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REGIONAL PLAN OF ACTION FOR THE REDUCTION OF MATERNAL MORTALITY IN THE AMERICAS

Pursuant to Resolution XIII of the XXXIII Meeting of the Directing Council (1988), in which the Director is requested to propose to the Governing Bodies of the Pan American Health Organization a plan of action for the reduction of maternal mortality in the Americas, the corresponding plan, contained in Document CE105/17, Rev. 1, was presented at the 105th Meeting of the Executive Committee. Certain adjustments and editorial changes were made in the document and are reflected in the appended version.

In presenting the document, the Secretary referred to the dimensions and characteristics of the problem and its principal determinants; to the targets of the Plan; to its basic strategies, policies, and lines of action for implementation in the countries; and to the scenario expected as a result of its implementation.

During the discussions that followed, it was emphasized that the targets are feasible provided there is the necessary political commitment. The extrasectoral determinants of the problem were pointed out, and reference was made to the successful classification of countries into four groups with a view to establishing priorities. Attention was called to the need to increase health education, particularly through the use of mass media, and special mention was made of home delivery care, maternal homes, and birthing centers as important alternative strategies for several of the countries in the Region. Another point discussed was the impact of family planning on maternal and infant mortality.

The Director of PASB referred to the problem of health care quality, the importance of the committees on the surveillance of maternal death, and the need to make more efficient use of resources and to improve cooperation among countries.

The document was accepted in its entirety by the Members of the Executive Committee, who adopted the following resolution for the consideration of the XXIII Pan American Sanitary Conference:

THE 105th MEETING OF THE EXECUTIVE COMMITTEE,

Having examined the Regional Plan of Action for the Reduction of Maternal Mortality in the Americas (Document CE105/17, Rev. 1),

RESOLVES:

To recommend to the XXIII Pan American Sanitary Conference the adoption of a resolution along the following lines:

THE XXIII PAN AMERICAN SANITARY CONFERENCE

Having examined the Regional Plan of Action for the Reduction of Maternal Mortality in the Americas (Document CSP23/10);

Reaffirming, reiterating and expanding the concepts and mandates of Resolutions CD30.R8 (1984), CD31.R18 (1985), CD32.R9 (1987) and CD33.R13 (1988), related to population matters, maternal and child health and family planning, and to women, health and development; and

Endorsing the proposal contained in the Regional Plan of Action for the Reduction of Maternal Mortality in the Americas presented by the Director,

RESOLVES:

1. To urge Member Governments:

   a) To develop a comprehensive health care policy addressing women and the prevention of maternal morbidity and mortality;

   b) To set targets for the reduction of maternal mortality by at least 50%, to be attained within the next 10 years;

   c) To carry out programs for the communication and dissemination of information to build collective awareness and informed public opinion on the protection of maternity and promotion of reproductive health;

   d) To design and execute action plans for the reduction of maternal mortality including, whenever appropriate, the goals, intervention strategies, action guidelines and policies proposed in the Regional Plan;

   e) To undertake an analysis of the cost of a national plan for the reduction of maternal mortality, define a strategy for financing it, and assign to it the necessary resources;

f) To make special efforts for the participation of other sectors in the implementation of actions in promotion of women's health and maternal health;

g) To make a special effort toward improving the quality and use of demographic, health and services information in order to maintain an up-to-date diagnosis of the situation related to the health of women in general, and their reproductive health in particular;

h) To establish a maternal mortality surveillance system;

i) To evaluate the national plan for the reduction of maternal mortality every two years and inform PAHO on its progress;

j) To continue efforts to execute the unanimously adopted mandates contained in Resolutions CD30.R8 (1984); CD31.R18 (1985), CD32.R9 (1987) and CD33.R13 (1988) as a means of achieving rapid progress in executing maternal and child health and family planning programs, thus increasing activities aimed toward groups at greater risk, and particularly those activities aimed at promoting the health of women and protecting their reproductive health, with the goal of reducing the differences within and among countries.

2. To request the Director:

a) To support activities to prevent maternal morbidity and mortality as demanded by the Organization's collective mandates, giving particular attention to mobilizing national and international, technical and financial resources to execute regional, subregional and national activities proposed in the plan of action;

b) To inform on the progress attained in this field to the Directing Council at its meeting in 1993.

Annex

REGIONAL PLAN OF ACTION FOR THE REDUCTION OF MATERNAL MORTALITY IN THE AMERICAS

CONTENTS

REGIONAL PLAN OF ACTION FOR THE REDUCTION OF MATERNAL MORTALITY IN THE AMERICAS

I. INTRODUCTION

During their reproductive life, women are exposed to greater risks of becoming ill, particularly in the absence of appropiate social conditions, proper diet, universal coverage, and good maternal health services that guarantee a safe pregnancy. These risks are greater in high-fertility populations, because the women begin their reproductive life when they are younger, have more pregnancies, and continue to have them up until very late. Some of these pregnancies are unwanted, and the women often resort to abortion.

The death of a woman from maternity-related causes should be interpreted as a reflection of the relatively disadvantaged situation of large numbers of women in the Region of the Americas in terms of their fundamental rights and the desired pregnancy. In addition, it is the end result of a process specific to health and disease, which sometimes begins in childhood and constitutes a family and social tragedy.

Maternal mortality is avoidable. Its principal causes are known, and the knowledge and appropriate technology for reducing it have been available for a long time.

Maternal mortality still represents a major social and health problem in Latin America and the Caribbean. Complications of pregnancy, delivery, the puerperium, and abortion are often among the main causes of death in women of reproductive age in the countries of the Region.

Any program aimed at reducing maternal mortality should take into account the socioeconomic context, which is marked by a severe financial crisis and overwhelming external and social debt. Therefore, any proposals to resolve the social and health problems of women should be realistic, and the proposals for alternative solutions should include ideas for new sources of funding as well as provision for broad-based community participation.

On the other hand, the reduction and control of maternal morbidity and mortality cannot be isolated from the comprehensive nature of care that women and children should receive. Moreover, this care should be structured in such a way as to contribute to the decentralization and strengthening of local health systems.

In this sense, the safe motherhood initiative and the development of local health systems are mutually reinforcing. They bring together complementary program objectives that tend to strengthen the infrastructure of the services, making health care of women more humane and better in quality.

II. THE STATUS OF REPRODUCTIVE HEALTH OF WOMEN IN THE REGION

A. Maternal Mortality

There are differences in the quality of the information collected, in the scope and quality of the analysis, and in utilization of the information.

The situation is compounded by problems in the availability and accessibility of information for analysis and use. For example, in the information provided for the publication Health Conditions in the Americas (PAHO 1990), of the 43 countries and territories that submitted data, 27 provided information on infant mortality and only 19 provided information on maternal mortality (PAHO/WHO 1989).

The underregistration of maternal deaths, even in developed countries, has been estimated at 37% (Kooning 1988). In less developed countries, the figure climbs to more than 70% (Laurenti 1988, Illia 1987, Walker 1985, Siqueira 1984). This is the result of: lack of knowledge of total maternal deaths, incorrect assignment and coding of the cause of death, and recording of the information after the 42-day postnatal period.

Despite this underregistration, some of the figures provided by the Latin American and Caribbean countries are six to 120 times higher than those recorded in North America (PAHO/WHO 1989). In addition, there are differences between the countries in terms of income, levels of education, extent of urbanization, geographical area, and other variables.

B. Description of the Situation in the Region

As of 1990, the estimated population of women of reproductive age (15 to 49) in the Americas is 186 million, and of these women at reproductive risk, slightly more than 15 million will have a live birth. During the reproductive phase, it is estimated that more than 27,900 women will die from abortion, toxemia, hemorrhage, infection, and complications of pregnancy, delivery, and the puerperium.[1] If all these women had living conditions and reproductive health care similar to those of the country with the lowest maternal death rate of the Region, more than 27,400 of these deaths could be avoided (PAHO-WHO 1990 and Annex I).

The inequity in the social conditions of women in Latin America and the Caribbean, exacerbated by the effect of population growth, intense urbanization, urban and rural poverty, the employment conditions of

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1 The number of registered maternal deaths is adjusted to allow for general underregistration of deaths; for some countries the estimates have been based on studies of maternal mortality (see Annex I, Table 3).

women, their low levels of education, inadequate coverage and quality of health services, the high levels and distribution of maternal mortality, the correlation between these figures and delivery coverage, and the prevalence of contraception are all factors that bear on or contribute to an estimated annual loss of more than 1.0 million potential years of productive life.[1]

1. Demographic Aspects

By 1990 the estimated population of the Region will exceed 725 million. Of these persons, 449 million will live in the countries of Latin America and the Caribbean. The overall population growth in the Region during the five-year period 1985-1990 has been estimated at 2%, with the following subregional differences: 2.8% for Latin America, 2% for the Caribbean, and 0.8% for North America (CELADE/PAHO 1989). It has been determined that the population doubles every 25, 35, and 87 years, respectively--a fact that should be taken into account in the planning of activities under the present proposal.

This growth has coincided with an intense process of urbanization that has placed 72% of the population of the Region in urban areas. By the year 2000 this proportion will reach 75%. It is estimated that 93 million Latin Americans in urban areas live in poverty. In some countries more than 50% of the population is affected. This situation exists side by side with 11% clear unemployment in urban areas, in addition to more than 19% underemployment (CELADE/PAHO 1990).

Of the rural population, estimated at 200 million (ECLA/PAHO 1990), 70% live in conditions of poverty and 40% of the total are destitute.

In terms of health services, the abnormal urban growth, coupled with the fact that the needs of the rural population prior to this growth remain unmet, means that 130 million people in Latin America and the Caribbean do not have regular access to primary health services (Macedo 1988).

2. Fertility

Over the years from 1950 to 1990, fertility has declined in all the subregions, although at different rates from one country to another (CELADE/PAHO 1989). This decline has resulted in a younger population and in increased fertility in the female population between the ages of 20 and 29, thus implying reduced health risks. Because of the larger contingent of young people in Latin America, the number of births rose from 7.3 million to 12.1 million in the same period. For the next decade

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1 Average potential years of life lost is calculated on the basis of the data in Table 3 of the Statistical Annex (Annex I).

it is expected that the absolute number of births will be nearly constant or will even decline, and that the overall figure will probably be 12.6 million.

3. Adolescent Fertility

This phenomenon, of special interest to modern-day society, occurs with wide variations in the countries of Latin America and the Caribbean. Differences have been observed in the specific fertility rate, which fluctuates between 10 per 1,000 women from 15 to 19 years of age in Uruguay, to 133 per 1,000 women in Guatemala. Countries with high fertility rates in general also have high adolescent rates. In recent years a rise in the fertility of adolescents between 15 and 19 has been recorded in some of the countries. The increase is very marked in Argentina, Cuba, and Chile, which are countries with low overall fertility. In the countries with low to average* and average to high** fertility, declines have been recorded in the period 1950-1980, but the rates are still higher than 100 per 1,000. The exceptions are the increases during the eighties in Brazil, Panama, and the Dominican Republic that have been recorded in recent studies (CELADE 1989).

The phenomenon in the Caribbean is worrisome, since the rates are also quite high and contribute to 22 to 27% of total births.***

4. Abortion

The abortion rate in Latin America is estimated at 65 per 1,000 women of reproductive age, and this rate is even higher in urban areas (Henshaw 1987). The estimated rate is one abortion for every 2 or 3 deliveries in the subregion. This, coupled with the fact that it is illegal, is probably contributing to the high rates of maternal death: from 26 per 1,000 in women between the ages 15 and 44 in Chile and Cuba, to 120 to 164 per 1,000 in Honduras, Paraguay, and Peru (CELADE 1990).

5. Family Planning

The level of knowledge of contraceptive methods in the Region is high. According to the most recent information available, more than 90% of women in the Region between the ages 15 and 44 know at least one contraceptive method. The prevalence of use ranges considerably; it is 71% in Costa Rica and 65% in Puerto Rico (figures that are comparable to the levels of 68 and 73% in the United States and Canada), followed by Brazil and Colombia, 65 and 66%; Mexico, Panama, Dominican Republic,

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* Brazil, Colombia, Costa Rica, Ecuador, Mexico, Panama, Dominican Republic, and Venezuela.

** El Salvador, Haiti, Paraguay, and Peru.

*** Personal communication of the CPC Office in Barbados.

Venezuela, Jamaica, Martinique, and Trinidad and Tobago, from 23 to 57%; and Haiti, only 7% (CELADE 1989). The prevalence is unknown in Argentina, Chile, Cuba, and Uruguay, but judging from the low levels of fertility in these countries, the prevalence is thought to be high.

Another problem is the demand that still has not been met. It is high in most countries of Latin America and the Caribbean, ranging from 21% in Mexico (ENFS 1987) to 68% in Guatemala (ENSMI 1987). This figure is based on the proportion of women who stated at the time of the surveys that they do not want another child or want to space births and do not use contraceptives.

Any effort to reduce maternal mortality should seriously take into account the unmet demand for services aimed at fertility regulation.

6. Health Services

Despite the progress noted, the coverage and quality of prenatal care and delivery services, and the prevalence of contraception, are still inadequate in many of the countries (Table 1 of Annex I--Statistical Appendix).

In four countries the known coverage of prenatal care does not exceed 50%; in eight countries it ranges from 50 to 90%. Only in four countries of the Region is the coverage greater than 90% (Table 1). Similarly, in seven countries, less than 50% of the pregnant women receive institutional care at the time of delivery. In four countries that have 60% of the total population in the subregion, institutional coverage of delivery ranges from 70 to 90%, and in eight countries of Latin America and the Caribbean the coverage is over 95% (Table 1).

Evaluations of the efficiency of maternal and child care services carried out from 1985 to 1989 in fifteen countries of the Region showed that ambulatory obstetrical and hospital care services were deficient. Only 39 and 8%, respectively, were in an acceptable condition (PAHO/WHO/HPM 1989).

The social, labor, education, and services factors are influencing maternal mortalitily figures, which, even with the acknowledged underregistration, are six to 120 times higher than those of Canada (Table 1). In addition, it has been determined that the risk of death from maternal causes during the entire life of a woman is one in 73 for South America and one in 140 for the Caribbean, compared with one in 6,366 for United States and Canada and one in 9,850 for Northern Europe (Rochat 1987).

C. Status of Maternal Health in the Countries of the Region

The level of maternal mortality in the countries of the Region varies substantially. It may be linked to the quality of services and

the availability of the resources necessary for its prevention, such as the supply of blood and access to an adequate level of care.

Abortion is the leading cause of maternal death in six of the 25 countries studied and the second leading cause in six others (Table 2).*

Toxemia is the leading cause of death in three countries and the second leading cause in nine or more** and hemorrhage is the leading cause in five countries and the second in one more,*** facts that point to substantial deficiencies in coverage and quality of the services (See Tables).

Caesarean sections, when they exceed a certain limit, pose an additional problem.****

On the basis of the different levels of maternal mortality registered and the index of health needs proposed by PAHO's Health Services Development Program in 1988, the countries have been grouped by category (Table A), based on which it is possible to identify four situations for application of the plan for the reduction of maternal mortality. Each group of countries is characterized by demographic variables, socioeconomic indicators of health services, and the structure of maternal mortality.[1]

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* The leading cause of maternal deaths in Argentina, Chile, Honduras, Jamaica, Trinidad and Tobago, and Uruguay; the second leading cause in Canada, Cuba, United States, Guatemala, Panama, and Guyana.

** The leading cause in Brazil, Costa Rica, and Venezuela; the second leading cause in Canada, Colombia, Ecuador, Jamaica, Paraguay, Puerto Rico, Dominican Republic, Suriname, and Trinidad and Tobago.

*** The leading cause in Paraguay, Peru, Puerto Rico, Suriname, and Guyana, and the second leading cause in Mexico.

**** Caesarean sections in more than half of the 176 hospitals in a collaborative study conducted by the Latin American Center for Perinatology and Human Development, which included 16 countries (Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Cuba, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Peru, Dominican Republic, Uruguay, and Venezuela), were between 17 and 29.4% during the period 1981-1985.

1 Data taken mainly from documents submitted by countries in 1989 for the publication Health Conditions in the Americas. Other sources of information were used to obtain the missing data (see bibliography).

Table A

INDEX OF HEALTH NEEDS AND MATERNAL MORTALITY FOR SELECTED COUNTRIES OF THE REGION OF THE AMERICAS[1]

Index of Health Needs[2]	MATERNAL MORTALITY (rate per 100,000 live births)			
	Low	Medium	High	Very High
	(Under 20)	(20-49)	(50-149)	(150+)
LOW (2.79-1.29)	Canada (4.0) U.S.A. (9.8)	Cuba (26)[3]		
MEDIUM (0.83-0.5)		Bahamas (21) Chile (48) Costa Rica (26) Panama (49) Uruguay (26)	Argentina (69) Suriname (88) Trinidad and Tobago (80)	
HIGH (-0.09--0.83)			Brazil (140) Colombia (100 Guyana (80) Jamaica (115) Mexico (82) Venezuela (60)	Ecuador (160) Peru (303)
VERY HIGH (-0.90--1.99)			El Salvador (148) Guatemala (104) Honduras (117) Nicaragua (73) Dominican Rep. (100)	Bolivia (480) Haiti (230) Paraguay (270)

1 Some countries and territories of the Eastern Caribbean--Anguilla, Antigua, British Virgin Islands, Dominica, Grenada, Montserrat, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines--have been excluded because they do not provide information on maternal deaths or else because they report very small figures in terms of the unit.

2 PAHO/WHO. Source: Los Servicios de Salud en las Américas. Análisis de indicadores básicos, 1988. Cuaderno Técnico No. 14, 1988, Washigton, D.C. (see Table 9, Annex I)

3 Cuba is included in this group on the assumption that its index of health needs is low.

The index was prepared at PAHO using indicators of five socio-economic and health categories (five demographic indicators, four indicators of the state of health, four indicators of health service resources, and three indicators of economic and health expenditure.) The index has been used to make comparisons among groups of countries and not for its absolute value per se.

1. Group One is made up of 10 countries: Bolivia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, and Peru.

These countries are characterized by their high or very high indexes of health needs and high or very high maternal mortality ratios registered, which greatly exceed 100 deaths per 100,000 live births, except in one country, Nicaragua, where underregistration might be greater.

The population of these 10 countries, estimated at 81.6 million as of 1990, corresponds to 11% of the total population of the Region. The 18 million women of reproductive age (15 to 49 years) in these countries will have 2.7 million live births, that is, 18% of the total for the Region. Overall fertility rates ranged from 3.7 to 6.1 children per woman. The level of urbanization varies widely: the proportion of urban population ranges from 30 to 68%, with a concentration in the capitals and large cities and wide dispersion in the rural areas.

The 10 countries in this group have the largest proportion of the population living in conditions of poverty, with figures ranging from 50 to 80% of their total inhabitants. In these countries, per capita gross national product (GNP) in 1987 ranged from US$360 to $1,285 (World Bank 1989).

The percentage of gross domestic product (GDP) allocated to health for 1987 was less than 3% in all the countries.

Coverage by the services is low, institutional care for delivery ranges from 22 to 41%, while contraceptive use ranges from 5 to 46% of women in union between 15 and 49 years of age. The concentration of prenatal care is also low, ranging from 1.2 to 2 visits per live birth, and the percentage of caesarean sections ranges from 9.5 to 11.8% of total deliveries. In general, the limited resources and the low coverage are contributing significantly to high maternal mortality.

Maternal death rates in these 10 countries range from 73 to 480 per 100,000 live births (Table 1). The predominant causes of maternal death are: hemorrhage, abortion, and toxemia, followed by puerperal complications and sepsis.

2. Group Two countries include Brazil, Colombia, Jamaica, Guyana, Mexico, and Venezuela. These countries are characterized by high maternal death rates and a high index of health needs. They total a population estimated at more than 295.2 million as of 1990--that is, 39.5% of the total in the Americas.

In these countries, women of reproductive age (15 to 49) are expected to total 68.9 million by 1990. Overall fertility is estimated at 3.4 children per woman. By the year 1990 the number of births is expected to be 7.5 million--that is, 50% of the births in the Region. The estimated urban population in 1990 is 77% and by the year 2000 it is expected to be 80% (UN 1989).

Per capita GNP in 1987 ranged from US$940 in Jamaica to $3,230 in Venezuela (World Bank 1989). Between 20 and 50% of the populations in these countries live below the poverty level. The percentage of GDP spent on health is less than 3% (PAHO/WHO 1990).

Coverage with prenatal care is about 95%. Institutional care for delivery ranges from 38 to 98%, and the use of contraceptives among women in union between the ages of 15 and 49 ranges from 38 to 66%. The number of prenatal visits per delivery was 2.3 to 2.9 (PAHO 1990).

Maternal mortality is high, the rates ranging from 60 to 140 per 100,000 live births.

Toxemia, hemorrhage, puerperal complications, and abortion appear to be the present causes of maternal mortality. This pattern is related to prenatal care coverage, which is deficient both in quantity and quality and is reflected in the high number of cases of toxemia. Despite the fact that two thirds of the pregnant women receive institutional care, the significant contribution of hemorrhage during pregnancy, delivery, or the puerperium to high levels of maternal mortality may be an indication of the inadequacy of services at the first level of referral, as efforts are made to cope with the complications of pregnancy and delivery and the shortage of blood at the institutional level.

Abortion as a cause of maternal death has not been fully measured because of the legal and punitive implications in most of these countries. Underregistration is widespread, and presumably the rate is very high. The illegal practice of abortions under nonsurgical conditions contributes to increased deaths from infection and hemorrhage.

The presence of puerperal complications among the five leading causes of maternal death indicate, inter alia, deficiencies or difficulties in terms of care provided in institutional services under aseptic conditions.

3. Group Three consists of nine countries: Argentina, Bahamas, Costa Rica, Cuba, Chile, Panama, Surinam, Trinidad and Tobago, and Uruguay.

These countries are included here because they have high or average maternal mortality and an average or low index of health needs. Most of them are close to the lower limits in the different categories.

For these countries, the estimated population as of 1990 is 66.6 million--that is, 9.2% of the total for the Region. Women of reproductive age (15 to 49) represent 25% of the total population and will number 16.6 million in 1990, 17.7 million in 1995 and 18.8 million by the year 2000 (UN 1989).

Overall fertility ranges from 2.4 to 3.2 children per woman (PAHO/WHO 1990). Births are expected to reach 1.5 million--that is, 12.5% of the total for the Region--by 1990.

The population is concentrated in the urban area, with figures that reach 82% in some of the countries.

The percentage of the population below the poverty level in these countries ranges from 17 to 45%. Per capita gross national product in 1987 ranged from US$1,310 in Chile to $4,210 in Trinidad and Tobago (World Bank 1989). These countries allocate between 3.1 and 11% of their GDP to health.

Available health resources for these countries approach levels that are considered to be more acceptable.

Prenatal care coverage is high--between 89 and 98%. The same applies to institutional delivery care, which ranges from 70 to 99.8%.

The use of contraceptives in the countries that provided data ranges from 43 to 72% for women in union between the ages of 15 and 49 (PAHO/WHO, 1990).

For the maternal death ratios registered in the four countries, the leading cause of death was abortion (Argentina, Chile, Trinidad and Tobago, and Uruguay). Toxemia and hemorrhage continue to contribute significantly in all the countries, indicating the need to improve the quality of prenatal care and delivery.

4. Group Four corresponds to the United States of America and Canada, which have the lowest maternal death rates and the lowest index of health needs.

These two countries together have 275.8 million people--that is, 38% of the total population in the Region (CELADE 89). Women of reproductive age (15 to 49) are expected to total 26.3%, or 72.6 million, by the year 1990 (CELADE 89). Of this population, 74.3% live in urban

areas. The estimated number of births by 1990 is slightly more than 4.2 million. Overall fertility for 1990 was estimated at 1.7 for Canada and 1.9 for the United States of America (World Bank 1989).

Per capita gross national product in 1987 was US$15,160 for Canada and US$18,530 for the United States of America (World Bank 1989). In that same year, the Government of Canada spent 1.5% of its gross domestic product on health, or the equivalent of $227 per capita, and the Government of the United States, 2.9% of gross domestic product, or $537 per capita (estimates based on World Bank data, 1989).

The proportion of population below the poverty level is 17% in the United States. In Canada, 83% of the population have gone to school for more than nine years (PAHO-WHO 1990).

Canada has universal coverage accessible to the entire population. The same is true of the United States, but the ability to have access to and to purchase health services is unequal, especially for people below the poverty level who are not covered by health insurance.* According to estimates, there are 37 million people in total and 9.7 million women of reproductive age without health insurance coverage or access to government programs but with access, in theory, to health services (Wesbury 1990).* In recent years a network of centers for low-risk deliveries has been introduced in the United States of America. Although this network does not cover a high percentage of deliveries, it could be a mechanism for decreasing perinatal morbidity linked to excess surgery and could increase the care being provided for high-risk persons and persons without coverage (Rooks 1989).

Maternal mortality in Canada, 4 per 100,000 live births, is the lowest rate in the Region and one of the lowest in the world. Toxemia, indirect causes, and puerperal complications are the main causes of death. Maternal mortality in the United States was 9.6 per 100,000 live births (UN 1989) and the second lowest in the Region. The principal causes were puerperal complications, abortions, and indirect causes.

Limited access to services for a proportion of the high-risk and low-income population, the cost of care, and excess surgery (measured as the percentage of caesarean sections) could explain the differences in maternal mortality between the United States and Canada.

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* According to estimates, there are 37 million people, 9.7 million of them women of reproductive age, who are not covered by health insurance schemes or government programs but who theoretically have access to health services (Wesbury 1990).

III. OBJECTIVES AND TARGETS

Changes in the health situation of women and the improvement of their reproductive health[1] depend on sectoral and intersectoral activities for the advancement and development of the female population and on measures for increasing coverage and the quality of care.

The two areas covered by this plan, namely the sectoral and the intersectoral, call for explicit political commitment by these countries in terms of legislation, policies implemented, and programs of action. At the international level they require the cooperation of all the governments in order to support and implement complementary measures and to reflect the priority assigned to women's health in terms of programming and funding.

All this justifies the effort to secure a greater proportion of public spending for health, thereby giving maximum priority to the problem of the maternal death.

A. Objectives

The following objectives have been set for bringing about changes in the situation by 1995 and by the year 2000:

- Improve the health conditions of women in the Region through increased coverage and improved quality of reproductive health services in order to reduce the current rates of maternal mortality by 50% or more by the year 2000.

- Increase the capacity and quality of institutional delivery care through strengthening of the first level of referral, expanding the number of hospital beds installed, and providing birthing centers for low-risk deliveries.[2]

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1 The following conditions are required for proper reproductive health: individuals must be able to plan or regulate their fertility, couples must be able to have sexual relations without fear of an unwanted pregnancy or of contracting a disease, women must be able to have low-risk pregnancies and deliveries, and the results of the pregnancy and delivery must be favorable in terms of survival and well-being of both the mother and the child (adapted from Fathalla 88).

2 Institutional delivery is considered to be that provided either in hospitals and in low-complexity establishments attended by nursing personnel with the participation of the community, which in this plan they are termed birthing centers (see Annex II).

- Increase knowledge and social participation in the interest of safe motherhood, and mobilize the community to identify pregnant women so that they will receive care in a timely and adequate manner.

- Establish a regional system of epidemiological surveillance for maternal deaths.

- Increase the capacity of the countries to design, operate, and evaluate their programs aimed at reducing maternal deaths.

- Improve care in home delivery through the continuing education of traditional birth attendants and other personnel who may be involved in home delivery.

B. Targets

In light of the general health situation of the female population and the levels of maternal mortality in the four groups of countries, different targets have been set for each.

1. Targets for the Reduction of Maternal Death Rates by 1995 and 2000

a) For Groups One, Two, and Three,[1] the goals of 30% reduction for 1995 and 50% by the year 2000 are proposed.

b) For Group Four,[2] these goals are 40% by 1995 and 60% by the year 2000.

The foregoing targets are cumulative percentages for the 10-year period. They correspond to reductions calculated according to the figures reported, with adjustments for underregistration.

For Group Four, the proposed target for the United States of America is based on the hypothesis for a reduction from 9.6 to 4 per 100,000 live births by the year 2000, which is the current level for Canada.

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1 Group 1: Bolivia, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, Peru, and Dominican Republic.

Group 2: Brazil, Colombia, Guyana, Jamaica, Mexico, and Venezuela.

Group 3: Argentina, Bahamas, Chile, Costa Rica, Cuba, Panama, Suriname, Trinidad and Tobago, and Uruguay.

2 Group 4: Canada and the United States of America.

2. Targets for the Services

Country group	Prenatal coverage (%)		Number of prenatal controls[1]		Institutional coverage of delivery[2]		Prevalence of contraceptive use[3]		Coverage during the puerperium (%)		Efficiency conditions of maternal/ child health services[4]	
Year	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
First	75	85	3	5	55	60	40	50	30	40	60	70
Second	80	90	4	5	80	90	65	70	40	50	60	70
Third	100	100	5	5	Maintain 100		70 50	70[6] 65[7]	50	70	70	85
Fourth[5]	100	100	5	5	Maintain 100		Maintain 70	72	-	-	-	-

1/ Minimum number of prenatal controls considered to be efficient.
2/ Institutional delivery is understood to be any delivery that takes place in a hospital or special maternity center, such as low-risk birthing centers. Natural childbirth will be promoted. The target for caesarean sections is no more than 15% of all deliveries.
3/ Prevalence of use by women in union between 15 and 49 years of age.
4/ Percentage of services with an acceptable level of efficiency conditions for maternal and child care (over 80%).
5/ Increase in coverage levels and concentration of prenatal care in the poorest groups of the population.
6/ English-speaking Caribbean, Costa Rica, Chile, and Panama
7/ Argentina, Cuba, and Uruguay.

3. Targets for the Infrastructure

The targets pertaining to the strengthening of infrastructure have been formulated jointly for the three first groups of countries and for the first five-year period of the plan:

- Strengthening at the first level of referral[1]

  By 1995, there will be 1,338 outpatient facilities equipped to provide outpatient care, 1,391 homes for high-risk pregnant women, 1,362 hospitals, and 197 birthing centers.

- Utilization of bed capacity[2]

  By 1995, the percentage of occupation for obstetrical beds in hospitals with fewer than 50 beds should total 60%; the figure for obstetrical beds in the larger hospitals should be 80%.

- Training of human resources[3]

  By 1995, 4,904 physicians, 4,884 nurses or auxiliary nurses, and 36,200 traditional birth attendants should be trained.

- Epidemiological surveillance: reporting institutions[4]

  By 1995, 60% of the institutions performing deliveries will be providing monthly information to the appropriate health authorities on the maternal deaths that occurred during the period.

  By 1995, 25 countries of the Region will be providing semiannual information on maternal deaths to the Pan American Health Organization.

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1 In 1984 there were 6,056 hospitals in Latin America and the Caribbean, (PAHO/WHO Technical Paper No. 14, 1988, p. 99, Table 2-39). It is estimated that of the 90% that perform deliveries (5,450), 25% would be strengthened in the first five years of the plan (1,362) (see Annexes I and II).

2 The percentage of occupancy in the hospitals with less than 50 beds is estimated at 40 to 50%, and the figure for larger hospitals is estimated at 70%. This goal is being proposed only for countries in groups one and two.

3 The goal for the training of physicians and nursing personnel is for the countries in groups one, two, and three. The goal for the training of traditional birth attendants is being proposed for groups one and two.

4 These goals refer to the countries in Groups One, Two, and Three.

IV. INTERVENTION STRATEGIES

The intervention strategies proposed have been grouped into general and specific categories, covering intersectoral and sectoral scope.

A. General Strategies

1. For the promotion of health conditions for women:

- Update existing legislation protecting the health of women and the family so that women's right to health care and protection of their reproductive health is specifically set forth, with provisions regarding the timeliness, coverage, cost, and accessibility of the care.

- Develop comprehensive health care programs for women in institutions and communities, including education for sexual health.

- Revise national legislation on abortion in order to facilitate its care with a preventive component as well as its free and timely care when complications arise.

- Strengthen and improve knowledge and actions on the part of the community and organized women's groups in order to promote optimum health conditions for women.

- Use social, group, and intersectoral communications media to promote health programs for women and to foster greater and enhanced utilization of health services.

- Develop supplementary feeding programs for pregnant women with nutritional problems.

- Develop comprehensive fertility regulation programs with unrestricted access for all users (men and women) who desire it, respecting their informed decision and offering all the methods that have been verified as safe and effective.

- Include educational activities on sexual health within adolescent health programs.

- Prevent unwanted pregnancies and provide instruction for carriers of certain diseases that are aggravated by pregnancy on the risks generated in such circumstances.

- Promote recognition among health service providers of the importance of promotion and prevention activities within comprehensive women's care programs.

- Establish committees on maternal mortality at the national, regional, and local levels and see that they operate on a regular basis.

2. For Training:

- Prepare or update existing standards on pregnancy care, delivery, and the puerperium and on fertility regulation, based on an appropriate classification of risk.

- Educate and train health services personnel and community health workers in women's health and maternal health, ensuring the development of continuing education programs in conjunction with universities, scientific societies, and other training institutions for health personnel.

3. For Research on Maternal Mortality:

- Support population-based research on maternal mortality aimed at: improving data collection, knowledge, and the use of information; carrying out epidemiological studies of medical and social causes as well as health services research, including studies of community perceptions. For this purpose, the participation of institutions, scientific societies, research centers, and the health services workers will be enlisted.

4. For Improving the Information Systems:

- Ensure the existence of a national system for the epidemiological surveillance of mortality in women of reproductive age that provides information in sufficient quantity and quality to determine the real scope of the problem, the structure of its causes, and the social determinants of maternal mortality.

- Improve the system for registration and the capture of information on all health actions relating to pregnancy, delivery, the postpartum, and family planning, by extending registration, collection, and use of the information to the peripheral levels and the community itself.

B. Specific Strategies for Improvement of the Services

1. Common Strategies for the First Three Country Groups

- Promote humanized care for women on the part of health personnel.

- Establish alternatives with a view to eliminating the economic barriers that stand in the way of women's access to health services, adapting the organization and operation of services to local realities and to users' needs.

- Reorganize the maternal care services by concentrating on universal coverage, the risk approach, strengthening of the referral system in both directions, and transportation, so as to ensure ongoing, thorough, and timely care with priority on high-risk pregnancies.

- Improve the operational efficiency of maternal care services, strengthening operational capacity at the first level of referral.

- Strengthen the physical infrastructure, equipment, and provision of supplies and drugs for maternal health services, and ensure the preventive and corrective maintenance of equipment and installations.

- Increase the coverage, concentration, and quality of prenatal care, with emphasis on the extension of coverage to pregnant women in rural and marginal urban areas.

- Develop a nationwide network of homes for high-risk pregnant women.[1]

- Guarantee access and follow-up for users of family planning.

- Provide comprehensive care for the prevention of abortion, guaranteeing medical and/or surgical care in cases of incomplete abortion.

- Maintain the percentage of caesarean sections at less than 15% of total deliveries.

- Guarantee follow-up during puerperium in an effort to diminish complications and consequently deaths during this period.

- Implement and/or strengthen national and regional networks of institutional and community blood banks[2] In coordination with the national programs for the prevention and control of AIDS.

- Integrate traditional birth attendants into the health system, in the countries that use such personnel, through a program of continuing education to supplement their knowledge and guarantee

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1 Low-complexity institutions, located near hospitals at the first level of referral, which house high-risk pregnant women during the week(s) prior to delivery and which are administered by auxiliary and community personnel.

2 "Community blood bank" refers to the WHO concept of "walk-in banks," which rely on donations from recognized people from the community rather than pooled blood.

that care during pregnancy and home delivery is performed under proper conditions.

- Promote recognition among health service providers of the importance of promotion and prevention activities within comprehensive women's care programs.

- Establish committees on maternal mortality at the national, regional, and local levels, and supervise the operation on a regular basis.

2. For the Countries in Group One

- Support the development of groups of high-risk pregnant women, with active community participation.

- Increase the institutional coverage of deliveries[1] via the risk approach, drawing on underutilized capacity, strengthening the first level of referral, and implementing early discharge.

- Increase institutional coverage of deliveries by the use of birthing centers for low-risk deliveries.[2]

- Coordinate preventive and promotional actions with programs for vector control, and detect, early on, pregnant women who live in endemic areas.

- Make a special effort to improve the provision of services and coverage for family planning activities.

3. For the Countries in Group Two

- Increase early detection and actively seek out pregnant women by enlisting community participation, and provide for institutional care for a larger number of low-risk pregnancies.

- Increase resources with a view to providing a minimum of five prenatal consultations.

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1 Institutional deliveries are defined as those deliveries attended to in hospitals or birthing centers.

2 A community birthing center is an institution that attends to low-risk deliveries, operating under the direct responsibility of a nursing auxiliary, assisted by traditional birth attendants, and with continuous medical supervision, as well as guaranteed access at the first level of referral (see Annex II).

4. For the countries in Group Three

- Enhance the risk approach strategy for prenatal, delivery, and postpartum care.

- Improve the quality of services for care during pregnancy, delivery, and the normal puerperium, as well as intercurrent diseases.

- Increase the coverage of care to unserved and high-risk groups.

- Rationalize the use of technologies.

- Include, within maternal health programs, care to ensure psychological protection.

5. For Countries in Group Four

- Improve prenatal care and and promote natural and conservative care for deliveries.

- Reduce the proportion of caesarean sections to less than 15% of all deliveries.

- Increase the number of birthing centers in the depressed areas of the large cities to provide care for the population not served by the social security systems.

V. POLICIES AND LINES OF ACTION

The Regional Plan to Reduce Maternal Mortality in the Americas constitutes a commitment shared by the Member Countries of the Pan American Health Organization. It requires additional resources. In order to carry it out the countries should develop the following policies and lines of action, understood as sets of strategies for making the plan feasible.

A. Resource Mobilization

Implementation of the strategies for action proposed in this document requires an intersectoral approach. Therefore, in addition to improvement of the living conditions of the female population, a broader short- to medium-term effort is required for promoting actions to expand infrastructure and provide equipment, inputs, drugs, and contraceptives, in order to build up the capability to meet greater health demands.

The governments should channel more economic resources from their own countries and from international cooperation to the social sectors of the economy--fundamentally, to health and education.

B. Social Participation and Community Mobilization

The purpose of this line of action is to foster a national consensus on women, forming a broad alliance in behalf of the life and well-being of women in their reproductive function, particularly of the poorest women.

The attitude of Latin American and Caribbean women has been changing for the better in recent years, as they have increasingly demanded a leading role in caring for their own health and that of their families. Accordingly, one action component will be to promote self-care in women's health and to open a broad space for the participation of the population in health-related decisions.

This participation should also include encouragement and a receptive attitude on the part of the services to demands by or criticisms from the users.

All the social organizations, communications media, political parties, unions, local governments, scientific and academic institutions, professional schools, nongovernmental organizations, productive sectors, and religious entities should join forces in a major national campaign to improve the living conditions of women.

This national consensus to favor women should basically seek to align the institutional sector with the just expectations of the popular sectors to have their social demands met, recognizing that health is a universal social right.

In Latin America and the Caribbean there is a collective tradition that must be integrated and developed through the grass-roots organizations. These include organized groups of women and organizations in rural and marginal urban communities.

C. Strengthening and Development of Local health Systems

In the context of the process of decentralization initiated by many of the countries of Latin America and the Caribbean, local health systems are identified as an operational strategy for implementing policies and programs in well-defined geographical and demographic areas. They orient multisectoral actions and actions involving social participation through which, within the framework of social planning, solutions are sought to the health needs identified by the community itself.

In the specific case of maternal health it is indispensable that the hierarchies of the services be defined in relation to the degrees of reproductive risk. Thus it is indispensable that there be close coordination between the units at the first level of care and the hospital care units that serve each geographic and demographic area. It is

indispensable that there be health establishments with sufficient operating capacity. Publication of the text "Funciones obstéticas esenciales en el primer nivel de referencia" (Essential Obstetrical Functions at the First Level of Referral) produced by PAHO/WHO, was a major advance; its immediate or short-term application can contribute to a considerable reduction in the number of maternal deaths.

There is still an urgent need to develop standards, or keep existing ones up to date, regarding pregnancy, delivery, and puerperal care and fertility regulation, based on appropriate risk classification.

D. Human Resource Development

Given that women's health care constitutes a priority activity, it is necessary to attempt to guarantee adequate care in all areas.

For this purpose, it will be desirable to develop education and training activities in the university institutions, scientific societies, and research centers.

1. At the undergraduate level, the universities and other institutions that train health manpower should make a commitment to reformulate their curriculum and provide sufficient knowledge for promoting attitudes and developing abilities and skills to ensure that future health professionals and health workers are in a position to deal with the most common health needs of women.

2. At the graduate level, it will be necessary to encourage university institutions to develop programs and curriculum and to participate in the process of ongoing training of the health services personnel in managerial, methodological, and technical aspects, on a scientific basis, in order to ensure better health care for women.

3. At the level of the services, the training of personnel should be taken on as a continuing education process that involves all the professionals, nursing auxiliaries, and other personnel who work in the establishments at the first level of care and in the hospitals of mid-level and higher complexity.

Special emphasis should be placed on the training of personnel at the first level of referral to ensure familiarity with and application of the "essential obstetrical functions."

4. At the level of the community, some countries should place greater emphasis on the ongoing training of traditional birth attendants so that they can contribute to the detection and referral of high-risk pregnancies, refer deliveries that require more complex care, and report demographic events that occur in their community.

E. Health Education

The development of health education activities has been limited in most of the countries, which means that efforts should be stepped up quantitatively and qualitatively in order to generate positive behavior based on reproductive health. The actions in this area should include sex education; care and hygiene during pregnancy, delivery, and the puerperium; child-rearing; and family planning, thereby guaranteeing the reproductive rights of women, the family, and society.

These actions should be implemented through:

- The formal educational system, in the primary and secondary schools.
- The mass media.
- The nongovernmental organizations.
- The health establishments as such.

F. Information Systems, Registration, Control, and Evaluation

- Guarantee the existence of a national system for the epidemiological surveillance of deaths in women of reproductive age which provides sufficient information in terms of quantity and quality to determine the real magnitude of the problem, the structure of its causes, and the social determinants of maternal mortality.
- Improve the system of registration and information for all health actions relating to pregnancy, delivery, the puerperium, and family planning by extending the registration, collection, and utilization of information at the peripheral levels and by the community itself (respecting or protecting the confidentiality of users of the services).

G. Research

Research projects should be promoted on:

- Improvement of the registration and statistical analysis of data.
- Distribution of the causes of death and structure of social causality.
- Use of surveys that apply indirect methods for the measurement of maternal mortality.
- Home care delivery by traditional birth attendants and other community personnel.

- Health services research to evaluate interventions for the reduction of maternal mortality.

- Research on the cost-efficiency and cost-effectiveness of the various alternatives.

In the current situation of the countries in the Region, health services research deserves priority attention, since it involves research projects geared to determining actions and has the potential to lead rapidly to the adoption of measures to improve the efficiency, effectiveness, and equity of these actions.

This research process should involve the joint participation of health workers, universities, scientific societies, and research centers.

VI. NATIONAL PLANS, SUBREGIONAL PLANS, AND INTERNATIONAL PARTICIPATION

A. National Plan

In order to implement the national plan to reduce maternal mortality, the governments and society must have the commitment and the political will to do so.

The National Plan of Action for the Reduction of Maternal Mortality should operate under the leadership of the health sector with collaboration from other sectors so as to maximize the effectiveness of actions and bring together support from financing agencies.

This Plan should be coordinated with other priority intrasectoral actions (e.g., programs for nutrition, malaria control) and extrasectoral (e.g. education, sanitation, transportation, and communication) actions. The Plan should also have the support of a government advisory body to assist in its execution. This could be an interinstitutional commission made up of representatives of the health sector institutions, other sectors, and women's organizations.

Depending on the epidemiological situation, socioeconomic conditions, and conditions of the services, the countries should place different degrees of emphasis on the principal activities provided for under the Plan.

Basic components

1. Education through mass communications media.

2. Family planning based on the reproductive risk approach and with universal access to modern and effective methods of fertility regulation for women and men.

3. Improvement of prenatal control and delivery and postpartum care, which requires:

   - Training of the personnel responsible for these activities;

   - Implementation of essential obstetric functions at the first level of referral;[1]

   - Implementation of free or subsidized programs for the health care of women and unserved population groups;

   - Strengthening of the systems of referral and back-referral.

4. Community participation and the particiation of organized women's groups.

5. Participation of scientific societies.

6. In the countries where maternal mortality is on the decline, research will preferably be oriented toward the development and evaluation of technologies. In the rest of countries the emphasis should be on community-based health services research, evaluation of the local delivery of contraceptives, prenatal care and delivery at home by traditional birth attendants, and in operations research.

   In almost all the countries of the Region it is possible to identify some research topics the results of which could have an impact on maternal mortality. For example:

   - Operation of birthing centers;

   - Prevalent causes of maternal death;

   - Techniques for controlling the high incidence of caesarean sections;

   - Committees to audit maternal deaths;

   - Costs.

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1 Seven basic functions have been defined. They are the functions involving: surgery, anesthesia, medical treatment, blood transfusion, the clinical surveillance of delivery, support for family planning and control of high-risk pregnancies, and timely referral.

7. Evaluation and control; the following points are relevant in this connection:

   - A parallel system of registration should not be created;

   - Epidemiological surveillance and control should be carried out permanently, utilizing for this purpose the committees for auditing maternal deaths in institutions and the community;

   - The evaluation should be performed at least once a year;

   - The indicators for evaluation and control and for epidemiological surveillance should flow from the data provided by the local health services to the national information system;

   - The evaluation will take into account the variation in ratios, the process indicators, an analysis of costs and the impact on maternal deaths, and changes in the behavior of the users and providers of services.

8. The National Plan should include a financing strategy and a cost analysis with a feasibility study component.

B. Regional and Subregional Activities

To support the national plan, a number of regional and subregional activities will have to be undertaken, including:

1. Normative guidelines, prepared at the Regional level, that can be adapted at the subregional level and in local standards.

2. Development of a network of reference centers to support manpower training.

3. Promotion of the inclusion of maternal morbidity and mortality as topics for study and discussion within the activities of the scientific societies in the subregion.

4. Promotion of intercountry technical cooperation in the various subregions, including the exchange of human resources, experiences, technologies, training activities, research, and evaluation.

5. Encouragement to incorporate scientific publications from the countries into the international medical information systems and to promote the exchange of bibliographies within the subregion.

6. Development of linkages between teaching institutions, services, and the community, and promotion of the exchange of curriculum experiences among schools of medicine, nursing, and other health professions.

7. Encouragement of exchanges between women's organizations, the formal health sector, and international agencies.

8. Promotion of subregional data banks and implementation of the perinatal information system, with training of the health personnel from the countries in the subregion.

9. Holding of training workshops for all personnel involved in the registration of deaths, with emphasis on the importance of specifying death data on women of reproductive age.

10. Support for collaborative research by the health services on maternal morbidity and mortality.

C. International Participation

Recognition of the magnitude of the tragedy of deaths in women of reproductive age associated with pregnancy, delivery, the puerperium, or abortion led to a declaration by the World Health Assembly in Geneva in 1985. This meeting was followed by a workshop in Nairobi in February 1987 which proposed strategies for safe motherhood. As a corollary to this workshop, a joint initiative was undertaken by the World Bank, the United Nations Population Fund, and the World Health Organization, all of which committed themselves to supporting strategies for the promotion of safe motherhood worldwide, especially in the developing countries.

Subsequently, other international agencies subscribed to this commitment, including the United Nations Development Fund and the United Nations Children's Fund, as well as bilateral cooperation agencies.

In the countries this initiative was echoed in the organized groups of women that work on women's health issues and reproductive rights and have a developed worldwide network to coordinate among the groups in the various countries. The network for Latin America and the Caribbean has begun a campaign to reduce maternal mortality through educational initiatives and the airing of grievances at different levels in all the countries participating in the network.

The problem of maternal mortality is affected by a broad spectrum of conditioning factors, in addition to those having to do with health, which are sometimes beyond the countries' capacity to deal with. These include the educational level of the population, existing and applied legislation, the various social structures, the technical and financial possibilities, and the extent of women's social participation. These conditioning factors and the ever-increasing interdependence among the countries make it essential that there be international cooperation and solidarity among countries, mutual support, and cooperation for development.

This cooperation can take the concrete form of technical support, supplies, equipment, and financial contributions for improving the services and, as an area of special interest, health services research for evaluating the impact of interventions aimed at reducing maternal morbidity and mortality.

This international cooperation should allow for the participation of women's organizations to ensure that the reality and the needs of women at the regional and national levels are taken into account.

Currently, most countries in the Region are receiving international cooperation funds for maternal health and women's health activities. Of particular interest are the contributions made by PAHO/WHO and the United Nations Population Fund. Also contributing are the United Nations Development Fund, the United Nations Children's Fund, the United States Agency for International Development, the Canadian International Development Agency, the Kellogg Foundation, The Pew Charitable Trusts, the Carnegie Foundation, the International Cooperation Agency of Japan, and the World Bank.

In addition, some of the countries are receiving bilateral assistance from the European Economic Community and from the governments of Italy, Holland, and Sweden.

D. Role of the Pan American Health Organization

The Regional Program on Maternal and Child Health (HPM), and specifically its Unit on Growth, Development, and Human Reproduction (GDR) will be responsible, on behalf of the Director, for coordinating the Organization's cooperation in the programming, execution, and evaluation of the regional and subregional activities and for technical cooperation with the countries as needed in designing, executing, and evaluating the national plans.

The Program on Maternal and Child Health (HPM) will undertake activities involving horizontal coordination with other PAHO programs: Women, Health, and Development (WHD), Health Services Development (HSD), Human Resource Development (HSM), and Health Situation and Trend Assessment (HST). In addition, vertical coordination will be undertaken with the PAHO/WHO Country Representative Offices and at the level of the PAHO Headquarters Direction. Outside the Organization there will be coordination with the multilateral or bilateral cooperation agencies, nongovernmental organizations, and women's organizations.

The PAHO Secretariat will have the support of a Technical Advisory Group (TAG) in the develpoment and execution of the plan. This group, appointed by the Director of PAHO, will comprise five to seven recognized professionals in the Americas. It will participate directly in the entire process of planning, programming, execution, and evaluation of the plan. In addition, it will collaborate with the governments and the Organization in mobilizing multilateral and bilateral resources for financing the plan.

The Maternal and Child Health Program (HPM) should strengthen its infrastructure at the national, subregional, and regional levels. Estimated additional needs include five international consultants to work at the regional and subregional levels and eight more national consultants, who would be located in the countries of Group One or Two, depending on the needs (see Chapter II).

All the technical cooperation is being extended within the framework of the mandates, objectives, goals, lines of action, and strategies cited in the previous chapters, once they are approved by the Governing Bodies.

VII. FINANCING

A. Estimated Costs of the Plan

Reduction in the number of maternal deaths, increase in the years of useful life saved, improvement of overall health for a large number of women, and the provision of family and social benefits are the direct result of the comprehensive improvements in maternal health. They are not measurable in monetary terms.

As mentioned elsewhere in the document, the plan will require, in addition to increased efficiency of the resources, the reallocation of other resources and the mobilization of new national and international resources.

An initial estimate has been developed for the plan's execution, its principal purpose being to give an idea of the magnitude of the effort to be carried out, with a view to raising approximately US$300 million per year for reducing the gap observed in the coverage of family planning, and prenatal, delivery, and postpartum care, and specifying the desirable levels thereof. This amounts to less than one dollar per inhabitant per year, and barely 1/120 of the total health expenditure in the Region. There are other estimates, made by the World Bank, according to which the per capita cost per year is approximately US$1.50.[1]

The costs shown in Annex II are based on a mathematical model that estimates the gap between the coverage of care observed and the goals proposed in the plan. This model, or an alternative one to be developed, should be refined so that in the future there would be a system capable of measuring costs in terms of cost-efficiency and cost-effectiveness. To this end, discussions have been initiated with the World Bank aimed at moving forward in this area.

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1 Herz and Measham, The Safe Motherhood Initiative, World Bank Discussion Paper.

The calculations were based on unitary values obtained from a study done in one country of the Region. They may be underestimates or overestimates of the total cost of the interventions (Guatemala Ministry of Health and Social Welfare, 1989).

The plan does not propose any new construction or any new hospital bed facilities. It is an attempt to improve efficiency, seeking greater and enhanced utilization of the installed capacity.

It is proposed that centers be outfitted to provide care for low-risk deliveries and that other homes be established for housing high-risk pregnant women. This implies installation, operation, and maintenance costs.

Costs are established for transportation and communications, as one of the mechanisms for ensuring that patients are referred.

There is an assessment of the training activities and utilization of human resources, as well as the procurement of equipment, supplies, and drugs. Promotional activities involving dissemination of knowledge and improvement of the information system, research, and technical cooperation are quantified and assessed. The mathematical model and the breakdown of costs appear in Annex II of this document.

B. Estimated Budget (in millions of dollars)

To reach the proposed levels of coverage in the first five years, the following amounts, shown by line item, need to be added to the current expenditure on reproductive health care for women in the countries of the Region.

	Millions	%
Prenatal care	169.5	11.3
Care for high-risk pregnancies in maternal homes	98.5	6.6
Care for normal deliveries in birthing centers	11.9	0.8
Hospital care for deliveries	1,077.5	72.1
Training of human resources	18.1	1.2
Installation of birthing centers and maternal homes	11.0	0.7
Transportation	66.5	4.5
Equipment for hospitals and medical offices	21.3	1.4
Promotion and education	10.0	0.7
Information	5.0	0.3
Research	4.0	0.3
Technical cooperation	2.0	0.1
	1,494.0	100.0

The largest proportion of expenditure (72.1%) would be invested in hospital delivery care. Any strategic alternative for making such care more efficient or for replacing it will directly and substantively affect the total cost of the plan. The possibility of reducing a segment of maternal mortality through sound family planning services and adequate care for abortions with complications should be considered.

C. Financial Strategy

The plan should include a financial strategy at the regional level and in each country based on:

1. The search for feasible sources of national and international financing, with the estimated contribution from each source.

2. Alternatives for reducing costs, especially those entailed in providing delivery care. This should include rationalizing the use of existing obstetrical beds and of all beds and strengthening peripheral maternity units and birthing centers.

3. Estimate of the real costs to the State, to individuals, and to the population in general.

4. Whenever possible, analysis of the cost-efficiency and cost-effectiveness of the resources for each of the different approaches.

VIII. EVALUATION OF THE PLAN

As is mentioned throughout this document, the existing data base on maternal deaths and related events, such as the economic, social, and educational indicators, as well as indicators regarding access to services, concentration of actions, and hospital registration, inter alia, is still weak. Therefore, in the effort to adequately follow up on the actions contained in this plan, it will be necessary in the short term to review, adapt, and organize the system and the processes that will give feasibility to the activities of monitoring, adaptation, and evaluation at the local, regional, and national levels, as well as at the inter-American level, and also facilitate evaluation of the inputs, processes, and services, as well as the impact of the plan itself.

The criteria and indicators that make it possible to measure and compare, nationally and internationally, the most important aspects of the proposed plan will have to be reviewed and selected on the basis of: relevance of the plan and its programs in relation to the human needs and priorities in health and social policy in general, adequacy of strategies and proposed courses of action, inputs and resources allocated for carrying out the plan, and fulfillment of activities, as well as the efficiency achieved in the use of resources, which would imply an effort to minimize costs and optimize impact.

Also, there must be follow-up and evaluation of attainment of the long- and short-term objectives and of the goals proposed in such a way that deviations may be detected early on and corrective measures adopted in time. Given the importance of costs in this case, it will be necessary to place special emphasis on analyzing the costs of the various strategies proposed for the countries. It is hoped that during the effective period of this plan it will be possible to develop models, or refine existing ones, so that the anticipated impact of this plan can be measured in terms of not only preventing and reducing maternal deaths but also of determining the changes in their magnitude and the morbidity profile related to the reproductive process, so as to be able, in addition, to measure or at least estimate the contribution of these actions to improvements in the status of women in society, and in the socioeconomic development and well-being of the entire population.

Without any attempt to be exhaustive, it is proposed, in principle, that the following aspects be evaluated:

- Political commitment to the reduction of maternal mortality;
- Resources allocated by the health sector to the reduction plan/program;
- Degree of equity in the distribution of resources to the various geographical areas and priority groups;
- International support, donations, concessionary loans;
- Increase in the rates of female literacy;
- Studies on installed and operating capacity;
- Availability and coverage of family planning and prenatal, delivery, and post-delivery care services;
- Evaluation of the training and performance of trained traditional birth attendants, as well as of the mechanisms that link them to the institutional health system;
- Evaluation of conditions of efficiency in the services, especially those at the first level of hospital referral;
- Existence and operation of committees for the study and surveillance of maternal death;
- Proportion of high-risk pregnancies identified and referred, as well as the frequency and proportion of caesarean sections, by institution and in general;
- Morbidity of the reproductive process;

- Maternal mortality;

- Perinatal mortality;

- Unit costs;

- Cost efficiency and effectiveness.

Through discussions with technical groups, a consensus will be sought to determine which of these will be recommended to the countries to be processed, analyzed, and reported on at both the local and national levels and for purposes of international comparison.

The PAHO Technical Secretariat, on the basis of the information provided by the countries and other sources, proposes to present progress reports on implementation of the plan every two years, or as often as the Governing Bodies of the Organization may determine.

This report will include an analysis of the degree of implementation of the national plans, advances in the systems for registering data on maternal deaths, and achievements in fulfilling the targets for service coverage and for the infrastructure.

In order to provide an additional mechanism for evaluating the impact of the regional plan on maternal mortality, a regional surveillance system on maternal mortality should be established. All maternal deaths occuring in any part of the country should be studied by a committee on maternal mortality and reported immediately to the national health authorities, who in turn should report semiannually to the Organization. This information will constitute the basic data used for operating and monitoring the plan.

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STATISTICAL APPENDIX

TABLE 1

MATERNAL MORTALITY AND INDICATORS OF SERVICES FOR REPRODUCTIVE HEALTH IN SELECTED COUNTRIES OF THE REGION, CIRCA 1987

Country	Maternal mortality/ 100,000 LB	Prevalence of contraception, married-cohabit. women age 15-49	Prenatal care coverage	Delivery care coverage
Argentina	69	-	-	93.4
Bahamas	21	-	-	-
Bolivia	480 h)	30.3 i)	50.3 i)	37.8 j)
Brazil	140	66 d)	69.6	70
Canada	4	63 1984)	-	99
Chile	48	43 e)	-	98.1
Colombia	100 a)	65 d)	76	75
Costa Rica	26	69 k)	90	93
Cuba	26.1	-	98	99.8
Dominican Rep.	100	50 d)	51.7 p)	52.4 p)
Ecuador	160 m)	44 d)	52.5 n)	55.6 n)
El Salvador	148	47 d)	34	50
Guatemala	104	23 d)	34	22
Guyana	60	28	33	90
Haiti	230	7	-	20 f)
Honduras	117	21.3	66.2	26
Jamaica	115 b)	51	95 b)	81.6 b)
Mexico	82 c)	53 d)	62 c)	77.4 c)
Nicaragua	103 g)	5	92 g)	73.3 g)
Panama	60	59 e)	89	96
Paraguay	270	-	-	22 f)
Peru	303	46 d)	61	49
United States of America	9.6 a)	68 1987)	-	99
Uruguay	26	-	-	96
Venezuela	58.7 r)	38	31.4 r)	96.9 r)

a) U.N. Demographic Year Book, 1989
b) University of the West Indies, 1989.
c) Mexico, Ministry of Health, 1990.
d) Institute for Resources Development Macrosystem Inc., 1989.
e) Unicef 1989.
f) PAHO/WHO; World Bank, World Development 1989.
g) Nicaragua, Ministry of Health, 1990.
h) Bolivia, Ministry of Social Welfare and Public Health, 1990.
i) INE/ENDSA survey, 1989.
j) INE/ENDSA survey, 1989.
k) Asociación Demográfica Costarricense, 1989.
m) Ecuador, Ministry of Health, 1990.
n) Ecuador, Ministry of Health, 1990.
p) Dominican Republic, Ministry of Health and Social Welfare, 1990.
r) Venezuela, Ministry of Public Health and Social Welfare, 1990.

TABLE 2

DISTRIBUTION OF CAUSES OF MATERNAL MORTALITY IN SELECTED COUNTRIES AND TERRITORIES OF THE REGION OF THE AMERICAS, CIRCA 1986

Country	Total Maternal Deaths	Percentage of Maternal Deaths by Direct Obstetric Causes					Indirect
		Abortion	Toxemia of pregnancy	Hemorrhage of pregnancy and delivery	Puerperal complications	Other direct obstetric causes	
Argentina (1986)	369	35	-	14	14	35	2
Brazil (AI)(1986)	1,814	13	29	16	16	19	7
Canadá (1984)	11	9	9	9	55	9	9
Chile (1987)	135	35	12	8	24	16	5
Colombia (1984)	642	23	20	17	9	30	1
Costa Rica (1988)	15	7	27	27	13	26	-
Cuba (1988)	73	22	8	3	16	18	33
Dominican Rep. (1985)	106	17	25	16	-	34	8
Ecuador (1987)	355	8	26	23	11	30	2
El Salvador (1984)	99	7	5	7	8	72	1
Guatemala (1984)	236	17	10	2	15	56	-
Guyana (1984)	17	29	18	41	6	6	-
Honduras (1983)	79	9	...	...	...	88	3
Jamaica (1984)	14	64	21	7	-	8	-
México (1986)	1,681	9	20	25	9	35	2
Panamá (1987)	22	23	18	5	-	49	5
Paraguay (AI)*(1986)	140	14	18	31	17	16	4
Perú (1983)	538	11	8	33	14	33	1
Puerto Rico (1987)	11	-	22	9	45	24	-
Suriname (1985)	7	14	14	71	-	1	-
Trinidad y Tabago(1986)	18	50	28	6	6	4	6
United States (1987)	251	18	14	13	33	16	6
Uruguay (1986)	14	36	7	7	14	36	-
Venezuela (1980-1983)	291	23	23	15	15	18	6

Sources: Official mortality data available in the PAHO technical information system.

TABLE 3

ESTIMATED NUMBER OF MATERNAL DEATHS AS OF 1990 IN SELECTED COUNTRIES AND TERRITORIES OF THE REGION, BASED ON ADJUSTED RATES OBTAINED FROM FIVE DIFFERENT SOURCES[1]

Country	Adjusted Rate 100,000 live births	Births[2] (000)	Maternal deaths
Argentina (1986)	140	669	936
Bolivia	600	293	1,758
Brazil (1986)	200	4,086	8,172
Canada (1986)	6	371	22
Chile (1987)	67	301	202
Colombia (1984)	200	861	1,722
Costa Rica (1988)	36	80	29
Cuba (1988)	36	181	65
Dominican Republic (1985)	300	213	639
Ecuador (1987)	300	328	984
El Salvador (1984)	300	182	546
Guatemala (1984)	300	350	1,050
Guyana (1984)	200	26	52
Haiti	600	213	1,278
Honduras (1983)	300	189	567
Jamaica (1984)	115	65	75
Mexico (1986)	200	2,569	5,138
Nicaragua	300	149	447
Panama (1987)	60	68	40
Paraguay (1986)	300	150	450
Peru (1983)	300	759	2,277
Puerto Rico	20	78	16
Trinidad and Tobago (1986)	111	31	34
United States of America(1987)	13	3,738	486
Uruguay	36	54	19
Venezuela	200	569	1,138
TOTAL			28,142

1 a) For Argentina the adjustment was based on the underregistration observed in the Córdoba study (Illia 1987).
b) For Brazil, Colombia, Guyana, Mexico and Venezuela the estimated rate for Brazil was used (Laurenti 1988).
c) For Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay and Peru, the estimated rate for Peru was used.
d) For Canada, Chile, Costa Rica, Cuba, Panama, Puerto Rico, Trinidad and Tobago, United States, and Uruguay the correction was based on the 39% underregistration observed in a study in the United States (Kooning 1988).
e) For Jamaica the figure from a recent study (University of West Indies 1989) was used. For Bolivia and Haiti the rate was estimated on the basis of data from the Bolivian Ministry of Social Welfare and Public Health (1989).

TABLE 4

POTENTIAL YEARS OF LIFE LOST DUE TO MATERNAL DEATHS
IN SELECTED COUNTRIES OF THE REGION
TIS-PAHO/WHO 1990

Country	No. maternal deaths age 15-49	Total Years Lost	Per death
Argentina (85)	357	12,428	34.8
Brazil (86)[1]	1,790	64,195	35.9
Chile (87)	134	4,885	36.5
Colombia (84)	635	22,813	35.9
Dominican Rep. (85)	101	3,878	38.4
Ecuador (87)	346	12,430	35.9
El Salvador (84)	99	3,578	36.1
Guyana (84)	16	580	36.3
Mexico (86)	1,660	58,460	35.2
Panama (87)	22	795	36.1
Paraguay (86)	131	4,528	34.6
Peru (83)	564	18,820	33.4
Suriname (85)	6	220	36.9
Venezuela (85)	289	6,678	25.8

1 Reporting area.

Average = 35.84 years of life lost per maternal death.

TABLE 5

AMERICAS: TOTAL POPULATION, BY REGIONS AND COUNTRIES
1990-2000
(in thousands)

	1990	1995	2000
Americas	725,192	780,803	835,533
Latin America	437,951	482,762	527,784
Argentina	32,322	34,264	36,238
Bolivia	7,314	8,422	9,724
Brazil	150,368	165,083	179,487
Chile	13,173	14,237	15,272
Colombia	32,978	36,182	39,397
Costa Rica	3,015	3,374	3,711
Cuba	10,608	11,091	11,504
Dominican Republic	7,170	7,915	8,621
Ecuador	10,587	11,934	13,319
El Salvador	5,252	5,943	6,739
Guatemala	9,197	10,621	12,222
Haiti	6,504	7,149	7,838
Honduras	5,138	5,968	6,846
Mexico	88,598	97,967	107,233
Nicaragua	3,871	4,539	5,261
Panama	2,418	2,659	2,893
Paraguay	4,277	4,893	5,538
Peru	22,332	25,123	27,952
Uruguay	3,094	3,186	3,274
Venezuela	19,735	22,212	24,715
Caribbean and other territories	11,361	12,146	12,919
Antillas	193	207	221
Bahamas	260	278	297
Barbados	261	272	285
Belize	182	201	221
Dominica	81	87	93
Grenada	103	110	117
Guadalupe	340	346	354
French Guiana	92	102	112
Guyana	1,040	1,119	1,197
Jamaica	2,521	2,706	2,886
Martinique	331	338	352
Puerto Rico	3,709	3,958	4,192
Saint Lucia	136	146	156
Suriname	403	435	469
Trinidad and Tobago	1,283	1,385	1,480
Other territories	426	456	487
North America	275,880	285,895	294,830
Canada	26,525	27,567	28,508
United States	249,235	258,204	266,194
Other territories	120	124	128

Source: CELADE (1989a)
United Nations (1989)

TABLE 6

AMERICAS: FEMALE POPULATION AGED 15 TO 49
FOR COUNTRIES GROUPED BY STAGE OF DEMOGRAPHIC TRANSITION
1970-2000

Group and Country	Female population aged 15-49 (in thousands)			
	1970	1980	1990	2000
Group 1				
Bolivia	1,010	1,295	1,700	2,283
Haiti	1,064	1,294	1,621	1,997
Group 2				
El Salvador	782	1,025	1,223	1,657
Guatemala	1,163	1,517	2,029	2,838
Honduras	568	783	1,168	1,660
Nicaragua	448	615	882	1,257
Paraguay	509	733	1,032	1,382
Peru	2,930	4,033	5,369	6,865
Group 3				
Brazil	22,267	30,239	38,672	47,771
Chile	2,229	2,880	3,515	4,008
Colombia	4,699	6,550	8,768	10,660
Costa Rica	377	567	767	976
Dominican Republic	944	1,340	1,799	2,251
Ecuador	1,315	1,861	2,598	3,427
Guyana	150	215	278	343
Jamaica	368	496	651	807
México	11,406	16,148	22,905	29,171
Venezuela	2,330	3,596	4,931	6,408
Windward Is.	71	97	123	153
Suriname	77	76	90	113
Trinidad and Tobago	232	272	310	353
Other territories	140	188	225	264
Group 4				
Argentina	5,964	6,752	7,673	8,962
Barbados	53	66	76	86
Canada	5,226	6,451	7,191	7,592
Cuba	1,942	2,427	3,008	3,012
Guadalupe	71	76	88	89
Martinique	74	77	86	90
Puerto Rico	658	828	987	1,108
United States of America	48,956	58,763	64,513	67,984
Uruguay	689	694	739	808

TABLE 7

AMERICAS: CRUDE BIRTH, DEATH, NATURAL GROWTH, AND TOTAL GROWTH RATES, BY COUNTRIES, 1985-1990 AND 1995-2000
(in thousands)

Countries	1985-1990				1995-2000			
	CBR	CDR	NGR	TGR	CBR	CDR	NGR	TGR
Latin America								
Argentina	21	9	13	13	20	9	11	11
Bolivia	43	14	29	28	40	10	30	29
Brazil	29	8	21	21	24	7	17	17
Chile	24	6	17	17	21	6	14	14
Colombia	27	6	21	20	24	6	18	17
Costa Rica	28	4	24	26	23	4	19	19
Cuba	18	7	11	10	16	7	9	7
Dominican Republic	31	7	25	22	25	6	19	17
Ecuador	33	7	26	26	26	7	22	22
El Salvador	36	8	26	19	35	6	28	25
Guatemala	41	9	32	29	36	7	30	26
Haiti	34	13	22	19	31	11	21	16
Honduras	40	8	32	32	3	6	27	27
Mexico	29	6	23	22	24	5	19	18
Nicaragua	42	8	34	34	35	6	30	29
Panama	28	5	23	21	23	5	18	17
Paraguay	35	7	26	29	31	6	25	25
Peru	34	9	25	25	26	7	21	21
Uruguay	18	10	8	6	17	10	6	5
Venezuela	31	5	25	26	26	5	21	21
Caribbean								
Barbados	19	8	10	10	17	7	10	10
Guadalupe	20	8	12	3	18	8	11	5
Guyana	25	5	19	17	19	5	15	13
Windward Islands	27	6	21	14	21	5	16	15
Jamaica	26	6	20	15	20	5	15	13
Martinique	19	8	11	3	16	8	10	7
Other territories	23	6	17	14	19	6	13	13
Puerto Rico	21	7	14	15	18	6	12	12
Suriname	26	6	20	7	26	5	21	16
Trinidad and Tobago	24	7	17	12	19	7	12	11
North America								
Canada	14	7	7	11	13	8	5	8
United States	15	9	6	9	15	9	6	7

Note: (CBR) crude birth rate. (CDR) crude death rate
(NGR) natural growth rate
and (TGR) total growth rate.

Source: CELADE (1989)
United Nations (1989)

TABLE 8

USE OF CONTRACEPTIVES
(WOMEN IN UNION, 15-49 YEARS)

Selected statistics from DHS surveys
Latin American and the Caribbean

Country	% Currently using some method[a]
Bolivia 1989	30
Brazil 1986*	66
Colombia 1986	65
Dominican Republic 1986	50
Ecuador 1987	44
El Salvador 1986	47
Guatemala 1987*	23
Mexico 1987	53
Peru 1986	46
Trinidad and Tobago 1987	53

[a] Excludes prolonged abstinence

* Women aged 15 to 44.

Source: Institute for Resources Development Inc.

TABLE 9

INDEX OF HEALTH NEEDS BY STRATUM AND LEVEL OF NEED,
35 COUNTRIES AND TERRITORIES, 1985-1990 AND 1995-2000
(in thousands)

Rank	Country	Need Index	Stratum	Need Level
1.	Haiti	-1.99099		
2.	Bolivia	-1.73970		
3.	Guatemala	-1.47766	-0.9 and under	VERY HIGH
4.	Nicaragua	-.95835		
5.	Dominican Republic	-.94612		
6.	Honduras	-.90169		
7.	Peru	-.86259		
8.	El Salvador	-.81263		
9.	Mexico	-.58185		
10.	Ecuador	-.46888		
11.	Belize	-.45763		
12.	Paraguay	-.41158	-0.01 to -0.8	HIGH
13.	Brazil	-.34489		
14.	Colombia	-.24551		
15.	Jamaica	-.14477		
16.	Saint Lucia	-.14153		
17.	Venezuela	-.12300		
18.	Guyana	-.09605		
19.	St. Kitts-Nevis	.05305		
20.	Grenada	.13136		
21.	Suriname	.13669		
22.	St. Vincent	.22198		
23.	Panama	.25583		
24.	Costa Rica	.28410		
25.	Dominica	.31675	0.0 to 0.0	MEDIUM
26.	Antigua	.51301		
27.	Chile	.56817		
28.	Trinidad and Tobago	.57354		
29.	Montserrat	.67439		
30.	Bahamas	.70838		
31.	Argentina	.76423		
32.	Virgin Islands (UK)	.83791		
33.	Barbados	1.29690		
34.	Canada	2.57252	1.0 and over	LOW
35.	United States	2.79661		

Source: Los servicios de salud en las Américas. Análisis de indicadores. PAHO/WHO Technical Paper No. 14, 1988.

ANNEX II

COST ANALYSIS FOR THE FIRST FIVE YEARS OF THE PLAN

Quantification of the costs of the Plan for the Reduction of Maternal Mortality takes the following points into account:

Calculations are based on estimated unit values, which might under- or overestimate the cost of the interventions.[1]

The plan does not envisage any new construction or the installation of new hospital beds. The focus is on improving efficiency through increased and improved utilization of installed capacity.

It is proposed to set up birthing centers for the care of low-risk pregnant women and homes for high-risk women. This will involve costs for installation, operation, and maintenance.

Provision is made for the cost of transportation and communications as one of the mechanisms for ensuring that patients are referred.

There is provision for the evaluation of activities related to the training and updating of human resources and the procurement of equipment, supplies, and drugs. In addition, activities relating to promotion, dissemination of knowledge, improvement of the information system, and monitoring and evaluation are also to be quantified and assessed.

It is recognized that this is a model applied in one country and that it should be validated or modified in order for it to be consistent with other models that are currently under discussion. The following is proposed in order to have an idea of the magnitude of the effort to be carried out.

1. Annual Adjustments Needed at the Level of Each Country

To estimate the cost of the plan in each country, it is suggested that an initial adjustment be made based on real costs in each country as they are affected by:

- Devaluation;
- Inflation;
- The cost of providing or subsidizing care at current prices;
- Wage increases;
- Projected income from contributions collected or fees for services.

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1) The costs of prenatal consultations and hospitalizations for delivery were based on data from the Guatemalan Ministry of Health on "production, performance, and hospital cost" for 1988-1989 (data produced periodically).

2. Prenatal Care

Based on the current coverage of prenatal monitoring as reported by the countries, on the targets set for 1995, on the concentration of interventions, and on an estimated cost of US$5 per case, it is calculated that:

- The countries in Group One[1] would need $6.2 million per year and $31.0 million for the five years;
- Those in the Group Two[2] would need $17.4 million per year and $87.0 million for the five years;
- Those in Group Three[3] would need $6.3 million per year and $32.1 million for the five years;
- For the Group Four[4] countries no costs have been estimated.

The annual total cost for the first three country groups would be US$33.7 million, and for the five-year period it would be US$168.2 million, in order to close the gap between existing needs at current levels and the targets that have been set. (Data given in Table 2.1 of this annex).

3. a) Estimated Cost of Housing High-Risk Pregnant Women in Maternity Homes (Table 2.4)

	Estimated cost in millions of dollars		
Time/cost of stay	Group One	Group Two	Total Cost
6 days $48	18.5	80.0	98.5

b) Cost of stay in birthing centers (Table 2.2):

Group One	2.0
Group Two	8.7
Rounded cost	US$10.8 million

1) Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, and Peru.
2) Brazil, Colombia, Guyana, Mexico, and Venezuela.
3) Argentina, Bahamas, Chile, Costa Rica, Cuba, Panama, Trinidad and Tobago, and Uruguay.
4) Canada and United States of America.

4. Normal Delivery Care in Birthing Homes (Table 2.2)

Estimated cost per bed $200:*

Group One	130 beds	$ 26,000
Group Two	461 "	$ 92,200
Total cost	591 "	$118,200

(*) This amount could be increased to US$1,000.

5. Institutional Delivery Care

The calculation is based on closing the gap between the current level of coverage and the targets programmed for 1995.

It is estimated that 10% of the needs for institutional delivery can be met in low-risk birthing centers at an estimated cost of US$20 per delivery.

Group One will need $528,000 a year for birthing homes and US$2.6 million for the five years. It should be noted that these values do not include the initial cost of setting up the homes, which is estimated under another heading.

The annual cost of hospital delivery in the Group One countries is estimated at $47.5 million, and at $237.5 million for the five years. The average unit cost per patient for a surgical or normal delivery has been estimated at $200.

In Group Two the care programmed for birthing homes has been estimated at $1.9 million a year, and for the five years, at $9.3 million. Hospital care is estimated at $168.0 million per year and $840 million for the five years.

The annual total cost of closing the gap in institutional delivery for these two country groups comes to $218.0 million and for the five years, $1077.5 million, of which $11.9 million correspond to birthing centers. (Estimates given in Tables 2.3 and 2.4 of this Annex.)

6. Manpower Training

6.1 Training of Physicians and Nursing Auxiliaries

To estimate the needs for physicians, nursing auxiliaries, and physicians' offices for the care of high-risk pregnancies, calculations were made based on population modules of 100,000 and 250,000 inhabitants.

6.1.1 Estimate of human resources and physicians' offices by module

Population (1)	Women of reprod. age (2)	Pregnancies (3)	High-risk pregnancies (4)	No. of caesareans acceptable (5)	Births attended (6)
100,000	24,000	2,800	576	432	144
250,000	60,000	7,200	1,440	1,080	360

Physician visits (7)	Physician-hrs eeded (8)	Daily hours per year (9)	Physicians (10)	Physicians' offices (11)	Nursing auxiliaries (12)
5,760	1,440	6	1	1	1
14,400	3,600	15	2.5	2	2.5

(1) Total population for the module.
(2) 24% of the population are women of reproductive age.
(3) Estimated pregnancies based on a fertility rate of 120 per 1,000 women between 15 and 49 years of age.
(4) High-risk pregnancies correspond to 20% of the total.
(5) The acceptable proportion of caesarean sections is considered to be 15% of all pregnancies.
(6) Attended births are 5%.
(7) Total consultations for pregnant women at risk.
(8) Physician hours at six consultations per hour.
(9) A daily hour per year corresponds to 240 hr of work per year.
(10) Physicians needed on the basis of a 6-hour working day.
(11) In the 100,000-population module the working days will be six hours and in the 250,000-population module they will be eight hours.
(12) Nursing auxiliaries estimated in the same proportion as physicians.

6.1.2 Manpower training needed per year in order to care for the population of high-risk pregnant women in ambulatory consultations (calculation based on the assumption that continuing education for physicians will cost $350 per person/year and for nurses, $250)

Countries	High-risk pregnancies	Physicians needed	Cost of hospitalization	Nursing personnel	Cost
Group One	453,660	882	308,700	862	215,500
Group Two	1,958,120	3,400	1.190,000	3,400	850,000
Group Three	358,700	622	217,700	622	155,500
Total	2,770,480	4,904	1,716,400	4,884	1,221,000

Countries	Cost for 5 years in millions of dollars		
	Physicians	Nurses	Total
Group One	1.5	1.1	2.6
Group Two	6.0	4.3	10.3
Group Three	1.1	0.8	1.9
Total:	8.6	6.2	14.8

$14.8 million will be needed.

6.2 Training of Traditional Birth Attendants

The cost of continuing education for traditional birth attendants, or lay midwives, is estimated at $90 each per year.

For Group One it is estimated that 15% of the total of expected deliveries will be attended by trained midwives. In order to provide this care, it has been estimated that 5,200 midwives need to be trained, at a cost of $468,000.

In order to attend 10% of the births (787,110) in the countries of Group Two, it will be necessary to train 31,000 midwives at a cost of $2,790,000.

The Group Three and Four countries do not require training for traditional birth attendants.

6.3 Summary of Training Costs (in millions of dollars)

	Countries			
	Group One	Group Two	Group Three	Total
Physicians	1.5	6.0	1.1	8.6
Nurses	1.1	4.3	0.8	6.2
Birth attendants	0.5	2.8	-	3.3
Total	3.1	13.1	1.9	18.1

6.4 The dissemination of technical and scientific information is budgeted at 10% of the cost of training, or $1,800,000.

7. Drugs

For this plan an estimated $10 has been allowed per high-risk pregnant woman for the purchase of drugs and expendable items. It should be noted that other existing cooperation projects in the Region subsidizes the purchase of contraceptives.

At an estimated total of 2,700,000 high-risk pregnancies, the cost per year is $27,000,000, or for the five years, $135 million.

8. Transportation

Extra vehicles, in addition to those already available, would be purchased for the transportation of pregnant women. They would have to be adapted to the topography of the site where they are to be used. They may be ambulances, outboard motorboats, or jeeps.

The calculation has been based on a figure of 6,056 public hospitals known to exist in Latin America in the mid-1980s. Of these, an estimated 90% (5,450) perform deliveries. It is calculated that one vehicle should be purchased and maintained for each hospital. The breakdown of respective costs is as follows:

Countries	Existing hospitals	Hospitals that perform deliveries	Cost in millions of dollars
Andean Area	1,453	1,308	13.1
Southern Cone	1,735	1,561	15.8
Brazil	1,290	1,161	11.6
Central Amer. Isthmus	223	201	2.0
Latin Caribbean	327	244	2.9
Mexico	919	827	8.3
English-speaking Caribbean	109	98	1.0
Subtotal	6,056	5,450	54.7
Allowance for adjustments			0.8
Overhead for the five years at 20% of initial cost			11.0
		Total cost	66.5

9. Equipment

9.1 Physician's Office Equipment for Closing the Gap in Prenatal Monitoring

The following equipment for physicians' offices is estimated for every 1,500 pregnancies attended, based on the assumption that 1,338 such offices are needed during the first five years of the plan. The estimated unit cost for equipment, according to prices listed in the UNICEF/UNIPAC-1988 and ABCO Hospital Equipment and Supplies catalogues is $3,314; the total cost is $4,334,346.

9.2 Equipment for Obstetric Services at the First Level of Referral

It has been established that the acceptable proportion is for 15% of all pregnancies to end in caesarean section, and it is estimated that in the population of pregnant women corresponding to the care gap being addressed will require caesarean sections: 39,600 women in the Group One countries and 140,000 in Group Two.

In the 100,000-population module there would be 2,900 pregnant women, corresponding to 435 caesarean sections per year, which could be performed entirely at the first level of referral.

Based on the estimate number of caesarean sections, the needs for a population of 100,000 would be as follows:

Countries	Equipment	Cost in thousands of dollars
Group One	100	2,895
Group Two	350	10,132

Approximate total cost: US$17 million, including freight and insurance.

9.2.1. Breakdown by type of equipment

	Unit cost	Catalogue
Anesthesia equipment	12,000	ABCO
D&C kit	350	UNIPAC
Minilaparatomy kit	200	UNIPAC
Surgical instruments	7,900	ABCO-UNIPAC
Laboratory and blood bank equipment	8,500	UNIPAC

10. Cost of Information, Research, and Technical Cooperation Activities

For promotional activities the amount proposed is $18.0 million for the five years of the plan. An amount of $5.0 million has been allowed for the development of information systems and the epidemiological surveillance of maternal death. For operations research the sum of $4 million is proposed. For technical cooperation the estimated cost would be $2 million.

11. Explanation of the Mathematical Model

With regard to calculation of the costs for prenatal care (Table 2.1), column 1 gives the estimated number of pregnancies expected in 1995 based on the birth rates in each country; column 2 shows the current level of prenatal care coverage by country, with 0.0 being applied to those countries for which information was not available; column 3 corresponds to the coverage programmed for 1995; column 4 is the calculation of the gap (difference between column 3 and 2); column 5 is the difference expressed in absolute numbers; column 6 is the total cost of a consultation at a rate of five per pregnancy; column 7 is the annual cost based on three consultations for the countries of Group One and five for Groups Two and Three; column 8 is the calculation of total cost for the five years.

Table 2.2 gives the estimated cost of installing the beds in birthing centers. Column 1 is the number of centers per country, column 2 is the number of beds in each birthing centers; column 3 is the per-bed cost at $200.00 per bed installed, and column 4 is the total cost.

Table 2.3 gives the estimated costs by country for reducing the gap in institutional delivery care. Column 1 corresponds to the number in thousands of expected deliveries; column 2 is the current coverage of institutional delivery as a percentage; column 3 is the target percentage for institutional delivery in 1995; column 4 is the difference between columns 2 and 3; column 5 is the number of deliveries in thousands that represent the gap between current coverage and the levels programmed for 1995; column 6 is the estimated number of women who will use birthing centers; column 7 is the estimated number who will be attended in hospitals; columns 8 and 9 are the average costs of delivery care in a birthing center at a rate of US$20 per delivery and in a hospital at US$200 per delivery; columns 10 and 11 are the annual and five-year costs of institutional delivery care.

Table 2.4 estimates the cost of attending deliveries in birthing centers and the cost of a high-risk pregnant woman staying in a maternity home. Column 1 shows the number of deliveries in birthing centers; column 2, the number of bed-days needed on average (1.5); column 3, the number of birthing centers needed with a delivery bed turnover of 200; column 4, the number of high-risk pregnant women; column 5, the number of beds needed; column 6, cost for normal deliveries; column 7, the total cost of delivery in birthing centers; column 8, the total cost in homes for high-risk pregnant women.

TABLE 2.1

ESTIMATES OF ANNUAL AND FIVE-YEAR COSTS OF PRENATAL CARE BY COUNTRY AND GAP BETWEEN CURRENT COVERAGE AND TARGETS PROGRAMMED

Countries	Exp. Preg.(000) (1)	Current coverage % (2)	Coverage Programmed % (3)	Gap % (4)	Gap (000) (5)	Estimated Cost (6)	Annual Cost (7)	5-year cost (8)
GROUP ONE								
Bolivia	276.8	50.0	75.0	25.0	69.2	346.0	1,038.0	5,190.0
Peru	793.0	60.0	75.0	15.0	119.0	594.8	1,784.3	8,921.3
Ecuador	286.0	69.0	75.0	6.0	17.2	85.8	257.4	1,287.0
Dominican Rep.	162.8	66.0	75.0	9.0	14.7	73.3	219.8	1,098.9
Nicaragua	117.0	45.0	75.0	30.0	35.1	175.6	526.5	2,632.5
Honduras	189.7	66.0	75.0	9.0	17.1	85.4	256.1	1,280.5
Guatemala	312.4	46.0	75.0	29.0	90.6	453.0	1,358.9	6,794.7
El Salvador	130.1	34.0	75.0	41.0	53.3	266.7	800.1	4,000.6
							6,241.1	31,205.4
GROUP TWO								
Brazil	5,714.8	74.0	80.0	6.0	342.9	1,714.4	6,857.8	34,288.8
Colombia	793.0	76.0	80.0	4.0	31.7	158.6	634.4	3,172.0
Mexico	2,696.7	62.0	80.0	18.0	485.4	2,427.0	9,708.1	48,540.6
Jamaica	55.5	75.0	80.0	5.0	2.8	13.9	55.5	277.5
Venezuela	514.3	80.0	80.0	0.0	0.0	0.0	0.0	000.0
Guyana	16.3	33.0	80.0	47.0	7.7	38.3	153.2	766.1
							17,409.0	87,045.0
GROUP THREE								
Grenada	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Suriname	12.1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Dominica	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Trinidad & Tobago	28.2	90.0	100.0	10.0	1.7	8.5	42.3	211.5
Argentina	652.9	70.0	100.0	30.0	195.9	979.4	4,896.8	24,483.8
Panama	52.4	89.0	100.0	11.0	5.8	28.8	144.1	720.5
Chile	231.5	90.0	100.0	10.0	23.2	115.8	578.8	2,893.8
Costa Rica	79.7	90.0	100.0	10.0	8.0	39.9	199.3	996.3
Uruguay	51.2	70.0	100.0	30.0	15.4	76.8	384.0	1,920.0
Belize	7.5	80.0	100.0	20.0	1.5	7.5	37.5	187.5
Saint Lucia	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Cuba	199.6	98.0	100.0	2.0	4.0	20.0	100.0	500.0
							6,621.7	31,913.3
GROUP FOUR								
United States of America	4,556.6	98.0	100.0	2.0	91.1			
Canada	421.6	99.0	100.0	1.0	4.2			

TABLE 2.2

COSTS PER COUNTRY FOR THE INSTALLATION OF MATERNITY HOMES FOR HIGH-RISK PREGNANT WOMEN

Countries	No. homes (1)	No. beds (2)	Bed installation cost (3)	Total cost (4)
Group one				
Bolivia	155	1,238	200	247,527
Peru	443	3,546	200	709,138
Ecuador	160	1,279	200	255,755
Dominican Republic	91	728	200	145,583
Nicaragua	65	523	200	104,627
Honduras	106	848	200	169,639
Guatemala	175	1,397	200	279,363
El Salvador	73	582	200	116,341
				2,027,972
Group two				
Brazil	3,194	25,552	200	5,110,440
Colombia	443	3,546	200	709,138
Mexico	1,507	12,058	200	2,411,515
Jamaica	31	248	200	49,631
Venezuela	287	2,300	200	459,911
Guyana	9	73	200	14,576
				8,755,211

TABLE 2.3

ESTIMATED COST OF INSTITUTIONAL DELIVERY CARE, BY COUNTRY, TO REDUCE THE GAP BETWEEN CURRENT COVERAGE AND TARGETS PROPOSED IN THE REGIONAL PLAN FOR THE REDUCTION OF MATERNAL MORTALITY

Countries	Expected deliveries 1995 (000) (1)	Current coverage % (2)	Target for 1995 % (3)	GAP % (4)	GAP (000) (5)	Birthing home del. (000) (6)	Hospital deliveries (000)(7)	Birthing center cost (000) (8)	Hospital cost (000) (9)	Annual cost (000) (10)	5-year cost (000) (11)
GROUP ONE											
Bolivia	235.3	28.0	55.0	27.0	63.5	6.4	57.2	127.1	11,434.6	11,561.7	57,808.3
Peru	674.1	49.0	55.0	6.0	40.4	4.0	36.4	80.9	7,279.7	7,360.6	36,803.1
Ecuador	243.1	53.0	55.0	2.0	4.9	0.5	4.4	9.7	875.2	884.9	4,424.4
Dominican Republic	138.4	54.0	55.0	1.0	1.4	0.1	1.2	2.8	249.1	251.9	1,259.3
Nicaragua	99.5	41.0	55.0	14.0	13.9	1.4	12.5	27.8	2,506.1	2,534.0	12,669.3
Honduras	161.2	26.0	55.0	29.0	46.8	4.7	42.1	93.5	8,417.0	8,510.5	42,552.6
Guatemala	265.5	22.0	55.0	33.0	87.6	8.8	78.9	175.3	15,773.1	15,948.3	79,741.7
El Salvador	110.6	50.0	55.0	5.0	5.5	0.6	5.0	11.1	995.3	1,006.3	5,031.6
								528.1	47,630.1	48,058.2	240,290.9
GROUP TWO											
Brazil	4,857.6	70.0	80.0	10.0	485.8	48.6	437.2	971.5	87,436.4	88,408.0	442,039.8
Colombia	674.1	75.0	80.0	5.0	33.7	3.4	30.3	67.4	6,066.5	6,133.9	30,669.3
Mexico	2,292.2	62.0	80.0	18.0	412.6	41.3	371.3	825.2	74,267.1	75,092.3	375,461.5
Jamaica	47.2	77.0	80.0	3.0	1.4	0.1	1.3	2.8	254.7	257.6	1,287.9
Venezuela	437.2	98.0	98.0	0.0	0.0						
Guyana	13.9	90.0	90.0	0.0	0.0						
								1,866.9	168,024.8	169,891.7	849,458.5
GROUP THREE											
Grenada	0.0	0.0									
Suriname	10.3	80.0	85.0	5.0	0.5						
Dominica	0.0				0.0						
Trinidad and Tabago	24.0	98.0	98.0	0.0	0.0						
Argentina	555.0	93.0	93.0	0.0	0.0						
Panama	44.5	96.0	96.0	0.0	0.0						
Chile	196.8	98.0	98.0	0.0	0.0						
Costa Rica	67.7	93.0	93.0	0.0	0.0						
Uruguay	43.5	97.0	97.0	0.0	0.0						
Belize	6.4	80.0	85.0	5.0	0.3						
Saint Lucía	0.0										
Cuba	169.7	99.0	99.0	0.0	0.0						
GROUP FOUR											
United States of America	3,873.1	98.0	98.0	0.0	0.0						
Canada	358.4	99.0	99.0	0.0	0.0						
								2,448.0	215,554.9	217,949.9	1,089,749.4

TABLE 2.4

ESTIMATED COST OF DELIVERY CARE IN BIRTHING CENTERS
AND OF STAYS BY PREGNANT WOMEN IN HOMES FOR HIGH OBSTETRIC RISK

Countries	Birthing centers deliveries	Bed-days needed	Birthing centers needed	High-risk pregnancies	Bed days needed	High-risk beds needed	Cost for normal deliveries	Cost high-risk pregnancies
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group A								
Bolivia 2,258,688	6,353	9,529	31	47,056	376,448	1,238	127,051	
Peru 8,470,880	4,044	6,066	20	134,810	1,078,480	3,545	80,886	
Ecuador 2,333,760	486	729	2	48,620	388,960	1,279	9,724	
Dominican Republic 1,328,448	138	208	1	27,676	221,408	728	2,768	
Nicaragua 954,720	1,392	2,088	7	19,890	159,120	523	27,845	
Honduras 1,547,952	4,676	7,014	23	32,249	257,992	848	93,522	
Guatemala 2,549,184	8,763	13,144	43	53,108	424,864	1,397	175,256	
El Salvador 1.061.616	553	829	3	22,117	176,936	582	11,059	
Totals 18,505,248			130				528,112	
Group B								
Brazil	48,576	72,864	240	971,516	7,772,128	25,552	971,516	46,632,768
Colombia	3,370	5,055	17	134,810	1,078,480	3,546	67,405	6,470,880
Mexico	41,260	61,889	203	458,439	3,667,512	12,058	825,190	22,005,072
Jamaica	142	212	1	9,435	75,480	248	2,831	452,880
Venezuela	-	-	-	87,431	699,448	2,300	-	4,196,688
Guyana	-	-	-	2,771	22,168	73	-	133,008
							1,866,942	79,891,236
							2,923,165	116,901,792

DESCRIPTION OF ALTERNATIVE CARE MODELS AND SURVEILLANCE COMMITTEE ON MATERNAL MORTALITY

Maternity Homes for High-Risk Pregnant Women

These are local establishments set up for pregnant women in rural and marginal urban areas to stay in when they have been identified, through the primary care services, as being especially at risk.

These homes should be located near the referral hospital, they should be connected to an alarm system, and transportation should be available.

These homes carry out the following functions:

- Education for the pregnant women through lectures, talks, and psychoprophylactic courses;
- Prevention and care, with monitoring of the high-risk pregnancy and prevention of complications;
- Teaching for medical students, nurses, and other health professionals, for them to learn how to carry out instructions and participate in the delivery of services;
- Recreation for the pregnant women staying in the home.

The home should have one responsible person in charge as well as health personnel permanently on duty to monitor and evaluate the pregnant women every day. There should be a board of directors with representatives from the community and the local government.

The typical home will have eight beds, an average stay of six days, an annual bed turnover of 52 women, and an occupancy rate of about 85%.

UTILIZATION AND SUPPORT OF TRADITIONAL BIRTH ATTENDANTS

The traditional birth attendant is a resource identified by the community as appropriate for providing delivery care and care of the newborn. This work has been given leadership and a certain status in its environment--a situation that the health services have seen as an opportunity to strengthen ties between the health services and the community.

The traditional birth attendant should be linked to the local health services through an ongoing education process that will enable her to supplement her knowledge of maternal and infant care. An effort should be made to provide her with the minimum equipment for delivery care and care of the newborn in order to ensure a more effective and risk-free outcome for the mother and the child. In addition, she must work in coordination with the health services.

COMMUNITY-BASED BIRTHING CENTERS

These are local establishments set up and equipped by the community itself, in which prenatal, delivery, and postpartum care is provided under the responsibility of traditional birth attendants with the support of nursing personnel.

This staff provides prenatal care, attends low-risk deliveries, and follows up during the puerperium, in addition to caring for the newborn. These functions are periodically supervised by health professionals, who also participate directly in preventive activities, promotion of women's health, maternity, fertility regulation, and child-rearing.

In order to ensure access to higher levels of referral, there should be a transportation and communication system.

These institutions, when they meet the basic requirements, provide a setting that meets the physchological and physical needs of the pregnant woman and her newborn. They contribute to natural childbirth and to maintaining the cultural values of the women who use them.

The typical community-based birthing center will have three beds and an average of stay of no longer than 24 hours after the birth.

COMMITTEE ON MATERNAL MORTALITY

Definition

This is a technical body, non-punitive and confidential, that is responsible for auditing deaths in women of reproductive age in order to identify maternal mortality and its causes and to discover ways in which it can be anticipated and prevented.

Composition

The committees on maternal mortality should function at three levels:

National or central level

- The director of the national maternal and child health program, who serves as its chair.

- A group of medical experts, including: two obstetrician-gynecologists and two pathologists.[1]

- A representative from the statistical services.

Regional level

- The head of the maternal and child health program at this level, who serves as its chair.

- A group of obstetricians and pathologists.[1]

- The head of the statistical unit.

Level of the local health systems

- The director of the hospital, who serves as its chair.

- The chief of the obstetrics and gynecology department or service.
- A physician from the obstetrics and gynecology department or service.

- The head of the statistical unit in the hospital.

Functions

The committees on maternal mortality should meet regularly, and they should have the following functions:

- Auditing:

  . Of each maternal death by study of registries, reports, death certificates, clinical histories, interviews with family members, and pathological examinations.

- Normative:

  . Propose single registration of maternal and perinatal events;

  . Standardize terminology, definitions, classifications, technical procedures;

(1) It is desirable to include a representative from the college of physicians or the medical association in the group of experts.

. Promote correct recording of data in the maternal death certificate, with specification of the underlying, intermediary, and terminal causes.

. Classify deaths as preventable or non-preventable.

- Educational:

. Encourage continuing and in-service education.
. Encourage formal and information education.

- Research:

. Promote research on morbidity and mortality in women.

- Advisory:

. Advise health authorities on the allocation of resources based on an evaluation of the cases of maternal mortality.

- Informational:

. Prepare confidential reports on maternal deaths for dissemination at different levels.