged in private practice. The challenge is to adhere to appropriate selection criteria and obtain the commitment of clinical professionals despite the loss of private practice income during training and periodic follow-up. Opportunities for post-graduate education and other professional development incentives must be built into the training programme to offset these losses.

Affecting change in attitude, not just knowledge and skills
Affecting positive change in individual midwifery, EmOC and anaesthesia practices requires change in attitude, not just knowledge and clinical skills. This change can be facilitated through behaviour modelling. Site standardisation has proven to be a challenging, yet critical, step in implementing the training and establishing services. Again, it requires constant, deliberate change based on the determination of the team to provide a quality service in a safe and nurturing environment. CBT is about doing things differently to produce a better outcome.

Identifying and building centres of excellence for training and service delivery requires whole-site involvement. The gains achieved by quality EmOC service delivery — through CBT — will not be implemented or sustained if the hospital leadership and health systems managers are insufficiently supportive and enabling. Achieving the desired level of standardisation requires commitment and action from everyone.

The gains achieved through the Midwifery Refresher Training will be difficult to implement and sustain unless the workplace ‘environment’ is sufficiently enabling. Many factors will contribute the capacity of the participants to provide evidence-based care in their individual units and lead change throughout the hospital. The effort to achieve standardisation of quality services and evidence-based practices will be facilitated and supported by availability of adequate infrastructure, functioning equipment, available supplies, appropriate policies, sufficient staff and supportive leadership.

Nepal Midwifery Refresher Training Report

Recognition and relevant policy change
Recognition of the capacity of non-specialists, e.g. midwives and nurse anaesthetists, to deliver EmOC and anaesthesia services, must be backed by relevant policy change that authorises them to provide midwifery, EmOC and anaesthesia services.

The situation in Bhutan may differ from some other South Asian countries.

"The content and practices addressed in the training are not 'so different', but they are systematic (standardised). What is really new is the 'counselling' aspect of the practices.

Dr. Taka of Bhutan

"This EmOC programme is an opportunity for us, in our institution. It builds acceptance of non-specialist providers (of EmOC and anaesthesia services). In Bhutan, specialists do not feel threatened by non-specialists. We do not have private practice so there is no danger that non-specialists will go out (and compete in private practice). We can standardise practice and quality using performance guidelines (regardless of status of the providers)."

Dr. Dorji Wangchuk, Medical Superintendent of JDWRH

However, there is another kind of challenge within the hospital. If hospital managers do not acknowledge these practices as different, other colleagues are less willing to respond positively. They respond, "It is not new… we were doing it like this before."
CASE STUDIES
Establishing EmOC as a strategy for maternal mortality reduction

Background

Afghanistan had been in a state of complex emergency for over 20 years, until late 2001. More Afghans have known their country at war than those who have seen it at peace. An estimated 24 million Afghans lived in poverty and substandard conditions. Low socio-economic situation; low female literacy rate (18 per cent\(^1\)); high fertility rate (6 six per cent\(^1\)); geographical constraints, lack of roads and landmines; poor infrastructure; poor health services and inadequate distribution are all the contributing causes for a high maternal mortality ratio in the country. Moreover, gender discriminatory regulations imposed upon women by former political regimes including bans on female education, employment and movement deteriorated the status of women in society during the conflict period.

Issues

Women’s health status in Afghanistan is among the worst in the world. Maternal mortality is perhaps the most important indicator demonstrating that life is extraordinarily difficult for women in Afghanistan. The Maternal Mortality Study\(^2\) in 2002 shows a MMR of 1,600/100,000 life births and confirms that Afghan women giving births continue to die from pregnancy and childbirth. According to this study, more than half of deaths among women of reproductive age are related to pregnancy and childbirth. The study also demonstrates that only one quarter of infants born to mothers that die of pregnancy-related complications survive.

The availability of only few medical facilities poorly equipped to provide obstetric care is a major issue. Fifty-two per cent of basic health service facilities did not assist any delivery either at the facility or at the client’s home. Of the 48 per cent (374) that did claim to assist deliveries, only 40 per cent (150) have all the equipment necessary to do so. Only 18 per cent (138) of all basic health service facilities that offer delivery services had all the necessary equipment with only one female clinician\(^2\).

The utilisation of delivery services is far behind the minimum required. Preliminary results of a Multiple Indicator Cluster Survey carried out in 2003 shows that only 11 per cent of deliveries had taken place in a health facility with big gap between the urban and rural figures (Urban 32 per cent, rural 4 per cent). The average birth attended by skilled personnel is only 14 per cent (urban 35 per cent, rural 7 per cent)\(^1\).

Actions

In September 2002, the Ministry of Health (MoH) endorsed a strategic framework for reducing maternal mortality and morbidity in Afghanistan. The strategic framework is centred on three components:

1. Improve EmOC coverage, quality and utilisation

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\(^1\) Preliminary results of a Multiple Indicators Cluster Survey, UNICEF, 2003

\(^2\) Maternal Mortality in Afghanistan: Magnitude, Causes, Risk Factors and Preventability, Summary Findings, CDC, UNICEF and MoH, November 2002
2. Improve coverage of skilled attendants at birth
3. Ensure effective/evidence-based ANC, and family planning

In collaboration with UN agencies, NGOs and AMDD/Columbia University, the MoH is striving to implement EmOC as a key strategy to tackle maternal mortality. The intervention includes upgrading five regional hospitals to perform as centres of excellence that primarily provide quality obstetric services for women and also provide an enabling learning environment for pre and in-service training of midwives and doctors. In addition, partners are working to meet the MoH objective of upgrading one facility in each of the 32 provinces to perform EmOC services. The facilities upgrading process include renovation, equipment and supplies, as well as knowledge upgrade and skill standardisation of obstetric care providers and the development of appropriate delivery/EmOC related tools to monitor progress using UN process indicators.

In early 2003 MoH assigned a task force to bring together all the stakeholders in order to support the implementation of the National Strategic Framework and the achievement of government’s objective to reduce maternal mortality. The task force has succeeded in developing safe motherhood related policies, standards and guidelines, as well as a delivery/EmOC related HMIS.

Three national safe motherhood workshops held in April and September 2002 and in May 2003 brought together government, donors, service providers and programmers to align the vision, articulate a strategic framework for reduction of maternal mortality and morbidity, and share programme updates e.g. on EmOC competency-based training, supply and equipment, and MHIS.

For technical support and advocacy for EmOC, the Afghanistan Society of Obs/Gyn was founded in December 2002. The society received FIGO membership at the FIGO Conference in December 2003. The society is another important asset to safe motherhood in general and to EmOC in particular.

Results

The political commitment of the Government of Afghanistan to reduce maternal and neonatal mortality has been translated into the establishment of a Women’s and Reproductive Health Department which includes a Safe Motherhood Initiative Unit. With support from UNICEF and AMDD/Columbia University, SMI unit is taking the lead in the development of tools for the implementation of quality EmOC services. Strategies, technical standards and guidelines have been developed and translated into local languages, and implementation will start shortly. The unit is also ensuring co-ordination among all stakeholders in the field of maternal health.

To date, EmOC facility readiness varies from one facility to another

- Three centres of excellence, Kabul Malalai Maternity Hospital, Jalalabad and Herat are operational. Renovation of another centre of excellence is in progress while efforts are also ongoing in the fifth centre of excellence for staff recruitment and collaboration with an NGO that will look after the facility.
- Out of 32 provincial hospitals (including five centres of excellence), 13 facilities are under renovation, another 13 already renovated and renovation on hold in three provincial facilities because of security constraints. Renovation plans with partners are ongoing for three provincial facilities.
- All 32 provincial hospitals receive equipment, renewable and medicines for EmOC that are estimated for one year needs.
- Provision of training aids, anatomic models and material to the centres of excellence as
well as to the midwifery schools has been accomplished in an attempt to ensure the quality of in-service and pre-service EmOC training.

- The training of skilled personnel is moving forward rapidly. Competency-based Trainings (CBT) on EmOC have been conducted in collaboration with UNICEF and JHPIEGO. It started with training of trainers, a team composed of 1 Ob/Gyn, 1 anaesthetist, and 2 midwives, from each centre of excellences. They have completed knowledge updates and skills standardisation as well as clinical skills training. By mid 2004 all provinces will have a team of service providers with knowledge and skills upgraded to effectively manage emergency obstetric complications. Training was also conducted to improve infection prevention in EmOC facilities.

- For monitoring the progress on improving availability, quality and utilisation of EmOC, all data necessary for measuring process indicators have been integrated into the national health management information system. Data collection tools and forms have been developed and are being tested within the basic package of health services.

### Lessons Learnt

- Different stages of EmOC implementation building blocks were implemented simultaneously. For e.g. in Kabul Maternity Hospital, training was followed by renovation and at the same time supplies and equipment was received. Meanwhile, the hospital receives support in terms of management.

- Political will and strong leadership make things happen quickly and promptly.

  Strong leadership is required to make the transition from humanitarian assistance to development.

  Continuous advocacy efforts at all levels is essential e.g. in the development process of the country’s new constitution as well as in the national development budget.

- National capacity development is crucial to sustain achievements.
Establishing EmOC as a national programme

Introduction

The Challenge
For decades Bangladesh has struggled with attempts to reduce maternal mortality. For far too long, it has been accepted that a majority of women entering pregnancy would face many uncertainties and unnecessary risks — not being able to identify on time the five danger signals of pregnancy complications; falling victim to the ignorance of in-laws and guardians as well as religious taboos; being ignorant about health care; facing a dearth of medicines and equipment and doctors and staff in the facilities; being unable to meet the costs associated with seeking care; being denied the services they need to prevent death and disability.

It is estimated that more than 500,000 women develop complications that can be fatal or result in lifelong debilitation. Although there has been some improvement in the maternal mortality rate over the years, with the MMR estimated at 320-400 per 100,000 live births, there are still more than 30 women dying every day due to complications of pregnancy and childbirth.

The Changes
Yet, there is also a perceptible change taking place in favour of the millions of women every year who experience pregnancy and childbirth in Bangladesh. Significant changes have taken place in the availability and use of Emergency Obstetric Care (EmOC) services, services that can save the lives of women who develop life-threatening complications. In 1993 it was estimated that there was one comprehensive EmOC 1 centre for 3.4 million of the population, far from the UN advocated ratio of one for every 500,000 population. Today, the estimate is one comprehensive EmOC centre for every 930,000 population with thousands of more women accessing services. Met need increased from 5 per cent in 1994 to 27 per cent in 1999, an increase contributed to by improved service coverage and quality at the district hospitals and upazila health complexes. There has also been significant increase in the 2003 caseload of the district hospitals and upazila health complexes providing either basic or comprehensive EmOC services compared to a baseline set in 1999 — deliveries increased by 63 per cent, admissions of complicated cases increased by 135 per cent and caesarean deliveries increased by 70 per cent.

It is now established in Bangladesh that the technology of life saving services for women with obstetric complications can be provided in rural centres without relying on specialists. Rather, the critical elements required are deployment and retention of skilled and competent care providers, essential equipment and supplies, ensuring readiness through hospital micro-planning, and most importantly, the motivation and will to ensure availability of quality services. The past years have also shown that a strong policy commitment and

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1 Facilities are designated comprehensive based on set of signal functions performed. There are eight Signal Functions: administer parenteral (intravenous or by injection) antibiotics, administer parenteral oxytocic drugs, administer parenteral anticonvulsants, perform manual removal of placenta, perform removal of retained products, perform assisted vaginal delivery (vacuum extraction, forceps delivery), perform surgery (caesarean section) and perform blood transfusion.
demonstrated rigour in tracking progress and taking action is critical in ensuring synchronisation of the various inputs that are required for established functioning centres.

The pathway/route-map to implementing a national programme for establishing EmOC in Bangladesh
The path to EmOC becoming a national programme in Bangladesh displays classic programme development stages and remarkable commitment by key stakeholders to make a difference in the lives of women. Bangladesh is one of the ROSA countries participating in the “Women’s Right to Life and Health” initiative, and has made the largest single country contribution to the progress that has been achieved and the potential for accelerating efforts to reduce maternal mortality.

Advocacy and development
The period 1993 to 1997 is marked as the stage of advocacy and development. The concept of EmOC gained support from professional bodies, women’s rights activists, development partners and key policy makers. The situation was assessed along the lines of the “three delays model” and intervention was designed to improve quality of care, decentralise services and create awareness regarding the danger signs of complications. During this period UNFPA, WHO and EU also supported government projects in establishing EmOC services. While each agency focussed on establishing EmOC services, the efforts varied by geographical area, type of facility supported and working mechanism. Efforts were made to coordinate activities and share materials developed under each initiative. On May 28, 1997, the Prime Minister signed the Declaration of Safe Motherhood Day acknowledging the need for focusing on reducing maternal mortality and violence against women and calling for action and commitment of resources to address the issues. The lessons learned from the various projects showed that there is need not only to focus on the technical details but also for strong coordination of various inputs and administrative rigour — this provided the basis for the design of the plan for establishing EmOC within the Health and Population Sector Programme (HPSP), between 1998-2003.

Scaling up of efforts
The period 1998-2003 has seen the scaling up of efforts. The HPSP stated objectives for increasing coverage (one comprehensive EmOC for every 750,000 population) and utilisation of EmOC services (met need increased from 5 per cent to 70 per cent) and indicators have been tracked in the annual performance reviews. Attention has been given to not just the big picture to attain a national goal, but also to the details that go into bringing about an overall transformation of systems and processes long neglected. Focus was on strengthening of the systems for MIS, human resource development, supply and procurement, monitoring, hospital-based micro-planning, team-building, stakeholder participation, and last but not least, social mobilisation. A major milestone for the national programme has been the formulation and approval in 2001 of the National Strategy for Maternal Health in Bangladesh, which aims to strengthen the provision of essential (including emergency) obstetric care and improve the utilisation of services. The draft programme implementation plan of the health, population and nutrition sector programme also reflected the priorities of the strategy document.

Approach
A rights-based approach to the reduction of maternal mortality has been promoted, which is based on a conceptual framework of three elements required for successful and ethical implementation of the programme — a comprehensive perspective that includes quality life-saving technology, excellence in management, respect for human rights. The desired output is readiness of facilities to provide round the clock quality EmOC. This phase has resulted in training curricula being revised to be more skill and competency based, establishment of a uniform system for record-keeping and reporting for
obstetric care, standardisation of lists of equipment, and development of communication packages. It has been possible with critical financial and technical investment of UN agencies, Columbia University, Government of Japan, USAID and IDA.

The current prominence of EmOC is the result of continued advocacy and institutionalisation of key processes that support systems and measure progress. The UN process indicators being part of the annual performance review of the sector programme, provides the opportunity for synthesising data collected through the health MIS — the result of investment in designing record-keeping and reporting formats and interventions to improve quality of reporting. The list and specifications of equipment needed for establishing functioning EmOC centres has been standardised through a process of consultation that included obstetricians and anaesthetists – resulting in uniformity of supply regardless of source of funds. All this is supported by the creation of forums, where the performance of facilities is reviewed on a regular basis and instances of extraordinary effort and achievement are highlighted and critical action points are decided upon.

Lessons Learnt

Partnership is powerful
The implementation of a national programme in Bangladesh between 1994 and 2003 resulted in promising progress in the achievement of women’s rights to safe motherhood. Much emphasis is placed on coalition building through a process of building a shared vision and defined areas and actions to bring on board stakeholders at the national, sub-national and facility level. The WRLH programme in Bangladesh is an outstanding example of partnership between government, AMDD and UNICEF and a unique blend of technical and financial support to a national policy and implementation framework. The positive results of this partnership encouraged other partners to invest in the programme. Strong support has come from the government of Japan, which in 2001 committed to equip 47 comprehensive and 192 basic EmOC sites in the country. This has complemented the resources available in the project and ensured life saving equipment in the 123 facilities being focused on. USAID has invested in communication and social mobilisation activities in areas where EmOC services have become functional.

Competency based training
The technology of life saving services for women with obstetric complications can be established in rural health centres without relying on specialists. The critical elements required include skilled and competent providers (doctors, nurses and technicians), essential equipment and supplies, ensuring readiness through hospital micro-planning and most importantly motivation and the will to ensure availability of quality services. Innovative steps taken to initiate the 17-week competency based training for service providers have shown positive results.

Strong policy commitment and demonstrated rigour
Policy commitment and demonstrated rigour are essential for tracking progress and taking action. It is critical in ensuring synchronisation of the various inputs required for establishing functioning centres. The secretary MOHFW instructed ministry officials to monitor progress and report to him and the director general of health services. The secretary personally reviews the individual facility status every other month. This is particularly important to contain the issue of human resource deployment and ensuring retention of trained/skilled personnel.

Focus on the three inter-linked dimensions
Strengthening life saving services requires focus on the three inter-linked dimensions of quality technology, excellence in management and respect for human rights. The rights aspect has included attention to issues such as privacy, cleanliness, adherence to standards of quality, valuing dignity, creating enabling environments and
respect for women’s rights. These issues have been reflected in human resource development — technical training protocol, special capacity development initiatives, guidelines for organising services, WFHI accreditation criteria, and, social mobilisation intervention (Women’s right: healthy life and happy mind).

**Innovative methodologies**
Various innovative methodologies have been tested and found valid in the improvement of services and local capacity. This has strengthened the whole effort to bring about change in the facilities particularly through micro-planning (using Appreciative Inquiry and Five Step Hospital Action Planning); and, working with technical experts and partners to influence quality of care (technical monitoring through quality assurance teams, peer assessment of training centre performance and institutionalisation of training coordination committee).

**Investing in people**
*Investing in people is necessary* for cutting through attitudes at all levels. Accountability of providers to women — changing attitudes and motivating service providers to take responsibility and respect women’s human rights — is a key requirement for effectiveness of this project. This has been addressed by building a strong team of facilitators, who have worked with facility personnel every step of the way in improving functioning and utilisation. It has also required working with service providers, administrators and other stakeholders through workshops on transformation, gender sensitisation, team building, leadership development and self-esteem.

**Monitoring creates momentum**
Monitoring is the key to creating momentum and generating appropriate action. The review of functioning status and performance of facilities is a key activity. The major achievement has been setting up an EmOC record keeping and reporting system. Monitoring checklists have also been developed and used during monitoring visits. The quality of record keeping and reporting has improved tremendously. A computer software package for EmOC monitoring is being used for storing, sorting and analysing of data on facility and utilisation of services. The 1st EmOC newsletter was published in June 2003 by UMIS. The data is used to track progress and provide feedback to the facilities.

**Increasing utilisation**
Addressing the three delays, increases utilisation of life saving services. The evaluation of the three year operations research initiative (1998-2001), of the Dinajpur Safe Mother Initiative (DSI) — “a community mobilisation initiative for addressing the three delays for reducing maternal mortality” in Birampur Upazila of Dinajpur district yielded important lessons. The key interventions that have been implemented through DSI include promotion of birth planning, development of community support systems, improvement in quality of care at the service facility through the creation of stakeholder committees, and advocacy for access for all women subjected to violence. A comparison of EmOC utilisation rates during DSI in the three study areas suggests that while upgrading facilities increases utilisation rates, combining upgrading with community mobilisation increases it further.

**Procedural barriers can be overcome**
This has been amply demonstrated by the experience where the bidding process of offshore procurement included conditionality on availability of local agents who would take responsibility of maintenance and supply of spare parts. To avoid delays in distribution, a decision was taken by the government to hand over the responsibility of transporting the equipment from the port of arrival to the supplier warehouse and from there to the facilities to the local agents of the offshore supplier.

**The Challenge Ahead**
The Government of Bangladesh is committed to achieving the Millennium Development Goals (MDGs) and has re-affirmed the obligation to reduction of maternal mortality in the Interim Poverty Reduction Strategy (IPRS). The vision of
the IPRS has adopted a “comprehensive approach premised on a rights-based framework, which highlights the need for progressive realisation of rights in the shortest possible time”. The IPRS has recognised the need for addressing the poverties of health and emphasised the issue of reduction of maternal mortality and violence against women in two of the five major stated policy sets — fostering human development and supporting women’s advancement and closing gender gaps in development. The slow decline in MMR, coupled with a plateauing of the TFR at 3.3 since the mid 90s, raises concerns because of the potential adverse impact on poverty reduction. The health seeking behaviour of women during pregnancy and childbirth is far from optimal. There is also evidence of disparity in the health seeking behaviour by education and wealth status, with the less educated and poorer women being less likely to seek qualified promotive and emergency obstetric care. Only 40 per cent of women who perceived that they had life threatening complications during their pregnancy sought immediate care — 70 per cent of women in the highest wealth quintile and 50 per cent of those in the lowest quintile sought care.

Challenges still remain. Strengthening systems will be the key to ensuring sustainability — there have been considerable gains which will not be sustained if adequate attention is not paid to health systems management. The next phase will need to address in greater depth issues of equity, clinical quality assurance, human resource functions, stakeholder involvement, referral systems and social mobilisation.

But in the final analysis, what stands out is the fact that a movement has been started, and it shows no signs of losing momentum. The neglected health system of the country is at last shaking off the dust and slowly but surely getting on its feet. Helping hands are there, and so is a steadily increasing interest and commitment to see the movement reach its goal. Efforts are all geared toward following a straightforward road map that points to a healthier future for the women of Bangladesh — a step towards ensuring their right to surviving pregnancy and childbirth.

To claim that all is well would be an exaggeration. But the situation has improved to such an extent that Bangladesh can be considered a success story. An example of how saving lives is not just left to miracles, but to the conception and implementation of practical, well thought out efforts by people who are inspired, motivated and dedicated to the vision of ensuring safe motherhood for women of Bangladesh.

Inserts

Technical assistance from the Preventing Maternal Mortality Programme of Columbia University, in 1993, was sought by UNICEF Bangladesh for introducing the Ministry of Health and Family Welfare and professional society (Obstetrical and Gynaecological Society of Bangladesh) to the concept of EmOC. UNICEF subsequently supported these key stakeholders in the endeavour to advocate, test and lobby for focus on life saving services for women.

Continued investment of UN agencies and an additional injection of funds from Columbia University and the Government of Japan have had positive results. One such investment has been in the Women’s Right to Life and Health (WRLH) — the joint initiative of UNICEF, Averting Maternal Death and Disability (AMDD) project of the Mailman School of Public Health, Columbia University and the government of Bangladesh. The initiative is aimed at bringing about a substantial

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2 Economic Resources Division, Ministry of Finance, Govt. of People’s Republic of Bangladesh, Bangladesh: National strategy for Economic Growth, Poverty Reduction and Social Development, December 2002

3 The Obstetrical and Gynaecological Society of Bangladesh (OGSB) is the highest professional body in the field of maternal health. They have played a pioneering role in the establishment of EmOC in the country by developing a system of training and monitoring of EmOC activities involving their members working in medical colleges, district hospitals and the private sector.
increase in the availability and use of EmOC services and contributing to the reduction of maternal mortality in Bangladesh.

Social factors impacting maternal survival include limited mobility of women, their low self-esteem, a culture of acceptance, early marriage, and lack of effective community support structure — all aggravated by conservatism and prejudices prevalent in a society that has a strong patriarchal structure.

**Addressing the needs of women through a women friendly hospital initiative**

The issues of gender equity, management of violence against women and formation of linkages between the community and facility stakeholders are all being addressed under the current health interventions. The strategy is to certify facilities as ‘women friendly’ on the basis of key criteria.

A training programme on ‘Initiating Transformation’ has been started since February 2001 to bring about positive changes in the attitude of those playing a role in the implementation of the WRLH initiative. The purpose of the training is to put the participants through a process of initiating transformation within themselves, thereby extending it to their place of work and most importantly, in the effort to ensure women’s right to life and health. The training is given to those involved with the WRLH initiative, including civil surgeons, upazila health and family planning officers, facility managers, coordinators, and EmOC field officers. The most important impact of the 9 days of ‘face-to-face’ training is felt in the relationships between people working across various hierarchical levels.

Since its launch in 2000, the four-year WRLH project has covered a total of 59 district hospitals and 64 health complexes throughout the country. A major learning is that procedural barriers can be overcome. This has been amply demonstrated by the experience whereby the bidding process of offshore procurement included conditionality on availability of local agent who would take responsibility of maintenance and supply of spare parts. To avoid delays in distribution, a decision was taken by the Government to hand over the responsibility of transporting the equipment from the port of arrival to the supplier warehouse and from there to the facilities by the local agents of the offshore supplier.

**Priority intervention of the government**

i) Focus on establishing essential and emergency obstetric care for reducing maternal mortality;

ii) Address the needs of women through a women friendly hospital initiative;

iii) Human resource development to ensure quality functioning of facilities;

iv) Communication for behaviour change and development for creating an environment, which promotes a positive socio-cultural movement;

v) Involvement of professional bodies, and

vi) District based innovation and stakeholder participation

There are many issues that still need to be addressed to ensure proper obstetric care for women. In the first place, strong clinical quality assurance interventions need to be introduced as utilisation of services increase. Cost issues must be addressed to protect the poor and ensure equity in service utilisation. Also, given the increasing threat of HIV/AIDS and hepatitis B, due attention needs to be given to screening to ensure safe blood transfusion.

**Case Studies**

Until recently, the Sonatola Upazila Health Complex of Bogra district never saw a baby being delivered through C-Section. Even though 3-4 normal deliveries were conducted every month since the facility was established, not one case was handled with the skill and facilities required
nor was standard post delivery care provided there. Today, however, the health complex has undergone a transformation as a result of the WRLH intervention to introduce EmOC facilities there. Over the last year, as many as 104 C-Sections have been conducted and currently, 50 to 60 normal deliveries and 10-20 C-sections are conducted every month on an average at this health complex.

Dr. Monorama Sarker is the EmOC trained medical officer at the Bheramara Upazila Health Complex in Kushtia. Today she has the support of a medical officer trained in anaesthesia and two trained nurses to complete her EmOC team, as well as essential equipment such as, OT light, labour room equipment, safe delivery kit, etc. She can recall the time when this health complex did not even have the basic equipment and staff to provide care for cases more complicated than normal deliveries. Even those deliveries were conducted with questionable skill by untrained staff. The number of fatality cases of mothers and children was naturally quite high at that time. But ever since the facility came under the purview of the Women’s Right to Life and Health project, the situation has changed dramatically. Modern equipment has been installed now to facilitate C-Sections and normal deliveries, along with post operative and child care services. The social mobilisation and awareness raising activities conducted under the project has increased the number of pregnant women coming in to seek obstetric care. The number of maternal and child deaths during delivery has dropped to zero. Looking back at how it used to be, Dr. Sarker and her team marvels at the improvement brought to the functioning of the facility, in staff skill and in the community’s attitude towards seeking care at the facility. They are determined to maintain their newfound reputation as an excellent health complex.

**Jahanara’s choice**

Jahanara has just given birth to a healthy baby daughter. She had come to the Joypurhat District Hospital to have her baby against the wishes of her elders. She refused to pay any attention to the people in her community who had told her that since her baby was the Creator’s creation, He would ensure its safe birth if ordained. Jahanara did not share the scepticism of her neighbours and relatives regarding the wisdom of availing modern medical facilities. The elders in her community warned her that male doctors would attend to her at the hospital, whereas if she stayed at home the ‘dai’, i.e., the female birth attendant would attend her. They said it did not matter if she or her baby died – that would be fate. But it mattered to Jahanara, and so she made her way to the hospital. She has seen how clean the hospital is, and has taken comfort in the efficiency and skill shown by the doctor and nurses. Jahanara is convinced the decision has been right for herself and her baby.

**A story book ending to a real life tale**

A remarkable thing happened in Lohagora, Chittagong the other day. The people living in the locality of the Lohagora Health Complex, particularly the Imam (religious head) of the local mosque, recall the story of Nurun Nahar as a special incident in their lives. The incident has made them realise that they each had a role to play in ensuring the successful delivery of care at their local health complex.

Nurun Nahar had come to the health complex in desperate need of emergency obstetric care. She was a mother of two and was expecting her third child. Since her first two had been delivered at home without any complications, she and her family had assumed that this time too she would have a normal delivery. But after her labour began, she suffered for 2 days at home before finally seeking help at the health complex. By that time her condition was such that the attending doctor had no other option but to prepare her for a C-Section. However, Nurun Nahar was also severely anaemic and needed immediate blood transfusion. In the absence of a blood bank at the facility, precious time was wasted in trying to match her blood group with prospective donors. The facility staff and many of the local community people became involved in the hunt for the life saving blood. For the next 12 hours, Nurun Nahar struggled to hang on to her life.
In what was to be a storybook ending, a donor was finally found at a most unexpected place and at a moment when desperation was giving way to despair. Her attending doctor had gone to the mosque to say his early morning prayers when he mentioned the problem to the Imam. It turned out that the Imam’s blood group matched with Nurun Nahar’s. So the C-Section was at last performed and Nurun Nahar was able to return home with a healthy son.
Introduction

The Drugs Vaccines and Equipment Division (DVED) under the Ministry of Health coordinates the utilisation of resources allocated by different partners and the government for health care related supplies and manages the health care logistics in the country. It forecasts needs, procures, stores and distributes health care related supplies to meet the countries requirement. It has a section that deals with essential drugs and vaccines, and another section dealing with equipment and other health care supplies. The essential drug programme and the section dealing with equipment and other health care supplies maintain standard lists of items to be supplied to different health facilities. Each unit has a technical committee. The technical committees periodically reviews and updates the list of supplies needed for each level of health care facility and takes part in major procurement related decisions. The need forecast for drugs and consumables is based on past consumption, while for equipment it is based on needs presented by the facilities, scrutinised by the technical committee. The procurement process is transparent and follows open tendering. The distribution is done by the central store located at the capital, based on annual indents from the hospitals and six months consumption reported by the Basic Health Units (BHU). DVED uses a network of trained pharmacists cum store managers in the districts to manage the district stores, report periodically and put up indents for the hospitals. BHU units have a six monthly reporting system and supplies are automatically calculated based on past consumption and delivery to them by the DVED’s logistics system. Unpublished reports indicate that the supplies at all levels are of good quality and ‘stock-out’ of essential items in the health facilities is rare, indicating that the logistic system is reliable.

Emergency obstetric care facility establishment required a logistic system to reach supplies needed to establish and run the facilities. Working together with a well managed health care logistics system can speed up the process of facility establishment and reduce cost by sharing resources. This paper presents how the EmOC project in Bhutan used the health care logistics system run by DVED under the Ministry of Health to assess the needs for EmOC supplies and mobilised it to meet most of the needs of the project.

Background

A mapping of the existing facilities in Bhutan in March 2000 showed four basic EmOC facilities and four comprehensive EmOC facilities and an inequitable distribution. Further, the difficult terrain and the dispersed population posed a challenge in providing access to EmOC services. Accordingly plans were made in 2000 to set up 10 basic and four comprehensive facilities distributed equitably throughout the country. As implementation started it became evident that the 14 planned facilities would not provide access to EmOC services. Accordingly, the government made plans to make 14 of the total 29 hospitals in the country comprehensive EmOC facilities and the remaining 15 basic EmOC facilities.
Emergency obstetric care facility establishment required repair, renovation and up-gradation of existing facilities, setting up of labour rooms, operation theatres, blood banks, all of which need costly equipment and supplies. Besides the cost of equipment and supplies, it also needed a logistic system for procuring, distributing and setting up the facilities and maintaining its functionality through regular and ongoing supply of essential drugs, consumables, spare parts etc and repair or replacement of non-functional equipment.

**Issues**

A needs assessment for setting up EmOC facilities was done in March 2000. The assessment covered 31 health facilities but found that only four were functioning basic EmOC facilities and another four comprehensive facilities. There was unequal distribution of EmOC equipment and supplies with resultant shortages and surpluses. However, there was a standard logistic management system reaching to all levels of health care, a good inventory and a functional repair and maintenance mechanism. The needs assessment did not report on the surplus supplies but the following were some of the issues identified:

- Appropriate labour tables were not available in 10 hospitals.
- Seven hospitals did not have spot lights.
- Protective attires were not used in the labour rooms.
- Six centres did not have pan type baby weighing scale.
- 11 centres did not have surgeon’s hand brush.
- 11 centres did not have adult ventilator bag.
- Only seven centres had sharp disposal containers and the rest used locally made containers.
- Instruments needed for delivery were available in all centres but 9 centres did not have them as packs.
- The instruments were kept in sterilising solution instead of being stored as sterilised packs.
- Five centres did not have instruments required for cervical tear repair, nine had them but they were not made into packs.
- 10 centres did not have vacuum extractor sets and some centres had vacuums with hand pumps.
- 11 centres did not have obstetric forceps.
- Only 14 centres had neonatal resuscitation packs.
- Only two hospitals had blood banks.
- 22 centres had OT but only seven were using them.
- Labour rooms and OT were inadequately heated.

**Actions**

The needs assessment findings were used to mobilise the DVED, to re-distribute supplies from places with surpluses to places where there was shortage. The potential value of the exercise convinced the DVED management and the supplies network into doing this internal mobilisation. As the DVED had an existing logistic management system reaching to all levels of health care with existing standards, good inventory and a functional repair and maintenance mechanism, the procurement and distribution of EmOC supplies was merged with the routine health care logistics system. Established supplies norms and high level of commitment and accountability in the system ensured smooth
procurement and distribution. The DVED’s expertise facilitated the specification, distribution, maintenance and use while UNICEF’s external procurement process ensured competitive price and good quality of supply. This is now a standard practice in procuring and distributing all UNICEF assisted supplies.

Results

The role of DVED as the central procurement and distribution agency helped pool resources, identify inputs from other partners and find the existing gaps. The DVED issued office orders and sent personnel and transport to pick up and move supplies from places with surplus to places with deficits, keeping record of all the movement. The remaining deficits were filled through routine supplies and inputs from other donors. There was a supply grant of maternal and child health equipment from JICA for 23 hospitals and 4 BHUs. Simultaneously, there was a trauma centre establishment drive and tertiary care improvement drive requiring similar inputs as EmOC going on in Bhutan. The DVED’s co-ordination helped in identifying facilities which received these supplies and the existing gaps. The project had to procure supplies to fill the remaining gaps for which the DVED did not have the resources.

The logistics of EmOC was completely merged with the routine health care logistics system. Each year, supply needs were reflected in the annual project plan of action of the government and UNICEF. The procurement followed the existing DVED standards to ensure familiarity and availability of skills for maintenance and use. The EmOC advisor and UNICEF project worked together with the person dealing with equipment in the DVED to work out specifications of equipment. External procurement was done by UNICEF as per existing UNICEF norms. When supplies arrived at the national store, the distribution to the facilities identified to have needs was done through the DVED’s distribution system. The inventory management, use and maintenance was taken over by the DVED’s network. To ensure proper distribution, the project recommended procurement and distribution of regular DVED procured EmOC supplies as sets and the DVED has made that a routine practice. Once procured, the supplies are distributed and use monitored through the DVED network.

The merging of logistics operations, internal mobilisation, linkage with other inputs and initiatives and the use of local expertise and network in managing the EmOC logistics lowered the cost of setting up facilities and ensured sustainability. As awareness about the needs developed among the providers, the EmOC supplies appeared in the routine supply lists of health facilities, reducing the need for direct input from the project. In summary, the project could leverage resources from other sources and additional 10 basic EmOC facilities and 2 comprehensive facilities were established at a cost of $126,300. The use of DVED’s logistic system worked well because it was a functioning medical supply logistic chain with clear responsibility delegated at all levels under one central co-ordinating body which could identify shortages and surpluses within the country and co-ordinate re-distribution and use of resources to fill the gaps.

Lessons Learnt

National commitment and professional support is the key to success. The government delivered free health care system providing over 90 per cent access to primary health care provided the base for building upon. The absence of a parallel privately run health care services is another unique factor in Bhutan. This could have contributed to the lack of professional resistance, compliance to norms set by the government and greater involvement of health care professionals in promoting public good.

EmOC facility development in Bhutan suggests that a well-managed central logistics system that has a wide reach facilitates EmOC facility
development, reduces cost and ensures sustainability. Co-ordination and distribution of supplies procured through different initiatives complement each other’s needs if there is one central supply management system.

Human resources development could not keep pace with facility development due to non-availability of appropriate training institutes. As a result, some fully equipped facilities still lack skilled service providers. In some facilities, transfer out of skilled providers took place and some facilities ceased to provide EmOC services as the provider(s) moved out for training. For settings with poor human resource development capacity like that of Bhutan, careful planning of human resource development needs to be done as a priority to ensure that the equipped facilities get skilled providers.
Blood availability in maternity section — from policy to practice

Introduction

In India obstetric haemorrhage and anaemia remain the largest cause of maternal deaths and claims at least 55,000 maternal lives every year. Most of these women live in rural areas and deliver at home. Haemorrhage can occur before (Antepartum — APH), or after delivery (postpartum — PPH). Post delivery haemorrhage is the most common cause of maternal death yet the least discussed and reported. The risk of dying from PPH depends on the amount and rate of blood loss, the prior health status of the mother, and her access to emergency care where guaranteed availability of blood transfusion services is paramount. The predictive value of antenatal factors is generally low. Once begun, a woman may lose up to 500 ml per minute — up to 10 per cent of the total circulating blood volume.

Of concern is the fact that almost all women in India enter pregnancy with varying grades of anaemia, which exacerbates the risks of pregnancy. Women with anaemia tolerate haemorrhage poorly and easily succumb to bleeding that would be inconsequential in healthy mothers.

Rajasthan is the largest state in India with the highest maternal mortality ratio in the country, i.e. 670/100,000 live births (SRS 1998), 30 per cent of these deaths are due to haemorrhage and in almost 20 per cent anaemia is responsible. Other contributing factors include

i) The lack of blood transfusion services.

ii) The frequent unwillingness of family members to donate blood for women owing to the latter’s poor social standing.

iii) General apathy among providers.

iv) Lack of political commitment.

Project and Policy Context

The WRLH project is operating in three districts in Rajasthan with a population of approximately three million and estimated 250,000 annual pregnancies. These three are the border districts cut off from the mainstream with HDI poorer than the state averages.

At the start of the project, only one comprehensive EmOC centre was functioning, together with one blood bank in each district. The overall quality of the services was very poor in terms of infrastructure and laboratory facilities, availability of basic equipment and medicines, emergency readiness and waste disposal systems. Record keeping and charts were weak and training spotty. In addition, many doctors remained reluctant to serve in these remote districts where the support, monitoring and supervision was minimal and morale low.
In this context, the WRLH project, supported by the UNICEF Rajasthan Field Office, has moved progressively forward in a step-by-step approach to address the principles of equity and efficiency within the context of quality of care in emergencies, and health system strengthening. The strategies undertaken underscore the fundamental principle that women and their children are rights holders, not objects of charity. All women should be able to enjoy pregnancy and its outcome with equity, respect, dignity, and social justice through better access to quality health services especially during pregnancy, childbirth and the postpartum period.

Ongoing advocacy with the Government of Rajasthan has resulted in a government decision to establish Blood Storage Centres at all sub-divisional hospitals starting with the six First Referral Units (FRUs) identified under the WRLH project, and to transform them into CEmOC Centres. All six centres have undergone a series of renovations. Notable gains have been made to ensure that every woman in need can count on the availability of safe blood, not as a beneficiary, but as a human right.

Given the fact that a majority of obstetric complications occur at home and delayed decision making result in late arrival at the facility, most of the women with PPH need blood transfusion. As facilities for blood transfusion are limited many women succumb to haemorrhage. In order to facilitate safe blood availability and quality transfusion services at the peripheral institutions the Government of India announced a national blood policy, wherein provisions were made to expand blood storage facilities to the sub-district level.

**National Blood Policy: April 2002**

In April 2002, the Government of India adopted the National Blood Policy (NBP) which seeks a "comprehensive, efficient and a total quality management approach" within a nation-wide system, to ensure easy access to an adequate and safe blood supply.

To ensure the provision of safe blood to anyone in need, wherever and whenever required, the national blood policy has the provision for the establishment of Blood Storage Centres ready to receive tested and processed blood and blood components from authorised centres. These storage centres can be established at any hospital — government or private, rural or urban. A blood bank collecting up to 2000 units of blood annually could be converted into a storage centre, provided it is affiliated to a larger blood bank that is approved by the State Blood Transfusion Council (SBTC) and licensed for the purpose. Private or commercial blood banks were not permitted to supply blood to storage centres by the SBTC. The blood storage centres at the sub-district level would be affiliated to the district hospital blood banks and would receive tested blood from these banks.

This favourable policy environment prompted UNICEF to take the lead in establishing blood storage centres in the three project districts. In each district two First referral units/Sub-district hospitals were identified for strengthening CEmOC services.

As a first step, renovations of these centres according to the required specifications were undertaken. These have been completed in all six centres. A team of medical officers and lab technicians for manning these centres needed to be trained for which a training module was designed and developed by the chief of pathology at Jhalawar District Hospital (DH), one of the WRLH districts. The training duration is for seven days. This module has since been endorsed by the Government of Rajasthan (GOR) and has been accepted as training material for the whole state. A training of trainers has been completed. Further training of medical officers and lab technicians from these identified centres were underway and were expected then to be completed by January 2004.

Recognising that voluntary donations constitute the backbone of all blood transfusion services, and with

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1 UNICEF a Human-Rights-based Approach to Programming for Maternal Morality Reduction. 2002 pp 26
a view to ensuring an ongoing supply of blood for all blood groups, a crucial step in the process of strengthening the EmOC services has been to focus attention on the recruitment and maintenance of voluntary blood donors. The objective is to complement the replacement donations made by relatives of a pregnant woman at the time of an emergency.

Owing to the prevailing social attitudes and beliefs, resistance to giving blood on replacement for a female relative is common. As a result, when the health personnel encounter a blood shortage, they have tended to refer the patient to a higher-level centre rather than invite the wrath of distressed relatives. This often proves to be a death sentence for women with PPH where the timeliness of the intervention is the determining factor between life and death.

Appreciative Inquiry for Attitudinal and Behavioural Change
To address the multiple social and technical issues influencing unnecessary maternal deaths, an Appreciative Inquiry approach was developed to bring about behavioural and attitudinal shifts in the health facilities. The methodology was designed to achieve the following:

**Expansion** of the number of voluntary donations;

**Increased awareness** on the need to prioritise blood transfusion services for the maternity section within each facility;

**Heightened sensitivity** of service providers with respect to their roles and responsibilities in saving women's lives; and

**A consolidated team** approach to saving women's and their babies' lives.

The stakeholders involved in the application of the Appreciative Inquiry technique included local NGOs, CBOs and influential members of the community. They supported the organisation of voluntary blood donation camps and undertook activities to motivate people to participate in these camps by dispelling the myths and misconceptions related to blood transfusion.

The most common myth encountered was that giving blood renders a donor weak and may cause his or her death. Deeply ingrained in this thinking is the low social value attached to a woman's life in contemporary Indian society, which in the case of Rajasthan is largely patriarchal and feudal. When a potential donor is a male, few families would dare risk a male's life to save that of a female! It is therefore common for relatives to desert a woman in need of blood.

The Appreciative Inquiry technique allowed for continuous interaction amongst the staff irrespective of medical hierarchy. By concentrating on the preventable nature of maternal deaths, a change in attitude within the health cadre has emerged over time. This was demonstrated when the hospital staff reached a consensus that it should be a hospital priority and agreed to form a blood team.

The team outlined a vision that, "no woman will be referred to a higher centre or die for want of blood in this hospital."

The team constituted staff members from maternity, pathology and other sections, paramedical staff, and support staff. Regular monthly meetings were held and two major determinants were identified as being fundamental for effective blood transfusion:

(a) **Ongoing blood collection and**

(b) **Increased use of blood and improved reporting on blood use in the maternity section.**

**Results**

Such intervention resulted in improved blood availability for use in maternity section for obstetric cases. The blood bank services are now available
round the clock. The officer in charge — principle medical officer at the district hospitals has made a provision that in the event that blood donor/s are not available blood is to be issued for obstetric emergencies to be replaced later when the donor is available or to be adjusted through voluntary donation.

**Promoting voluntary blood donations**

In order to dispel the myths surrounding blood donation and to encourage blood donation, local women’s groups, youth groups, community leaders, etc were involved in advocacy of blood donation and that it did not lead to weakness in a healthy person. Important days like International Women's Day and National Safe Motherhood Day, Independence Day, World AIDS day, etc were used for organising blood donation camps and raising awareness among community members. Local leaders and bureaucrats were involved to lead by example. UNICEF supported in organising these camps and networking with community stakeholders for awareness generation and advocacy.

To sustain the enthusiasm of community members, certificates of appreciation were distributed to voluntary donors on the occasion of Independence and Republic Days. To facilitate blood availability in emergencies, an updated list of donors highlighting those with rare blood groups was made available with the blood bank.

As demonstrated in the table below, positive health trends are emerging in the three-project districts.

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<tr>
<td>Total blood collection</td>
<td>NA</td>
<td>956</td>
<td>1041</td>
<td>2094</td>
<td>2313</td>
<td>3014</td>
<td>637</td>
<td>607</td>
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<td>56</td>
<td>37</td>
<td>92</td>
<td>79</td>
<td>5</td>
<td>8</td>
<td>20</td>
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<tr>
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<td>268</td>
<td>460</td>
<td>670</td>
<td>676</td>
<td>1006</td>
<td>147</td>
<td>168</td>
<td>145</td>
</tr>
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i) Total collection of blood in the hospital has increased

ii) Voluntary blood donations have almost doubled from the starting point

iii) The use of blood in the maternity section has increased at Baran and Jhalawar District Hospitals. An increase occurred in Dholpur District Hospital between 2000 — 2001, to fall back again in 2002 as a result of ongoing managerial and supervisory issues that require further attention;

iv) The increased use is also due to improved reporting. MIS registers for blood banks were designed by UNICEF and supplied to all districts that helped in getting relevant data.

The preliminary data coming in for the cause of maternal death from the institutions show encouraging trends in terms of increase in case management of obstetric haemorrhages and declining trend in case fatality.

**Lessons Learnt**

The support of UNICEF in three districts of Rajasthan through the Women's Right to Life and Health (WRLH) project is demonstrating a slow but incremental improvement in the reduction of maternal deaths arising from post-partum haemorrhage. The availability of blood has been strengthened, together with the quality of the
EmOC services. Involvement of key stakeholders is critical to success and a team approach is imperative for interventions to demonstrate results. The programme is striving to increase adequate coverage of priority services, foster attitudinal changes and heighten an awareness of the right of every woman to a safe pregnancy and dignified childbirth.

Through its support, UNICEF has developed a sound methodology at the district level. However, before attaining the Millennium Development Goals, further attention is required to address the well-known constraining factors relating to poor reporting systems. The outcomes of those pregnant women that left the centre against medical advice, those who were referred to other hospitals, and those who absconded without informing the medical staff require more systematic tracking and follow-up. In this regard, social audits conducted by the community-based health and nutrition teams, under the direction of leaders of the Panchayt is a strategy being proposed as the next stage.

With a view to scaling up and accelerating the initiative over the next period, additional complementary interventions requires further attention. They pertain to the need for continued improvement of infrastructure and labour rooms in other areas of the state. In addition, the availability of basic medicines and equipment for emergency situations remains inconsistent across the state, as does the dependable functioning of the waste disposal systems and electricity supplies. Broadening the private-public partnerships based on organisational comparative strengths will also be piloted and documented as a strategy designed to achieve maximum impact in the next phase.
Increasing availability and access to district EmOC services

Introduction

"Nepal has an estimated maternal mortality ratio of 740/100,000 (WHO/UNICEF/UNFPA, 2000), one of the highest in the world. With about 4478 preventable maternal deaths each year, one of the most difficult questions to answer is "who is accountable for these deaths?" Among those whose duty it is to respect, protect and fulfil the right of women to survive pregnancy and childbirth with dignity — her immediate family, the health system, government — most believed they were not responsible."

However, the scenario of needless maternal death is beginning to change. In 2002, a qualified general practitioner was posted to remote Panchthar in North East Nepal, to receive a warm welcome from local communities. Shortly after his arrival, 33-year-old Deumuka Idingo, was brought to the district hospital with severe bleeding during pregnancy. The doctor diagnosed a placenta praevia, a condition in which a caesarean section was urgently required to save her life; the baby had died in utero. He requested for two units of cross matched blood and proceeded with the caesarean section. Blood samples were drawn from two of Deumuka’s relatives; however the blood failed to match. So a paramedic at the hospital and a “peon” stepped in and donated blood. Deumuka’s life was saved not only due to the availability of quality emergency obstetric care services at the hospital, but the attitude of the hospital staff whose respect for life resulted in actions that went beyond the call of duty to save her life.

Maternal mortality is a reflection of the unavailability of quality 24-hour EmOC services and the social and economic conditions that deny a woman her fundamental right to survive pregnancy and childbirth.

In four UNICEF-assisted safe motherhood programme districts in Nepal, the lives of many such women have been saved through increased access and utilisation of quality emergency obstetric care services. It is estimated that there are about 9,500 women with life threatening complications requiring emergency obstetric care services in these four districts. A baseline assessment in 2000, showed that only 225 among them received EmOC services (2.4 per cent met need for EmOC). Of the remaining 9,275 women, it is likely that a large number died, while many survived with residual disability. Three years after the introduction of the Women’s Right to Life and Health Project, 1,610 women have received EmOC services during the year (met need of 15.3 per cent), a five fold increase in utilisation of emergency obstetric care services. In a country where less than 10 per cent of the population have access to health services as compared to 76 per cent for neighbouring India, this is a remarkable achievement.

Background

Nepal is a country faced with many development challenges. The majority of its population live below the poverty line. Although child mortality has been halved in the last two decades, maternal mortality ratios have continued to remain among the highest in the world. Despite an extensive district network of health facilities, many are non-functional and an overtly centralised administration and political
instability have hampered efforts to improve health service delivery.

**Local governance and UNICEF’s Decentralised Action for Children & Women (DACAW) programme**

The passage of the local Self-Governance Act in 1999 offered an opportunity to bring about accountability based on enhanced popular participation in development. In the spirit of this Act, the UNICEF Country Programme (2002-06) supports a rights based district approach, focussing on "decentralised action for children and women", to respond to prevalent social inequities and gender disparities. The objective of DACAW is to strengthen the capacity of duty bearers and rights holders to ensure progressive realisation of the rights of children and women to survival, growth and development, non-discrimination, nutrition, clean water, hygiene and sanitation, basic quality education, special protection and protection from HIV, including good health and health care. Through DACAW, community action processes are facilitated and local governance institutions strengthened to undertake integrated, convergent planning and provision of responsive services for women and children.

At the centre, UNICEF's major partner for implementation of the DACAW approach is the Ministry for Local Development (MLD) and through MLD, the respective line ministry such as the Ministry of Health Services. UNICEF Nepal has four regional field offices, which co-ordinate implementation of the DACAW approach at district level, the major district partner being the District Development Committee (DDC) and through the DDC, the line agencies such as the District Health Office. Budgetary regulations permit donors to directly fund projects through the DDC, which facilitates flow of financial resources and increases timely action.

**AMDD and the Women’s Right to Life and Health (WRLH) Initiative**

The Women’s Right to Life and Health Initiative in Nepal is set within the comprehensive DACAW programme and is supported by the Bill and Melinda Gates Foundation, through the Averting Maternal Death and Disability (AMDD) Project, run by Columbia University. The project in Nepal was initiated in 2000. In 2003, the project received additional funds from DFID. The objective of the project is to achieve a sustained reduction in maternal death and related disability through strengthening EmOC services in four districts — Dang and Kapilvastu in the western region and Saptari and Panchthar in the eastern region. This is to be done through:

- establishing one comprehensive and one basic emergency obstetric care facility in each district
- ensuring that the facilities incorporate management principles based on teamwork, motivation and accountability and
- Supporting interventions that would result in increased utilisation of quality EmOC services, provided in a manner that respects women’s rights.

**WRLHI is realised in the context of decentralised approaches through:**

- **Responsive EmOC services** that ensures quality and accountability among duty bearers
- **Community action** that mobilises and empowers communities to take necessary collective and timely action for increased utilisation of EmOC services
- **Good governance** that ensures appropriate programming and management among all stakeholders and local policies are in place.

The WRLHI is implemented in partnership with government counterparts at district level with technical assistance of field officers working within the UNICEF DACAW structure. Technical support is also provided by the UNICEF country office in Kathmandu.

Within DACAW, WRLHI addresses the immediate causes of maternal death to reduce the third delay
through supporting provision of quality services, while the Community Based Safe Motherhood Project, funded through other UNICEF resources, supports interventions to increase awareness and create demand for services, to reduce the first two delays. Other DACAW programmes also support activities that address the underlying and basic determinants of maternal death — the social, legal and educational status of women.

**Community Based Safe Motherhood Project**

It is worth mentioning at this stage that two years before the initiation of WRLHI, UNICEF had been supporting the implementation of a Community Based Safe Motherhood Project in 10 districts in Nepal, of which two (Dang and Kapilvastu) were selected as WRLH districts. Through DACAW, the Community Based Safe Motherhood (CBSM) project linked the health, local government and non-health sectors as well as non-government organisations/ community based organisations at the district level and below, with the objective of increasing community demand for health services and increased responsibility for health as well as strengthening responsive service delivery to communities, focusing primarily on antenatal and postnatal care and increased utilisation of existing EmOC services. Advocacy through this programme had created awareness and demand for maternal health services. When funds became available for strengthening quality service delivery through AMDD/WRLHI, it was a simple matter of linking demand creation through the existing CBSM project with strengthening supply through WRLHI.

**District baseline**

In 2000, the eight selected WRLHI facilities, located in four districts were typical of most health facilities in Nepal. They were remote islands isolated from the communities they were expected to serve, as reflected in a met need of 2.6 per cent.

Key findings from the quality assessment conducted in Saptari district in 2001 confirmed that the majority of men and women would go to a health facility in the case of heavy bleeding (60 per cent women, 78 per cent men) and convulsions (65 per cent of women, 70 per cent men), however the rest reported that they would wait and see or go to a local healer, including a faith healer, other healers or friends/relatives. However, most respondents (75 per cent) did not believe that their local health facility could handle the situation. Cost was reported as an important factor for poor families because they have to take out loans, which sometimes requires negotiation by several family members and often takes considerable time to secure.

Within the health facilities, there were many issues. The health facility assessment revealed that the record keeping was old and inefficient, no standard protocol and procedures were being used for emergency obstetric care, and the partograph was not in use. Most EmOC drugs were not available and many inadequacies were revealed in the EmOC supplies and equipment lists.

In order to provide quality EmOC services, a basic pre-requisite is the need for team work among health staff. This culture was undeveloped and instead an environment of rigid hierarchy and depleted motivation existed. Although the poor quality of care was attributed to the lack of training, supplies, equipment and supportive infrastructure, perhaps the most important, yet unreported factor, was the lack of communication between different health staff, the health staff and the community, coupled by a lack of accountability for the lives of women. Health workers had no voice in decision-making and lacked the power to influence outcomes.

**Project Intervention**

**Policy level**

The WRLHI contributes to the National Safe Motherhood Programme, co-ordinated by the Family Health Division, (FHD) which is the focal point for safe motherhood. As a member, UNICEF participates actively in the national safe motherhood sub-committee constituted in July 2000 under the chair of the FHD, with major
donors and partners forming the members of the sub-committee. Through the co-ordinating efforts of government and partners on the sub-committee, the various projects supported by various partners in the National Safe Motherhood Programme are being implemented in a programme approach.

The DFID supported Nepal Safer Motherhood Project (NSMP) and WRLHI, address project implementation as well as policy development. The USAID supported Maternal and Neonatal Health Project has mainly addressed policy level issues, such as the development of a national training strategy, communication strategy, the development of a birth preparedness package and IEC/ advocacy messages for increasing utilisation of maternal health services as well as the establishment of training sites. A national training site for competency based training for EmOC has been established through a leadership grant from AMDD supported by WRLHI. NSMP and WRLHI working with the FHD have provided support to the development of a national monitoring system for EmOC. Working in partnership with UNFPA, the WRLHI also addresses the issue of quality of care. The members of the safe motherhood sub-committee have worked in partnership, contributing according to the organisation’s mandate and capacity to the development of a far-sighted progressive approach to reducing maternal mortality in Nepal. The approach prioritises EmOC and skilled attendance, adopting a rights based approach to increasing coverage through delegation of responsibility for services to the lowest appropriate level where care could safely be given.

**Interventions at district level**

**Reducing the third delay**

WRLHI interventions address the third delay, linking closely with the Community Based Safe Motherhood Project that addresses the first two delays leading to maternal death. Community participation has been the key strategy in planning, implementing and monitoring activities for reducing all three delays. The initiative seeks to build the capacity of health systems and civil society in a sustainable manner — an approach that embodies quality technology, management excellence and respect for human rights. In doing this, the following principles of rights based programming were taken into consideration:

- **Universality and non-discrimination**: Are the most vulnerable benefiting from the programme?
- **Indivisibility**: Does WRLHI gain synergy and contribute to the goal of other sectoral programmes?
- **Participation**: Are all stakeholders including those that the programme seeks to serve involved in the continuous review, planning and monitoring processes?
- **Accountability**: Are all stakeholders equally responsible and responsive?

The project interventions in WRLHI were applied to all districts, in a decentralised approach, i.e. based on the identification of local needs by field offices. Technology, rights and management are the three essential components of the initiative and have been addressed in the following manner.

**Technology**

Principles of rights based programming were applied to development of quality technology through inclusion of stakeholders in addition to health staff in the planning and implementation of these activities.

**Construction/renovation**

A needs assessment carried out at the beginning of the project period revealed that there were major deficiencies in the infrastructure of the selected project hospitals. Based on the needs assessment, design drawings were prepared in a participatory process with stakeholder involvement, resulting in a high sense of ownership and commitment. New construction of maternity units including operation theatres was undertaken in three districts — Kapilvastu, Dang and Panchthar in preference to renovation, being more cost and staff- effective. It was possible to include features
of earthquake safety, based on Nepal’s seismic location. Given that in the capital city of Kathmandu, most hospitals lack features of earthquake safety, this is particularly important.

**Procurement of equipment**

Equipment needs were identified in a participatory process involving hospital staff and members of the hospital support committees. High quality, low maintenance equipment have been procured through UNICEF procurement services, Copenhagen and distributed to the districts. Says a senior staff of the DHS’s logistics management division, "It is a long time since we received equipment of such high quality; if used reasonably well, it should last for 10 years and more". An INGO working with government on equipment maintenance has been contracted to provide maintenance training to all users — again a whole site participatory approach. Although there are no designated maintenance technicians at district hospital level, four peons have received six weeks training in equipment maintenance and repair.

**Training**

Technical training of health providers in the four districts consisted of — whole site infection prevention training, midwifery refresher (62), anaesthetic assistant training to nurses and paramedical staff (6), blood bank technicians training (3), whole site maintenance and users training for proper use of equipment, on site midwifery/EmOC coaching as well as BEmOC (9) and CEmOC (1) training.

**Rights and Management**

The major challenge that the project faced was developing a sense of accountability among duty bearers, in particular among health staff, though community accountability was also an issue. Clearly this could only be achieved through open interaction between service providers and users/stakeholders, so that sensitive issues relating to avoidable maternal deaths could be discussed with project planning based on community aspirations and needs. Given the existing scenario of blame, it was also necessary to create a non-threatening environment where such discussions could take place. Appreciative Inquiry (AI) — the management approach adopted by the project provided the necessary positive background for such discussion.

Working within a rights based approach, the project focussed on participation of all staff, including peons and cleaners giving previously marginalised health workers a voice in planning EmOC services in their facility. Stakeholders consisted of local government officials, women leaders and women from marginalised communities, representatives of media, NGOs, other government line agencies. Initially, there was considerable reluctance from health staff to invite communities to participate; however the visible commitment of communities and their support for the district health system quickly dissolved any barriers. Today, communities are equal participants in these workshops for strengthening EmOC, which have become a regular feature of the district activities, with twice yearly review planning meetings.

Appreciative Inquiry, an innovative planning and management approach, was used during these workshops to strengthen systems. AI is a result oriented process designed to help people realise their potential and to help themselves. This is achieved through the creation of a positive environment based on appreciation and analysis of past successes of individuals and the organisation. This foundation of success enables the district team of health staff and stakeholders to create a shared vision for quality EmOC services. This is followed by the development of breakthrough plans (action plans) and teams that take responsibility for carrying out action plans. The achievements of these teams are reviewed six months later and new plans made. Between workshops, breakthrough team meetings are held to review progress. AI has proved to be a non-confrontational approach to the realisation of human rights. Human rights values such as participation, non-discrimination and accountability are being institutionalised at individual health facility and community levels through this process.
Reducing the first and second delays

Awareness of danger signs
The first delay is the time between onset and recognition of the emergency. A baseline EmOC Quality Assessment Survey conducted in Saptari district in July 2001 interviewed 17 clients who experienced obstetric complications. The survey showed that it took an average of nine hours to decide to seek treatment after the emergency took place. Eight women responded that it took 24 hours to decide (range 0-96 hours) to seek treatment. Among the 421 women and men interviewed, none knew all five key danger signs. In the four project districts, community empowerment strategies have been developed to increase awareness of danger signs and mechanisms for increasing access through:

- Community mobilisation through multiple sectors going beyond health. Advocacy through women's groups, interaction meetings with religious leaders, meetings in the electoral ilakas by the district public health staff, street theatre on EmOC, advocacy sessions for elected women members of each ward, safe motherhood training to village health management committees and out-reach clinic management committees.

- Advocacy and knowledge dissemination on danger signs of emergency complications through radio in local dialects

- Publication of news bulletin to reinforce positive practices targeted at health workers and visitors to all extension health facilities in the district.

- Hoarding boards on the danger signs of obstetric complications

- Weeklong campaigns on safe motherhood in village development committees.

- Interaction programmes between community and hospital staff about the WRLHP in the hospital, the danger signs, three delays

- Development of referral slips, with pictorial representation of danger signs, for use by community volunteers.

Emergency transport and community funds
One of the major barriers to access to EmOC is the lack of transport and funds to reach an EmOC facility as well as lack of trust in the health system. The baseline EmOC Quality Assessment Survey at Saptari showed that, there were no formal schemes for supporting women with obstetric emergencies in the entire district. In emergencies, individual families arranged transportation. Ambulance service covered 11 per cent of VDCs that have connection with good road. Though there were some private and public institutions involved in saving and credit programmes in the study communities, they have not incorporated EmOC issues in these programmes. During obstetric emergencies, communities generally borrowed money from the local moneylender; the report showed that the interest rate of the local moneylender was remarkably high (24 to 120 per cent).

Given the major role of the second delay in posing barriers to accessing EmOC services, the UNICEF assisted Community Based Safe Motherhood Project has developed the following strategies to address the second delay:

- Creation of emergency funds through community contributions and budget allocation by local governments

- Linking these to hospital emergency revolving funds set up through community contribution matched by UNICEF.

- Provision of ambulances, in all four districts, by UNICEF in two districts and by partners in the remaining as well as developing systems for ambulance management.

- Formation of village safe motherhood committees and mobilisation of local village volunteers and blood donors.
**Hospital revolving funds**
A major barrier to access to EmOC services is the inability of many families to afford the high cost of services. A revolving fund has been established at all district and zonal hospitals with contributions from the community and matching funds from UNICEF. The medical superintendent of Sagarmatha Zonal Hospital, Saptari says, “No woman has died or will die in this hospital for lack of medicine and treatment. If a woman is really poor, we allow them to borrow money from the hospital emergency funds.” Since these funds have been instituted, about 50 women in four districts have accessed the community and hospital revolving funds; surprisingly repayment of these funds have been fairly good. Debtors are tracked through the district public health office, which has an extensive infrastructure in the grass root level.

**Study or Project Findings**

The supported health facilities providing EmOC services and communities have demonstrated a high degree of commitment and capacity for the provision and utilisation of quality EmOC services thus saving the lives of women. Although seriously affected by insurgency all through the project period, with the imposition of curfew since January 2002 and more recently the dismissal of the elected government officials, the districts have shown a steady increase in utilisation of services. The results based nature of the project, with its clear monitoring indicators (UN process indicators for EmOC) has demonstrated very clearly its achievements in the short period since the programme was introduced. Of the four proposed basic and comprehensive EmOC sites, three CEmOC and four BEmOC sites are functional. Utilisation data is shown in the attached Annex.

**Third delay**

**Community participation:**
- Hospitals which were completely alienated from surrounding communities, where a pervasive culture of blame was the norm both among health staff and communities have been transformed by constructive joint planning and implementation, with the development of increased accountability on both sides.
- The behaviour of health workers towards clients has improved considerably.
- The health facilities have in turn benefited from the support and contributions provided by communities in terms of finances as well as assistance in kind.
- At Dang, the Planning Review (AI) Workshops helped resolve conflict between two high level local government officials, through acknowledgement and appreciation, rather than analysis of problems and their solution. Resolution of this conflict has helped development programmes in the district move ahead.
- The Kapilvastu Review Planning (AI) workshop focussed on inclusion of women, among them the marginalised and the minorities, as stakeholders in the health system. The presence of low caste illiterate women in this forum, initially considered unacceptable, was eventually accepted due to their high degree of participation. These women have proved to be the most effective stakeholders.

**Quality of services**
- The improved quality of care noted in the facilities is also attributable in the first place to the AI approach leading to better teamwork, as demonstrated by a fall in case fatality rates which preceded technical training. This was later complemented by high quality competency based training as well as continuing medical education and use of quality improvement tools.
- At Sagarmatha Zonal Hospital, Saptari, construction of a new maternity block could not be supported as a result of budget constraints. However, following his exposure to the Appreciative Inquiry approach, the medical superintendent has undertaken a personal
A crusade to transform the sanitation and cleanliness in the hospital, using the hospital's own funds together with some matching funds from UNICEF. A new block of toilets has been built; all the old toilets in the hospital have been tiled making maintenance much easier for the cleaners, empowered by participation at the review planning workshops, based on Appreciative Inquiry. The drainage system in the hospital has been re-done. The floor of the labour ward and post-operative ward have been tiled.

- Partnership between Sagarmatha Zonal Hospital Saptari and Teaching Hospitals such as BP Koirala Institute of Health Sciences, has been mutually beneficial, with use of the increased hospital case load for teaching learning activities, while the Teaching Hospital staff provide the much needed human resources and technical support.

- Linkages with neighbouring district hospitals, and health facilities, which refer patients for CEmOC resulting in further increase in utilisation of services.

- The project has supported capacity development of hospital support committees to manage EmOC services, as the project phases out.

- Due to the high utilisation rates of two CEmOC facilities (Saptari and Dang), the hospitals have been developed as refresher training sites for district midwives with the objective of increasing the proportion of district births delivered by skilled attendants, developing a referral system linking the community with skilled attendants at health posts and EmOC services at PHCC and hospital level, thus further increasing utilisation of these facilities for emergency complications. This has further helped develop the capacity of these institutions and improved quality of care.

- A rapid assessment made of the cross section of staff in the hospital (excluding stakeholders) indicates that in their view the technical skill competence improvement has been key to quality improvement followed by improvement in management through personal transformation and leadership.

- Staff were also asked to name one important change that had occurred at a personal level, as a result of project interventions. While answers relating to enhanced knowledge, skills upgrading and improved service delivery were expected and received, more than half the answers actually addressed human rights values related to change in attitudes with increased provider responsibility and accountability, improved behaviour towards clients and team spirit.

**First and second delay**

- At the community level, multi-media advocacy has sensitised communities and increase confidence in the health facilities. Wall news bulletin have helped reinforce best practices. News media has been influenced by the Appreciative Inquiry approach and report positively on changes in the health facilities.

- The extensive support structures that have evolved including the mobilisation and inter-linkage of emergency funds have contributed to increasing access to services by the disadvantaged. Provision and improved management of ambulances have also improved access, particularly in hill districts where terrain and poor transportation have in the past discouraged families from moving out of their isolated settlements.

- The mapping of patient flow from communities to EmOC facilities (Annex 2) has also developed a sense of urgency among communities and local governments. The information has been analysed to address
utilisation of services by rural disadvantaged communities and is used intensively to discuss and forge alliances at all levels.

Interviews with stakeholders attribute these achievements to quality services provided in hospitals through training of relevant staff and key attitudinal changes and commitment of individuals and groups, with resultant change in the culture of hospitals and communities. The tremendous change in attitudes of staff and stakeholders has resulted in readiness, response and accountability in handling women with obstetric complications. Quality of care has improved significantly with only two maternal deaths in 2002 as compared to fourteen the year before.

**Conclusion and Implications for Scaling Up**

Mainstreaming WRLHI in DACAW has produced a successful district model for reducing the three delays leading to increasing coverage and utilisation of EmOC services, which can be scaled up in the National Safe Motherhood Programme. DACAW’s programming approach has been key to the success of this model and demonstrates the effectiveness of the decentralised integrated rights based approach over sector driven vertical programme approaches. Within UNICEF’s Decentralised Action for Children and Women Programme, EmOC is a core component of the strategies contributing to the realisation of the Millennium Development Goal for “improved maternal health”.

The inclusion of EmOC in UNICEF assistance priorities has furthered the progressive realisation of the indivisible rights of children and women, thereby enhancing the status of families and contributing to the reduction of human poverty.
Annex 1

Utilisation of EmOC Services

Annex 2

1. Proportion of district births and met need for EmOC — WRLH districts (Bar chart)

Average (District wise) Proportion of district birth (%) and Met Need for EmOC - WRLH Districts

2. Met need for EmOC (Graph — Saptari, Dang, Kapilvastu, Panchthar)

Met Need for EmOC - Dang (UNICEF)

Met Need for EmOC - Kapilvastu (UNICEF)
Met Need for EmOC - Saptari (UNICEF)

Met Need for EmOC - Panchthar (UNICEF)

Met Need for EmOC - WLRH/UNICEF
Strengthening the existing EmOC services in targeted facilities to reduce maternal mortality

Background

A fresh approach
With far too many pregnant women in developing countries lacking access to good medical facilities and care, particularly during emergencies, some health workers are pursuing a fresh approach to ending the death and suffering associated with pregnancy and childbirth in the world’s poorest communities because most maternal deaths are avoidable and therefore unacceptable.

The Women’s Right to Life and Health is a new collaborative approach of UNICEF Regional Office for South Asia (ROSA) and Averting Maternal Death and Disability (AMDD) project of the Mailman School of Public Health, Columbia University, to support the Government of Pakistan (GoP) in its effort to reduce maternal mortality, through a deepened understanding that maternal mortality is a woman’s right. It is based on the premise that emergency obstetric care is essential and life saving for complications that may arise with any pregnancy and childbirth.

The overall objective is to strengthen the existing EmOC services in targeted facilities to reduce maternal mortality and morbidity through the following:

- Availability of comprehensive EmOC services at 13 districts and sub-districts /taluka headquarter hospitals (DHQ/THQ) and basic EmOC at 14 rural health centres in the three targeted districts to increase geographic distribution.

- All 27 EmOC health facilities would offer 24-hour services, seven days a week.

- Reduction in the unmet need as indicated by the proportion of women who are treated for obstetric complications at the facilities and by improving proportions of C-sections.

- Case fatality rate among women with obstetric complications treated at the facilities will be monitored for improving the quality of care.

- The database for maternal morbidity, deaths and near misses in the targeted facilities will be established.

- Family and community will be mobilised for accountability to save women's lives.

The overall strategy is based on the conceptual framework of three elements required for successful implementation of the programmes — quality technology, management excellence and respect for human rights.

To achieve its objective the WRLH initiative has been designed for both immediate and longer term results, creating space for innovation and providing direction for results, without being prescriptive. More importantly it was meant to maintain one common strand of focus — enhancing the status and self-esteem of women throughout the process.

However, interest in this new approach is being fuelled by frustration with persistently high levels of maternal deaths in less developed countries as well as by weaknesses in traditional ways of tracking the problem. Determining maternal mortality ratios (MMR) — the number of deaths for every 100,000 live births in a population — relies on the gathering of accurate data on the deaths
and their causes. These are difficult to come by for a variety of reasons — many deaths occur outside of health systems and are not recorded; health workers may not always know the causes of death; collecting the data is costly; and calculating the numbers is complex.¹

**Situation analysis**

Unfortunately there is no one-time prescription that can be used to solve the predicament our women are in. Women, particularly poor women, are the most discriminated. The disadvantage of being a woman is manifested throughout their life cycle in the form of prejudicial child-rearing practices with preference for the male child, exclusion from schools, early marriage, untimely pregnancy, domestic violence, harassment at the workplace etc.

**Stage of delay**

1st Delay: Deciding to seek care
2nd Delay: Identifying and reaching a medical facility
3rd Delay: Receiving adequate and appropriate treatment at the facility

However, Deborah Maine, the AMDD programme director emphasises, “Focusing on emergency obstetric care does not negate the importance of other kinds of activities, such as working with the community to encourage families to promptly seek care for women who are ill. Nor does it mean that all pregnant women need to deliver in medical facilities.” Calling this a “first-things-first” approach, she argues that emergency obstetric services must first function well before the community is mobilised to seek care.

With a population of about 142 million, of which 33 million are women in the reproductive age, every 20 minutes a woman loses her life while giving birth in Pakistan. The maternal mortality ratio is officially estimated to be 533 per 100,000 live births. The same ratio is estimated to apply in Sindh.

While there have been efforts by various agencies including UNICEF, UNFPA, WHO etc, to eliminate gender-inequity, most have focused on improving infant and maternal health and well being. Efforts to reduce maternal and infant deaths have included strengthening access to prenatal care, improving women’s nutrition, trying to identify high-risk pregnancies early, and training traditional birth attendants. None of these approaches has had a major impact on maternal mortality. A major pitfall in saving lives is our poorly functioning health systems.

There is a shortage in the number of health facilities providing EmOC. All facilities do not provide 24-hour coverage for cases with complications. A study in Sindh showed that the minimum basic obstetric team (surgeon, anaesthetists and operation theatre technicians) was available in one third of the health facilities only. The knowledge and skills of the health care providers was deficient. There was extreme shortage of essential supplies and equipment. The record keeping was very poor and the referral system was not in place.

It is for the first time that such a project has been initiated based on the model of 3 Delays with emphasis on developing strategies for the 3rd delay — provision of 24-hour quality EmOC care — as the basis for programmatic actions. At the same time ensuring that the initiative promotes, establishes and preserves women’s right to privacy, dignity and self-esteem. For this purpose, tools developed by Columbia University for Quality Improvement are being used.

¹ Improving Emergency Care to End Maternal Deaths by Yvette Collymore, senior editor at Population Reference Bureau
² Improving Emergency Care to End Maternal Deaths by Yvette Collymore, senior editor at Population Reference Bureau
³ Improving Emergency Care to End Maternal Deaths by Yvette Collymore, senior editor at Population Reference Bureau
Sidebar

Sindh Health Department’s medical facilities

To provide preventive and curative health care to the entire population in the Sindh province, train medical, nursing and para-medical staff in sufficient numbers and to meet the requirements of all the hospitals in the province, the Sindh Health Department manages all the above through the following:

Five medical colleges, five teaching hospitals (Civil Hospital Karachi; Lyari General Hospital, Karachi; Liaquat Medical College Hospital, Hyderabad and Jamshoro; Chandka Medical College Hospital, Larkana and People’s Medical College Hospital, Nawabshah).

There are five specialised hospitals namely, Sir Cowasjee Jehangir Institute of Psychiatry, Hyderabad; Institute of Skin Diseases Karachi; Ojha Institute of Chest Diseases Karachi; Chest Diseases Institute, Kotri and Chest Diseases Hospital, Khairpur.

There are 11 secondary care civil hospitals and 24 other major hospitals in various districts of the province, 44 Taluka headquarter hospitals (THQ) and primary health care facilities are provided through 92 rural health centres (RHC), 701 basic health units (BHU), five urban health centres, 14 urban health units, nine sub-health centres, 201 dispensaries, 19 maternity homes, 36 mother and child health (MCH) centres, 10 dental clinics and 18 school health clinics.

There are four autonomous bodies such as the Sindh Health Foundation; Sindh Medical Faculty; Sindh Quality Control Board and Sindh Nursing Examination Board also that comes under the health department.

While there is a well-oiled health delivery system on paper, it seems to be falling apart. The BHUs and RHCs are often difficult to access as transport facilities are not always there. Often they are understaffed and frequent absenteeism is observed. At the Tehsil and district hospitals pilferage of allocated medicines is a common practice and since there is no accountability, countering such pilferage is impossible.

With poorly staffed non-functional local facilities, the lower tiers of the health system are frequently bypassed in favour of the tertiary-care teaching hospitals. This results in the primary-care centres and the secondary care facilities including Tehsil and district hospitals remaining underutilised, while the teaching hospitals are constantly overburdened and overextended.

About the Sindh project

At the onset an assessment of the nine districts of Sindh was carried out and it was envisaged that WRLH initiative would be launched in five while the remaining four would come under the purview of ADB’s Women’s Health Project. However, seeing the tremendous task this entailed, the work was reduced to three districts where 27 health facilities needed to be strengthened/ upgraded for EmOC services. The three districts selected for the purpose were Hyderabad, Sanghar and Karachi West.

The right ingredients

The shared vision and action for saving the lives of women
1. Respect of human rights
2. Excellence in management and
3. Quality technology

The strategies of the WRLH initiative are based on three guiding principles: excellence in management, provision of quality technology and respect for human rights.

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*4 Government of Sindh, Official website*
Excellence in management
Excellence in management can be achieved through two key interventions — hospital readiness and MIS. This would help sort out problems like staffing, equipment, planning and review, drugs and supplies, staff development, information systems and maintenance. A project steering committee was formed to provide technical guidance and to expedite the implementation of the plan of action. The committee includes representatives from the National Committee on Maternal Health (NCMH), Pakistan National Forum on Women’s Health, Project Director of ADB-funded Women’s Health Project, nursing director, government counterparts and representatives of UNICEF and UNFPA.

Management information systems (MIS)
Perhaps the biggest hurdle in fighting maternal and infant mortality is inadequate information related to women’s reproductive health. Lack of information or deficient record keeping where it exists has been one of the key challenges in strengthening the health system in the facilities working under the WRLH initiative. MIS is the key component of this initiative and therefore extensive database of patient information has been built up, for the very first time, in government facilities. “MIS data is very important as it provides a clear picture of the health status of the population and it helps planners and decision makers in prioritising budget and resource allocation," says Dr. Furqan Zafar.

As a first step a directive was issued from the government that every maternal death in the facility would be recorded and audited. Earlier teaching hospitals would conduct death reviews verbally at morning meetings but no form or tool was available to record these deaths. With the initiation of the project, a facility-based death inquiry form has been developed and sent to a central database.

Management information systems (MIS)
The software called the CU (Columbia University) readiness for managing obstetric emergencies caters to specific needs of this initiative. It helps manage, monitor and analyse huge amounts of data in an easy and efficient manner. A 1999 benchmark was established as the basis for comparison in all mid-term and final evaluations.

Hospital readiness
“A large number of people starting from the doorman to the consultant should be trained, ready and prepared to deal with emergencies. The EmOC team consists of the obstetrician, midwife, anaesthetist, and operation theatre attendant. A neonatologist is also needed to look after the newborn.” Dr Sadiqua Jafarey, president, National Committee for Maternal Health (NCMH) and professor of obstetrics and gynecology, Ziauddin Medical University.

The targeted taluka hospitals have been motivated and trained to deal with emergencies. Take the case of Shahdadpur Taluka Hospital (STHQ) where the (Qingchi) rickshaws, taxis, food vendors, just about anyone could enter and flock around the premises. “It was like coming to a carnival everyday,” says one doctor. All that has changed. “We got direction and motivation from the Appreciative Inquiry conducted by the WRLH team that addressed the gaps.” The spirit behind the facelift and to take the responsibility of saving women’s lives was the previous medical superintendent.

However, the new medical superintendent is as interested to carry on the good work. “After effective organisation and preparedness for obstetric emergencies, I advised my two sisters-in-laws to have their C-sections here at the government-run outfit instead of in a private hospital,” says Dr Khadim Hussain, working in the hospital, who feels his family would have received free treatment even in a private hospital. “But we are so well-equipped and the doctors are so trained here, that there is no need to go to a private hospital.”
For the first two years the project had difficulty in collecting and organising MIS from the targeted health facilities. The system when put in place was met with significant resistance from various hospital staff when asked to carry out record keeping and updating and was considered an extra burden and a way of increased workload.

Three years down the road, most staff have been trained in record keeping and the use of daily registers and forms which have been modified to incorporate information required for the seven process indicators used in the project. They are now comfortable with updating and recognise the importance of a strong database.

Hospital renovation plan
At the start of the project in 2000, out of 27 facilities targeted for implementation of project activities, only two hospitals were working as comprehensive EmOC and one centre as basic EmOC. At the end of 2003, 13 have been provided with 24-hour comprehensive and basic emergency obstetric care. The critical areas of intervention included upgrading existing infrastructure, capacity building, whole site transformation, improvement in management techniques and quality assurance of service delivery.

Assessment of the infrastructure was carried out in all the 27 targeted facilities and renovation plans developed accordingly. During the reporting period, renovation work was completed in seven hospitals, at one centre the government carried out renovation, and at seven others work is still being carried out. For smooth functioning of these hospitals especially for dealing with obstetric emergencies, necessary supplies were ordered for nine hospitals, while 15 are under process.

"You should've seen this place two years back," says Dr. Shershah Syed, head of the of the gyne/obs ward of QGH. "It was just one big room — more like a fish market — with a corner designated for examination which had a dirty rag of a curtain used as a screen. Doctors would sit around the room behind desks. There was complete mayhem with patients surrounding the doctor and all talking at the same time."

All of it seems to have changed with the introduction of the slip system and an ayah at the door to let the women through after they show the slip. Women have to sit on benches till their number is called. Five cubicles completely equipped have been constructed that are used as examination rooms by the doctors. The place is airy and well lighted. The new paint job gives an added clean look to the room. The OPD has been given a new lease.

"It's become quite organised and has led to time-saving. We are able to see more patients, are less irritated and give more time to individuals as we are not harangued or harassed by the impatient women. In fact, the number of women coming to this OPD has increased manifold," says Dr. Yasmin Wajahat.

With the setting up of comprehensive and basic emergency obstetric care facilities, blood banks have been established at some centres with a list of volunteers, their blood groups, names and addresses. The practice and resistance to donating life-saving blood has thus been put to rest.

At a few hospitals the surrounding environment has improved considerably. The garbage heap which formed the focal point at the hospital in Shahdadpur was cleared up to be replaced by a garden with proper pathways, flower beds. "From whichever side you happened to look out all you could see was an unsightly discarded and broken down furniture dump, garbage and old hospital linen. The previous medical superintendent had all of it removed, got the gardeners to work and turned it from an eyesore to a sight to behold. The old tiles removed from the corridors have been re-used to form pathways," says one of the doctors who takes a daily stroll through the park before his rounds start!
With these interventions there has been a marked increase in the utilisation of the services. Patients are receiving treatments in time and fewer cases are being referred to other hospitals. In the past three years these health facilities have been able to aver disabilities and deaths caused by three delays as can be seen from the table below:

**Appreciative Inquiry**

The introduction of Appreciative Inquiry, a purely corporate tool, in hospital management, with around 10 such workshops conducted in the health facilities has paid dividends. "For the first time, in government-run hospitals, we have been able to make the staff forget that hierarchy exists, even if it is for the two days that the workshop is conducted. But this is just a start. From the medical superintendent to the janitor, the gynaecologist to the dai (traditional birth attendant), everyone sits in one room, perhaps at one table and discuss their aspirations, their dreams, their problems, why they act the way they do, and become more human," comments Dr. Jamaluddin Sheikh, one of the co-facilitators, of these workshops.

"A kind of a barrier has been broken with the Appreciative Inquiry now that interpersonal communication has improved," says Dr. Parriyal Channa, the medical superintendent of Hala Taluka Hospital. He feels that motivation and a continuous reminder that "it is your problem too" and including them in everything, has helped in improving the performance of the lower staff as well. "You can’t reprimand them or threaten them as they know and you know too that you can’t give them the sack." He has, since the first Appreciative Inquiry held with everyone included, been holding regular meetings with all the staff.

And that is what Appreciative Inquiry is all about — helping people recognise who they are their importance in the situation. It brings about a sense of ownership by searching for the best in people, their organisations, all the while working within the cultural context that influence them and their work. The impact is seen in the volume and quality of EmOC services, the improvement in other medical services, greater cooperation and collaboration between various departments, higher level of motivation and accountability, more participatory leadership styles, greater involvement of the community stakeholders, reduction in costs, better

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**A prize-winning comment was made by a doctor at an AI workshop at the taluka headquarter hospital, in Tando Allahyar when she said,**

"Tomorrow when I enter the hospital, I'll probably be greeting Ghulam Rasool, our sweeper, now that I know he has a face, a voice and most of all, a throbbing intelligent mind, which I had, through my own ignorance, failed to recognise. I'll probably even ask how his three-year old daughter is doing." She believes the workshop has attributed personalities and given a human face to the hospital staff.
It's not just doctors and paramedics who are called on emergencies at Sindh-Government's Qatar General Hospital in Lyari. Mohammad Chand, the ward's dhobi (laundry man), too, on various occasions, has been contacted, at ungodly hours "on my cell phone that the administration provided me with" he informs beaming with a sense of pride. But he does not object. Having been attached to the hospital since 1984, he is happy with all the activity after the lull he experienced till some three years back. "In fact, since the ward became abuzz with activity, now that no one is referred, I enjoy my work even more. Now I feel a sense of responsibility that was amiss earlier. I feel my contribution is as important as, say, the doctors and the staff." Clearly there has developed a new and exalted sense of respect for himself and his vocation. He was one of the participants of the Appreciative Inquiry held for the doctors, paramedics and other staff at the Qatar General Hospital and apparently for Chand, the workshop has brought about a positive behavioural change in him.

For conducting Appreciative Inquiry workshops, a team of three facilitators was sent to Bangladesh. On their return, the training material was translated into Sindhi on the initiative of the facilitators. They also conducted nine trainings at various targeted hospitals.

"I received a certificate which I got framed and had it put up on the wall in my house. I'm really proud of it. There was a party held at the hospital and I was the only one among the sweepers who got this award. That has really encouraged me," says Mukesh Kumar, a sweeper at the OT in Shahdadpur Taluka Hospital. As opposed to what most people say about inflation and finding it difficult to make ends meet, Mukesh Kumar surprises you by saying, "I'm able to buy medicines for the poor as I get a good salary."

inventory management, increased pride and ownership, and appreciation of their own value and capacity to bring about positive changes.

**Quality technology**

Quality technology includes quality assurance and human resource development, which can be achieved through skill, readiness and performance, procedure and protocols, ongoing reviews and education and technical supervision.

The WRLH initiative recognises that increasing the capacity or number of health facilities is an effective measure to avert maternal mortality. However, it is not enough unless the quality of service at these facilities comes up to a certain standard. It has been observed that a family's decision to access a certain health facility, depends on their confidence that it will provide them quality care.

Humaira, 35, and mother of seven was brought to THQ Shahdadpur in a state of shock caused by induced abortion by a local traditional birth attendant. During the procedure, the uterus was ruptured and a part of the intestine was pulled out of the cervix. When Humaira started bleeding profusely, as a last resort, she was brought to the hospital at Shahdadpur. The hospital has no gynaecologist and patients with complications are referred to the teaching hospitals in the adjoining district — the distance of life and death for patients like Humaira. The WMO posted at the hospital had only recently been able to hone her skills through the WRLH initiative. She performed an emergency laparotomy and carried out a hysterectomy as well as resection anastomosis of the intestine with the help of a general surgeon. Humaira's life was thus saved due to availability of EmOC as well as the emergency response team's timely intervention.
Improving the quality of care is thus an important component of the initiative as well as a major constraint. This involves all stakeholders from transforming the management, to revitalising systems improving the quality of trainers and trainings, functionality of the facilities, monitoring and self-assessment, standards, protocols and orientations.

**Staffing, upgrading and training**

Providing continuous quality training to MOs, anaesthetists and the gynaecologists to play a vital role in providing comprehensive EmOC services at taluka hospitals is an important priority in saving women’s lives. The WRLH initiative has been providing necessary knowledge and on-site training to the obs/gyne team of the various hospitals to be able to handle emergencies.

Shahdadpur has been a real success story for the WRLH initiative. "From 30-40 deliveries per month in 2000, the number has increased to almost 150 deliveries per month in 2003. A similar ratio exists in C-section. I think what we lacked most was a concerted teamwork. The appreciative Inquiry opened our eyes to what all can be achieved with fewer resources and that we have to look within ourselves and see what we are capable of," says Dr. Mariyam Majeed Chhutto, deputy medical superintendent. "We had supplies and equipment, but they were not being utilised. We are still terribly short of staff, but we have found a way." Asked if maternal mortality has decreased in the three years, Dr. Chhutto responds, "The workload has increased considerably now that more women are coming in. I don’t know if maternal mortality has increased or decreased as there is no way we can measure that but now we don’t refer anybody nor are we scared of taking on complicated cases. So in a way the registers may point to some maternal mortality where none were recorded earlier. But one thing is for sure of the three delays, the third delay is almost non-existent in this hospital."

In Shahdadpur, for one, the constant complaining of lack of resources that one is used to at most government-run facilities was not found.

Dr. Ghulam Sakina working in Taluka Hospital, Hala, had performed a couple of C-sections way back in 1998 but due to lack of preparedness had stopped. "We would always refer patients to Hyderabad. Then our hospital was visited by the WRLH team and I performed my first elective C-section in 2002 assisted by Dr. Zahid Qadri from Karachi. He taught me new techniques and encouraged me so much that I was able to perform two more C-sections the same day. I have since then felt good about myself and really motivated to work." Dr. Ghulam Sakina has performed 20 C-sections. "One was of a woman in obstructed labour and our senior gynaecologist was on leave. I was left with little choice but to perform a C-section as she would not have survived the one-hour journey to Hyderabad. Of course I was very nervous and requested a senior general surgeon to stand-by in case things went wrong." Needless to say, a couple of hours later, both the patient and the young doctor came out of the OT exhausted yet elated. She feels that while she has learnt newer techniques that are quicker and cost-effective for the patients with less chances of catching infection the most important lesson she has learnt is never to underestimate your team. You will be amazed at the ingenuity of the dai or the OT technician."

Sajida Munir Siddiqui, and Frazana Nuzhat Siddiqui, senior gynaecologists working in CDF Hospital, Hyderabad, echo the same sentiments when they say, "We're always in a learning phase." They feel the WRLH has had a good impact. Patient load has definitely increased and all this has happened purely through word-of-mouth. "We didn't take any non-booked patients as we refused to take the risk." But now there has been a new confidence developed. "Now we don't refuse any one. Our death rate may have increased but we are providing emergency care. We have been encouraged and learnt new techniques from the WRLH team." The one thing every doctor vouches for at CDF is the claim made by the medical superintendent Dr Shahnaz Memon. "No time is wasted once the patient is in our care. We may be short of staff, but we have a very organised roster."
Our utilisation has improved and a lot of administrative problems have been sorted out. We are able to arrange a surgery within an hour — with blood, anaesthetist, medicines etc."

A training plan for hands-on technical training on EmOC for health care providers was outlined. For this purpose the WHO manual for EmOC was used. These include EmOC training manual, charts of protocols ad procedures for six major causes of maternal mortality, maternal death inquiry form for basic as well as comprehensive EmOC health facilities.

It was envisioned that the medical officers, paramedics, and the anaesthetists would be trained in the same institution as a team, but this was not possible due to various reasons. The duration of training was one major hurdle. For example training of anaesthetists requires one year training, while EmOC trainings require different cadres according to the competence and experience.

"We found it difficult to leave our homes and our families for three months at a stretch and so told the WRLH team that it would be easier if one of them would visit us and teach us new skills, observe the way we perform our surgeries on our turf with the minimum possible staff and equipment. And they agreed immediately. Now a doctor comes once or even twice a month and helps us in our work. It has made a world of a difference in our performance," says Ghulam Sakina, a WMO at Hala Taluka Hospital.

**Competency-based training**

This provides the doctors, the paramedics and other relevant staff intensive training on the core competencies necessary to deal with obstetric emergencies. Assessments at district/sub-district level hospitals revealed critical deficiencies such as lack of preparedness for emergencies, poor infection prevention practices, inadequately or inappropriately trained physicians and midwives and outdated and hazardous practices. To overcome these challenges requires training. For this purpose staff from the peripheral rural health facilities were trained at Qatar General Hospital where a training centre has been established for CBT. The master trainers were trained by the JHPIEGO in Bangladesh.

A project was initiated in collaboration with the Aga Khan University Hospital at Hala and Matiari and the relevant staff provided competency/skilled-based training as well as training regarding management of incubators and resuscitators.

The condition of most labour/delivery rooms was also observed to be appalling at the various health facilities. For this purpose, three trainings at Mission Christian Hospital, Sialkot, for master trainers from 11 hospitals and one training for 25 midwives from the targeted facilities were arranged on infection prevention. Each team comprised one WMO, a nurse/midwife and an OT technician. These teams have, on their return, conducted trainings for their own hospital staff. A team of midwives was sent for CBT training to Dhaka. The use of partograms and management of third stage of labour according to standard protocols has improved the delivery practices considerably.

"There has been a world of a difference since we went for training," says Saleem, an OT technician at Shahdadpur Taluka Hospital who has been working there since the last 10 years and who went to Sialkot for training and has since then conducted two trainings, along with the other team members who went with him, for the entire staff of the gyne-ward. Even Rashid Hussain of CDF Hospital, Hyderabad, feels the same way, "We were using really dated methods. We never used chlorine for sterilising purposes, we learnt to make optimum use of the auto clave; even the way we scrubbed was different and it made sense when they told us to use concentric motions while scrubbing." About infection prevention, both add, "Earlier we were just concerned that the patient should not catch any infection but now we take care that we should use gloves, masks and caps, cut needles, dispose off placenta in a pit etc, so as to prevent ourselves from catching infections too."
Rashid feels that by having an autoclave run on gas, they are saving up extra cost.

In the three years since the project was initiated schools of midwifery have become functional at three hospitals — QGH, Shahdadpur and Hala — funded both by the private sector and government resources, and is offering training to a batch of 20 to 25 students each per year. It seems the time is ripe to cash in on this opportunity now that the TBA is dying its own death with the profession not being passed on to the next generation. In fact, quite a few of the midwives who passed out from QGH’s School of Midwifery are daughters of TBAs in Orangi. For further improving the quality of teaching, two training workshops were conducted for the midwifery tutors.

"I'd always linked giving birth to death. Quite paradoxical but this is what I'd seen all my life. I never quite understood why women bled or why they suffered fits. There is so much illiteracy in my village and even today there is no hospital, no doctor," says Fizza. She's determined to make a difference. "Armed with a diploma, I am now in a better position to help my village women. They don't have to be afraid of giving birth or dying now," she says.

During the visits by the WRLH team, the health facilities often approached them for supporting them in fistula repairs. Thus many camps for gynaecological surgeries on cases of prolapsed uterus and repair of vesico vaginal fistulae were carried out. Four doctors from these facilities in interior Sindh have taken specialist training for fistula repair from Dr. John Kelley, a prominent gynaecologist from the United Kingdom. Dr. Kelly visits developing countries and not only performs operations to repair fistulae but provides training to the staff. This is done free of cost.

The critical component of preventing fistula is access to emergency obstetric care. The obstruction can occur because the woman's pelvis is too small, the baby's head is too big, or the baby is badly positioned. In Pakistan, however, Dr. John Kelley, a prominent gynaecologist from the United Kingdom, who operates in the fistula repair camps, insists the complication, is caused not just by obstructed labour but "obstructed traffic in rural areas" of the country!

Respect for human rights
The key interventions under respect for human rights are social mobilisation and behavioural change communication. Accountability, participation, sustainability, valuing dignity and understanding the context and the priorities form the core values of the initiative.

Till some two years ago the labour room in Shahdadpur Taluka Hospital was not what it is now. There were no screens to provide patients to deliver in privacy and no bathroom. There was one small heater which was not enough, so now a gas heater has been put in to make it the room warm and comfortable. The staff have been so organised that a midwife is present 24-hours. A small resuscitation area has been earmarked for the baby in the labour room and it also has its own oxygen cylinder.

Behaviour change communication activities
This aims at influencing not just the care seeker but also the care provider's attitude, broadening their outlook towards life ensuring safe motherhood as a woman's right and sensitising not just the woman but all her family members. The objective is to identify the myths attached to redundant practices and dissipate them gradually by establishing positive norms. It has been observed that the success of EmOC depends to a large extent on interpersonal communication and social mobilisation activities. Doctors reinforce
In a small room outside the OPD of the Qatar General Hospital, in Karachi, a doctor goes about her job advising first-time mothers and prepares them for childbirth, identifying risk factors involved in pregnancies and the rewards of breast-feeding.

And then once having won their attention, she introduces the novel and innovative *gulaq* (earthenware money-box) scheme. "A year back Sakina, a young woman, in labour, was dumped at our hospital in the thick of the night. That was one of our busiest nights," recalls the doctor. "We had performed some 22 deliveries and not only were the doctors exhausted but the supplies too. The woman had no money and no one to get her the supplies. The labour was getting delayed and she had started bleeding. So the doctors pooled in whatever they had, bought the required medicines and she delivered. The following week when we had our staff meeting this idea was floated and accepted."

"We give one each to the pregnant woman and ask her to save and at the end of the ninth month when she comes for the delivery, to bring her *gulaq* along. We break it in front of her and double whatever she's collected over this time period. That money is then used on her — for her delivery."

"The idea is not only to inculcate in them the virtue of saving, but also for them to realise that unpredictable emergencies may arise anytime. Anything can go wrong but in a crisis, if they have ready cash, they don't have to plead with people to lend them money."

these messages in everyday communication, by posters, brochures, billboards, newspapers articles, messages shown on TV and aired on radio etc.

**The morning round**

The morning round of the gynaecological ward at the Qatar General Hospital in Karachi, of Sindh Government, is a far cry from the doctor's round that you see in the various hospital series sitting in the comfort of your home, courtesy the cable television. But then what do you expect in a government-run outfit, which charges Rs 4/day/ bed, which many women can't afford to pay!

Dr Shershah Syed, head of the gyne/obs ward, with about five junior doctors and about the same number of nurses in tow, takes a quick round and sees the progress of the patients. He listens carefully to the students who give him an update and what accrued the night before, their prognosis and the options available. He looks at the eyes of most women that tell him of woeful neglect and acute anaemia. "This round is very important for all concerned. The patients can tell their problems directly to the doctor, the nurses interact with the doctors, but most importantly, this is very beneficial for the junior doctors."

The one question he asks most patients religiously is if they have been to school. He gives instructions to doctors to set counselling sessions for couples who've had more than five children and suggest to them various contraceptive options. To those who've been there for a few days he meets them like old acquaintances and asks them if they are breast-feeding, are taking proper food, tells a few women not to put *kohl* to their young ones' eyes.

*Tehrik-e-Niswan marches right into the wards!*

Just as the *dhola* (drum) picked up its beat, a crowd began to gather in the foyer of the Qatar General Hospital's gyne/obs ward. Midwives and staff nurses began to take up places on the floor matting. Curious faces — patients, doctors and patients, doctors and
visitors stopped and began gathering around the area while the team of actors of Tehrik-e-Niswan got busy putting up the few props. Some found space and sat next to the hospital staff, others stood around the balustrade and on the staircase. The actors had succeeded in distracting the patients from their pain and their woes, even if it was for a half hour. For once Jawaid, the one-legged doorman, who normally keeps a strong vigil on all incoming people, throws caution to the wind and lets the men in to see the play.

The play - 'Meri Zindagi ka Safar' (My Life's Journey) — was not just pure entertainment and the idea was not just to draw a few laughs but had an underlying message — if you desire change for the better around you, change has to first come from within you. Stereotype thinking has to be replaced by education, but that, however, does not mean that we forget our culture and traditions. It probed and questioned why time-worn flawed traditions had stealthily crept into the 21st century, why were people not speaking out against injustices, especially those meted out to the vulnerable girl-child.

The audience was very receptive and ready to applaud at every juncture. There were some very touching scenes where you could see the audience being mesmerised. "These plays are extremely effective as they touch people emotionally and when you ruffle their emotions transformation takes place internally," says Sheema Kermani, the founder of Tehrik-e-Niswan and the director of the play.

For some, the play acted as a catharsis as it was like their story being replayed. A few men were overheard saying: "It all rings true"; "This won't happen in my home!" or "We've got to educate our daughters." According to Sheema, "The performance at Qatar hospital was difficult because of the constant flux of people — patients and visitors — and constant movement. We usually have a more settled audience." She was referring to the main lobby that they performed in. On the contrary, that was perhaps the prime place to hold the play. A doctor on duty who was initially a little sceptical of the Tehrik holding their play in the foyer, and who gave them little assistance, later came to the performers and invited them for a cup of tea, was heard saying, a little sheepishly, "I felt a lump in my throat, I'm totally sold..."

The doctor was perhaps not the only one. There were few that afternoon who didn't feel just a little misty-eyed. The play touched upon themes like the prevalence of son preference in our culture, child marriage, the curse of dowry etc. The role of the matriarch in perpetuation of such injustices was also highlighted. It talked about myths; fallacies and superstitions still very much part of our culture. But perhaps the one fundamental message the play brought home and which one elderly woman pointed out at the end of the play was "that all this was due to sheer ignorance and that can be dispelled if we educate our daughters. You educate a daughter and the whole generation benefits."

There have been regular articles and features on maternal mortality and how it can be averted through recognising and becoming aware of the three delays. A slow process indeed, but this is bound to have a far reaching effect.

The WRLH initiative has had a ripple down effect in other departments too. For example the paediatric department's component of saving newborns is also gaining momentum at some of the rural health facilities. The Shahdadpur Taluka Hospital has been able to setup a paediatric ward with the help of a local donor. "We have a very active fund-raising committee which meets local philanthropists every month to apprise them of our needs. The credit for forming this committee goes to the WRLH but keeping it active is the motivation and support of our medical superintendent," says an MO. Other philanthropic activities include construction of a musafir khana (rest house for attendants of patients), an eye ward, a TB ward, construction of the school of midwifery. They are now working towards having funds raised for a pre labour room, a lactation room and arranging stipends for the midwifery students.
Private sector involvement
Inspired by the WRLH initiative, many hospitals in the private sector have joined in. Teaching hospitals in Larkana and Nawabshah, KMC’s Sobhraj and private ones like the Murshid Hospital have set up the maternal death audits and near miss cases are regularly reviewed.

Some private charitable hospitals like the Memon Charitable Hospital, Kharadar Hospital and Murshid Hospital have agreed to provide subsidy on the charges for obstetric and neonatal services in return of the technical trainings imparted to their staff for quality improvement.

When others jump in to help
Due to visible changes in the environment and the services provided by the hospitals, some of these health facilities have attracted philanthropists/organisation to come forward and help. The Shahdadpur Taluka Hospital has acquired a central oxygen supply system for its paediatric ward; the cost of the midwifery schools established at the three hospitals is being borne partly by some philanthropists and partly by the community. The medical superintendents are providing the premises of the midwifery schools at Hala and Shahdadpur. A local financial institution has pledged its support for the construction of two wards.

"I want to see the doctors to both complain and compliment them," said Maulana Abdul Sattar Edhi, the famous philanthropist, to one of the nurses the day he came to visit a patient who was sent by his centre to Qatar General Hospital, some six months back. A little in awe of the Maulana, and astounded by his strange request, the nurse complied. "The place is too crowded with two women sharing a bed," complained the Maulana when he met Dr. Shershah Syed, head of the gyne/obs ward at QGH and then, at the same breath, he added, "but that shows how popular and successful the place is."

Qatar General Hospital enjoys a certain relationship with the Edhi Centre in that the latter’s ambulances bring any pregnant women, of the area, free of charge to the hospital. "These ambulances have, to a major extent, helped resolve morbidity caused by second delay," says Dr. Shershah Syed.

The day the Maulana came from visiting the hospital, he sent a cheque amounting to one million rupees in favour of QGH. "We decided we needed to expand and the money came in useful in adding a 30-beds ward on the next floor."

It's judgment day for the doctors, nurses and midwives every Tuesday morning, at Qatar General Hospital’s obs/gyne ward. Everyone is accountable and the medical record file is there to prove your performance or lack thereof during an emergency. This leads to improvement not just of the individual doctor but the overall performance of the ward. Maternal death is audited and we find out the cause of delay and hence the death. Apart from discussing the various deaths, it helps build a valuable pool of data and identify gaps and the progress made. The purpose is not to pin the blame but to review how not to make these mistakes again. "The idea is to achieve multiple learning objectives such as training of under/postgraduates, midwives, LHV's, paramedical staff, audit reviews etc," says Dr. Zahid Qadri, consultant gynaecologist at QGH.
Musafir khanas (rest houses) at CDF Hospital Hyderabad and the one at THQ Shahdadpur is ready for occupancy. At some places ambulances have been repaired/provided by the local community for 24-hours.

**Challenges for the initiative**
The project started with initial teething pains. While some have been overcome, others have still to be worked out. While the initiative had to grapple with problems like staffing, renovation and supplies, a lot has been achieved in this short time and with limited resources and time, primarily due to motivation.

"Earlier most patients were referred and I'd be sitting idle. Now the workload has increased but I don't mind as it keeps me busy. I must say I'm enjoying it a lot more now that we're all kept busy," says Saleem, the OT technician at Shahdadpur.

**Availability of the CEmOC and BEmOC**
The project has achieved the target of availability of one CEmOC facility/500,000 population in all the three districts but the BEmOC is still not achieved. The need assessment pointed out that CEmOC was required at the district level and women who reached the hospitals were more in need of comprehensive rather than basic services. Another reason is that emergency cases can reach a THQ within an hour by transport. Thus if the THQ are equipped for CEmOC, their lives can be saved, instead of first taking them to a RHC and providing them with BEmOC.

**Staffing**
It was easier to post/transfer the skilled staff at THQ than at RHC. In the absence of sanctioned posts for specialists and anaesthetists at the RHC, it would be difficult to administratively post such staff. Talking to the concerned people from the sweepers to the paramedics to the WMOs to the MS, all had just one grievance — shortage of staff to facilitate them in achieving their targets for establishing 24-hours EmOC.

The staffing position has been a major dampener in the establishment of a 24-hour EmOC at the targeted health facilities. Despite promises from the highest authorities, the target could not be achieved. While other alternatives have been tried, like registering WMOs for competency-based training at QGH and LMC Hyderabad, and after CBT sending them back to the parent institutions to deliver the service. The idea was to take care of shortage of skilled staff at the peripheral facilities as a long term strategy for sustainable results. A concrete planning and firm commitment by the health directorate is required for sustainability of the services.

A majority of the lady doctors and nurse/midwives requiring CBT training are from peripheral facilities. This training requires stay of at least 3-6 months at the training site. It is very difficult for them to stay away from their homes for longer periods. There is therefore a need for a CBT training centre at the teaching hospital of LMC at Hyderabad. For majority of the staff at the periphery, it is easier to commute on a daily basis or at least on the weekends from that training site.

**Quality of trainers**
The schools of midwifery have opened and students from the local areas admitted, but what is amiss is training of tutors. There was no book available for midwives in Urdu or local language. However, the project is getting the text book by Margaret Myles translated in Urdu. This will make it easier for these young girls to comprehend, but the tutors need to be trained to impart education. The syllabus has to be planned in a more organised manner. Along with the untrained tutors, the other challenge is that of the standard of education of the students. The first batch at Qatar General Hospital had only a handful of girls who had passed their intermediate (Grade12). With the result only six could pass in the midwifery examination. The second batch turned out to be far better with 24 women clearing the exam. Now that the third batch has joined, one finds a marked difference in the standard with a few graduates too.
Lack of monitoring
For achieving the desired results, monitoring is continuously required. It was possible for the core team to monitor the activities at the initial three to four facilities. With the expansion of activities at more than 12 facilities, the current core team of four to five members was insufficient to cope with the workload. Another constraint that has been noted is that the core team is busy with alternative tasks and unable to take on more work. This has resulted in documentation that has been weak. To support the monitoring process and MIS, two field officers/monitors solely for the WRLH initiative are needed, especially for districts Sanghar and Hyderabad. The government has only recently approved the appointment of the FO.

"I visit the various facilities twice a month for four days and can now say with confidence that there has only recently been developed a rapport with the staff. Earlier they were a little reluctant and felt threatened. They thought that even if they shared their challenges, I'd not be able to help, but now they are more open. They were not interested in learning because that meant incorporating the new skills in their everyday work. There is now a marked difference in the quality control. Initially, I'd tell them when I'd be going, now they ask me when I can come and see them," says Dr. Zahid Qadri. He, however, says, "I wish I could be provided with some transport and a decent place to stay. There is no proper washroom facility at Hala and even when I visit, I don't want to stay the night."

Financial implications
The workload increased tremendously at some of the district level and taluka level hospitals but the recurrent budget allocation is uniform for all districts and taluka level hospitals, irrespective. With a 200 per cent increase in the patient's attendance at the project health facilities, the budget from the government is insufficient to fulfil the requirements of medicine and other resources. These hospitals are now facing difficulty in coping...
with the increased workload and services. Up until now the administration of the hospitals were somehow arranging drugs and other items through community support and donations but in the long run the government needs to revise and approve the budget according to the workload.

Utilisation of allocated budget
Many activities like renovation and stocking the supplies took longer than anticipated. Expenditure of the funds for the first two years remained underutilised. However, this leftover budget was used for the planned CBT trainings.

Renovation
A detailed review of selected facilities was undertaken by a team consisting of an international consultant with experience of renovation in other South Asian countries and a local engineer. Plans for renovation were drawn up accordingly and contractors hired with work initiated under UNICEF supervision. However, only three health care facilities were renovated completely while at four hospitals work is still in progress. The slow progress can be attributed to the long-winded process. There is need to develop an in-house mechanism for expediting this process.

Equipment and supplies
Besides the equipment and supplies identified during the needs assessment survey, further needs emerged with the passage of time, with expansion of activities and increased utilisation of these services. Separate OTs have been established for Obs/Gyn surgeries at a few hospitals that require extra equipment and supplies including resuscitation equipment, anaesthesia machines, CTG, ultrasound etc. Similarly consumable items like linen, OT clothes, disinfectants and I/V equipment and drugs are required in abundance for offering quality care.

Accomplishments

Competency-based training
The project invested a lot of time and resources on the preparedness of the facilities for offering EmOC. With 13 facilities providing BEmOC and CEmOC, the next step was improving the quality of services. With the completion of the CBT training of master trainers from Bangladesh, the team prepared a calendar for basic as well as comprehensive trainings for next 18 months.

The CBT training centre established at the teaching hospital of LMC at Hyderabad has made it easier for the majority of the staff at the periphery to commute to and from the training site. Budget allocations have been made for the training of master trainers, site assessment of LMC, site set up and costs of trainings for the trainees. This would require more funding especially for the participants TA/DAs, facilitator’s honorarium and other logistic support for the trainings. The remaining fund from the total project allocation of $ 950,000 is being utilised for the purpose.

By the end of the year 2003, the team worked towards providing CEmOC in five health facilities and BemOC at nine maternity homes. For the first six month all efforts were spent in expediting the process of service delivery at these facilities and by the middle of 2003 energies were channelled in improving the quality of service delivery.

MIS
More concrete efforts are needed for the collection and compilation of data from the targeted facilities. A working system of HMIS needs to be established in the facilities of the project area.

The staff of the targeted facilities will be trained for collecting and compiling the data on a uniform format. So far 13 facilities are providing this data on regular bases. It will be strengthened in other 14 facilities in the next one-year.

Quality improvement for EmOC services
As more and more facilities are offering services now, more time and resources would be spent on improving the quality of services. This can be achieved though CBT training, refresher courses as well as through evaluation and on-the-job
training by an external team from SOGP, NCMH and CPSP.

**Results**

Perhaps the biggest marker of success of this initiative is that cases are no more referred and the hospitals are ready to take on complicated cases as pointed out by all the doctors at the targeted facilities. Based on the progress achieved by the project and strategies outlined, GoS has expressed its interest in expansion of the project activities to other districts. The need for this expansion is outlined below:

The initiation of project activities took some time with substantial investment in processes. There is need to consolidate the programme results in the areas initially identified for the interventions and at the same time expand the activities as planned earlier.

The project is demonstrating good results as indicated by the number of women utilising health services in the project facilities and the "near-miss" deaths averted. This number is expected to go up with the completion of current processes. These efforts need to be sustained over a longer period of time for institutionalisation and replication in other areas of Sindh.

The project has taken a lead in mobilising the effort of GoS in the entire sector of women's health. The lessons learnt from this project are ready for application in selected areas of Sindh.

There is a strong interest in expanding the scope of the project in other districts/areas. Under the devolution system in Pakistan, health is being taken up as a subject area by district governments. Karachi district has indicated its interest in expanding the programme area to cover all 18 towns under the city government. A need assessment has already been carried out for this purpose.

There is strong interest from the private sector and other NGOs for adaptation of programme results in other areas of Sindh. Partnerships with HOPE, Aga Khan University, Trust for Rural Development and other NGOs working with UNICEF have developed initiatives for this purpose.

The partnerships and linkages developed through this project with technical and implementing bodies (such as National Committee on Maternal Health, Pakistan Medical Association, Aga Khan University and others) represent a significant development in the otherwise neglected field of women's health in Pakistan. These partnerships can contribute to further national capacity building through replication and further up-scaling of the project.
### Report of Six Monthly Project Implementation Activities Jan — Jun 2003

#### Project Facilities

<table>
<thead>
<tr>
<th>Functions</th>
<th>Comprehensive</th>
<th>Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renovations Number of facilities 2001-2002</td>
<td>Planned 5</td>
<td>Completed 5</td>
</tr>
<tr>
<td></td>
<td>Planned 2</td>
<td>Completed 2</td>
</tr>
<tr>
<td>2002-2003</td>
<td>4</td>
<td>4 In process. To be completed by Dec 2003</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3 In process To be completed by Dec 2003</td>
</tr>
<tr>
<td>June 2003</td>
<td>2</td>
<td>2 Assessment completed. Plans and BOQs ready for bidding process</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2 Assessment completed. Plans and BOQs ready for bidding process</td>
</tr>
<tr>
<td>Equipment Procurement</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Number of facilities 2001</td>
<td>Planned 2</td>
<td>Completed 2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2002-2003</td>
<td>7</td>
<td>7 Local supplies arrived. Offshore supplies expected to reach by Aug 03</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8 Local supplies arrived. Offshore supplies expected to reach by Aug 03</td>
</tr>
<tr>
<td>Installation of Equipment</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Number of facilities</td>
<td>Planned 2</td>
<td>Completed 2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Training of relevant staff</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>on use and maintenance</td>
<td>Planned 2</td>
<td>Completed 2</td>
</tr>
<tr>
<td>of new equipment.</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Staffing</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Number fully staffed for EmOC and on-site Total till end of 2002 = 9+2 Total till now = 10+8</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Training</td>
<td>9 Health facilities planned till 2002</td>
<td>Tr. Activities for 9 Health facilities completed till 2002</td>
</tr>
<tr>
<td>Total till end of 2002 = 9+2</td>
<td>Planned for 2003</td>
<td>Tr. Activities for 2 Health facilities completed till 2002</td>
</tr>
<tr>
<td>Kind of Training</td>
<td>4 Health facilities planned till 2003</td>
<td>Tr. Activities for 6 Health facilities planned till 2002</td>
</tr>
<tr>
<td>Number of trainings</td>
<td>Tr. Activities for 4 Health facilities completed till 2002</td>
<td>Tr. Activities for 6 Health facilities completed till 2002</td>
</tr>
<tr>
<td>Infection Prevention</td>
<td>Total 8 planned</td>
<td>Tr. Activities for 6 Health facilities completed till 2002</td>
</tr>
<tr>
<td>(Master Trainers training)</td>
<td>Total 13 planned</td>
<td>Total 13 planned</td>
</tr>
<tr>
<td>Internal trainings by MT.</td>
<td>9 Completed</td>
<td>6</td>
</tr>
<tr>
<td>Appreciative Inquiry</td>
<td>10 Completed</td>
<td>8</td>
</tr>
<tr>
<td>Training on MIS</td>
<td>8 Completed</td>
<td>8 Completed</td>
</tr>
<tr>
<td>Midwifery training</td>
<td>3 Completed</td>
<td>3 Completed</td>
</tr>
<tr>
<td>Readiness Exercise and</td>
<td>On going at 3 health facilities</td>
<td>On going at 8</td>
</tr>
<tr>
<td>Quality Improvement</td>
<td>Total 8 planned</td>
<td>On going at 8</td>
</tr>
<tr>
<td></td>
<td>Tr. Activities for 2 Health facilities completed till 2002</td>
<td>Tr. Activities for 6 Health facilities completed till 2002</td>
</tr>
</tbody>
</table>
### Project Facilities

<table>
<thead>
<tr>
<th>Number of facilities providing EmOC</th>
<th>Total Planned 13</th>
<th>10 Functional</th>
<th>Total Planned 14</th>
<th>8 Functional</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Number of facilities providing EmOC</th>
<th>24 hours a day, 7 days a week (24/7)</th>
<th>Total Planned 13</th>
<th>10 Functional</th>
<th>Total Planned 14</th>
<th>8 Functional</th>
</tr>
</thead>
</table>

### Project Activities

<p>| Management | Appreciative Inquiry workshops planned for 18 hospitals till end of June 2003 | Appreciative Inquiry workshops conducted at 12 hospitals till end of June 2003 | Regular review meetings at the hospitals where AI workshop has completed |
| Rights Activities | Taluka Level advocacy meetings 2 Meetings with media planned 2 meetings with local women councillors 4 theatre activities planned | 4 meetings held 2 meetings held 1 completed |
| Documentation | Weekly articles in the Newspaper MIS and MD Inquiry forms Urdu and Sindhi translation of Advocacy package | According to plan | Completed. Ready for printing |
| Technical Assistance Provided | CBT training of 4 Master trainers at BD. EmOC curriculum and Protocols development. | Completed. One CBT training centre established at Qatar General Hospital. First training at QGH for 5 weeks completed. Technical hands on training by supervisors at their own facilities on regular bases. EmOC manual completed and printed. Protocols completed and ready for printing. |
| Other | Long term planning for skilled birth attendants 2 Follow-up workshops for training of Midwifery Tutors on teaching methodology and knowledge update on EmOC. | Schools of midwifery are functional at three health facilities of the project. 1 workshop for midwifery tutors completed one planned in August. |</p>
<table>
<thead>
<tr>
<th><strong>Additional Comments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Renovations</strong></td>
</tr>
<tr>
<td><strong>Equipment Procurement</strong></td>
</tr>
<tr>
<td><strong>Installation of Equipment</strong></td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
</tr>
<tr>
<td><strong>Training</strong></td>
</tr>
<tr>
<td><strong>Management</strong></td>
</tr>
<tr>
<td><strong>Rights Activities</strong></td>
</tr>
</tbody>
</table>
Articles, news items on community based activities, special supplements in newspapers and publications for medical professionals regarding women health and WRLH are published regularly.

As part of the activities, medical and surgical camps and advocacy seminars at the annual conferences, medical colleges and different areas of Sindh are held on regular bases.

The project has mobilised different public-private partnership schemes and donations for different activities for supporting women’s health.

A MOU has been signed with City District Government of Karachi for providing 24 hours EmOC services through existing maternity health centres in order to reduce maternal mortality and disability.

Table 1. Progress in Availability of EmOC services: Project facilities only

<table>
<thead>
<tr>
<th>Previous Reporting Period (Jul 02 - Dec 02)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># facilities providing Basic EmOC</td>
<td># facilities providing Comprehensive EmOC</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Reporting Period (Jan 03 - June 03)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># facilities providing Basic EmOC</td>
<td># facilities providing Comprehensive EmOC</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Name of facility</td>
<td>Name of location (district/province)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>QAQAR GENERAL HOSPITAL</td>
<td>Karachi West</td>
</tr>
<tr>
<td>RHC SHERSHAH</td>
<td>=</td>
</tr>
<tr>
<td>THQ Hospital SHAHDADPUR</td>
<td>SANGHAR</td>
</tr>
<tr>
<td>CIVIL HOSPITAL SANGHAR</td>
<td>=</td>
</tr>
<tr>
<td>THQ Hospital HALA</td>
<td>HYDERABAD</td>
</tr>
<tr>
<td>CDF HOSPITAL</td>
<td>=</td>
</tr>
<tr>
<td>BHITTAI HOSPITAL</td>
<td>=</td>
</tr>
<tr>
<td>PRETABAD HOSPITAL</td>
<td>=</td>
</tr>
<tr>
<td>LMC HOSPITAL Total of 3 Units</td>
<td>=</td>
</tr>
<tr>
<td>THQ Hospital TANDO ALLAH YAR</td>
<td>=</td>
</tr>
<tr>
<td>RHC MATIARI</td>
<td>=</td>
</tr>
</tbody>
</table>

** If data from past six months are not available, data from the first month of each quarter (two months total) can be multiplied by three.

** Haemorrhage (antepartum or postpartum), prolonged/obstructed labour postpartum sepsis, pre-eclampsia/eclampsia, ectopic pregnancy, ruptured uterus, complications of abortion.

*** From one of complications listed above in *
### Table 2. Six-monthly data

For the period of Jan - Jun 2003

<table>
<thead>
<tr>
<th>Name of facility</th>
<th>Name of location (district/province)</th>
<th>Specify Basic, Comprehensive or Non-EmOC (B,C, or N)</th>
<th># Births in facility</th>
<th># Women with complications</th>
<th># C. sections</th>
<th># Maternal deaths***</th>
</tr>
</thead>
<tbody>
<tr>
<td>THQ Hospital Tando Adam</td>
<td>Dist. Sanghar</td>
<td>C</td>
<td>520</td>
<td>327</td>
<td>54</td>
<td>nil</td>
</tr>
<tr>
<td>THQ Hospital Tando Mohd. Khan</td>
<td>Dist. Hyderabad</td>
<td>C</td>
<td>91</td>
<td>123</td>
<td>76</td>
<td>nil</td>
</tr>
<tr>
<td>THQ Hospital Sinjhoro</td>
<td>Dist. Sanghar</td>
<td>B</td>
<td>167</td>
<td>56</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>M.H Manghopir</td>
<td>Karachi West</td>
<td>B</td>
<td>256</td>
<td>187</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Saeedabad</td>
<td>Dist. Hyderabad</td>
<td>B</td>
<td>332</td>
<td>147</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Murad Memon Goth</td>
<td>Karachi West</td>
<td>B</td>
<td>112</td>
<td>67</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Nasarpur</td>
<td>Dist. Hyderabad</td>
<td>B</td>
<td>126</td>
<td>98</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Jam Nawaz Ali</td>
<td>Dist. Sanghar</td>
<td>B</td>
<td>93</td>
<td>74</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Baldia</td>
<td>Karachi West</td>
<td>N</td>
<td>nil</td>
<td>83 Referred to QGH</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>M.H Orangi Town</td>
<td>Karachi West</td>
<td>N</td>
<td>nil</td>
<td>76 Referred to QGH</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>RHC Tando jam</td>
<td>Dist. Hyderabad</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHC Raju Nizamani</td>
<td>Dist. Hyderabad</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHC Serhari</td>
<td>Dist. Hyderabad</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The use of maternal death review in problem analysis and decision making

Introduction

Sri Lanka’s experience in the reduction of maternal mortality in the past decades has often been quoted as an example of a situation where much has been achieved in terms of health output in a low income country.

Based on reported data from the Registrar General’s Department, the maternal mortality ratio has shown a marked decline during the last few decades from 1650 per 100,000 live births in 1945 to 124 per 100,000 live births in 1996. In recent years too, this trend has continued with the most marked decline seen (67 per cent) during the period 1990 to 1996 as shown in Figure 1 and Table 1. The common causes of MMR has been haemorrhages of pregnancy, sepsis, pregnancy induced hypertension and abortion.

During the past four decades, the contributions made by the common causes to MMR have also shown a change. There is a marked decline in maternal deaths due to sepsis, pregnancy induced hypertension (PIH) with an increase in other causes 4. The category ‘other’ includes a wide range of causes and contributed to nearly half of the maternal deaths in 1996. (Annex 1)

Background

Maternal care services in Sri Lanka — an overview

Historical background

The western system of medical care was introduced to the country by the Portuguese in 1505. The Dutch who ruled the country from 1658 to 1796 established a few hospitals in the maritime provinces. The present day health services of Sri Lanka aimed at provision of the “western” system of medicine evolved from the military and estate medical services introduced by the British, during the period they ruled Sri Lanka.

The earliest indication of a health service aimed specifically at mothers and children was the establishment of a maternity hospital in 1897. The next recorded maternal and child health activity was the setting up of a Public Health Department in the Colombo Municipal Council in 1902 and the establishment of a Maternal and Child Health (MCH) Department in 1906. MCH work was carried out by medical officers, nurses and midwives. In 1927, the midwifery services in the Colombo Municipality were reorganised by training all midwives.
Two legislative enactments that had an influence on MCH services were in existence at the time. They were the Medical Ordinance of 1927, which related to the control of practice of midwifery, whereby registration of midwives was made a legal requirement and requiring compulsory registration of births and deaths enacted in 1897.

Establishment of a "Health Unit" on an experimental basis in 1926, which emphasised preventive and promotive health activities at community level is an important landmark in the development of the health care services in the country. A health unit could be described as a defined geographical area hence with a defined population, focusing on provision of preventive and promotive health services at the community level, by a medical officer and a team of field level health workers. These services aimed at meeting many of the criteria which are considered important in the provision of primary health care services, even today. Two of the important activities of a health unit were, collection of vital statistical data related to the area, provision of maternal and child health (MCH) services, at the domiciliary level and at clinics established at "health centres"(field level service outlets).

During the next few decades, health units were established throughout the island, the functions of the units were clearly identified and training programmes for personnel developed. Even today, this system of health units with appropriate modifications constitutes the mainstay of the preventive and promotive health services of the country, especially reproductive health services.

The expansion of the field-based services through the health unit system was accompanied by improvement of institutional health facilities. This led to the establishment of a network of institutions ranging from teaching hospitals and general hospitals at the highest level to rural hospitals at the lowest. Facilities available at the institutions were improved with access to specialised services in the higher level of hospitals, which served as referral centres. This strategy enabled easier geographical access to services and provision of services free of charge enabled economic access. Availability of a satisfactory road network enhanced the accessibility. In addition to the institutions of the Ministry of Health for maternal care, several local authorities, especially the municipalities provided maternity homes, where deliveries were attended to, by trained midwives.

Introduction of a system for registration of births and deaths as early as 1867, was the first step in the development of an information system. In the early post-independence era, such information formed the basis on which service requirements were identified, planned and implemented.

**Current status of maternal health services**

In Sri Lanka, the public and the private sectors provide health care though the allopathic system and through the Ayurvedic and other systems of medicine. The organised delivery for provision of maternal health services is implemented mainly through the allopathic (western) system.

**FIGURE 1:**

Maternal Mortality ratio per 10,000 live births 1970 – 1996

**TABLE 1:**

Trends in percentage change in MMR: 1960 – 1996

<table>
<thead>
<tr>
<th>Year</th>
<th>MMR</th>
<th>Year</th>
<th>MMR</th>
<th>Year interval</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>3.40</td>
<td>1970</td>
<td>1.20</td>
<td>1960-1970</td>
<td>-64.71</td>
</tr>
<tr>
<td>1970</td>
<td>1.20</td>
<td>1980</td>
<td>0.65</td>
<td>1970-1980</td>
<td>-45.83</td>
</tr>
<tr>
<td>1980</td>
<td>0.65</td>
<td>1991</td>
<td>0.42</td>
<td>1980-1991</td>
<td>-35.38</td>
</tr>
<tr>
<td>1991</td>
<td>0.42</td>
<td>1996</td>
<td>0.23</td>
<td>1991-1996</td>
<td>-45.24</td>
</tr>
</tbody>
</table>

*Source: Registrar General’s Department*
Provision of maternal care services has been traditionally a component of the organisation for provision of maternal and child health (MCH) services in the country, which include maternal care, child care and family planning. In recent years, with the introduction of the concept of reproductive health (RH), the service areas have been broadened to include other areas related to RH.

**State sector**

The state sector health services function under a cabinet minister. With the introduction of the 13th amendment to the constitution in 1989, which led to the establishment of provincial councils, major reform was undertaken leading to the devolution of the organisation for providing health care, to the provincial councils. Thus, the responsibility for providing health care belongs to the provincial council. Each provincial council has a provincial director of health services at the provincial level and several deputy provincial directors for each district within the province.

The key functions of the Ministry of Health at the level of the central government are setting policy guidelines, training of health personnel (except for medical officers, which is the responsibility of the Ministry of Higher Education), management of teaching and specialised medical institutions and bulk purchase of medical requisites.

The responsibility for policy making, planning, and monitoring of the maternal health services lies with the Family Health Bureau (FHB), a decentralised unit of the central government Ministry of Health. The provincial ministries of health are responsible for implementation of maternal health programmes. Thus, the FHB has to liaise with provincial health authorities, curative services provided through the central government i.e. teaching hospitals and national hospitals of Sri Lanka and other relevant professional bodies.

There are eight provincial directors of health services (PDHS) who are assisted by 23 deputy directors of health services (DPDHS) at the district level, responsible for management and effective implementation of all health services including those for maternal health and for the management of all hospitals other than teaching and specialised hospitals in the respective areas. The levels at which the health care services have been organised are in keeping with the “levels” of the organisation for other administrative activities i.e. provincial, district and divisional levels.

At the district level, an officer with the designation, medical officer — maternal and child health (MOMCH) is responsible for planning, implementing, supervising and monitoring maternal health services. They are also expected to provide technical guidance as required. In recent years, some of the Provincial Health authorities have taken the initiative to appoint specialist officers to be responsible for reproductive health services.

Further devolution of power by the end of 1992 led to the establishment of divisional directorates of health (265 in 2001) responsible for provision of comprehensive health services. The divisional director of health services (DDHS)/medical officer of health (MOH) areas are geographically defined and have a defined population that can be considered as the equivalent of the health units (introduced in 1926). The health services are provided by a medical officer/s and several categories of field level health personnel who include public health nursing sisters (PHNSs), public health inspectors (PHIs) and public health midwives (PHMs). Maternal health care forms an important component of services provided through the MOH areas.

The public health midwife (PHM) is the grass root level health worker, responsible for the preventive and promotive health services for a population of approximately 3000 - 4000 residing in a geographically defined area, focusing on family health activities including maternal health care.

State sector curative services providing in-patient care, are provided through a series of institutions ranging from rural hospitals and maternity homes...
at the lowest level to teaching hospitals and the
National Hospital of Sri Lanka (NHSL) in the capital
city of Colombo at the highest level. These
institutions could be broadly grouped into three
groups i.e primary level institutions comprising of
rural hospitals and maternity homes, where
facilities for antenatal care and uncomplicated
deliveries are available, intermediate level of
institutions (district hospitals and peripheral units)
where more facilities are available and higher level
institutions, where specialist facilities are available
include special maternity hospitals, teaching
hospitals, general/provincial hospitals and base
hospitals. For administrative purposes, the NHSL,
teaching hospitals and some provincial hospitals
come under the Ministry of Health at the central
level, while others are under the provincial health
ministries.

A study to assess the availability of essential
obstetric care was carried out in the year 2000
indicated that in terms of geographical distribution,
availability of comprehensive/basic essential
obstetric facilities (EmOC) varied widely between
districts from one facility for 7,034 sq. km. in
Anuradhapura to one per 109 sq. km. in Colombo.

The organisation for provision of MCH services
through the state sector is given in Figure 2.

The organisational chart of the structure for
provision of health care at the central level and
provincial level is given in annex 2 A and B.

Antenatal care
The PHM provides services through field visits to
provide domiciliary care at home and in clinics held
at the field level. As she is responsible for a
defined population, she has to have a register of all
‘eligible couples’ in her area i.e. married women in
the 15 to 49 age group. She is expected to register
all pregnant women early in pregnancy and advice
them to attend antenatal clinics. During field visits,
she is expected to take the history of the mother
and carry out a physical examination. The focus of
the physical examination is to screen the mother
from abnormalities. She has a major responsibility to
educate the mother in all aspects related to care
during pregnancy with special emphasis on
nutrition.

Natal care
The PHM also plays an important role in providing
assistance at home deliveries, even though the
numbers requiring such services are relatively low
as the proportion of institutional deliveries has been
on the increase, within the past few decades.
Promoting institutional deliveries has been a
strategy adopted by the Sri Lankan maternal health
services, through the past few decades.

Postnatal care
In the case of a normal delivery, mothers are
discharged from hospitals within 24 to 48 hours.
The PHM who health services at the field level is
responsible for supporting the mother and the
newborn through postnatal visits. The PHM is
expected to pay three visits to every post partum
woman during the first 10 days after delivery and 2
additional visits around 28 and 42 days, in the post
partum period. However, practical difficulties related
to communication sometimes leads to delays in
such visits thus influencing the quality of postnatal
care.

Utilisation of field based services
According to DHS, 2000, 98.4 per cent of the
mothers who had a live birth within the preceding
five years had antenatal care, 95 per cent had
visited a clinic and 84.0 per cent had a midwife
visiting their home. The SLDHS carried out in the
conflict affected areas of Sri Lanka in 2001 also
indicated that among a comparable group of
mothers, 99.8 per cent received antenatal care,
96.8 per cent of them visited an antenatal clinic and
45.7 per cent had been visited at home by the
midwife.

In the year 2000, of the total number of deliveries
reported by PHMs, 1.9 per cent were home
deliveries and 31 per cent of them did not receive
trained assistance during delivery.
FIGURE 2: Organisation structure for maternal care services

Minister of Health
- Secretary Health
- Director General of Health Services
  - Deputy Director Generals
    - Public Health Services
    - Medical Services
    - Management Dev & Planning
    - Lab Services
    - Administration
    - Finances
  - Director MCH
    - Director Tertiary Care Hospitals
    - Director Lab Services
    - Director National Blood Transfusion Services
    - Director Medical Supplies
    - Director Medical Technology and Supplies
  - Medical Instructions (Curative Care)
    - General/Provincial Hospitals
    - District Hospitals
    - Peripheral Units
    - Rural Hospitals
    - Central Disp and Maternity Homes
  - Health Units (Preventive Care)
    - Div. Director of Health Services
    - Medical Officer of Health
    - Public Health Nursing Sister
    - Supervising Public Health Midwife
    - Public Health Midwife
    - Public Health Inspector
- Provincial Minister of Health
- Provincial Secretary of Health Services
- Provincial Director of Health Services
- Deputy Provincial Directors of Health — MO MCH
Maternal health services at institutional level
The responsibility for provision of institutional maternal health services lies with the provincial director of health services with the exception of the services provided by the teaching hospitals and the special maternity hospitals, which comes under the purview of the central government Ministry of Health. Antenatal, natal and early postnatal care services are provided through the network of institutions in the state sector.

Antenatal care
Services are provided through the clinics held at institutions, some of them with specialised facilities for investigation and management. Often, provision of antenatal services is shared between the field and institutions i.e ‘shared care’.

Natal care
A consistent upward trend in the per cent of institutional deliveries has been noted in the past few decades. This percentage has increased from 75.6 per cent in 1980 to 91.9 per cent in 2000. Of all institutional deliveries, 78.4 per cent took place in higher level institutions and another 18.7 per cent in the intermediate level hospitals.

Proportion of deliveries without trained assistance was high in the districts in conflict affected areas. In the districts outside the conflict areas, 96 per cent of the deliveries had trained assistance with the comparable proportion of such deliveries in the districts affected by the conflict being 80.6 per cent.

Postnatal care
As a majority of mothers who have normal deliveries at term at institutions are discharged within 24 to 48 hours after delivery, only early postnatal care services are made available at this level, exceptions being mothers who deliver by caesarean section of neonates who need institutionalised care.

Availability of human resources for maternal health services also shows an improvement over the years.

Information system
With further development of MCH services through the state sector, data collection systems for monitoring the services was developed, based on the needs. Introduction of a comprehensive MCH/FP information system in 1986 enabled data from field level MCH activities to be assessed. This system has been further revised in the year 2000, to include information on a wide range of activities included under the family health programme, focusing on the mothers and young children.

Financing of health care services
Provision of free health services’ (including RH services) to the population of Sri Lanka was one of the important welfare measures in existence in Sri Lanka since independence. Available data indicate that the state has spent an amount ranging from 4 to 5 per cent of the total government expenditure on health, during the period 1996 to 2001. This amounts to approximately 1.5 per cent to 1.7 per cent of the GNP5.

Role of the private sector in maternal care
According to DHS, 2000, 6 per cent of all deliveries take place in private hospitals. It is known that provision of antenatal care is undertaken by private sector practitioners, even though it is not possible to quantify their contribution.

Factors contributing to changes in MMR
Sri Lanka’s success in reducing maternal mortality can be attributed to a number of complex factors having a mutual beneficial effect. High political commitment to health and health related activities together with the provision of health care through a well-developed health infrastructure, have contributed greatly to reductions in maternal mortality. The state has played a major role in providing services for maternal care, with a focus on improving access and quality of services.

Perusal of documentation on the specific strategies adopted during the past few decades indicate that close monitoring of the status of MMR and its causes has led to interventions specific to a given situation. The decision to focus on provision of trained assistance at delivery through midwives as
opposed to training traditional birth attendants, linked with the legal requirements for registration of midwives was an important decision that enhanced the availability of trained assistance at delivery. Another example is the decision taken in 1978 to train midwives to administer ergometrine orally and PHNs and nurses in smaller hospitals, to give ergometrine parentally, to counter the problems of haemorrhage. Improvements in the availability of blood transfusion facilities occurred in parallel. Introduction of family planning programmes was yet another important strategy, implemented through the health sector.

**Contributions made by the programmes outside the health sector** have been considered to have an impact in reducing MMR. These include improvements in female education, which resulted from the free education system with equal opportunities for women, status of woman in society, food subsidies, food supplementation programmes and the wide range of communication strategies used for improving the level of knowledge on health matters.

Even though the MMR shows a declining trend, an area of concern is the wide inter-district variations in MMR seen throughout recent years.

**Quality of data on maternal deaths**
The data on which observations on trends and causes of maternal mortality are based, are those reported by the Registrar General's Department, through the routine death registration system. Even though earlier reports indicated a high coverage of registration of deaths, concerns have been expressed on the adequacy of coverage of maternal deaths, in recent years. To make an accurate assessment of maternal deaths, it is necessary that the coverage and quality of certification of cause of death is satisfactory. Recent studies indicate the need for improvement, in both coverage and quality of certification of cause of death.

Another area of concern regarding the information provided by the Registrar General's Department is the timeliness of data. Data from the Registrar General's Department are available only up to 1996.

The reasons for lower reporting of maternal deaths are related to inaccuracies in the certification of the cause of death by hospital staff and coroners, especially when death occurs outside an obstetric unit (for example, in an intensive care unit) and/or inadequate and incorrect coding at the Registrar General's Department. At present, there is no provision in the death declaration form or the death certificate to indicate the pregnancy status of the deceased.

**Development of a surveillance system for maternal deaths**
In view of the above, alternative approaches to improve the coverage and quality of data on maternal deaths were considered necessary, leading to the development of an active surveillance system.

A maternal death was identified as a notifiable event in 1985 by the Ministry of Health and a system for active surveillance of all maternal deaths was developed. If a maternal death occurred in an institution, the staff responsible for the care of the mother should inform the head of the institution. Head's of institutions should notify the health administrators at the district level (DPDHS and PDHS). If the mother is known to have been resident in an area outside the DPDHS area where the hospital is situated, the notification should be sent to the relevant DPDHS. When it is possible to identify the MOH area where the mother had been resident, this officer has to be notified. If this is not possible, then the DPDHS has the responsibility of notifying the MOH of the area, through the MO-MCH.

The judicial medical officers who conduct post mortem examinations on women, who were pregnant at the time of death or within 42 days after the termination of pregnancy, should also notify such deaths to the head of the institution.
If a death occurs at home, then area PHM should notify the MOH of the area and the MOH should notify the DPDHS and the PDHS. The DPDHS/PDHS also notify maternal deaths to the FHB. In both categories of deaths, those occurring at an institution or at home, the relevant office, head of institution or the MOH should also notify the FHB, Ministry of Health.

The Family Health Bureau also obtains up to date information on maternal deaths through the field based MCH/FP information system (H 509) on a quarterly basis, independent of the notifications. The hospital based information system, reports maternal deaths on a quarterly basis, to the medical statistician.

The use of multiple sources of information has led to a marked improvement in the reporting of maternal deaths. Cross checking of the reporting of each death is carried out at the central level, to avoid duplication. The number of deaths reported through this process of surveillance is considered to give a more reliable figure of maternal deaths in Sri Lanka.

Although the vital registration system through the Registrar General's Department reported the MMR as 24 per 100,000 live births in the year 1996, the maternal death surveillance system reported a maternal mortality rate of 62.6 per 100,000 live births for the same year. This difference is attributed to underreporting and reflect the need for an alternative source to collect information on maternal deaths (Figure 3). Since 2002, the ICD 10 classification has been used in notification of maternal deaths. This has enabled reporting of late maternal deaths and all pregnancy related deaths that occurred during pregnancy and 42 days of termination of pregnancy.

A schematic presentation of the different sources of information on maternal deaths in Sri Lanka is given in Figures 4.

**FIGURE 3:** Maternal mortality ratio based on data obtained from different sources

**History of the maternal death investigation system**

In the Sri Lankan health care system, the medical officer of health (MOH), the officer responsible for provision of preventive and promotive health services for a defined population has the responsibility of monitoring health status at the community level. An important component of such a monitoring process is that it is related to maternal and child health.

Undertaking an in-depth investigation into each maternal death that occurred within the MOH area was a responsibility that had to be carried out by an MOH, since the late 1950’s. A prescribed format was used for this investigation. The objective of this investigation was to identify the sequence of events that led to the death and to take corrective measures, mainly focusing on aspects of service provision and prevention of such events in the future. These investigations were usually undertaken at the field level with the participation of the field staff and may or may not have had adequate participation from the institutional staff. Hence, there were no linkages between the service providers in the institutions and those at the field level, in identifying the problems and corrective actions. The findings were discussed during the staff meetings at the MOH area.
The MOHs were expected to provide information related to maternal death investigations, to the administrative authority for health services at the district level (SHS/RDHS/DPDHS). However, there was no proper mechanism to monitor this activity, hence the extent to which this process was used to identify issues relevant to prevention of maternal deaths varied.

During this time, the objectives of the maternal death investigations were:

- Confirmation of the probable cause of death.
- Analysis of the circumstances leading to the death.
- Identification of attributable factors
- Review service provision system with a view to identifying and implementing corrective action, mainly at the field level.

The focus was more on the investigations of the maternal death and the review of available information from the investigation by a team, was minimal.

A major shift in the focus on investigating maternal deaths took place in 1985, after the establishment of the system of notification in 1985. At this time, the Ministry of Health decided to incorporate a Maternal Death Review into the already existing review of the Expanded Programme of Immunisation (EPI). These were to be undertaken at district and national levels. In 1989, the formats...
used for investigation of maternal deaths H 677 was modified to enable collection of different types of information from institution based (H 677 — annex 3) and field based investigations (H 677 A — annex4).

Generally, these reviews took place at the national level and were chaired by the secretary, Ministry of Health and all health administrators at the district level, MO - MCH, relevant MOHs and other field personnel participated in the review. This signified the commitment of the higher-level authorities in the Ministry of Health, which encouraged health personnel to take an active part in reducing maternal mortality. In some instances, the reviews were conducted at the district level in districts, where the reported maternal deaths were high, using the information gathered from the investigations at the field and institutional levels. These were held prior to the national level review.

Participation of institutional health staff and members from professional bodies was relatively low at the time.

By early 1990’s, this system of reviews was streamlined and the monitoring by the FHB at the central level was strengthened. Linkages were established with the College of Obstetricians and Gynaecologists and the College of Anaesthetists and by late 1990’s, there was active collaboration between the professional bodies and the Ministry of Health, in conducting these reviews.

Maternal death review — current status
At present, the maternal death investigation system includes investigating all maternal deaths that are notified as having occurred during a specific period (usually a year) irrespective of the place where the death occurred, in a medical institution, at home or elsewhere and review of such information by a team of health professionals. The objectives of the review are as follows:

- Confirmation of the probable cause of death.
- Analysis of the circumstances leading to the death.
- Identification of attributable factors
- Review service provision system at national and sub national levels.
- Review policies and its implementation at national and sub national levels.
- Linking of different sources of reporting of maternal deaths

The Ministry of Health requires that all maternal deaths be notified and investigated early, in order to establish the cause of death and the factors that contributed to the death. Such information is to be used to plan strategies and design policies aimed at preventing maternal deaths in the future. In Sri Lanka at present, the ICD 10th classification is used for notification and investigation of maternal deaths. Thus, it is imperative that notification of maternal deaths should include late maternal deaths and all other pregnancy related deaths. This enabled identification of all deaths during pregnancy and in the post partum period up to 42 days of termination of pregnancy.

Procedure adopted in the investigation and review of a maternal death
Review of maternal deaths is carried out at different levels of the health care system and the sequence of activities undertaken in this process is as follows:
1. Notification
2. Investigation of the maternal death
   a. At the institution
   b. At the level of the MOH
3. District maternal death review
4. National maternal death review

Figure 4 presents the sequence of events of maternal death investigation and review as implemented currently in Sri Lanka.

To maintain uniformity in the investigation and reporting of maternal deaths, a set of formats for
collection of data during the investigation of the maternal death at the institutional and field level were developed. They are:

- Hospital (institutional) investigation form H 677 (annex 3)
- Field Investigation Form H 677 a (annex 4)

These formats are designed to collect data on socio-demographic characteristics, past obstetric history, quality of antenatal, natal and postnatal care and other factors that may have contributed to the maternal death and are used at the level of the service providers i.e. field and institutional levels.

Based on the data from the maternal death investigation, a maternal death review is undertaken at the district level. After the district review, the information related to the preventive health sector are presented in Format A (annex 5) and those obtained from the hospitals are presented in Format D (Annex 6). Completion of these formats at the district review enables identification of factors that contributed to the maternal death. The national review also uses the same formats to report the findings.

The factors so identified are categorised according to the 3 Delays model i.e. delay in decision to seek care, delay in reaching the medical facility and delay in receiving adequate treatment. (In the Sri Lankan setting, this model has been modified, taking into consideration the country’s situation relating to access to care and factors influencing use of care.).

This approach helps to identify activities that could contribute towards improving the quality of care and reducing the risk of a maternal death in the future (e.g. training, strengthening of infrastructure facilities, improving referral mechanisms etc.). Depending on the level in the health care system where action is required, such actions are identified and implemented. A mechanism to monitor implementation of decisions has been developed. Wherever national level policy decisions are required, necessary action is taken to develop and implement policies. Consultative meetings, seminars, workshops are held as required.

**Institutional review of a maternal death**

If a maternal death occurs in a hospital (government or private) the head of the institution should be notified immediately by the ward staff. The head of the institution takes appropriate action to notify the maternal death to the:

- Director, Maternal and Child Health Family Health Bureau - Ministry of Health
- Provincial director of Health Services. (provincial health administrator)
- Deputy provincial director of Health Services of the district where the hospital is situated.

The method of transfer of such information is through the quickest possible route i.e. by telegram/telephone/facsimile. A letter confirming the occurrence of the maternal death along with supplementary information follows this notification.

If the mother has been a resident of a district other than that in which the death occurred, then the DPDHS of that area is informed so that it will be made possible for the MO - MCH to inform the MOH of the area where the mother resided.

The head of the institution is directly responsible for the investigation of the maternal death. This investigation is conducted by a team and completed within 7 days. The timeliness of conducting the investigation is important so as not to miss out on detailed information that will be relevant in identifying all factors that led to the maternal death.

The team comprises of the:

- Head of the institution
- Obstetrician and gynaecologists/anaesthetists and other consultants who were responsible for the clinical management
- Other medical officers responsible for providing care
- Medical officer of health of the area form which the mother came, hence responsible for field based care provided during the antenatal and postnatal period
- MO/MCH of the district
- Nursing officers/midwives who cared for the mother during her hospital stay.

This team discusses the information available on the form H 677 and attempts to identify the probable cause of death, type of maternal death and the factors that contributed to the death. At the institutional level, these causes may be, those related to specific aspects of service provision, managerial issues or administrative issues. It is the responsibility of the head of the institution and the team to identify actions that could be taken to overcome the problems identified and take corrective action.

The findings are recorded on the Maternal Death Investigation form H 677. This should be prepared in triplicate and copies sent to:
- Director maternal and child health family health bureau — Ministry of Health
- Deputy provincial director of health services (DPDHS) of the district
- The third copy should be retained at the office for further reference.

A schematic presentation of the procedure adopted in the investigation of a maternal death at the institutional level is given in Figure 5.

**FIGURE 5:**
**Procedure followed in the maternal death investigation at the institutional level**
Investigation of a maternal death by the MOH at field level

Investigation of maternal deaths at the field level is the responsibility of the medical officer of health (MOH) of the area where the mother resided. Irrespective of the place of occurrence of the death, the public health midwife (PHM) of the area should notify every maternal death immediately to the MOH. If the maternal death occurred in an institution, then the MOH should receive a notification from the head of the institution. If the head of the institution is not aware of the MOH area in which the mother resided, the information could be forwarded through the DPDHS and MO-MCH.

However, the most frequent method of receipt of notifications by the MOH is through the PHM. This is facilitated by the availability of the eligible couples register with the PHM and her responsibility of having to provide domiciliary care for the mother from early pregnancy. Thus in practice, PHMs are able to report maternal deaths that occur in her area, due to conditions related to early pregnancy such as ectopic pregnancies and abortions.

The MOH should check on this information and should inform

- Director maternal and child health family health bureau - Ministry of Health
- Provincial director of health services (provincial health administrator)
- Deputy provincial director of health services

As in the case of a death that occurred in an institution, the method of transfer of such information should be through the quickest possible route i.e. by telegram/telephone/facsimile. A letter confirming the occurrence of the maternal death along with supplementary information should follow this notification.

The field level investigation should be carried out at the earliest possible. The MOH should visit office of the PHM of the area where the mother resided and obtain information from the documents available with the PHM. Such information should focus on the care received by the mother prior to pregnancy (e.g. family planning services), during the antenatal and postnatal periods and include perusal of mother's records (H 512 A, H 512 B) and checking the Pregnant Mothers Register and Eligible Couples Register.

The MOH should visit the residence of the deceased with other members of the health team comprising of supervising public health midwife, (SPHM) public health nursing sister (PHNS) and public health midwife (PHM). The team should discuss with the family members and obtain relevant information on the circumstances related to the death, check diagnosis cards and other documents if available and gather information on the views expressed by family members about the death.

The MOH has to visit the hospital where the death occurred, collect relevant information from the Bed Head Ticket and discuss with the head of the institution and record the information in the H 677 a format. This process of investigation of a maternal death is a modified form of verbal autopsy carried out along with a clinical audit, in the field setting.

At the monthly staff conference of the MOH area, where all field staff are present, the findings of the MOH on the maternal death/s that occurred in the area should be discussed. The sole aim of such a discussion should be to prevent such deaths in the future by taking preventive action that can be implemented at the local level.

A schematic presentation of the process undertaken during an investigation of maternal death at the level of MOH (field level) is given in Figure 6.
Figure 6:
Procedure followed in the maternal death investigation at the field level

District maternal mortality review
District maternal mortality reviews are held at district level once in three months. All deaths of mothers who were resident in the district at the time of death during the period under study are reviewed, irrespective of the place of occurrence of the death. Information obtained from the investigations carried out at the institutional and field level form the basis on which the reviews are made.

The main objectives these reviews are to identify factors responsible for maternal deaths and to take corrective measures to avoid preventable deaths. District reviews are organised and co-ordinated by the MO-MCH who is responsible for planning and monitoring maternal and child health services at the district level.

The team who undertake district reviews includes:
- PDHS (Chairman)
- MOH/DDHS
- DPDHS
- Head of the institution/s where the death/s occurred.
- MOH/s of the area/s where maternal death/s had occurred within the specified period along with other members of the health team
- Consultant obstetrician and gynaecologist/s
- Consultant anaesthetist/s.
- Judicial medical officers, where relevant
- Other consultants, who may have provided clinical care
- Estate health personnel, if the mother was resident on an estate
The factors that contributed to the death of the mother are discussed and analysed based on the modified 3 Delays model and are recorded in Format A (field format given in annex 6) and format D (hospital format given in annex 7). This review helps to identify the factors that contributed to the maternal death, at the institutional and field level for which it is not feasible to implement corrective measures without concurrence/permission from a higher level. Such actions usually involve managerial and/or administrative decisions.

Following the review, it is necessary to follow up implementation of decisions, assess the extent to which the corrective actions are taken at the service provider level and those that could be done at the district/provincial level. The participation of district/provincial health administrators as part of the team undertaking the review enhances the ability to make appropriate decisions. This enables corrective measures and managerial decisions at all levels.

The district review also identifies the activities that may require policy decisions at the national level, which is an important expected output from district reviews. If the mother was transferred form one institution to another, relevant staff of both institutions have to be present at the review.

**National maternal mortality review**
The family health bureau — Ministry of Health is responsible for conducting the national maternal mortality review annually. Officials from the Ministry of Health (central government) including director, maternal and child health (D MCH) visit all districts annually and conduct the reviews in collaboration with the provincial health authority, Sri Lanka College of Obstetricians and Gynaecologists and Sri Lanka College of Anaesthetists.

By using the information available in the formats A and D, which have been completed at the district reviews, each maternal death is discussed and analysed according to the 3 Delays model (modified), by a multi disciplinary panel of experts, which includes health administrators at national, provincial, district and institutional level, public health experts, representatives of the College of Obstetricians and Gynaecologists, College of Anaesthetists etc. Estate health personnel are invited, when relevant.

The national maternal death reviews aim to identify changes to be made and/or activities to be undertaken to reduce maternal deaths. These could be categorised as decisions pertaining to technical aspects, managerial or administrative aspects of the system. Findings are presented to policy makers in order to reduce maternal deaths further with a focus on areas where policy decisions are required and inter-departmental activities are necessary. In doing so, the suggestions made at the district level reviews are of prime importance. The sequence of events undertaken in the system for maternal death reviews is presented in Figure 7.

**Process of decision making**
Action to be taken to implement the necessary changes required in the health care delivery system to reduce maternal mortality may have to be at different levels, i.e. institutional, field, district, provincial, national and sometimes outside the health sector.

The maternal death investigation system commences at the level of the service providers, at the field and institutional level. The issues identified during these investigations would include those related to provision of services. It is possible that some managerial and administrative problems may have influenced such issues. Technical aspects of care provided also may be identified as areas requiring attention.

Problems identified for which corrective measures are possible at the service provider level, are taken and implemented. For example, if post-partum psychosis in a mother is due to inadequate knowledge, the MOH could conduct appropriate training for midwives in the area. If the investigation identified the need for improved quality of services at post-partum visits, then decisions could be taken to improve guidance and
to improve supervision by the PHNS. If for example, at the level of an institution non-availability of officers in the institutions has been identified as an issue, it is possible to take managerial decisions to develop an appropriate system, e.g. develop a roster.

When the information available from these levels are discussed at the district reviews, in addition to clarifying the cause of death and the circumstances leading to the death, a more comprehensive analysis of the issues that need to be addressed at the service provider level and at the district/provincial level are identified. The focus on decision making at the district reviews will be on issues that could not be attended to at the service provider level. For example, shortages in a category of staff (PHMs, medical Officers etc) will need to be addressed by the district/provincial health managers. If upgrading of facilities at a given institution is required, then such decisions too have to be taken at the district/provincial level.

The decision making process at the national maternal death reviews is based on the findings at district reviews as well as from discussions with experts who participate in such reviews. Some of these will require major policy changes while others will require improvements in specific activities/procedures. If issues related to inappropriate case management are highlighted during the review (e.g. use of magnesium sulphate in the management of eclampsia, management of pulmonary embolism, guidelines can be prepared at the national level, by the FHB in collaboration with the relevant professional bodies e.g. College of Obstetricians and Gynaecologists, College of Cardiologists. Major decisions regarding establishment of the blood banks, training of staff etc. may have to be initiated at the national level.

**Implementation**

Implementation of decisions taken at the service provider level is with the head of the relevant institution/MOH.

At the district level, the minutes of the district review meetings are circulated to the relevant PDHS, DPDHSs, MOH, heads of institutions and a copy is sent to the FHB. The provincial and district

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**FIGURE 7:**
Sequence of events in the maternal investigation and review

1. **Maternal Death**
   - **Notification**
     - Field investigation
     - Institutional investigation
   - **District Maternal Mortality Review**
   - **National Maternal Mortality Review**
level health administrators along with the MO-MCH are responsible for the follow up of the decisions taken to implement changes at this level.

Whenever national level policy decisions are taken, the FHB has the responsibility to take necessary follow up action. Some of the policy decisions are communicated through circulars while others may require development of technical guidelines. Usually, these are followed up with a series of workshops and seminars as required, after the completion of national level reviews.

National level consultative meetings are held to discuss key areas where major changes are to be considered and policy decisions are to be made especially in areas, which require participation of sectors outside the health system.

Institutionalisation of the process of maternal death reviews

The incorporation of a maternal death review to the already existing maternal death investigation system along with strengthening of the monitoring system and establishment of a procedure for follow up requires that the process be institutionalised. In 1989, the Ministry of Health — central government informed all PDHSSs, DPDHSSs MO-MCH, MOH and head of institutions about the activities that should be undertaken to implement the process of maternal death reviews, through a series of circulars.

In 1994, with modifications made to the system of reviews, a further circular was issued by the Ministry of Health providing guidance to make the system of reviews more effective in terms of taking action to minimise maternal mortality.

With the introduction of the provincial system, the responsibility of implementation of the maternal death reviews, identifying interventions and implementing such activities has become the responsibility of the provincial ministries of health. Close liaison between the national level institutions and those at the provincial and district levels, is essential in ensuring that the target is achieved i.e. minimise the preventable maternal deaths and the FHB has undertaken this responsibility.

Analysis of maternal death review data

During the year 2001, a total of 225 deaths were reported, of which 167 were identified as deaths among females in the reproductive age group, with 58 deaths being pregnancy related deaths. This observation indicated the possibility of a high percentage of maternal deaths being notified.

The number of maternal deaths reported to the FHB has shown a marginal decline in the last few years, from 204 in 1997 to 167 in 2001. With increasing attention being paid to improving the quality of data on maternal deaths, this may indicate a true decline in the number of maternal deaths. A review of these deaths has enabled identification of the causes of death, categorisation according to the ICD 10 classification and the factors contributing to these deaths. (Number of deaths and the causes of death for these years are given in annex 7 and inter-district variations, in annex 8).

Of the 167 maternal deaths notified, 119 (71 per cent) were direct maternal deaths, 41 (25 per cent) were indirect deaths and 7 (4 per cent) of the deaths could not be classified. The cause of death in respect to each maternal death was decided upon, by a group of experts; hence it has been possible to obtain relatively accurate information. Tables 2 and 3 provide information on the cause of death in respect of direct and indirect maternal deaths.

**TABLE 2:**
Causes of direct maternal deaths reported to FHB during 2000

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhages of pregnancy</td>
<td>41</td>
<td>34.6</td>
</tr>
<tr>
<td>PIH</td>
<td>27</td>
<td>22.7</td>
</tr>
<tr>
<td>AF/P embolism</td>
<td>21</td>
<td>17.6</td>
</tr>
<tr>
<td>Septic abortion</td>
<td>14</td>
<td>11.8</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>Obstructed labour</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Post partum septicaemia</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>Anaesthetic deaths</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Transfusion reactions</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>DIC due to IUD</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Cardiomyopathy</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>119</td>
<td></td>
</tr>
</tbody>
</table>
A majority (87 per cent) of deaths had taken place in hospitals with 7 per cent taking place at home. An additional 4 per cent of the deaths had occurred in transit from home to hospital and 2 per cent between hospitals.

The time at which the death occurred in relation to pregnancy status is an important criterion that needs to be considered in identifying preventive measures. During 2001, a majority (71.2 per cent) of the deaths has occurred during the post partum period (42 days), 39.5 per cent during the early post partum period (within the first 24 hours) and another 31.7 per cent thereafter. A lower proportion of deaths i.e. 26 per cent occurred during the antenatal period. The finding that nearly a fourth of the deaths occurred during the antenatal period indicates that early registration of mothers during pregnancy and the availability of the eligible couples register may have contributed to identification of such deaths.

Only 30 per cent received adequate antenatal care with 47 per cent receiving antenatal care which was assessed as inadequate in terms of quality of care and another 12 per cent did not receive any antenatal care. Information available on antenatal care for 11 per cent of the mothers did not enable an assessment of the quality of antenatal care.

Analysis of causes of death among those who did not have antenatal care indicated that 55 per cent of this group died of septic abortion. Of all mothers who died of septic abortion, 79 per cent did not receive any antenatal care indicating that a majority of those who sought abortions did not go for antenatal care.

A factor relevant to this observation is the 'unmet need for family planning'. Of the pregnancies that resulted in maternal deaths, 46 per cent were pregnancies that were unwanted or unwarranted.

Classification of the maternal deaths according to the 3 Delays model is given in Table 4. In the modified version of the model used in the reviews in Sri Lanka, all circumstances that occurred due to a non compliance or non participation by the mother were included as delay 1, without limiting the reasons only to the delay in the decision to seek care. Thus, if the mother did not comply with the request for family planning or did not follow up on the advice to use a referral service, they were considered as delay 1.

In identifying Delay 2, delay in reaching the medical facility was considered to have been present if the delay to go to a hospital was related to the action taken by the mother and/or the family, or due to extraneous circumstances such as security risks, access denied due to closure of roads etc.

Delay 3 include all delays/problems/inadequacies related to receiving adequate treatment, irrespective of whether the delay occurs in the services provided at the institutions or field level. All delays relevant to service provision that took place throughout pregnancy, antenatal, natal and postnatal periods are considered under this category. For example, if the mother had visited the antenatal clinic conducted by the MOH at filed level on several occasions but the fact that the

---

2 Situations where the pregnancy should not have taken place e.g. where there were medical contraindication for pregnancy
mother had a heart disease complicating pregnancy was missed, this will be considered as a Delay 3. If a mother delivered in an institution and died of post-partum sepsis, inadequate infections control at the hospital level is indicated, hence included under Delay 3.

Detailed information available though investigation at field and institutional levels and participation of all personnel responsible for provision of care to the mother and the availability of expertise in all relevant fields enables identification of all possible delays that have contributed to the death. Final categorisations of the delay/s are made at the national reviews.

The findings indicate that Delay 3 was the most frequent delay and there were many reasons for this delay. They ranged from issues related to technical competence, availability of human and other resources and poor quality of care.

At the national review, it was possible to identify 86.2 per cent of the deaths as preventable.

Use of the findings from the maternal death review for decision making
The decisions to undertake activities aimed at reducing maternal deaths could range from policy decisions taken at national, provincial and district levels and/or those related to programme implementation at the institutional /field level.

Some examples of decisions taken are presented here, in relation to the key issues identified during the review process.

Under reporting
Several activities were identified and implemented to improve the reporting of maternal deaths. These included activities aimed at improving knowledge of health personnel (e.g. classification of causes of death etc) to taking a policy decision to develop a notification system from the judicial medical officers. Educating the coroners (inquirers of sudden deaths) was undertaken, to create an awareness about the importance of inquiring into the pregnancy status in the event of a death of a woman in the reproductive age group.

An important decision that required inter departmental activity was that made to modify the Bed Head ticket and the death declaration forms. This change is to be achieved through collaboration between the Ministry of Health and the Registrar General's Department. The decision was to include a space to indicate whether the woman was pregnant or was in the post-partum period at the time of death, if the pregnancy status of the woman, in the case of admissions, deaths of women in the reproductive age group .e.g. to include a "box" to be ticked off.

Improving quality of data
A decision was taken to accept the maternal mortality ratio calculated based on the data collected by the FHB, as the national figure.

Improving the quality of information at maternal death investigations
Special attention was paid to obtain information related to deaths that occur in specialised units other than obstetric units e.g. intensive care units. In the case of a transferred patient whose death occurred in a specialised unit, the head of the institution should be notified and the investigation should be carried out in the unit where the death occurred and the unit from where the patient was transferred also should be informed to further investigation.

### TABLE 4:
**Distribution of maternal deaths categorised using the '3 Delays' model**

<table>
<thead>
<tr>
<th>Delay</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No delay</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Delay 1 only</td>
<td>7</td>
<td>4.2</td>
</tr>
<tr>
<td>Delay 2 only</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Delay 3 only</td>
<td>59</td>
<td>35.9</td>
</tr>
<tr>
<td>Delays 1 &amp; 2</td>
<td>30</td>
<td>18.0</td>
</tr>
<tr>
<td>Delays 1 &amp; 3</td>
<td>9</td>
<td>5.4</td>
</tr>
<tr>
<td>Delays 2 &amp; 3</td>
<td>4</td>
<td>2.4</td>
</tr>
<tr>
<td>All delays 1,2 &amp;3</td>
<td>36</td>
<td>21.6</td>
</tr>
<tr>
<td>Not enough data</td>
<td>7</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>167</strong></td>
<td></td>
</tr>
</tbody>
</table>
Review process
A decision was taken to have maternal death reviews once in every three months, on a fixed date.

Improvements in natal care
Several decisions were taken aimed at prevention of deaths due to haemorrhage. These include: provision of basic EmOC facilities, at least 4 per 500,000 population and comprehensive EmOC facilities provided at least 1 per 500,000 population, to take action to encourage all mothers at high risk be delivered at institutions with specialised facilities, improve availability of blood transfusion facilities by ensuring a 24 hour service, to be established at blood banks at provincial hospitals and to have at least 2 medical officers with appropriate training at the base hospital level, to enable a continued service. Blood storage facilities for emergencies to be established at district hospitals.

Other decisions include, recommending the use of the partogram in all institutions to monitor progress of labour and to appoint two qualified obstetricians to all institutions with specialist services, to enable 24 hour service, on all days.

Human resources
Routine supervision by special grade nursing officers to be carried out and guidelines for supervision to be developed.

Appoint senior house officers to all obstetric units from district hospital upwards.

Decisions to provide specific therapeutic agents and other support facilities required for patient management were taken where relevant. E.g. to make available magnesium sulphate at all institutions.

Lessons Learnt
Maternal death investigation system: strengths and deficiencies

Strengths
The importance of preventing maternal deaths becomes highlighted at all levels of the health care system, which contributes to sensitising all health personnel into taking action or preventing such deaths.

The reviews at the district and national level bring together, all medical personnel who have responsibility for maternal health. Complementary nature of the services provided by different categories of personnel is clearly identified in such situations and the importance of the linkages between the different service providers is highlighted. In the identification of corrective actions too, this aspect becomes important. Using such a participatory approach results in enhancing a shared responsibility and increased accountability of their role.

The purpose of maternal death review is to find facts that will enable identification of possible corrective action and is not an attempt to find fault with an individual or a group of service providers but to identify issues related to the system of service provision where modifications could be implemented. This approach has enhanced the availability of detailed information of better quality related to such an event and active participation from all categories of personnel, who take part in the review process.

These reviews enable confirmation of the cause of death as a modified form of verbal autopsy technique along with a clinical audit used in the process.
Using the modified 3 Delays model enables identification of the shortcomings in case management at the individual level as well as the healthcare system. In-depth review of the available information enables identification of tools for prevention so that maternal deaths could be avoided in the future.

**Deficiencies**

An area where deficiencies of the maternal death investigation system could occur is related to notification of maternal deaths when some deaths are missed. Under reporting of maternal deaths is an area of concern, especially late maternal deaths and those that occur in early pregnancy. Some of the indirect maternal deaths may be misclassified and hence may not be reported. Use of multiple sources of data has shown positive results in identifying maternal deaths and further action to improve the situation has to be made.

In order to obtain optimal benefits from maternal death reviews, all steps in the process should be followed and carried out effectively i.e. field and institutional investigations, district reviews and national reviews. They should take place within a stipulated time period and should achieve the specified objectives, as relevant to the level at which the investigation and review take place. It is necessary to hold the reviews within the shortest possible time to minimise errors due to recall. There are instances where 'gaps' have been observed in this process. On some occasions, maternal death investigations and reviews are carried out as a routine procedure without paying much attention to identifying corrective actions to be taken to reduce such deaths and ensuring their implementation.

Identification of the corrective actions that can be taken at different levels of the healthcare system and implementing such decisions has to be an integral part of the review process. However, in practice, problems related to the implementation of this process has led to a decline in the efficiency of the system, where by the national reviews have to deal with actions that need to be taken at the service provider level.

An area of concern has been the issues related to confidentiality of the information discussed at the reviews. During the reviews, detailed personal information of the deceased as well as those related to health care provided at all levels are dealt with. Even though this information is considered confidential, due to the relatively high number of persons involved in these investigations and reviews, the possibility of such information 'leaking out' is a matter of concern. Attempts are being made to use a coding system, to minimise identification of not only individuals and institutions but also aspects of case management. Relevant legal aspects are also being reviewed.

**Future development of maternal death reviews**

Based on the experience gained in the development and implementation of maternal death reviews, it is necessary to consider the following as future challenges/actions to be taken.

- Streamline the system with a view to closing the 'gaps' in the system

- Ensuring confidentiality of information available at maternal death reviews.

- Legal aspects related to the use of such data require attention and action taken to ensure that such concerns do not undermine the benefits of the process of maternal death reviews.

- There has to be an effective mechanism for implementation of decisions taken at maternal death reviews and a system for monitoring the review process and the implementation of decisions.
Should attempt to forecast changes that are likely to occur with regard to the problems related to the causes of maternal deaths and those related to service provision and appropriate decisions should be made for the system.

An appropriate mechanism should be developed to carry out a confidential inquiry into maternal deaths to enable unbiased, comprehensive information that can be used in taking corrective measures can be established.

Scope should be clearly defined.

Information flow should be defined.

Timeliness of such investigations is of crucial importance.

The levels at which such investigations are to be carried out should be clearly identified and the information flow.

Annex 1

Summary table on trends in percentage change in cause specific MMR 1931 - 1996

<table>
<thead>
<tr>
<th>Interval (years)</th>
<th>All causes</th>
<th>Abortion</th>
<th>Sepsis</th>
<th>Haemorrhage</th>
<th>Hypertension</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931-1940</td>
<td>-22.74</td>
<td>50.88</td>
<td>-35.80</td>
<td>64.86</td>
<td>-25.82</td>
<td>-2.95</td>
</tr>
<tr>
<td>1940-1950</td>
<td>-58.31</td>
<td>-60.85</td>
<td>-76.44</td>
<td>6.34</td>
<td>-78.86</td>
<td>-32.78</td>
</tr>
<tr>
<td>1980-1991</td>
<td>-35.38</td>
<td>-31.22</td>
<td>-81.95</td>
<td>52.52</td>
<td>-65.78</td>
<td>-44.20</td>
</tr>
<tr>
<td>1991-1996</td>
<td>-45.24</td>
<td>-69.21</td>
<td>-47.66</td>
<td>-54.91</td>
<td>-92.52</td>
<td>18.10</td>
</tr>
</tbody>
</table>

Source: Registrar General Department for relevant years

Percentage contribution made by selected causes, to Maternal Mortality 1930-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Abortion</th>
<th>Sepsis</th>
<th>Haemorrhage</th>
<th>PIH</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>0.82</td>
<td>36.45</td>
<td>2.94</td>
<td>47.27</td>
<td>12.51</td>
<td>100.00</td>
</tr>
<tr>
<td>1935</td>
<td>0.89</td>
<td>32.51</td>
<td>3.14</td>
<td>50.01</td>
<td>13.46</td>
<td>100.00</td>
</tr>
<tr>
<td>1940</td>
<td>1.56</td>
<td>29.76</td>
<td>7.00</td>
<td>47.25</td>
<td>14.53</td>
<td>100.10</td>
</tr>
<tr>
<td>1945</td>
<td>1.34</td>
<td>24.55</td>
<td>8.24</td>
<td>46.19</td>
<td>19.68</td>
<td>100.00</td>
</tr>
<tr>
<td>1950</td>
<td>1.49</td>
<td>20.17</td>
<td>21.43</td>
<td>28.82</td>
<td>28.09</td>
<td>100.00</td>
</tr>
<tr>
<td>1955</td>
<td>2.88</td>
<td>17.66</td>
<td>22.52</td>
<td>30.48</td>
<td>26.46</td>
<td>100.00</td>
</tr>
<tr>
<td>1960</td>
<td>2.74</td>
<td>11.43</td>
<td>28.79</td>
<td>24.77</td>
<td>32.27</td>
<td>100.00</td>
</tr>
<tr>
<td>1965</td>
<td>2.38</td>
<td>9.73</td>
<td>28.39</td>
<td>26.92</td>
<td>32.58</td>
<td>100.00</td>
</tr>
<tr>
<td>1970</td>
<td>6.17</td>
<td>13.46</td>
<td>30.65</td>
<td>25.42</td>
<td>24.30</td>
<td>100.00</td>
</tr>
<tr>
<td>1975</td>
<td>6.23</td>
<td>6.23</td>
<td>33.25</td>
<td>28.05</td>
<td>26.23</td>
<td>100.00</td>
</tr>
<tr>
<td>1980</td>
<td>10.74</td>
<td>4.81</td>
<td>18.52</td>
<td>35.56</td>
<td>30.37</td>
<td>100.00</td>
</tr>
<tr>
<td>1985</td>
<td>11.17</td>
<td>3.05</td>
<td>31.47</td>
<td>23.86</td>
<td>30.46</td>
<td>100.00</td>
</tr>
<tr>
<td>1991</td>
<td>11.26</td>
<td>1.32</td>
<td>43.05</td>
<td>18.54</td>
<td>25.83</td>
<td>100.00</td>
</tr>
<tr>
<td>1995</td>
<td>17.28</td>
<td>1.23</td>
<td>48.15</td>
<td>3.70</td>
<td>29.63</td>
<td>100.00</td>
</tr>
<tr>
<td>1996</td>
<td>6.25</td>
<td>1.25</td>
<td>35.00</td>
<td>2.50</td>
<td>55.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Annex 2
Organization Chart of the Department of Health Services
CONFIDENTIAL

REPORT ON A MATERNAL DEATH

The report is to be completed by the Head of Institution after the Institutional investigation / review or by the MOH in case of deaths occurring at home or on the way to hospital.

PART I

1) Name of Mother: ________________________________________________________________

2) Address: ____________________________________________________________

3) *DPDHS Division: ____________________________  4) *MOH Division: ____________________________

PART II - Basic Information

5) Occupation: __________________________________________________________

6) Educational Status

<table>
<thead>
<tr>
<th>None</th>
<th>Primary Gd. 1-5</th>
<th>Secondary Gd. 6-12</th>
<th>Tertiary</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7) Age of mother: Years: ____________

8) Gravida:

1 2 3 4 >5

9) LRMP

<table>
<thead>
<tr>
<th>YY</th>
<th>MM</th>
<th>DD</th>
<th>Not known / Unreliable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10) Marital Status

<table>
<thead>
<tr>
<th>UM</th>
<th>M</th>
<th>D</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Others Specify:

______________________________________________________________
PART III

11) Name of Hospital: 

12) BHT No:  

13) 1. Place of overall management  2. Place of death

14) a. Date & Time of admission

<table>
<thead>
<tr>
<th>YY</th>
<th>MM</th>
<th>DD</th>
<th>Weekday</th>
<th>Weekend</th>
<th>Public holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time: am / pm

* Mother was resident  
b. Admitted by

15) Date & Time of Death:

<table>
<thead>
<tr>
<th>YY</th>
<th>MM</th>
<th>DD</th>
<th>Weekday</th>
<th>Weekend</th>
<th>Public holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time: am / pm

16) No. of days / hours in ward prior to death:  

Days    Hours

17) Stage of pregnancy at maternal death:

<table>
<thead>
<tr>
<th>POA</th>
<th>Ante partum</th>
<th>Intra partum</th>
<th>Post partum</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>During 1st stage</td>
<td>During 2nd stage</td>
<td>During 3rd stage</td>
<td>Within 1st 24 hours</td>
</tr>
</tbody>
</table>

18) Out come of present pregnancy:

<table>
<thead>
<tr>
<th>18.1</th>
<th>Ectopic</th>
<th>Abortion</th>
<th>Still birth</th>
<th>Not delivered</th>
<th>Live Birth</th>
</tr>
</thead>
</table>

18.2 Status of baby at the time of maternal death where applicable:

<table>
<thead>
<tr>
<th>Live</th>
<th>Dead</th>
<th>Not known</th>
</tr>
</thead>
</table>

116
19) Date of baby's death:
YY/MM/DD

20) Result of previous pregnancies.

<table>
<thead>
<tr>
<th>No. of Live births</th>
<th>No. of Abortion/Ectopic</th>
<th>No. of stillbirths</th>
<th>Total No. of pregnancies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART IV Antenatal care**

21) Antenatal clinic care provided by this Institution:

- Yes
- No
- Shared care

22) Booking or first ANC - POA at first visit: Weeks

23) Clinic Examination & Investigation

24) How many times was she seen by the following officers in this clinic?

| Category | Time of visit and POA
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>VOG</td>
<td></td>
</tr>
<tr>
<td>Registrar</td>
<td></td>
</tr>
<tr>
<td>SHO</td>
<td></td>
</tr>
<tr>
<td>HO</td>
<td></td>
</tr>
<tr>
<td>DMO/MO.IC</td>
<td></td>
</tr>
<tr>
<td>AMO/ROM</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

* Details should be obtained from Clinic records/ Pregnancy Record

25) Were there any medical conditions or factors present which were risk to life? Yes / No

25.1) Please state the medical conditions/risk factors of the mother.
Condition/risk factor | POA at time of detection | Status of condition
---|---|---

25.2) by a VOG and a relevant specialist? Yes [ ] No [ ]

26) Antenatal Ward Care

26.1) Was the mother previously admitted to Antenatal ward during pregnancy? Yes [ ] No [ ]

26.2) If Yes, No, of days:

26.3) Were any risk conditions identified during the course of stay in ward? Yes [ ] No [ ]

26.4) If Yes, Specify / comment

Condition Diagnosed in ward | POA at time of Diagnosis | Management Plan / treatment | Status of condition
---|---|---|---

Details of the last admission

27) Condition/s for which the patient was admitted up to death:

27.1) POA at time of admission. Weeks [ ]

27.2) Antenatal management:

27.3) Intrapartum management:

28) Date & Time of labour / delivery YY MM DD Time: am / pm

29) Place and time of delivery
**Onset of labour**

- Delivery (1)
- Delivery (2)
- Expulsion of Placenta

*Specify the place where it occurred.*

<table>
<thead>
<tr>
<th>At Home</th>
<th>Ambulance/on the way to hospital</th>
<th>Private Nursing Home</th>
<th>Maternity Home</th>
<th>Govt. Hospital</th>
<th>Other places</th>
<th>Duration of 1st stage</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29.1) Mode of onset of labour

<table>
<thead>
<tr>
<th>Spontaneous</th>
<th>Induction</th>
<th>Elective LSCS</th>
<th>Emerge. LSCS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASM</td>
<td>ARM</td>
<td>ARM + synto.</td>
</tr>
</tbody>
</table>

29.2) If labour was induced please indicate reasons:

1.  
2.  
3.  

29.3) If indication for LSCS, please give reasons:

<table>
<thead>
<tr>
<th>Elective LSCS</th>
<th>Emergency LSCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

30) Malpresentation at onset of labour, if detected

31) Was the delivery monitored with a partogramme?

- Yes
- No

If No, Reasons

<table>
<thead>
<tr>
<th>Others specify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
33) Details of management of labour

- Data not available
- Not applicable
- None
- Lack of progress of labour

Other Specify

34) Attendance during delivery and labour (may have more than one option)

- Unattended delivery
- Unqualified person
- Public Health Midwife
- Labour room midwife
- Labour room Nursing Officer
- Private Doctor
- AMP / RMP
- House Officer
- DMO / MO
- SHO / RO
- VOG

Other Specify

35) Trauma during Labour

- No trauma detected
- Trauma to Perineum
- Laceration of GU Organs-
  - vagina
  - uterus
  - cervix
- Urinary organ / pelvic or abdominal organ
- Rupture uterus
- Trauma to others pelvic organs

Other Specify

36) Third stage complications

- Date not available
- Spontaneous expulsion of placenta
- Manual removal of placenta
- Removed under GA
- Not Expelled
- Acute inversion of uterus
- Not applicable

Other Specify

36) Episiotomy given

Yes ☐ No ☐

36.1) Time of suturing of episiotomy / tear

within 1 hr
1-2 hours
>2 hours

36.2) Officer (Designation) sutured the episiotomy / tear?

Operative Care:

37) If operative delivery performed the following questions should be answered

37.1) Prophylactic pre-operative medication given:

Yes ☐ No ☐

If Yes,

- Cimetidine / ranitidine
- Sodium citrate

120
37.2) Type of anaesthesia

<table>
<thead>
<tr>
<th>Local</th>
<th>Spinal</th>
<th>epidural</th>
<th>GA</th>
<th>Failed spinal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37.3) Anaesthesia administered by

<table>
<thead>
<tr>
<th>HO</th>
<th>Registrar</th>
<th>SR</th>
<th>Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37.4) Recovery from anaesthesia

Satisfactory:  
Yes [ ]  No [ ]

State details of all anaesthetic problems


37.5) Caesarian section was performed by

<table>
<thead>
<tr>
<th>SHO</th>
<th>Registrar</th>
<th>SR</th>
<th>RO</th>
<th>VOG</th>
<th>Others specify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37.6) Comments about clinical care available during surgery:


37.8) Were there any complications during the surgery?  
Yes [ ]  No [ ]

If Yes, Specify / comments


37.9) Was the mother monitored during the Post-op period?  
Yes [ ]  No [ ]
Post Partum Care

38) Condition of mother in immediate post partum period.

<table>
<thead>
<tr>
<th></th>
<th>15 mts.</th>
<th>30 mts.</th>
<th>45 mts.</th>
<th>1 hour</th>
<th>75 mts.</th>
<th>90 mts.</th>
<th>2 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status of uterus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Was the post partum care / monitoring done adequate? Yes [ ] No [ ]

Please qualify your statement

40) Complications during puerperium (following normal / operative delivery)

| Day of Pueperium |
|------------------|----------------|
|                  | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th |
| Fever            |     |     |     |     |     |     |     |     |     |      |
| Abnormal bleeding|     |     |     |     |     |     |     |     |     |      |
| Wound infection  |     |     |     |     |     |     |     |     |     |      |

41) Other Complications during puerperium specify

<table>
<thead>
<tr>
<th>Complications</th>
<th>Time of diagnosis</th>
<th>Action taken</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

42) Causes of puerperal pyrexia if applicable

<table>
<thead>
<tr>
<th>Causes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound infection</td>
<td></td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td></td>
</tr>
<tr>
<td>Mastitis</td>
<td></td>
</tr>
<tr>
<td>Viral fever</td>
<td></td>
</tr>
<tr>
<td>Pneumonia</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>
42) Brief statements of events leading to death

42.1) Short history up to the death

42.2) View of the investigation team on factors contributing to maternal death.

a) Lack of / non availability of health personnel

b) Lack of / non availability of services - OT / Laboratory findings / Blood / Transport etc.

c) Errors in clinic management / deficiencies / judgement

43) Any avoidable factors identified at field care: Yes ☐ No ☐
If Yes, specify:

44) Any avoidable factors identified at referring / transferring institution? Yes ☐ No ☐
If Yes, specify:
45.1) List the actions already taken or proposed to take to overcome the deficiencies. (technical / logistic / and others)

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

45.2) Any avoidable factors regarding mother's compliance (1st Dealy)

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

46) Cause of death:

46.1 Immediate cause of death:

46.2 Underlying cause of death:

46.3 Associated cause of death:

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

47) Post mortem done

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If Yes, Major findings:

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

48) Maternal Death notification done

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date: YY MM DD

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

49) Date of Institutional Investigation: YY MM DD

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
50) Names and Designation of the officers participated:

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

Signature of Head of Institution: .................................................................

Designation: ...........................................

Date: .................................
REPORT ON MATERNAL DEATH
(Field Investigation Section)

This Section is to be completed by the DDHS/MOH after visiting the household of the deceased and in reference with the mother's record - H 512 and the Pregnancy Record.

PART I

1) Name of Mother: 

2) Address: 

3) *DPDHS Division: 

4) *MOH Division: 

5) PHM Area: 

6) PHM Area: Yes No Vacant

7) If not vacant is she residing in the area: Yes No

PART II - Basic Information

8) Occupation: None Primary Gd. 1 - 5 SecondaryGd. 6 - 12 Tertiary Unknown

9) Educational Status

10) Age Years: 

11) Marital Status UM M D W

Others Specify:

12) Gravida: 1 2 3 4 >5

13) Number of living children:

14) LRMP: YY MM DD Not known / Unreliable
15) Name of next of kin:  

16) Address:  

17) Previous pregnancies  

17.1)  

<table>
<thead>
<tr>
<th>Year</th>
<th>Gravida</th>
<th>Outcome</th>
<th>Mode of Delivery</th>
<th>Relevant complication</th>
<th>Place of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ectopic</td>
<td>AB</td>
<td>SB</td>
<td>LB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vag</td>
<td>FD/Vac</td>
<td>LSCS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

17.2) Comments on the past obstetric history  

PRESENT PREGNANCY  

18.1) Was the mother registered by the area PHM: Yes [ ] No [ ]  

18.2) If Registered -  

<table>
<thead>
<tr>
<th>Registration No.</th>
<th>Date</th>
<th>POA at registration</th>
</tr>
</thead>
</table>

18.3) (to be obtained from the H 512 and pregnancy record)  

19)  

19.1) Relevant pre pregnancy illness/s: Yes [ ] No [ ]  

19.2) If Yes, specify / comment  

<table>
<thead>
<tr>
<th>Condition</th>
<th>Adequately managed / treated</th>
<th>Status of disease at registration</th>
</tr>
</thead>
</table>

19.3) This pregnancy should have been avoided: Yes [ ] No [ ]  

19.4) Presence of medical illness during present pregnancy: Yes [ ] No [ ]  

If No, Go to No. 20  

19.5) If Yes, Specify / comment
<table>
<thead>
<tr>
<th>Condition</th>
<th>POA at onset/detection</th>
<th>Management</th>
<th>Status of the disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IDENTIFICATION OF RISK FACTORS**

20) Risk factors detected during present pregnancy:  Yes [ ]  No [ ]
If No, Go to No. 21

20.1) If Yes, specify / comment

<table>
<thead>
<tr>
<th>Risk condition</th>
<th>POA at detection</th>
<th>Awareness of Family members</th>
<th>Management Field</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Outcome

Adequacy of treatment

If referred, has the mother gone

If No, reasons for poor compliance

Comments

20.2) Comments on medical and other risk factors and medical conditions treated

**ANTENATAL CARE**

21.1) Total Antenatal care (clinic & domiciliary)

<table>
<thead>
<tr>
<th>Provider</th>
<th>PHM at home</th>
<th>MOH clinic / Local Hospital</th>
<th>Estate Hospital / Clinic</th>
<th>Specialist clinic</th>
<th>GP</th>
<th>Private Hospital / Specialist</th>
<th>Not known</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of clinic visits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

First antenatal clinic visit (Booking visit)

21.2) POA Weeks [ ]  [ ]  21.3) Name of clinic : MOH / Institution

21.4) Seen by whom (First visit):

<table>
<thead>
<tr>
<th>Specialist</th>
<th>Registrar</th>
<th>SHO</th>
<th>DMO/MI/C</th>
<th>MOH</th>
<th>RMO/AMO</th>
<th>PHNS</th>
<th>SPHM</th>
<th>PHM</th>
</tr>
</thead>
</table>

128
**COVERAGE OF ESSENTIAL ANTENATAL VISITS**

22.1) Was the mother seen during the following visits

<table>
<thead>
<tr>
<th></th>
<th>&lt; 12 weeks</th>
<th>18 - 22 weeks</th>
<th>26 - 30 weeks</th>
<th>32 - 34 weeks</th>
<th>&gt;36 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes / No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22.2) Mandatory antenatal observations performed / not

<table>
<thead>
<tr>
<th>Observation</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td></td>
</tr>
<tr>
<td>Heart</td>
<td></td>
</tr>
<tr>
<td>Foetal lie</td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td></td>
</tr>
<tr>
<td>SFH</td>
<td></td>
</tr>
</tbody>
</table>

22.3) Basic clinical examinations / investigations

<table>
<thead>
<tr>
<th>Examination</th>
<th>TT</th>
<th>VDRL</th>
<th>Blood Gp &amp; Rh</th>
<th>Urine Sugar</th>
<th>Urine Albumin</th>
<th>Hb</th>
<th>BP</th>
<th>Ht</th>
<th>Wt</th>
<th>SFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes / No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any abnormality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22.4) Comment about quality of ANC (Domiciliary care clinic care, coverage of essential visits, appropriate referrals, quality and adequacy, management, interventions, follow up)


22.5) Hospital admission during antenatal period (prior to death)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

22.6) If Yes, specify / comment

<table>
<thead>
<tr>
<th>POA</th>
<th>Name of Hospital</th>
<th>Reason for admission</th>
<th>Management</th>
</tr>
</thead>
</table>

22.7) Outcome of Pregnancy

<table>
<thead>
<tr>
<th>Outcome</th>
<th>ectopic abortion</th>
<th>Not delivered</th>
<th>still birth</th>
<th>live birth</th>
</tr>
</thead>
</table>

22.8) Status of baby following the maternal death up to the time of investigation:

<table>
<thead>
<tr>
<th>Status</th>
<th>Live</th>
<th>Dead</th>
<th>Not Known</th>
<th>Others</th>
</tr>
</thead>
</table>

23.1) Place of maternal death:

- Home
- In transit
- Dead on admission
- Hospital

23.2) If Hospital death, Name of the hospital

23.2) At what stage was the mother taken to hospital (last admission)?

- a. During antenatal period (Specific period)
- b. At term but before commencement of labour
- c. After commencement of labour but before delivery
- d. After birth of baby but before delivery of placenta
- e. After delivery with complications

23.4) Specify / comments on complication/s (onset, severity, management etc.)

24) FOR MOTHERS TRANSFERRED TO A SPECIALIZED INSTITUTION FROM A NON SPECIALIST INSTITUTION

(To obtain information from the institution from where the deceased mother was transferred)

24.1) Name of Institution:

24.2) Duration of stay in the non-specialist institution? Days [ ] Hours [ ]

24.3) Was the mother seen by a Medical Officer after admissions? Yes [ ] No [ ]

24.4) If so, how long after admission was the first examination done? Hours [ ]

24.5 Please indicate the main findings as recorded on the BHT just prior to transfer

24.6) Was there an undue delay in deciding to transfer? Yes [ ] No [ ]

24.7) Specify the undue delay in deciding to transfer.
24.8) Reason for transfer?


24.9) Mode of transfer

<table>
<thead>
<tr>
<th>Ambulance</th>
<th>Private car</th>
<th>Other vehicle</th>
<th>Only referral letter</th>
<th>Specify other means</th>
</tr>
</thead>
</table>

24.10) Any constraints relevant to the transfer (Availability of personnel etc.)


24.11) Condition of the mother at the time of transfer


POST PARTUM CARE (IF RELEVANT)

25.1) Date of delivery: YY MM DD

25.2) Date of returning home : YY MM DD

25.3) How many times was the mother seen by the PHM during the pueperium

<table>
<thead>
<tr>
<th>1 - 10 days</th>
<th>11 - 30 days</th>
<th>31 - 42 days</th>
<th>43 - 365 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25.4) Was any abnormality / illness noticed during pueperium: Yes [ ] No [ ]

25.5) If Yes, specify . comment

<table>
<thead>
<tr>
<th>Complication/s</th>
<th>Time of detection</th>
<th>Action taken</th>
<th>Comment/s</th>
</tr>
</thead>
</table>

25.6) Comment of Medical Officer about the overall Postpartum care (Regarding home visits, Quality of care, identification of complications, interventions, outcome of the mother and care of the new born)
FAMILY PLANNING

26.1) Was there any unmet need for Family planning? Yes ☐ No ☐

26.2) If Yes, specify reasons

DEFICIENCIES IDENTIFIED - THREE DELAY/DEFICIENCIES MODEL

27.1) Delay/Deficiency in seeking medical care by the mother. Describe factors contributed.

27.2) Delay / Deficiency in reaching health facility with adequate care.

27.3) Delay/Deficiency in receiving quality care.

<table>
<thead>
<tr>
<th>In the Institution</th>
<th>In the field</th>
</tr>
</thead>
</table>

27.4) Comment on the contributory factors that led to the delays.

a. Care receiver
b. Service provider

c. Resources

d. Policies

27.5) View of the MOH on preventability of this death.

a. Is it a preventable death       Yes ☐       No ☐       Justify your comment

b. If preventable suggestions of MOH (regarding improvement of services / prevention of death)

c. Action taken by MOH (On administrative / supervisory / managerial to prevent future deaths / improvement of services)

d. Suggestions / recommendations to the higher authority
### CAUSE OF DEATH

<table>
<thead>
<tr>
<th></th>
<th>Immediate cause of death -</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Underlying cause of death -</td>
</tr>
<tr>
<td></td>
<td>Associated Cause of death -</td>
</tr>
</tbody>
</table>

28.4) Place of death:

<table>
<thead>
<tr>
<th></th>
<th>Home</th>
<th>In transit</th>
<th>On admission</th>
<th>Institution</th>
<th>Name of Institution</th>
</tr>
</thead>
</table>

28.5) Date of death:

<table>
<thead>
<tr>
<th>YY</th>
<th>MM</th>
<th>DD</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Weekday</th>
<th>Weekend</th>
<th>Public holiday</th>
</tr>
</thead>
</table>

28.6) Notification of Maternal death by MOH:

Yes [ ]  No [ ]

28.7) If Yes, Date:

<table>
<thead>
<tr>
<th>YY</th>
<th>MM</th>
<th>DD</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Investigation Team</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

Name, Designation and Signature of the MOH / DDHS:

Date/s:
Annex 5

To be presented by MOH at the review

Format A.

2000 / FHB-Revised in 2001

Maternal Death Review – Field Format

A

1. DPDHS Division:

2. MOH Division:

3. P.H.M. Area:

   P.H.M. Available Yes ☐ No ☐

   P.H.M residing in the area: Yes ☐ No ☐

4. Name of Mother:

5. Age of Mother: _______ _______

6. Gravida: ____ No of Living Children: ____ _____

7. Date of Death YY ______ MM ______ DD ______

   Working Day ☐ Weekend ☐ Public Holiday ☐

8. Time of Death: a.m. / p.m. ______ ______ ______

   Antenatal Death ☐ Intra natal Death ☐

   Postnatal Death ☐

9. Place of Death:

10. Post mortem done Yes ☐ No ☐

11. Cause of Death

   11.1 Immediate Cause:

   11.2 Underlying Cause:

   11.3 Associated Cause

B

1. Field notification done: Yes ☐ No ☐ Date ______ ______ ______

2. Field investigation done Yes ☐ No ☐ Date ______ ______ ______

3. H 677/a Sent Yes ☐ No ☐ Date ______ ______ ______

4. Reported in H 509: Yes ☐ No ☐ Quarter: ______ Month: ______

5. Brief case history: (Short H/O present & past obstetric and medical history, time of registration, antenatal clinic and field care, care during delivery & postpartum Care) All important events should be indicated along with the POA

135
6. Comment of the MOH on quality and quantity of care received by the mother

6.1 Antenatal

6.2 Intranatal

6.3 Postnatal

7. Was there an unmet need for contraception? Yes ☐ No ☐
If Yes, comment

C. Comment on detection and management of risk factors during this pregnancy

<table>
<thead>
<tr>
<th>Risk factor/s</th>
<th>Action taken</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.

D. Deficiencies identified – Three Delay Model

1. Delay / deficiency in seeking medical care by the mother

2. Delay / deficiency in reaching Health Institution with adequate care
3. Delay / deficiency in receiving quality care after reaching the Health Institution

E. Contributory factors that led to the death
1. Care receiver / Family members

2. Service provider

3. Resources

4. Policies

F. 1. View of the MOH on preventability of this death with reasons

2. If preventable, suggestions of MOH

3. Actions already taken at MOH level
G. Deficiencies identified, actions to be taken and already taken (To be filled at DMDR by MO/MCH)


H. Deficiencies identified & actions to be taken (To be filled at NMDR by FHB)
Maternal Death Review – Institutional Format

A

1. DPDHS Division: | 2. Name of Institution:
3. MOH Division: | 4. Name of Mother:
5. Age of Mother: | 6. Gravida: No of Living Children:
7. Date of Death (YY MM DD) Working Day | 8. Time of Death: a.m. / p.m. Antenatal Death Intra natal Death Postnatal Death
5. Place /Unit of Death
9. Cause of Death
11.1 Immediate Cause:
11.2 Underlying Cause:
11.3 Associated Cause
10. Post mortem done Yes No
10.1 Findings:

B.

1. Maternal death notification done: Yes No Date
2. Institutional review of maternal death done. Yes No Date
3. Maternal death investigation format H 677 sent: Yes No Date
4. Type of admission: Casualty / Booked / Transferred / Referred
5. If transferred, reason/s for transfer and stations.
5.1 Opinion of the Head of the Institution / Consultant in case of undue delay in transfer:

C. Short case history (Short H/O present and past obstetric and medical history, Time of registration, antenatal clinic and field care, care during delivery and postpartum care) All important events should be indicated along with the POA.

D. Comment on detection and management of risk factors during this management

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<th>Risk factor/s</th>
<th>Action taken</th>
<th>Management</th>
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E. Comment of Head of the institution / Consultant on quality of care provided at the Institution

F. Deficiencies identified - Three Delay Model

1. Delay / deficiency in seeking medical care by the mother/ family members

2. Delay / deficiency in reaching Health Institution
3. Delay / deficiency in receiving quality care after reaching the Health Institution

G. Contributory factors that led of the death

1. Care receiver / Family member

2. Service provider

3. Resources

4. Policies

H.

1. Opinion of the Head of the Institution / Consultant on preventability of this death

2. If preventable, suggestions of Head of the institution / Consultant

3. Actions already taken at the Institution and suggestions to the higher level
1. Deficiencies identified & actions to be taken (to be filled at DMDR by MO/ MCH)

J. Deficiencies identified & actions to be taken (To be filled at NMDR by FHB)