Preventing the Tragedy of Maternal Deaths

A report on the International Safe Motherhood Conference

NAIROBI KENYA
February 1987
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Prepared by
Ann Starrs

Co-sponsored by

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mortality reflect the underlying disadvantages and discrimination suffered by women. It recommends, therefore, that efforts to improve maternal health focus on the chain of poor nutrition, illiteracy, lack of income and employment opportunities, poor environmental conditions, inadequate health and family planning services, and low social status—all the factors that expose women to increased health risks during pregnancy and childbirth.

The co-sponsors of the conference pledged to fulfill the recommendations of the Call to Action and stated their willingness to provide technical and financial support to developing country governments that request help in designing and implementing programmes to ensure Safe Motherhood. Barber B. Conable, president of the World Bank, announced plans to double the Bank's lending for population, health, and nutrition projects to about $500 million annually by 1990, with projects in some fifty countries. In addition, the World Bank and the U.N. Development Programme declared that they would each contribute $1 million to the establishment of a Safe Motherhood Fund. The fund will support operational research in specific countries for the development and improvement of maternal health programmes, and will be administered by the World Health Organization.

The participants at the conference emphasized that maternal health care, including family planning, is an essential and integral element of primary health care programmes aimed at the goal of Health for All by the Year 2000. As the discussions made clear, saving women's lives is a practical goal as well as a humanitarian one. Women's contributions and productivity are visible not only in the infants they nurture, but in the food they grow, harvest, and cook; in the variety of goods they produce and market; in the teaching and care of their children; in the many tasks they perform every day to serve their families and communities. The death of an infant's mother results not only in the loss of a woman in the prime of her life, but also in the loss of her economic productivity, usually the death of her infant, and in some cases the disintegration of her family. For these reasons, Mr. Conable said in his opening address to the conference, "We are not here just to publicise a problem. We are here to attack it, to save lives, and to build better ones. . . We can make this conference the beginning of a new commitment to common decency and common sense:"

Maternal health care should be provided in the context of family health care—it should be socially acceptable, scientifically sound, and as simple as possible.

—Dr. Adetokunbo Lucas, Carnegie Corporation
THE SAFE MOTHERHOOD INITIATIVE:  
A Call to Action

Concluding Statement of the International Safe Motherhood Conference

THE PROBLEM

This conference was organised to remind us that although women have been dying in pregnancy and childbirth since time began, maternal mortality is a critical problem that needs to be recognised by all. Only recently has serious attention been paid to the full and tragic scope of this problem.

We have said that half a million maternal deaths take place every year; 99 percent of these deaths occur in the developing world. In the developed world, there are only 2 to 9 maternal deaths per 100,000 live births; in developing countries the figures range from 300 to 1,000 or more. Thus women in developing countries run a risk of dying in pregnancy and childbirth that is 50 to 100 times greater than that of women in the developed world. These figures do not convey the full measure of the risk. The lifetime risk of a woman in a developing country dying in pregnancy or pregnancy-related illness is 1 in 25 or 1 in 40; this contrasts sharply with the 1 in several thousand risk for women in the developed world. These measures of maternal death have not been used as part of the quality of health and quality of life index, and we feel that they should be. No country can claim to be advancing if its maternal death rates remain poor.

THE CAUSES

The causes of these deaths are tragic indeed. Illegal abortion from unwanted pregnancies causes some 25 to 50 percent of these unwanted deaths, simply because women do not have access to the family planning services they want and need, or they have no access to safe procedures or to human and humane treatment for the complications of abortion. For the thousands of women who die in pregnancy and childbirth, millions more are permanently disabled. Many of them are ostracised by their families and communities. For every death, it is estimated that 10 to 15 women are handicapped in one way or another.

The question we must ask is why this happens: is it because the majority of these women are poor that they are allowed to suffer this silent carnage?
There must be a commitment to stop these deaths. We need to mobilise the political will, to mobilise community involvement among men and women, and to implement specific programmes to stop these tragedies from taking place. We must do this for common humanity, because among human rights, the first is the right to life itself. We must do this also because women are a major resource to any nation, to any community, and above all to any family. They make a crucial contribution to the productivity and well-being of their families and communities. When a woman dies in childbirth, the death sentence of the child she carries is almost certainly written. Often the children she leaves behind suffer the same fate, and the family stands a good chance of disintegration. For all of these reasons it behooves us to think—and think seriously—about whether we as individuals and as a group should remain silent after this meeting.

The causes of this problem are deeply rooted in the adverse social, cultural, political, and economic environment of societies, and especially the environment that societies create for women. Women are discriminated against in terms of legal status, access to education, access to food and proper nutrition, access to appropriate employment, access to financial resources, and access to relevant health care, including family planning services. This discrimination begins at birth and continues through adolescence and adulthood, where women's contributions and roles are ignored and undervalued.

These deep-rooted causes need to be addressed if we are to improve the long-term health and status of women. The problems we are discussing will only grow in magnitude with population growth if we do not address these basic causes. We must reduce the pool of women who are most likely to suffer from the complications that result in so many deaths. Let us reduce the risk and help women achieve healthier, happier lives.

The United Nations, at the 1984 International Conference on Population in Mexico, stressed the need for action in these areas, and reached a consensus. The End of the Women's Decade Conference here in Nairobi in 1985 stressed this need, and reached a consensus. We must cut the vicious circle that creates the conditions that cause these women to suffer and die so needlessly.
The critical point, however, is that the overwhelming majority of maternal deaths are caused by obstructed labour, haemorrhage, toxaemia, infection, and complications from both spontaneous and induced abortion. The challenge is that there are low-cost, effective, and available interventions that can have a major impact on reducing these mortalities and morbidities if these interventions are specifically planned and practised as a priority.

What is needed right now is dedication and action.

**THE ACTIONS TO BE UNDERTAKEN**

- We need to generate the political commitment to reallocate resources to implement the available strategies that can reduce maternal mortality by an estimated 50 percent in one decade.
- We need to remember that the industrialised countries faced this challenge in the past. For some the change has taken place in our lifetime, through dedication and the reallocation of priorities.
- We need an integrated approach to maternal health care that makes it a priority within the context of primary health care services and overall development policy.
- We need to reach decisionmakers in family and government to change laws and attitudes, and to improve the legal and health status of women generally, especially in areas such as adolescent marriage and restrictions on health care delivery.
- We need to mobilise and involve the community and particularly women themselves in planning and implementing policies, programmes, and projects, so that their needs and preferences are explicitly taken into account.
- We need to utilise a range of information, education, and communication activities to reach communities, women, men, boys, and policymakers, through the media and all culturally appropriate channels.
- We need to carry out additional studies to gain better country- and locale-specific information on maternal mortality—its immediate causes, which we know, and its root causes, some of which either we do not know or we ignore.
- We need to have ongoing operational research and evaluation activities to assess the effectiveness of various programmes.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong></td>
</tr>
<tr>
<td><strong>THE SAFE MOTHERHOOD INITIATIVE: A CALL TO ACTION</strong></td>
</tr>
<tr>
<td>The Problem</td>
</tr>
<tr>
<td>The Causes</td>
</tr>
<tr>
<td>The Actions to be Undertaken</td>
</tr>
<tr>
<td><strong>DIMENSIONS OF THE PROBLEM</strong></td>
</tr>
<tr>
<td>The Disparity between Developed and Developing Countries</td>
</tr>
<tr>
<td>Maternal Morbidity and Its Consequences</td>
</tr>
<tr>
<td>Women at High Risk</td>
</tr>
<tr>
<td>The Dangers of Poorly Performed Abortion</td>
</tr>
<tr>
<td><strong>CAUSES OF THE PROBLEM</strong></td>
</tr>
<tr>
<td>The Road to Maternal Death</td>
</tr>
<tr>
<td>The Major Obstetric Complications</td>
</tr>
<tr>
<td><strong>THE CALL TO ACTION: WAYS TO IMPROVE MATERNAL HEALTH</strong></td>
</tr>
<tr>
<td>Improving the Status of Women</td>
</tr>
<tr>
<td>Changing Attitudes, Practices, and Laws</td>
</tr>
<tr>
<td>Health Sector Strategies</td>
</tr>
<tr>
<td>The Three-Pronged Approach</td>
</tr>
<tr>
<td>Mobilising Community-Based Care</td>
</tr>
<tr>
<td>First-Referral-Level Facilities</td>
</tr>
<tr>
<td>“Alarm” and Transport System</td>
</tr>
<tr>
<td>The Importance of Family Planning</td>
</tr>
<tr>
<td>The Affordability of Safe Motherhood</td>
</tr>
<tr>
<td>Appropriate Technology and Proper Management</td>
</tr>
<tr>
<td>The Special Contribution of Nongovernmental Organisations</td>
</tr>
<tr>
<td><strong>CONCLUSION</strong></td>
</tr>
<tr>
<td><strong>AGENDA FOR SAFE MOTHERHOOD CONFERENCE</strong></td>
</tr>
<tr>
<td><strong>PARTICIPANTS LIST</strong></td>
</tr>
<tr>
<td><strong>BACKGROUND PAPERS FOR SAFE MOTHERHOOD CONFERENCE</strong></td>
</tr>
</tbody>
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The tragedy of maternal mortality and ill health has been largely neglected in the development programmes of Third World countries and the priorities of donor agencies. Experts have only recently gathered sufficient data to present a clear portrait of the thousands of women who suffer painful maternal deaths throughout the developing world. These women die during pregnancy or childbirth at home and in hospitals, in urban slums and rural villages, because of their poor health, ignorance, poverty, low social status, and their limited access to essential health care.

The United Nations Decade for Women (1976-1985) helped focus international attention on women's critical contribution to the life and development of their families, communities, and nations. Maximizing this contribution requires a committed international effort to improve women's health and reduce high rates of maternal mortality in Africa, Asia, the Middle East, and Latin America.

The Safe Motherhood Conference that took place in Nairobi, Kenya in February 1987 had as its goal "not only to draw attention to maternal mortality, but more importantly, to mobilise immediate and concerted action at the national and international levels to prevent the continued tragedy," said Dr. Nafis Sadik, now executive director of the United Nations Fund for Population Activities (UNFPA). The conference was co-sponsored by the World Bank, World Health Organization (WHO), and UNFPA. Its 125 participants included representatives from these and other agencies, together with health experts, development professionals, and policymakers from over forty-five developed and developing countries.

Dr. Halfdan Mahler, director general of WHO, explained the motivation for the conference in his opening address: "[Maternal mortality] is a neglected tragedy, and it has been neglected because those who suffer it are neglected people, with the least power and influence over how national resources shall be spent; they are the poor, the rural peasants, and above all, women." William Draper III, administrator of the United Nations Development Programme, referred to a "lethal chain" of causes for the vulnerability of women during pregnancy and childbirth, and urged the development community to adopt a multidisciplinary approach to the problem.

The Call to Action adopted by consensus at the conference (see pages 6-9) highlights the extent and nature of maternal mortality and the need for programmes to reduce it. It recommends specific, affordable health initiatives to address the health risks and medical emergencies that lead to maternal death. The Call to Action also acknowledges that high rates of maternal
• We need to expand family planning and family life education programmes, particularly for young people, and make services for planning families socially, culturally, financially, and geographically accessible.

• We need to use appropriate technologies at all levels so that women have better care at lower costs.

• We need to strengthen community-based maternal health care delivery systems, upgrade existing facilities, and create relevant new ones if necessary:
  — We need to ensure that pregnant women are screened by supervised and trained non-physician health workers where appropriate, with relevant technology (including partographs as needed), to identify those at risk and to provide pre-natal care and care during delivery as expeditiously as possible.
  — We need to strengthen referral facilities—hospitals as well as health centers—and locate them appropriately. They need to be equipped to handle emergency situations effectively and efficiently.
  — We need to implement an alarm and transport system that ensures that women in need of emergency care reach the referral facilities in time to be helped.

These activities need to be seen within a comprehensive, multisectoral approach, although they do not have to wait for all sectors to achieve improvement simultaneously. These activities need to involve governments as well as take advantage of the flexibility, responsiveness, and creativity of nongovernmental organisations. They need to stimulate and support input from the communities themselves.

Perhaps the most important contribution of this Safe Motherhood Initiative will be to call attention to the problems related to it, and to create an awareness that something can, should—indeed must—be done, starting with the commitment of heads of states and governments.

A philosopher from my country—Ghana—once looked at a map of Africa and said, “It is asking the question ‘why?’” Today the women of developing countries, like mother Africa, are asking why. “Why are you letting us die?”

The answer is in your hands.

This statement was presented by DR. FRED T. SAI, moderator of the Safe Motherhood Conference, at the closing session on February 13, 1987. It was adopted by the conference participants by consensus as the conference “Call to Action.”
The World Health Organization estimates that half a million women die in pregnancy and childbirth every year; the vast majority of these deaths—about 99 percent—take place in developing countries. Maternal mortality rates vary widely from country to country and from region to region. For every 100,000 live births, in northern Europe there are typically two to nine maternal deaths, while in some parts of Africa there are over 1000. Most developing countries have rates that range from 300 to 800. Few countries, however, have complete and accurate data on the scope of maternal mortality. Research supported by the World Health Organization and other agencies has provided a glimpse of the magnitude of the problem.

Table 1

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of maternal deaths (thousands)</th>
<th>Maternal mortality rate (per 100,000 live births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>24</td>
<td>500</td>
</tr>
<tr>
<td>West</td>
<td>54</td>
<td>700</td>
</tr>
<tr>
<td>East</td>
<td>46</td>
<td>660</td>
</tr>
<tr>
<td>Central</td>
<td>18</td>
<td>690</td>
</tr>
<tr>
<td>Southern</td>
<td>8</td>
<td>570</td>
</tr>
<tr>
<td>Asia</td>
<td>308</td>
<td>420</td>
</tr>
<tr>
<td>West</td>
<td>14</td>
<td>340</td>
</tr>
<tr>
<td>South</td>
<td>230</td>
<td>650</td>
</tr>
<tr>
<td>Southeast</td>
<td>52</td>
<td>420</td>
</tr>
<tr>
<td>East</td>
<td>12</td>
<td>55</td>
</tr>
<tr>
<td>Latin America</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>9</td>
<td>240</td>
</tr>
<tr>
<td>Caribbean</td>
<td>2</td>
<td>220</td>
</tr>
<tr>
<td>Tropical South</td>
<td></td>
<td>310</td>
</tr>
<tr>
<td>Temperate South</td>
<td></td>
<td>110</td>
</tr>
<tr>
<td>Oceania</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>494</td>
<td>450</td>
</tr>
<tr>
<td>Developed Countries</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>World</td>
<td>500</td>
<td>390</td>
</tr>
</tbody>
</table>

Mortality rates for infants are, on average, ten times higher in developing than in developed countries. For women in developing countries, by comparison, the risk of dying in pregnancy and childbirth is 50 to 100 times higher, on average, than that of women in northern Europe or North America. The typical woman in a developing country confronts that risk not just once in her life, but an average of six to eight times — in Africa, sometimes closer to ten. Her chance of dying in childbirth is between 1 in 15 and 1 in 70; women in the developed world face a much lower risk of between 1 in 3,000 and 1 in 10,000.

Figure 1
PERCENTAGE OF LIVE BIRTHS AND MATERNAL DEATHS WORLDWIDE, BY REGION

LIVE BIRTHS

Source: World Health Organization, 1986
Complications of pregnancy and childbirth are often the leading cause of death among women of childbearing age in developing countries, accounting for 20 to 45 percent of the deaths of these women. In the United States that figure is less than 1 percent. This huge disparity between the developed and developing world is the largest of any of the health indicators used by WHO. The figures serve as a stark reminder of the poor health and neglect many women suffer in the developing world. They also show what can be achieved when, beginning in childhood, women are well nourished and healthy, have access to prenatal and general health care as well as life-saving obstetric measures, and can practice safe and effective family planning, as is generally the case in developed countries.

Table 2
Estimated Lifetime Chance of Dying from Pregnancy-Related Causes, by Region, 1975-84

<table>
<thead>
<tr>
<th>Region</th>
<th>Lifetime chance of maternal death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1 in 21</td>
</tr>
<tr>
<td>Asia</td>
<td>1 in 54</td>
</tr>
<tr>
<td>South America</td>
<td>1 in 73</td>
</tr>
<tr>
<td>Caribbean</td>
<td>1 in 140</td>
</tr>
<tr>
<td>North America</td>
<td>1 in 6,366</td>
</tr>
<tr>
<td>Northern Europe</td>
<td>1 in 9,850</td>
</tr>
</tbody>
</table>

MATERNAL MORBIDITY AND ITS CONSEQUENCES

For every woman who dies in childbirth, many more survive but suffer long-term damage to their health. Incontinence, uterine prolapse, infertility, and other illnesses caused by complications in pregnancy and childbirth contribute to the persistent suffering and poor quality of life experienced by millions of women. Dr. Kelsey Harrison, professor of obstetrics and gynaecology in Port Harcourt, Nigeria, stated at the conference, “for every maternal death in developing countries, at least fifteen other [women] are incapacitated or disabled . . . [In Africa], the number of disabled or incapacitated becomes two to three million, compared to no more than a few thousand in the whole of the developed countries.” For many women, complications during pregnancy, or infection from unclean hands or unsterile instruments, lead to pelvic inflammatory disease which, apart from the pain and suffering it causes, can lead to infertility. Infertility is a major problem in Africa, where it affects 15 to 20 percent of all women and is often caused by sexually transmitted diseases or the complications of pregnancy.

One devastating form of maternal morbidity is the development of fistulae, openings between the vagina and the rectum or urethra that allow urine or faeces to leak through the vagina. Fistulae are generally the result of infection or the trauma of prolonged obstructed labour. Women with fistulae suffer from incontinence and a persistent odour caused by stale excreta. Adolescent mothers, because they are not fully developed physically, are particularly susceptible to developing fistulae. Dr. Harrison explained that more than half the women in Africa who suffer from this serious disability are teenagers, who are often ostracised or hidden for the rest of their lives if they are unable to undergo expensive reparative surgery. In his opening address, Dr. Mahler said that fistulae and other forms of maternal morbidity are in some cases “so devastating to the personal, marital, and social life of the woman that many a time she must bitterly wish she had died.” Maternal morbidity can thus be almost as damaging to women and their families as maternal mortality.
WOMEN AT HIGH RISK

Some groups of women are especially susceptible to death or disability from pregnancy and pregnancy-related illness. Adolescents under the age of 15 are five to seven times more likely to die in pregnancy and childbirth than women in the lowest-risk age group of 20-24. As noted, girls under age 15 who have not attained their full growth often have pelvises too narrow to permit easy passage of an infant. They may suffer from obstructed labour and develop fistulae or die after 24, 48, or even 72 hours of agony.

Women who have had five or more pregnancies and women over the age of 35 also face a substantially higher risk than those aged 20-24. Women who become pregnant less than two years after a previous birth often suffer adverse consequences as well, and their children are more likely to be ill and die than infants who are born more than two years apart. Hence a common admonition of health professionals is to avoid pregnancies "too early, too late, too many, too close together."
Esperanza, 30 years old, had already borne five children, including one who had died at the age of 10 months. Neither she nor her husband was happy when she became pregnant again. The health centres accessible to her provided maternal and child health care but no family planning services. Esperanza did not know about the family planning association clinic in the capital city of the province. Esperanza had recently found work as a housemaid in the city, and her wages were much needed by the family. She made the decision alone to visit an abortionist in town. She was frightened and unsure about what was actually done to her.

After three days of bleeding Esperanza developed severe abdominal pain and began to vomit. Her husband took her to a hospital where she was diagnosed as suffering from incomplete septic abortion. She was treated and sent home after forty-eight hours. The pain returned, but Esperanza did nothing about it at first, fearing she would lose her job if she took any more time off. When she developed a high fever and started vomiting, she was admitted to the intensive care unit of the hospital. Abdominal surgery was performed for peritonitis, but her condition deteriorated, her heartbeat became irregular, and she died five days later.

Source: World Health Organization Case Histories

Many other factors can make women especially susceptible to the complications of pregnancy. Women of small stature are more likely to suffer obstructed labour and require a caesarean section in order to avoid uterine rupture and probable death. Millions of women are malnourished and suffer from chronic anaemia, malaria, and intestinal diseases that weaken their ability to bear healthy children and survive the delivery themselves. Furthermore, pregnancy can exacerbate many pre-existing chronic conditions such as heart disease, hypertension, diabetes, and hepatitis, all of which can cause “indirect” maternal deaths.

**THE DANGERS OF POORLY PERFORMED ABORTION**

Finally, poorly performed abortions contribute significantly to the maternal mortality problem. Women who confront an unwanted pregnancy often choose to risk an abortion, frequently performed with crude and unhygienic methods. More than two-thirds of women in the developing world, excluding China, have no ready access to legal abortion. Nevertheless, huge numbers of abortions still take place; an estimated 20-30 percent of the pregnancies that occur worldwide each year end in induced abortion. The World Health Organization reports that unsafe induced abortion is responsible for as many as 50 percent of maternal deaths in some regions, especially Latin America, making abortion “a major killer of women.” Even where abortion is legal, as in India, poor women can experience much difficulty in obtaining a safe, aseptic procedure. Effective family planning can play a significant role in preventing unsafe abortions. As Dr. Mahler stated in his address to the conference, “Since the great majority of abortions arise from lack of knowledge of contraception, or the failure to use it, or the inability to obtain it, family planning is the obvious way to save these thousands of pitifully wasted lives.”
Figure 2

Average Number of Deaths Annually Caused by Illegal Abortion, Selected Countries, 1970s

Participants at the conference discussed the causes of maternal mortality from two general perspectives. On the one hand, women's low status and poverty are often at the root of their poor health, high fertility, and lack of access to essential health care. In more immediate terms, studies indicate that three-quarters of the maternal deaths in developing countries are caused by one of five obstetric complications: haemorrhage, obstructed labour, infection, eclampsia, and abortion.

Dr. Mahmoud Fathalla of WHO presented the case history of “Mrs. X,” typical of thousands of women who die, to illustrate the immediate and underlying causes of maternal death. The immediate cause of Mrs. X's death was haemorrhage caused by placenta previa. This condition, however, is not always fatal, and a closer analysis revealed that Mrs. X died because the health facility where she was taken did not have sufficient blood for a transfusion. The clinician was not there when she arrived, so Mrs. X had to wait for surgery after she had travelled for four hours to reach the hospital following the onset of heavy bleeding. Efficient transportation and a fully equipped, well-staffed facility could have prevented her death.

Mrs. X had also suffered from anaemia and minor bleeding episodes earlier in her pregnancy. Basic prenatal care could have resolved her anaemia, identified the bleeding as a warning sign of a possibly serious complication, and saved her life. In addition, Mrs. X was 39 years old and had not wanted to become pregnant. She had been pregnant seven times before, and had never used a family planning method. She was illiterate, her husband was a poor agricultural worker, and her social status in the community depended on the number of children she bore.

The case of Mrs. X illustrates that defining the causes of maternal death for a poor, underprivileged woman is a complex task. From a strictly medical perspective, basic care for Mrs. X at a number of points could have prevented her death. Many other problems, however, line the road to maternal death. They begin soon after a baby girl's birth and continue through childhood, when malnourishment and poor education make girls more likely than boys to suffer from ill health and lack of opportunity. The road to death continues through adolescence, when girls often marry and be-
come pregnant at an early age. In adulthood, many women have little or no access to land, training, wage employment, or other means of financial support. They may be unable to obtain health care or family planning services without the permission of their husbands. Heavy workloads, poor nutrition, and repeated pregnancies often leave them unable to cope with the physical demands of pregnancy, childbirth, and breastfeeding. They frequently lack access to prenatal care from trained health workers, and at delivery they

<table>
<thead>
<tr>
<th>Study area</th>
<th>Maternal mortality rate*</th>
<th>Haemorrhage</th>
<th>Infection</th>
<th>Toxaemia</th>
<th>Abortion</th>
<th>Obstructed labour/</th>
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<td>3</td>
<td>19</td>
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<td>10</td>
<td>5</td>
<td>7</td>
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<td>Bali</td>
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</tr>
<tr>
<td>Cuba</td>
<td>31.3</td>
<td>5</td>
<td>19</td>
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<tr>
<td>Jamaica</td>
<td>108</td>
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<td>9</td>
<td>30</td>
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<tr>
<td>United States</td>
<td>15.3</td>
<td>10</td>
<td>8</td>
<td>17</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

*Number of maternal deaths per 100,000 live births

Source: Calculated from table in Barbara Herz and Anthony R. Moasham, The Safe Motherhood Initiative: Proposals for Action (Washington, D.C., The World Bank, 1987), using maternal mortality rates prepared by Dr. Roger Rochat, Emory University School of Medicine, Masters in Public Health program, using data from original studies.
may be attended by relatives, untrained traditional birth attendants, or by no one at all. When complications arise, the inaccessibility of health facilities and, often, the facilities' inability to provide adequate care, can be the final steps on the road to maternal death.

THE MAJOR OBSTETRIC COMPLICATIONS

The five complications which cause an estimated 75 percent of maternal deaths require different levels of care for prevention or treatment. They are defined as "direct" maternal deaths, that is, deaths caused by complications of pregnancy, delivery, or their management (e.g., induced abortion, caesarean section). Indirect deaths are those due to other medical factors that were aggravated by pregnancy.

- **Haemorrhage**, one of the most common causes of maternal death, is difficult to predict. It generally requires treatment within two hours at a health facility able to provide blood transfusions and perform other clinical measures if the woman's life is to be saved.

- **Obstructed labour** also requires treatment at a hospital or equivalent facility that can perform operative delivery.

- **Infection**, or sepsis, is a common result of poorly performed abortions and unsterile procedures during delivery. It can also result from prolonged labour; when a woman's membranes have ruptured and she has not delivered within twenty-four hours, serious infection usually ensues unless prevented by antibiotics.

- **Toxaemia** is a condition of high blood pressure which can lead to convulsions — eclampsia — and death if not treated in its early stages. It can be detected and its complications prevented by competent prenatal care.

- **Unsafe abortion**, performed with unclean instruments and in unsanitary conditions, is the frequent result of unwanted pregnancy. Where abortion is illegal, women are often reluctant to seek medical care if they begin to haemorrhage or show signs of infection after undergoing the procedure, and consequently many die.

**OBSTRUCTED LABOUR, NIGERIA**

Bola, 17, and her husband were farmers living in a remote village of Nigeria. They had their own small house with no electricity, and an open field that served for disposal of refuse and excreta. The couple had no formal education, and Bola was married at 13. Her first child was born dead after four days of labour. The prolonged and obstructed labour created a hole between Bola's bladder and her vagina. The consequences of this fistula are incontinence and a persistent smell of stale urine, which makes many women suffering from this injury virtual outcasts. Bola underwent reconstructive surgery, however, and became pregnant again two years later. Living far from a health centre, she had no prenatal care. In the seventh month of her pregnancy Bola started to bleed from the vagina while carrying water home from the river. Later that day her membranes ruptured and labour started. After three days of labour without progress, Bola was taken to the hospital in a state of distress, with a high temperature and pulse rate. Although the baby was small, rigid scar tissue from the fistula repair was obstructing its delivery. The baby died before it could be delivered, and was removed by surgery in the hospital. On the third day after delivery Bola was still very ill. Infection from a ruptured uterus was diagnosed, and Bola's poor condition because of undernourishment and anaemia militated against her recovery and survival. In spite of surgery to remove her infected uterus, Bola died in the hospital.

Source: World Health Organization Case Histories
The participants at the Safe Motherhood Conference did more than discuss the causes and consequences of maternal illness and death. They also recommended specific actions based on background papers from the World Health Organization, the World Bank, and other experts, and on their own experience in the fields of maternal health and women in development. Their recommendations fall into two basic categories: improvements in women's overall status, and improvements in the health services that are a key component of primary health care and that women—particularly pregnant women—need.

**IMPROVING THE STATUS OF WOMEN**

In the long run, participants agreed, women's status must improve if Safe Motherhood is to be realized. Women's status can be improved in several ways, most notably by recognizing and supporting the contributions

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage of adults who are literate</th>
<th>Percentage of women age 15-19 married</th>
<th>Number of children per woman (total fertility rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRICA</td>
<td>33 Male 15 Female 44</td>
<td>6.4</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>44 Male 18 Female 34</td>
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<td></td>
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<tr>
<td>West</td>
<td>29 Male 6 Female 70</td>
<td>6.8</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>29 Male 14 Female 32</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>35 Male 9 Female 49</td>
<td>6.0</td>
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</tr>
<tr>
<td>Southern</td>
<td>55 Male 56 Female 2</td>
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<tr>
<td>ASIA</td>
<td>56 Male 34 Female 42</td>
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<tr>
<td>Southwest</td>
<td>58 Male 31 Female 25</td>
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<td></td>
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<tr>
<td>Middle South</td>
<td>44 Male 17 Female 54</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Southeast</td>
<td>75 Male 53 Female 24</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>97 Male 92 Female 2</td>
<td>2.3</td>
<td></td>
</tr>
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<td>LATIN AMERICA</td>
<td>76 Male 70 Female 16</td>
<td>4.5</td>
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<tr>
<td>Central</td>
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<tr>
<td>Tropical South</td>
<td>74 Male 67 Female 15</td>
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<tr>
<td>Temperate South</td>
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<td>OCEANIA</td>
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<tr>
<td>NORTH AMERICA</td>
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<td>EUROPE</td>
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<tr>
<td>U.S.S.R.</td>
<td>100 Male 100 Female 10</td>
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<tr>
<td>WORLD</td>
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<tr>
<td>Developed</td>
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</tr>
<tr>
<td>Developing</td>
<td>52 Male 32 Female 39</td>
<td>4.4</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by World Health Organization
women routinely make to their families and their communities, and by changing the attitudes and practices that undermine women's health and undervalue the role women play as members of society. However, women's role as producers of children influences and is influenced by their role as producers in the economic arena. Women gather firewood for cooking. They fetch water for cooking and cleaning, sometimes walking five to ten kilometres a day or travelling overnight. Especially in Africa, they grow most of the agricultural produce and as much as 80 percent of the food. They often work in fields or factories for eight or more hours a day, in addition to their responsibility for cooking, cleaning, and caring for the children.

Increasingly, women are the sole supporters of the family, as men abandon their wives or go to cities to try to find work. In Bangladesh, where perhaps one-quarter of poor households are headed by women, one study found that when a woman died in childbirth, the infant she was carrying also

*Figure 3*

**Infant Mortality by Mother's Education (in years), Selected Countries**

*Number of infant deaths (under one year of age) per 1,000 live births

Source: Calculated by Dr. Gwendolyn Johnson-Acsadi from World Fertility Survey data, 1984.
Out of Safe Motherhood all kinds of other safeties flow: safety for infants and their older siblings, safety for the family unit and structure. Not least in importance is the safety of women themselves.

— Dr. Nafis Sadik, United Nations Fund for Population Activities

Mothers are not dropped from heaven. They are born as under-valued, neglected girls and grow as exploited, uneducated children. We must look at the suffering and disadvantages the mother-to-be has experienced. She must become self-confident and self-reliant, and for that she needs to be educated and employed.

— Dr. Harcharan Singh, Health and Family Welfare Planning Commission, India

died in 95 percent of the cases. The survival and health of young children usually depend heavily on the continued good health of their mothers.

Women in rural areas work particularly hard, and yet rural development efforts that fail to take women’s roles into account sometimes worsen rather than improve their situation. One study in an Indian village found that the purchase of a tractor expanded the area of land in use and facilitated the men's job of ploughing; but for the women who fertilised, weeded, and processed the crops, the tractor created twice as much work and placed even greater demands on their time and bodies. Other development efforts, such as well-designed agricultural extension programmes and efforts to improve local water supplies, can ease the burden on women and increase their economic productivity. As Dr. Mary Racelis of UNICEF pointed out, studies show that women's general health is worsened, and their susceptibility to complications in pregnancy and childbirth is increased, by the time and effort they must spend working. Because women work so hard and contribute so much to sustaining their families, it is even more important that they have access to the services and support that will ensure their good health and survival.

Many of the conference participants emphasised the important contribution of education to the health of women and their families. Education, they explained, provides women with the skills, knowledge, and confidence to plan healthy diets and protect family hygiene; to read instructions for giving medicine to their children or for using a family planning method; to improve their farming techniques and count the money they receive from selling produce; to apply for a loan to purchase fertiliser for their farms; and to obtain jobs as bank clerks, doctors, or prime ministers.

Education is only part of the answer. Women also need proper nutrition from early infancy on; this is especially important if their bodies are to be prepared for the demands of pregnancy and childrearing. They need money to purchase necessities for themselves and their families, and for that they generally need employment that does not exploit them or demand long hours away from their homes. Perhaps most fundamentally, their contributions need to be valued by society, so that they will be encouraged and supported as they strive to control their lives and broaden their choices.

Jennifer Mukolwe, head of the largest grass-roots women’s organisation in Kenya, emphasised that development programmes can be more productive
if the people who develop policies and implement programmes listen to women’s preferences and involve women in the process. Dr. Nafis Sadik agreed, noting that it is important for women to help design and manage projects as well as be their target.

**CHANGING ATTITUDES, PRACTICES, AND LAWS**

In some countries traditions that contribute to women’s poor health and limit their opportunities are deeply rooted and strongly held. Dr. Wiltshire Johnson, minister of health from Sierra Leone, cautioned that efforts to change such customs as early marriage, female circumcision, and giving birth alone need to be undertaken carefully to avoid being rejected. Traditional birth attendants (TBAs) and other accepted figures in the community have authority and the opportunity for daily interaction with local people. Women’s groups often address a variety of practical economic or health issues that are important in people’s lives. Properly trained and motivated, TBAs and representatives of women’s groups can provide an effective avenue for changing attitudes and teaching better health practices to community members.

Another avenue for reaching communities is through education programs. Experience has shown that the results of literacy campaigns and other educational efforts are more likely to be retained if they use information that is directly relevant and useful to the community. Incorporating information on maternal health into general health education efforts is one way to strengthen both educational campaigns and programs to reduce maternal mortality. Radio is frequently used in health education programmes, and is an important channel for communication throughout the developing world. The mass media have already proven useful in promoting family planning and good nutrition, especially in much of Latin America and Asia. Information campaigns not only make people aware of what services exist, but also help convince people to use them.

The media are crucial for alerting policy makers as well as the community that a problem exists, and that something can be done to solve it. Hilary Ng’weno, editor of the *Kenya Weekly Review*, emphasised that reporters need to have access to information and understand it in order to translate it for consumption by the public. The media can help generate and sustain public support for Safe Motherhood programmes, as well as promote social and economic changes necessary to improve women’s status.

Outside the time of medical crisis during pregnancy and childbirth, which should be prevented as often as possible, women should not be seen as passive beneficiaries of health and social services, but as active and responsible individuals, who have the right to participate in decisions on what is good and not good for themselves and their families. In order to do that, women need information and they need the minimum of material resources.

—**Dr. Lise Østergaard**,  
*University of Copenhagen, Denmark*
Attitudinal change also implies that programmes to improve maternal health should look beyond the reproductive years, to girls at school and to mature women who have completed their families and who will have a strong influence on coming generations. It also implies a strong commitment to attitudinal change among men, not merely as decision-makers at the higher levels of society, but as fathers, husbands, and sons.

—Dr. Nafis Sadik, United Nations Fund for Population Activities

One of the urgent needs in much of the developing world, emphasised Rami Chabbra of India’s Ministry of Health and Family Welfare, is to change laws that act as obstacles to women. Laws or customs sometimes severely restrict the provision of family planning services. In some places a woman must have her husband’s permission to legally obtain a contraceptive. Other laws prohibit non-physician health workers from providing the most basic health services. In one African country, for example, nurses are not allowed to use stethoscopes. Dr. Barbara Kwast of the World Health Organization reported that in some countries a woman cannot leave her village without the permission of her husband or a male relative—even if she is haemorrhaging in childbirth and desperately needs medical care within an hour or two.

In other countries girls still marry at age fourteen or younger, and society places considerable pressure on them to begin childbearing early to prove their fertility. In Africa, 55 percent of the teenagers are married; in the Indian subcontinent that figure is 58 percent. Adolescent pregnancy, which poses a substantial threat to the physical and mental health of young mothers and their infants, is a problem of growing concern to policymakers in almost every society. In many regions, high rates of adolescent fertility also reflect an increasing number of out-of-wedlock pregnancies. For these young people, stated Bradman Weerakoon, secretary general of the International Planned Parenthood Federation, counselling and family planning services must be offered in an understanding environment.

Several speakers emphasized that before such laws and customs can be changed, decisionmakers at all levels need to understand why change is necessary. A complete understanding enables them to be involved, educated, and committed to maternal health programmes specifically, as well as to the broader social, economic, and political issues relating to women’s status and needs. Conference moderator Dr. Fred T. Sai of the World Bank explained, “Men in the developing world still dominate as decisionmakers in the family, community, and government. They need to understand the importance of supporting women’s activities and programmes to improve women’s health for the sake of the entire community. Our role,” he added, “is both as actors and advocates. We must do what we can to implement these recommendations ourselves, and we must generate the commitment and the political will to convince others to take action.”
Health Sector Strategies

The participants acknowledged that in the long term, economic development and the expansion of women’s opportunities are critical to improving women’s health and increasing the availability of health services. But today and tomorrow, in every rural village or urban slum in the developing world, programmes can be implemented in the health field itself that will have an immediate impact on the problem of maternal mortality and morbidity. These programmes are not expensive; they do not require a huge investment in infrastructure and manpower development to save thousands of lives. What they do require, observed Dr. Carl Wahren of the Swedish International Development Authority, is the commitment and political will to implement a few basic strategies, and the creativity to work within limitations to devise new ways to improve services. Several participants cautioned that if these programmes are to be effective they must be tailored to the needs, conditions, and preferences of the communities they are designed to benefit. They should also provide the necessary care at the lowest cost and most peripheral level possible in order to reach the maximum number of people. A concerted effort to involve women actively as service providers and educators can help guarantee that such programmes will be culturally acceptable, have wider outreach, and be more successful.

The Three-Pronged Approach

The World Bank background paper by Dr. Barbara Herz and Dr. Anthony Measham outlined a three-pronged approach to reducing maternal mortality and morbidity. To improve prenatal care, provide help during delivery, and expand family planning services, this approach focuses on the following three components:

1. Stronger community-based health care that relies on non-physician health workers to screen pregnant women, identify those at high risk, and refer high-risk cases for timely help. Community-based health workers can provide prenatal care and ensure safe delivery for women who are not at high risk. They can also provide family planning services and family life education and generally promote better family health and nutrition.

Four essential elements for a maternal health programme are:

First, adequate primary health care at all levels and an adequate share of the available food for girls from infancy to adolescence, and family planning universally available to avoid unwanted or high risk pregnancies;

Second, after pregnancy begins, good prenatal care, including nutrition, with efficient and early detection and referral of high-risk patients;

Third, the assistance of a trained person for all women in childbirth, at home or in a hospital; and,

Fourth, women at higher risk and, above all, women in those dire emergencies of pregnancy and childbirth, must all have effective access to the essential elements of obstetric care.

—Dr. Halfdan Mahler, World Health Organization
2. **Stronger referral facilities** — hospitals and health centres with beds — to serve as a back-up to community-based care. These facilities can treat complicated deliveries and obstetric emergencies and provide clinical and surgical methods of family planning.

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**THE ROLE OF NON-PHYSICIANS IN MATERNAL HEALTH AND FAMILY PLANNING IN KARAWA, ZAIRE**

The CEUM Hospital of Karawa serves approximately 250,000 inhabitants in a 19,000 square kilometre area near the equator in northwestern Zaire. Health facilities in the region are very isolated because of poor or nonexistent roads and the lack of modern means of communication. The physical facilities are inadequate, funds and equipment scarce, and trained medical staff in short supply. There are three to four full-time physicians at the Karawa Hospital, or approximately one physician for 60,000 to 80,000 inhabitants. Because of the extremely low physician-patient ratio, the paramedical staff (consisting of approximately 100 nurses, midwives, auxilliaries, and ancillary health specialists) play an innovative role in the provision of health services, especially maternal and child health care.

As part of an expanding primary health care programme, the hospital has instituted an extensive outreach programme to increase the access of rural women to maternity care and to expand prenatal care. Traditional Birth Attendants (TBAs), nurses, and midwives play a critical part in the programme and in the back-up referral system that has been established.

A typical TBA in Karawa is a middle-aged woman, a mother or grandmother, who has been asked on multiple occasions to assist at the deliveries of neighbours or relatives. Almost all are illiterate, and their knowledge is gained by experience or handed down from their mothers. They are recognized and trusted by the people in their community. A training programme instituted in 1982 teaches them improved delivery practices, how to identify and refer high-risk women, and when to refer problem deliveries to the hospital. TBAs are also taught and encouraged to provide family planning education and to refer couples who intend to choose a method of contraception to the hospital or nearest health centre.

Community participation in the TBA programme is essential. The community contributes money to pay for TBA kits and families are asked to pay a small fee for each delivery. Some villages have built small maternity units where women can go to deliver their babies rather than delivering them at home.

A 38-bed maternity centre is staffed by one doctor, five nurses, seven midwives, and a variable number of students. Maternity centre staff are responsible for the prenatal clinic, deliveries, family planning clinic, TBA referrals, newborn nursery, and gynaecological surgery. Considerable time is devoted to improving the quality and quantity of prenatal care. The hospital has instituted an extensive outreach programme to encourage women to make at least one visit to the clinic during their pregnancy. They are given tetanus vaccinations, iron and vitamin supplements, and other treatments as necessary. The high-risk women (those with pre-eclampsia, infectious diseases, previous caesareans, etc.) are brought to the attention of the doctor. Low-risk patients are informed that their deliveries may be performed by the village TBA or local health centre nurse. A hospital-based maternal mortality study in 1983 showed that only 9 percent of the women had made no prenatal visit during their pregnancy. These women had a 15-fold increase in their mortality rate.

Most deliveries at the centre are attended by midwives or nurses. In order to reduce the demand on physicians and improve patient care, surgical procedures such as caesareans, laparotomies for uterine rupture, and minilap surgical sterilizations are performed by specially trained nurses. These nurses have had extensive on-the-job training under the supervision of physicians.
3. An “alarm” and transport system to transfer women with high-risk pregnancies and emergencies from the community to the referral facility in time for effective treatment.

Experience shows that if the nurses are guided and supervised properly, their performance of obstetric and surgical procedures compares favorably in safety and efficiency with that of the physicians. In addition, nurses are more available and—when they are women—culturally more acceptable to the patients than physicians.

The experience of the referral hospital in Karawa indicates that Safe Motherhood is possible in rural areas with the use of available resources. Acceptable maternal health care can be provided even in those areas where physicians are in short supply. Non-physicians can provide most maternity care services and can be trained to recognize and refer women at high risk to the health centre physicians.

Although the collection and statistical analysis of the data is not complete, some conclusions about the programme are possible:

1. The use of non-physicians, especially TBAs, is the only means by which any health care can be provided to the women and children in the villages of Karawa either now or in the near future.

2. Supervision of TBAs and the support of the community are the keys to the success of such a programme.

3. A well-equipped centre should be available for emergencies and for referral of high-risk mothers. The establishment of such a centre is essential before a programme for non-physicians can be initiated.

4. Data collection is a difficult problem in rural areas, but it is necessary for measuring the impact of the programme and determining the need for changes. Therefore a simple, low-cost data collection system should be built into the programme.

If these recommendations are applied, then the goal of health for all by the year 2000 can be realised and mothers in rural areas can expect to have safe deliveries and healthy babies.

Source: Presentation by Dr. Sambe Duale, Medical Director, Rural Health Zone of Karawa

<table>
<thead>
<tr>
<th>Types of Deliveries and Some Surgical Procedures Performed by Nurses or Doctors in Karawa, Zaire, 1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Normal deliveries</td>
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<tr>
<td>Dystocias</td>
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<tr>
<td>Caesareans</td>
</tr>
<tr>
<td>Minilaparotomies</td>
</tr>
<tr>
<td>Laparotomy for uterine rupture</td>
</tr>
<tr>
<td>Other laparotomies</td>
</tr>
</tbody>
</table>
Mobilising Community-Based Care — Community health workers and traditional birth attendants (TBAs) are often the only viable source of basic prenatal care and family planning services in isolated communities, and are generally the main source of help in pregnancy and childbirth. Even so, less than half the births in developing countries are attended by a trained health worker. Some training programmes for TBAs have resulted in safer deliveries. Other programmes have been less successful. Improving the skills of community health workers and TBAs, providing them with equipment, and enlisting their assistance and support in disseminating information to the community are critical steps to improving health care for pregnant women at the community level.

Figure 4

PERCENTAGE OF BIRTHS ATTENDED BY TRAINED PERSONNEL, BY REGION (ABOUT 1982)

Source: Estimates from the World Health Organisation.
TBAs and community health workers can often be trained to detect anaemia and malaria and provide treatment; to recognise signs of potential complications such as toxaemia; and to obtain information on age, menstrual and obstetric history, marital status, general health condition, and estimated date of delivery. Some projects that have been particularly successful in working with TBAs suggest that they may be able to identify a significant proportion of the pregnant women who develop the majority of the life-threatening complications. A project in rural northeast Brazil, for example, trained 620 TBAs, who now refer high-risk women to a hospital for delivery and conduct safe deliveries in forty communities.

The success of such community-based services often depends on the principle of outreach: the community must be actively involved and mobilised to contribute to health programmes. Community workers, village women's groups, and other nongovernmental organisations that work in isolated communities are important and often neglected resources for reaching women with services and information through house-to-house visits or group discussions.

Penina Ochola, a nurse trainer working for the African Medical and Research Foundation in Kenya, emphasised the importance of community-based efforts for providing information and training so that women can control their lives and solve their problems themselves. “There is a critical need,” she said, “for community-based health programmes that motivate and involve the people in that community, and generate their participation.” These participatory projects, Ms. Ochola explained, help members of the community agree on what should be done, and help generate support for the necessary changes.

Dr. Ransome-Kuti, minister of health from Nigeria, cautioned that because isolated communities have few alternative mechanisms for obtaining health care, the activities of community health workers must be adequately monitored, supervised, and supported. Health workers need ongoing training, he emphasised, and close, frequent supervision to ensure that they have adequate supplies and that the information they are obtaining and providing is accurate and meets the needs of the community.

**Traditional Birth Attendants in Southern Ethiopia**

In Southern Ethiopia the government is working with a nongovernmental religious organization in one district to provide a service which involves Traditional Birth Attendants (TBAs) in a team effort. They have succeeded in significantly reducing the incidence of ruptured uterus caused by obstructed labour. Trained by the primary health care team — the first rung of the national health service, which can deal with emergencies such as haemorrhage but cannot perform surgery — the TBAs are visited regularly once a month. The job of each TBA is to identify all the pregnant women in her village and to conduct the prenatal clinic together with the visiting midwife. She and the midwife determine who risks having a complicated delivery and at what stage a woman should be taken to a hospital for observation.

Because not all problems can be anticipated, the TBA uses a messenger who will run and walk — for as long as three hours — to alert the nuns at the primary health care post in cases of an emergency. The nuns then move out with a Landrover to pick up the patient and transport her to the first-referral facility of the health care system.

The system functions well because there is support and cooperation all down the line. Furthermore, the TBA, who already has the trust of the community, can introduce the women to new ideas about pregnancy and childbirth.

Source: World Health Organization Case Histories
### Table 5
**SELECTED INTERVENTIONS AT PRIMARY AND FIRST-REFERRAL LEVELS**

<table>
<thead>
<tr>
<th>Cause of maternal mortality/morbidity</th>
<th>Interventions</th>
<th>Health system level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Family Planning</td>
<td>Primary &amp; 1st referral</td>
</tr>
<tr>
<td></td>
<td>Prenatal care</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Supervised delivery</td>
<td>Primary</td>
</tr>
<tr>
<td>HAEMORRHAGE</td>
<td>Risk screening; referral</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Other prenatal care, including treatment of anaemia</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Oxytocics when placenta delivered (^a)</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Intravenous fluids</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Transport to 1st referral level</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Manual removal of placenta (^a)</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Blood typing of donors</td>
<td>1st referral</td>
</tr>
<tr>
<td></td>
<td>Blood transfusion</td>
<td>1st referral</td>
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<td>INFECTION</td>
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<td></td>
<td>Tetanus immunization</td>
<td>Primary</td>
</tr>
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<td></td>
<td>Clean delivery</td>
<td>Primary</td>
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<tr>
<td></td>
<td>Antibiotics when membranes ruptured if not delivered within 12 hours (^a)</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Transport to 1st referral level</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Hysterectomy</td>
<td>1st referral</td>
</tr>
<tr>
<td>TOXAEMIA</td>
<td>Monitor symptoms, blood pressure, and urine (for protein)</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Bed rest, sedatives</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Transport to 1st referral level</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Induction or caesarean section</td>
<td>1st referral</td>
</tr>
<tr>
<td>COMPLICATIONS OF ABORTION</td>
<td>Antibiotics (^a)</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Transport</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Oxytocics</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Evacuation</td>
<td>1st referral</td>
</tr>
<tr>
<td></td>
<td>Hysterectomy</td>
<td>1st referral</td>
</tr>
<tr>
<td>OBSTRUCTED LABOUR AND RUPTURED UTERUS</td>
<td>Risk screening, referral</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Partograph</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Transport to 1st referral level</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Symphysiotomy</td>
<td>1st referral</td>
</tr>
<tr>
<td></td>
<td>Caesarean section</td>
<td>1st referral</td>
</tr>
</tbody>
</table>

**Note:** Primary level includes outreach programmes and health dispensaries, posts, or centres. First-referral level would usually be a "district" or cottage hospital with twenty or more beds and the capability of giving blood transfusion and performing caesarean sections.

\(^a\) Recommended experimental approaches at the community level.

First-Referral-Level Facilities — Conference participants agreed that community-based maternal health care needs to be supported by adequately staffed and equipped health facilities at the first-referral-level — usually a district hospital or large health centre with beds. Although community workers and TBAs can provide information, risk screening, prenatal care, simple medications, and treatment, more advanced facilities for delivery and treatment are required for high-risk pregnancies and obstetric emergencies. These include obstructed labour, massive haemorrhage, eclampsia, and serious infection, as well as incomplete or infected abortion. Dr. Kwast of WHO explained that approximately 80 percent of maternal deaths are due to these direct obstetric causes and are basically preventable. In deprived areas the complication rate for deliveries can be as high as 30 percent, and even in an ideal situation at least 5 to 10 percent of pregnancies require operative delivery, blood transfusion, or treatment of convulsions.

The seven functions defined as essential for first-referral-level facilities by the World Health Organization are:

1. **Surgical functions** which include caesarean section, surgical treatment of sepsis, repair of high vaginal and cervical tear, laparotomy for repair of ruptured uterus, removal of ectopic pregnancy and evacuation of uterus in uncomplicated abortion;
2. **Anaesthetic functions**;
3. **Medical treatment functions** which include treatment of shock, medical treatment of sepsis, control of hypertensive disorders of pregnancy and eclamptic fits;
4. **Blood replacement** which includes administration of blood transfusion and plasma expanders;
5. **Manual and/or assessment functions**, which include manual removal of placenta, vacuum extraction and the use of the composite partograph;
6. **Family planning functions**, which include surgical family planning (tubal ligation and vasectomy), IUDs, Norplant, and other contraceptives;
7. **Management of women at high risk**, which necessitates maternity waiting homes for timely referral.
China: Systematic Maternal Health Care in Shanghai

Established at the time of the revolution in 1949, the maternal health care system in Shanghai, China, covers both the urban district and the rural county of Shanghai. Under the municipal hospital are twelve district and ten county hospitals with maternal and child health (MCH) care centres and obstetric-gynaecology and pediatrics departments. At the next lower level are 104 subdistrict and 200 commune hospitals with MCH units. They are staffed by both medical personnel and auxiliary workers such as midwives. The final level is the health station where the so-called barefoot doctors are based.

The municipal hospital focuses on referred complications while most normal deliveries occur at district, county, or commune hospitals. The district or county hospital screens for high risk, holds prenatal and postnatal clinics, and sponsors maternal and child health care research. The subdistrict hospital registers the pregnant woman and gives preliminary prenatal care. Further, subdistrict and commune hospitals supervise primary health care workers, screen and treat gynaecological disease, provide child health care, and collect data. The barefoot doctors make prenatal and postpartum home visits and offer family planning consultation and distribution, vaccination, education on hygiene, and care during menstruation, pregnancy, puerperium, and lactation.

Maternal mortality per 100,000 live births has dropped from 320 in 1949 to 30. In 1980, almost every pregnant woman in Shanghai participated in prenatal care with an average of 10.5 visits. Even postpartum care had reached 73.1 percent of the women, with an average of 2.6 visits.

Referral was facilitated by maternity cards given to the mother at registration. The cards were returned to the subdistrict or commune hospital after birth so that postpartum visiting could take place.

Dr. Kwast drew on her years of field experience in Africa to illustrate the functions that are essential at the first-referral-level. Facilities at this level frequently lack blood for transfusions, electricity to run equipment, clean water, sterile instruments or gowns, anaesthesia, antibiotics or other drugs, beds, or enough clinicians to staff the facility at all times. These facilities can be upgraded to meet the need for first-referral-level obstetric care in the surrounding community without a huge investment in equipment or personnel.

Some remote areas have tested a system of maternity “waiting homes” located next to referral facilities. Pregnant women can go to these homes a week or so before they are due to give birth, and can be transferred promptly to the facility if complications develop. In some cases members of their families stay with the women, providing their own food and bedding. The homes are usually maintained by the communities whose members use the facilities.

Trained nurses and other non-physician personnel can be taught to perform procedures such as manual removal of the placenta, caesarean section, treatment of septic abortions, and mini-laparotomy for sterilisation. This was done very successfully in a referral hospital in northwestern Zaire (see page 28). Some physicians have questioned the use of non-physicians to perform such functions, but as Dr. Beverly Winikoff of the Population Council pointed out, “Given the lack of resources and personnel, it isn’t a question of a nurse C-section versus a doctor C-section. It’s a question of a nurse C-section or no C-section at all, and probably death.” Dr. Judith Fortney of Family Health International, discussing the success of the programme in Zaire, emphasised that the centre there “was no richer, the equipment no better, the patients no healthier than in any other community. What made the difference in Karawa was the commitment and creativity of the people involved” in developing and implementing innovative programmes that make the best use of scarce resources to meet the needs of the community.

“Alarm” and Transport System — Ensuring that first-referral-level facilities are staffed and equipped to deal with obstetric emergencies is not enough if women cannot reach the facilities in time, or cannot reach them at all. The World Bank and WHO, therefore, recommended the implementation of an “alarm” and transport system, especially for rural areas. The system would use local communication channels, including radio, to call on whatever
means are available in the community to transport women with high risk and complicated pregnancies to the nearest first-referral-level facility.

This mechanism was cited as an excellent example of how the community can make an important contribution to Safe Motherhood. As Dr. Sadik said, “All communities place a high priority on health, which even in low-income societies — as we have found by experience — produces a willingness to mobilise resources for that purpose. If the means and the direction are made clear, the community can often provide staff, premises, and even transport.” In pointing out the importance of adequate transportation mechanisms to the success of Safe Motherhood programmes, Dr. Adetokunbo Lucas of Carnegie Corporation said, “the coverage and effectiveness of the health care system need to be measured not by the number of clinics in existence, but by the number of women being served and the number of lives saved.”

**THE IMPORTANCE OF FAMILY PLANNING**

Several conference sessions illustrated how family planning services improve women’s health. High rates of maternal mortality in the developing world reflect not only the poor health status of these women but also the large number of pregnancies. Thus, the number of women dying can be lowered both by reducing the risk associated with pregnancy and by reducing the number of unwanted pregnancies through the wider use of family planning. Increased use of effective contraceptive methods lowers the number of births; the impact on the number of deaths, however, will be more than proportional, explained Dr. Robert Cook of WHO, because women at high risk are more likely to use family planning to avoid pregnancy.

Deborah Maine of Columbia University’s Center for Population and Family Welfare analysed data from the World Fertility Survey to estimate that maternal deaths in many developing countries would be reduced by 25 to 40 percent if all women who explicitly say that they want no more children were using a contraceptive method effectively. World Fertility Survey estimates show that some 300 million couples around the world would like to postpone pregnancy or avoid it altogether, but have no access to family planning services.
### Table 6
**Comparative Advantages and Disadvantages of Contraceptive Technology**

<table>
<thead>
<tr>
<th>Method</th>
<th>Major advantages</th>
<th>Major disadvantages</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PILL</strong></td>
<td>Effective</td>
<td>Some side effects</td>
<td>Progestin-only pill more suited to breastfeeding mothers</td>
</tr>
<tr>
<td></td>
<td>Unrelated to coitus</td>
<td>Small mortality risk</td>
<td>Protective effect against anaemia, PID</td>
</tr>
<tr>
<td></td>
<td>Helps protect against anaemia, PID</td>
<td>Must take daily</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can be provided nonclinically</td>
<td>Not indicated for adolescents</td>
<td></td>
</tr>
<tr>
<td><strong>IUD</strong></td>
<td>Long term</td>
<td>Does not protect against ectopic pregnancy</td>
<td>Newer forms much improved</td>
</tr>
<tr>
<td></td>
<td>Effective</td>
<td>Associated with some increase in bleeding, PID</td>
<td>Can be inserted postpartum</td>
</tr>
<tr>
<td></td>
<td>Unrelated to coitus</td>
<td>Requires more clinical backup</td>
<td></td>
</tr>
<tr>
<td><strong>CONDOMS</strong></td>
<td>Nonsystemic</td>
<td>Not always effective in use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easily stored</td>
<td>May reduce pleasure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INJECTABLES</strong></td>
<td>Long acting</td>
<td>Minimal side effects</td>
<td>Not officially approved as contraceptive everywhere</td>
</tr>
<tr>
<td></td>
<td>Unrelated to coitus</td>
<td>Removal of implants requires clinical backup</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can be provided nonclinically</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FEMALE</strong></td>
<td>Effective</td>
<td>Virtually permanent</td>
<td>Minilaparatomy very safe on outpatient basis</td>
</tr>
<tr>
<td><strong>STERILISATION</strong></td>
<td>Unrelated to coitus</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MALE</strong></td>
<td>Effective</td>
<td>Virtually permanent</td>
<td>Cultural resistance in some areas</td>
</tr>
<tr>
<td><strong>STERILISATION</strong></td>
<td>Unrelated to coitus</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RHYTHM and OTHER</strong></td>
<td>No side effects</td>
<td>Relatively ineffective in use because of difficulty in calculating safe period or reluctance to abstain before and during that time</td>
<td>Determining time of ovulation can be difficult if thermometer not available Checking mucus in absence of clean water not hygienic</td>
</tr>
<tr>
<td><strong>NATURAL FAMILY PLANNING</strong></td>
<td>Approved by Catholic Church</td>
<td>Relatively ineffective in use because of difficulty in calculating safe period or reluctance to abstain before and during that time</td>
<td>Determining time of ovulation can be difficult if thermometer not available Checking mucus in absence of clean water not hygienic</td>
</tr>
<tr>
<td><strong>BREASTFEEDING</strong></td>
<td>Relatively unreliable for the individual</td>
<td></td>
<td>Inhibits ovulation but not with enough predictability to recommend for individual women</td>
</tr>
</tbody>
</table>

**Note:** *PID = pelvic inflammatory disease*

**Source:** Population Growth and Policies in Sub-Saharan Africa (Washington, D.C., *The World Bank, 1986*) based on information from the United States Centers for Disease Control
Several speakers emphasised that family planning programmes need to offer a variety of contraceptive methods, and that services and information must be of high quality and culturally acceptable. Because women are often more comfortable going to other women for services and advice, having well-trained women participate as providers helps ensure greater acceptability by the community. Each individual must be fully informed about the risks and benefits of the methods available as well. Women who lack access to such information often have an exaggerated perception of the health risks of various contraceptive methods, especially in comparison with the potential complications of pregnancy. Dr. Allan Rosenfield, dean of the

Figure 5

PERCENTAGE OF MATERNAL DEATHS POTENTIALLY PREVENTABLE THROUGH FAMILY PLANNING, SELECTED COUNTRIES

*Married fecund women who want no more children but are not using an effective contraceptive method.

Columbia University School of Public Health, explained that an unwanted, unplanned pregnancy for a woman in a developing country carries a risk twenty times higher than that associated with any commonly available modern contraceptive method.

**THE AFFORDABILITY OF SAFE MOTHERHOOD**

Low-income countries currently spend an average of US$9 per capita annually on health care. The three-pronged strategy of providing prenatal care and basic health and family planning services at the community and first-referral levels can be implemented in developing countries at a cost of less than US$2 per capita a year, according to Dr. Herz and Dr. Mea-

Table 7
E**STIMATED COST AND IMPACT OF TWO
SAFE MOTHERHOOD PROGRAMMES**

<table>
<thead>
<tr>
<th></th>
<th>Moderate effort</th>
<th>More limited effort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Population</td>
<td>200,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Births</td>
<td>9,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Contraceptive prevalence rate*</td>
<td>9</td>
<td>40</td>
</tr>
<tr>
<td>Birth rate**</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Maternal deaths</td>
<td>72</td>
<td>24</td>
</tr>
<tr>
<td>Maternal mortality rate***</td>
<td>800</td>
<td>400</td>
</tr>
<tr>
<td>Percent maternal deaths averted</td>
<td>—</td>
<td>67</td>
</tr>
<tr>
<td>Number maternal deaths averted</td>
<td>—</td>
<td>48</td>
</tr>
<tr>
<td>Number births averted</td>
<td>—</td>
<td>3,000</td>
</tr>
<tr>
<td>U.S. dollars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total programme cost</td>
<td>— $300,000</td>
<td>— $96,000</td>
</tr>
<tr>
<td>Cost per capita</td>
<td>— $1.50</td>
<td>— $0.48</td>
</tr>
<tr>
<td>Cost per birth</td>
<td>— $50</td>
<td>— $11</td>
</tr>
<tr>
<td>Cost per maternal death averted</td>
<td>— $6,250</td>
<td>— $4,800</td>
</tr>
<tr>
<td>Cost per death averted</td>
<td>— $3,125</td>
<td>— $2,400</td>
</tr>
<tr>
<td>Cost per birth averted</td>
<td>— $100</td>
<td>— $60</td>
</tr>
</tbody>
</table>

*Percent of women in union aged 15-49 currently using a contraceptive method

**Number of live births per 1,000 population

***Number of maternal deaths per 100,000 live births

sham. This investment in “upgrading and expanding referral services and stronger community efforts in maternal health and family planning should reduce maternal deaths by at least half in about a decade.” For countries that cannot afford that investment, increasing annual expenditures by US$1 per capita could still have a significant impact on maternal mortality. As Mr. Conable said, “A low-cost system that provides basic health care in communities and timely transportation to more advanced medical help at regional health centers can save thousands of mothers and children. We know that such measures can succeed, particularly in conjunction with other development programmes to improve women’s incomes, food supplies, and education.”

APPROPRIATE TECHNOLOGY AND PROPER MANAGEMENT

At both the community level and in referral facilities, health experts at the conference emphasised, appropriate technologies need to be adapted and incorporated into health programmes. Most of these technologies already exist; one that has considerable potential for saving lives is the partograph, a basic tool for assessing the progress of labour that offers an early warning for complications such as obstructed labour. Vacuum aspiration of the uterus can be performed with hand-operated pumps to treat retained placenta and incomplete abortion. Various drugs, including antibiotics, can be provided at the community level if health workers are trained in how to use them: oxytocic drugs contract the uterus and its blood vessels in cases of postpartum haemorrhage, and sedatives can be used to treat pre-eclampsia. Research can develop instruments that are easy to use and repair and that do not require reliable electricity. Plasma can be used instead of whole blood. These are only a few examples of practical technologies cited by participants at the conference. Dr. Winikoff of the Population Council emphasised in her presentation that appropriate technology does not only mean new and more complex types of technology; it can also mean advances in knowledge and new approaches to problems.

Improving maternal health services requires:
1. Upgrading training and knowledge to improve safety of services for many;
2. Expanding training to new levels of personnel to improve access and diminish the distance between women and the location where they may obtain adequate assistance;
3. Developing new technologies that result in simple but safer techniques which can be made available on a wider scale and at a lower level of service delivery.

—Dr. Beverly Winikoff, Population Council
MAENDELEO YA WANAWAKE

Kenya's largest women's organization, Maendeleo ya Wanawake, began providing family planning information in 1979. Maendeleo has some 7,500 local groups, with about 300,000 members, throughout Kenya. Its purpose is to develop projects to raise the living standards of its members.

According to a recent survey of women who attended meetings, some 90 percent of Maendeleo's members are farmers and housewives. About 25 percent have four or fewer children, 30 percent have five or six, and almost 50 percent have seven or more.

To emphasize the benefits of family planning, Maendeleo enlisted village volunteers to provide health and family planning education in a programme that now reaches most members. The volunteers were trained for about two weeks and now hold discussions on family planning, often for at least half an hour, at regular meetings. The volunteers refer interested women to government or private clinics and sometimes go with them to reassure them. About three-fourths of Maendeleo members surveyed in five disparate areas where the programme was operating had heard of family planning from these educators or from Maendeleo leaders. About 40 percent reported using contraception, compared with about 8 percent of women in the country as a whole.

Because Maendeleo members had difficulty in actually obtaining family planning services from clinics — clinics were far away, family planning workers were unexpectedly absent, and there was a lack of privacy, or the treatment was thoughtless — Maendeleo decided to test outreach programmes that use women from local communities to help deliver services. Maendeleo now provides services through hundreds of distributors in five districts. The organization's efforts have attracted considerable attention among policymakers in Kenya, where Maendeleo members include members of parliament and other political leaders. Maendeleo also has a seat on Kenya's National Council for Population and Development.

Source: World Bank

Dr. Ransome-Kuti, minister of health from Nigeria, and others highlighted the importance of careful design and good management of health care systems. Health workers at the community level and at referral facilities need to be adequately trained and supervised, and there must be enough of them; adequate supplies of appropriate drugs, blood, and equipment are needed; and communication channels between the different levels and to the community being served must be clear and reliable. As Dr. Herz and Dr. Measham emphasised, "The system will be no stronger than its weakest element . . . No maternal health programme can work effectively through action at one level only." Each country must decide on the most appropriate combination of investing in community-level care, first-referral-level facilities, and transportation based on its own needs and available resources.

Different strategies have been devised and implemented to address the problem of high rates of maternal mortality, and new methods will continue to be developed. Conference participants considered operational research critical to evaluating the effectiveness and costs of various approaches, and said it should be carried out systematically to ensure that scarce resources are used efficiently and effectively. Operational research can also help ensure that the quality of care is acceptable, and can monitor the development and testing of new technologies.

As the Call to Action states, there is a need for more and better information on maternal mortality that is country- and locale-specific. Such information is necessary to tailor programmes to meet the specific needs in the community as fully as possible.

THE SPECIAL CONTRIBUTION OF NONGOVERNMENTAL ORGANISATIONS

The established position of nongovernmental organisations (NGOs) in the communities where they work, their flexibility in responding to the needs and preferences of the people they serve, and their ability to develop innovative, low-cost programmes often enable them to lead the way in implementing effective maternal health initiatives. Dr. Manuel Ruiz de Chavez, under-secretary of health from Mexico, cited several examples of the ingenuity with which some organisations have taken advantage of commercial distribution networks to transport medical supplies or contraceptives. Other groups have adapted local customs to convey appropriate health
information on pregnancy, childbirth, nutrition, family planning, and immunisation. Many representatives of national and international NGOs working in health and education were present at the conference, and spoke of their interest in helping to implement Safe Motherhood programmes. Dr. Sai paid tribute to the importance of NGOs, saying “they are frequently at the frontier of identifying and solving problems, especially in terms of addressing sensitive problems sensitively.”

Local NGOs are sometimes limited, however, by lack of resources, and their strong links to the community can make it difficult for them to expand their programmes to the regional or national level. They need to operate within the framework of national development plans, with the awareness and support of their governments. Participants suggested that governments, in turn, have a responsibility to help and support the activities of NGOs, adopting and duplicating NGO model projects when possible and appropriate.
Analyses of government health budgets reveal that most developing countries allocate less than 20 percent to maternal and child health programmes, and the majority of that 20 percent is invested in child health programmes. Yet, the World Bank estimates that the investment of less than $2 per capita per year in programmes to strengthen basic health services for women could cut maternal mortality rates in half in one decade. The commitment to make this investment, and to support the improvement of women’s general status in society, can ensure that women will be equal partners in the development effort. As Mr. Conable said in his opening address,

Women’s health is basic to women’s advancement in all fields of endeavour. And as a mother’s health is the bulwark of her family, it is the foundation of community and social progress. Working for Safe Motherhood, we will be working for steady development on all fronts.

It is a goal that is within our reach, and one we must strive to achieve.

Figure 6

**How Many Maternal Deaths in the Year 2000?**

<table>
<thead>
<tr>
<th>Year</th>
<th>Scenario</th>
<th>Estimated Maternal Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>No action</td>
<td>500,000</td>
</tr>
<tr>
<td></td>
<td>Fertility 25% lower than UN projection</td>
<td>450,000</td>
</tr>
<tr>
<td></td>
<td>MMR halved</td>
<td>300,000</td>
</tr>
<tr>
<td></td>
<td>Fertility 25% lower than UN projection and MMR halved</td>
<td>225,000</td>
</tr>
</tbody>
</table>

**Source:** Compiled by World Health Organization
DAY 1: Tuesday, February 10

Presiding Chairman: The Hon. Dr. C.J.O. Nyakiamo, EBS, P.M., Minister of Health, Kenya
Moderator: Dr. Fred T. Sai, The World Bank

OPENING CEREMONY

Speakers: Barber B. Conable, President, The World Bank
Dr. Halfdan Mahler, Director General, World Health Organization
Dr. Nafis Sadik, Executive Director, United Nations Fund for Population Activities
William H. Draper III, Administrator, United Nations Development Programme
H.E. The President Daniel T. arap Moi, CGH, M.P., President of the Republic of Kenya

SESSION 1
Maternal Mortality and Morbidity: Extent and Nature of the Problem

Session Chairman: Dr. Shan S. Ratnam, National University of Singapore
Speakers: Dr. Robert Cook, World Health Organization
Dr. Mahmoud Fathalla, World Health Organization
Dr. Kelsey Harrison, University of Port Harcourt, Nigeria

SESSION 2
Role of Women in Maternal Health Problems: Perspectives, Priorities, and Participation

Session Chairman: Dr. Nafis Sadik, United Nations Fund for Population Activities
Speakers: Margaret Kenyatta, Kenya
Dr. Lise Ostergaard, University of Copenhagen, Denmark
DAY 2: Wednesday, February 11

Presiding Chairman: The Hon. Dr. O. Ransome-Kuti, Minister of Health, Nigeria

Moderator: Dr. Fred T. Sai, The World Bank

SESSION 3
Action Strategies to Improve Maternal Health

Session Chairman: Dr. Anthony R. Measham, The World Bank
Speakers: Dr. Fred T. Sai, The World Bank
Dr. Adetokunbo O. Lucas, Carnegie Corporation, United States

SESSION 4
Community-Based Services: Perspectives from the Field

Session Chairman: Dr. Barbara Herz, World Bank
Speakers: Jennifer Mukolwe, Maendeleo ya Wanawake, Kenya
Dr. Haryono Suyono, National Family Planning Coordinating Board, Indonesia
Dr. Ephraim Minya, Ministry of Health, Zimbabwe
Dr. Sheldon Segal, Rockefeller Foundation, United States

SESSION 5
District Level Interventions

Session Chairman: Dr. Allan Rosenfield, Columbia University, United States
Speakers: The Hon. Dr. O. Ransome-Kuti, Minister of Health, Nigeria
Dr. Sambe Duale, NIH/SIDA Project, Zaire
Dr. Barbara Kwast, World Health Organization
Dr. Beverly Winikoff, Population Council, United States
SESSION 6
Role of the Third Sector: Nongovernmental Organisations

Session Chairman: Dr. Christopher H. Wood, African Medical and Research Foundation, Kenya

Speakers: Eunice M. Kiireini, International health consultant, Kenya
Bradman Weerakoon, International Planned Parenthood Federation
Penina Ochola, African Medical and Research Foundation, Kenya

DAY 3: Thursday, February 12

Presiding Chairman: Dr. Manuel Ruiz de Chavez, Ministry of Health, Mexico

Moderator: Dr. Fred T. Sai, The World Bank

SESSION 7
Additional Resources for Improved Maternal Health: Contributions from Other Sectors

Session Chairman: Dr. Mary Racelis, UNICEF

Speakers: Hilary Ng’weno, Kenya Weekly Review
Dr. Jose Aristodemo Pinotti, Center for Integral Assistance to Women’s Health, Brazil
Dr. Inonge Lewanika, UNICEF

SESSION 8
Building Consensus

Themes: Policy
Programme
Financing
Community Mobilization

DAY 4: Friday, February 13

SESSION 9
Launching the Initiative

Presiding Chairman: Attiya Inayatullah, Minister of State for Population, Pakistan

Session Chairman: Dr. Fred T. Sai, The World Bank
PARTICIPANTS

PARTICIPANTS LIST

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The Safe Motherhood Initiative: Proposals for Action
Barbara Herz and Anthony R. Measham
The World Bank DP009 (Available only from the World Bank; see order form below.)

1. Prevention of Maternal Mortality
Report of a WHO Interregional Meeting, November 1985
World Health Organization FHE/86.1

Second Edition
World Health Organization FHE/86.3

3. Essential Obstetric Functions at First Referral Level
Report of a Technical Working Group, June 1986
World Health Organization FHE/86.4

4. Measuring Maternal Mortality
World Health Organization FHE/SMC/87.1

5. Maternal Mortality: The Dimensions of the Problem
World Health Organization FHE/SMC/87.2

6. The Status of Women, Maternal Health and Maternal Mortality
World Health Organization FHE/SMC/87.3

7. Causes of Maternal Death
World Health Organization FHE/SMC/87.4

8. Selections from WHO Press Kit prepared for the Safe Motherhood Conference:
   a. "Fact sheet"
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   e. "Family Planning"
   f. "Message" from the co-sponsors

9. Road to Maternal Death: Case Histories
Barbara E. Kwast
World Health Organization

10. Prevention of Maternal Deaths in Developing Countries: Program Options and Practical Considerations
Deborah Maine, Allan Rosenfield, Ann Marie Kimball (Columbia University);
Barbara Kwast (World Health Organization); Sharon White (CEUM Hospital, Karawa, Zaire)

11. Medical Services to Save Mother's Lives: Feasible Approaches to Reducing Maternal Mortality
Beverly Winikoff with Charles Carignan, Elizabeth Bernardik, Patricia Semeraro
The Population Council

12. Addresses by:
   a. Barber B. Conable, President
      The World Bank
   b. Halfdan Mahler, Director General
      World Health Organization
   c. Nafis Sadik, Executive Director
      United Nations Fund for Population Activities
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