MATERNAL AND CHILD HEALTH IN LATIN AMERICA[1]

Dr. Jorge Rosselot[2]

Health problems of mothers and children in Latin America are conditioned by the generally low level of development of the countries, which is reflected in relatively poor maternal and child welfare services. The present article establishes bases for the promotion of maternal and child protection programs and comprehensive family education in accordance with the recommendations of the Governments of the Region.

Maternal and child health in Latin America is bound up with general development in the various countries and with the dynamic changes in population structure recorded over the last few years (*1-3, 20, 33*).

Thus, understandably, the health care of mothers and children can only be viewed in the context of the general programs of economic and social development and family well-being. These are among the targets laid down in the Charter of Punta del Este, one of which is the reduction of mortality rates in children under 5 years of age during the decade 1961-1971 (*16*).

Some progress has been achieved in Latin America recently in regard to child health, and death hazards among children have been brought down closer to the level of the target figures (*22*), as is shown in Table 1. However, the facts are in all probability worse than they seem, partly because of the frequency of underregistration of vital statistics and partly because they reflect one facet of the problem only and do not take account of the health hazards to which those who survive are exposed.

Experience has shown the timeliness of the resolutions adopted at the Meeting of the American Chiefs of States (Punta del Este, 1967) (*30*), designed to intensify maternal and child protection and comprehensive family education programs.

TABLE 1—Success achieved in reducing death rates for children under 5 years of age in relation to the goals of the Charter of Punta del Este, 1968.

Mortality, children under 5 years	Middle America[a]	South America
Infant mortality,[b] average 1960-1962	71.3	83.9
Infant mortality,[b] 1968	63.7	71.3
Target 1968	46.3	54.5
Reduction achieved (%)	30.0	43.0
Mortality, 1-4 years,[c] average 1960-1962	14.0	13.3
Mortality, 1-4 years,[c] 1968	10.5	9.4
Target 1968	9.1	8.6
Reduction achieved (%)	71.0	83.0

[a]Mexico, Caribbean Islands, and Central America.
[b]Per 1,000 live births.
[c]Per 1,000.
Source: Health Conditions in the Americas (1965-1968), Scientific Publication PAHO 207 (1970), p. 27.

At the Special Meeting of Ministers of Health of the Americas (Buenos Aires, 1968) (*21*), the recommendations made with a view to implementing the agreements reached by the Chiefs of State included in particular the need to expand the coverage of services in the sectors most at risk.

The Situation in regard to Maternal and Child Health

In Latin America the status of maternal and child health reflects the health situation as a whole in most of the countries, with their prevailing high levels of health hazards that could be avoided. The factors conditioning this

[1]Published in Spanish in *Boletín de la Oficina Sanitaria Panamericana*, Vol. LXX, No. 5 (May 1971), pp. 407-421.
[2]Regional Adviser in Maternal and Child Health, PAHO.

situation include the special susceptibility of certain age groups to the effects of a generally adverse environment, and the influence of current health policies.

Population at Risk

The population of the Americas in 1970 (*22*) is estimated at 510 million inhabitants, 55 per cent of them (283 million) living in Latin America; their distribution by countries and basic population variables are shown in Table 2 (*1, 2*).

Even though underregistration of vital statistics impairs the reliability of the available data, there is without doubt in the majority of the countries a rapid demographic growth attributable to large-scale maintenance of high birth rates and falling off in the death rates over the last decade. Thus in Latin America the proportion of groups exposed to maternal and child health risks is high in the case of women of child-bearing age (approximately 21.3 per cent) and of children under 15 years of age (42 per cent).

Level and Structure of Maternal Risk

Maternal mortality, according to the information available (*23*), which is subject to a high degree of underevaluation, is approximately five times higher in Latin America (with rates of 13.1 and 14.4 per 10,000 live births, respectively, in Middle America and South America) than in Northern America (2.7 per 10,000).

The causes of death among mothers are for the most part of a kind that could be prevented: toxemia during pregnancy, hemorrhagic accidents, sepsis, and in particular induced abortion; the extent of the increase in the last-named hazard calls for proper quantification, since death from abortion could be reduced. Mention should be made of the findings of the Inter-American Investigation of Mortality (*27*) carried out between 1962 and 1964 by the Pan American Health Organization and the Governments of nine countries of the Americas, which indicated that in some countries induced abortion accounts for up to 33 per cent of all maternal deaths.

TABLE 2–Basic data concerning certain features of the population structure of selected Latin American countries.

Country	Population[a] (1970 estimate, in thousands) Total	15 years (%)	5 years (%)	1 year (%)	Births[b] 1970-1975	Life expectancy[a] 1970-1975
Argentina	24,352	29.7	12.2	1.6	22.9	68.4
Bolivia	4,658	42.5	16.9	3.9	44.0	46.8
Brazil	93,244	42.6	16.2	2.8	36.9	63.0
Chile	9,780	39.3	14.1	3.0	31.1	63.6
Colombia	22,160	47.1	18.8	3.6	43.9	60.8
Costa Rica	1,798	48.0	18.9	3.6	45.1	69.4
Cuba	8,341	44.3	14.8	2.5	26.1	69.0
Dominican Republic	4,348	47.3	18.4	3.7	48.1	54.6
Ecuador	6,028	46.9	18.8	4.2	43.5	59.6
El Salvador	3,441	47.1	19.4	4.3	46.9	58.2
Guatemala	5,179	47.6	17.7	4.1	41.6	54.0
Haiti	5,229	41.5	16.8	3.7	43.6	45.5
Honduras	2,583	46.7	18.9	4.1	48.5	51.4
Mexico	50,718	46.4	18.7	3.1	42.1	64.6
Nicaragua	2,021	48.0	18.9	4.4	46.8	52.5
Panama	1,406	43.5	17.3	3.9	39.2	55.8
Paraguay	2,419	45.5	17.7	4.2	44.6	61.5
Peru	13,586	45.0	17.4	3.8	39.8	62.0
Uruguay	2,889	28.0	10.0	2.1	20.9	70.1
Venezuela	10,755	49.0	18.9	4.2	40.3	66.3

Sources: [a]Latin American Center for Demography (CELADE). *Boletín Demográfico*, Year II, No. 3, 1969.
[b]CELADE. *Boletín Demográfico*, Year II, No. 4, 1969.

Abortion in the Region is a frequent cause of morbidity, but the actual extent can be determined only by means of retrospective or prospective studies. With regard to its repercussions on medical care, sufficient data are available to demonstrate that its prevalence in many Latin American countries is such as to account for up to 20 per cent of all obstetrical cases.

The death rates for infants and children between 1 and 4 years of age (Table 3) fluctuate considerably in the Latin American countries (*22*). Rath's researches reveal that at times, especially in Central America (*28*), the official figures differ very appreciably from what is though to be the real situation.

The three most prevalent morbidity factors that bring about the deaths of children under 5 years of age represent hazards which in a large measure could be reduced: gastroenteritis, communicable diseases, and respiratory diseases. But because of the poor certification of infant deaths, the prevalence of the true underlying cause—malnutrition—does not emerge clearly.

The Inter-American Investigation of Mortality in Childhood now under way in 13 areas of Latin America is revealing that malnutrition is a direct or associated cause of a large percentage of deaths of children under 5 years. The Investigation also brings out the importance of communicable diseases, including measles, as a contributing factor in child mortality (*26*).

It should be pointed out that it is not easy to identify the causal role played by "diseases of early infancy," most of which are to be found in group B of the current *International Statistical Classification of Diseases, Injuries, and Causes of Death,* and as a result the corresponding perinatal hazard is not given due weight (see Table 4) (*32*).

The Environment as a Health Hazard

In Latin America environmental factors have an important bearing on maternal and child health hazards. The most important of such

TABLE 3—Success achieved in reducing death rates for children under 5 years of age in relation to the goals of the Charter of Punta del Este in selected Latin American countries, 1968.

Country	Infant mortality (per 1,000 live births)			Reduction achieved (%)	Mortality 1-4 years (per 1,000)			Reduction achieved (%)
	Average 1960-1962	1968	Target 1968		Average 1960-1962	1968	Target 1968	
Argentina[a]	61.0	60.6	42.7	2	4.3	2.6	3.0	131
Barbados	65.9	45.4	42.8	89	3.7	1.8	2.4	146
Chile	117.8	86.8	76.6	76	8.2	3.2	5.3	172
Colombia[a]	92.8	78.3	65.0	52	15.4	11.7	10.8	80
Costa Rica[a]	66.1	62.3	46.3	19	7.5	5.3	5.2	96
Cuba	38.0	40.8	24.7	–	2.3	1.6	1.5	94
Dominican Republic	94.1	72.6	61.2	65	10.4	7.1	6.8	92
Ecuador	99.4	87.3	69.6	41	22.2	14.7	15.5	112
El Salvador	72.5	59.2	47.1	52	17.1	10.1	11.1	118
Guatemala	89.3	93.8	58.0	–	32.4	27.6[b]	24.3[b]	59
Honduras[a]	48.4	35.5	33.9	89	14.1	10.9	9.9	76
Jamaica	49.1	34.7	31.9	81	6.8	5.4	4.4	58
Mexico	71.4	64.2	46.4	28	13.8	9.8	9.0	83
Nicaragua	63.1	53.2	41.0	45	8.6	8.2	5.6	13
Panama	51.1	39.2	33.2	66	7.9	7.3	5.1	21
Paraguay	89.7	102.8	58.3	–	9.4	11.3	6.1	–
Peru[a]	92.9	75.3	65.0	56	15.7	9.0	11.0	143
Trinidad and Tobago[a]	42.9	35.8	30.0	55	2.5	1.7	1.8	114
Uruguay	44.6	49.8[a]	31.2[a]	–	1.3	1.4	0.8	–
Venezuela	52.1	44.3	33.9	43	5.7	5.2	3.7	25

[a] 1967.
[b] 1966.
Source: Health Conditions in the Americas (1965-1968), Scientific Publication PAHO 207 (1970), p. 27.

TABLE 4–Perinatal mortality in selected countries of the Americas, 1965-1966.

Country	Perinatal mortality		
	Late fetal	Early	Total
Canada	11.3	14.3	25.6
Chile	24.2	24.1	48.3
Costa Rica	19.8	16.6	36.4
El Salvador	9.0	12.7	21.7
Guatemala	30.8	20.0	50.8
Panama	16.0	15.9	31.9
United States of America	10.6	15.9	26.5

Source: World Health Statistics Report, Vol. 22, No. 1, 1969.

factors are low income levels, ranging from US$86 in Haiti to US$977 in Venezuela; the proportion of the population living in rural areas, which fluctuates between 21.4 per cent in Uruguay and 82 per cent in Haiti; the availability of piped water supplies, ranging anywhere from 6.5 per cent in areas of Haiti to 92.3 per cent in Venezuela; illiteracy, which is fairly low in Argentina (8.6 per cent) and very high in Haiti (80.0 per cent); and calorie intake, ranging from 1,840 in El Salvador to 3,170 in Uruguay (*3, 22*).

Interaction of Health Policies

The health policy adopted in the various countries is one of the factors determining the level and structure of the maternal and child health situation.

Over-all monetary resource figures indicate that frequently a sum of less than US$10 per capita is spent on health, and the average estimated implies a considerable imbalance, both geographically and institutionally.

Since as a general rule the resources assigned to maternal and child health services are not so specified, it is extremely difficult to identify the expenditure incurred in this area and the cost-benefit results of the pertinent activities, and information is also lacking on the specific resources available in terms of installed capacity (chiefly hospital beds) and professional personnel and auxiliary staff attached to the maternal and child health care services.

As regards the hospital bed situation as a whole, two-thirds of the Latin American countries have fewer than five beds per 1,000 inhabitants, and in many instances the figures for pediatric and obstetrical beds are less than 10 per cent of the total number of beds (*21*). Even though we know that there is a certain additional unspecified number of beds serving the requirements of maternal and child care, it is an undoubted fact that the resources in this field are few.

The total available medical and nursing personnel in Latin America is limited, being approximately one-third and one-seventh, respectively, of those in Northern America (*22*); the numbers specializing in maternal and child protection programs are largely unknown. In seven countries, we know that the number of pediatricians and obstetricians is more than 5 per cent of the total number of doctors, but data are lacking on their distribution by geographic area and type of care given, and on the proportion of general medical practitioners and nursing personnel with maternal and child health responsibilities. This explains why the operational level in Latin America is distinctly low.

Institutionalized care during childbirth ranges from extremely low figures (Haiti 10.1 per cent, Paraguay 18.0 per cent) to a progressively adequate coverage (Cuba 91.4 per cent, Chile 80.6 per cent, Barbados 71.9 per cent). In approximately half the countries less than 50 per cent of women are given professional care during childbirth and in seven countries the figure is under 30 per cent–a particularly serious situation, since confinements not handled in hospital centers are left to the care of empirical midwives.

The coverage recorded in prenatal and child care is likewise generally very low, though it fluctuates according to the country between 10 per cent and 70 per cent. The information available on this is in any case decidedly unreliable.

Integrated Maternal and Child Protection

The planning and development of an integrated maternal and child protection program is only conceivable as formulated in the context of a country's national health plan. In most of the Latin American countries the situation is not explicit; there is no definition of the resources actually available for the execution of the program and for establishing feasible targets.

Purposes

The following should be stipulated as the basic purposes of an integrated maternal and child protection program:

a) To help to reduce morbidity and mortality among mothers, particularly as caused by unduly frequent childbearing, induced abortion, cervical cancer, and other gynecological troubles.

b) To help to reduce morbidity and mortality among children, especially at the stage most vital for their development, by means of increased measures to reduce possible injury and promote adequate and timely medical care.

c) To help to improve the conditions of family well-being through better education and the provision of services aimed at the conscious exercise of the rights and duties of responsible parenthood, with due respect for free decision on the part of the spouses.

Objectives

The objectives include care, teaching, training, and research.

Objectives Involving Medical Care

These are tentative targets for coverage and concentration of activities; they should be progressive in character, with program priorities obviously geared to the proper social and economic development level, as illustrated schematically in Table 5.

Over-All Family Protection

The family, as the natural and most immediate environmental medium in which normally speaking the vital cycles of maternity and childhood occur; a satisfactory legal basis and economic and employment stability for the family; procreation within the family, deliberate and responsible; psychosocial harmony among its members and their incorporation in the activities of the local community—these are basic objectives to be sought in promoting maternal and child health. And in due course this means the multidisciplinary implementation of programs and proper coordination of them by various agencies.

An optimum state of health in parents; suitable education in matters connected with conjugal and family responsibility; premarital health supervision, including the increasingly important activities of genetic counselling and guidance with a view to rationally accepted maternity—these are basic factors in the promotion of health in the intervals between childbearing.

Prenatal Care

Early prenatal care, maintained with strict regularity, should be based on medical, obstetrical, and dental supervision; the inculcation of hygienic habits, and especially nutrition education or supplementary feeding or both; and psychosocial guidance and economic and employment safeguards where these are called for, always with due regard to physiological needs during the gestation period. The scheme thus outlined implies not only that adequate resources—mainly personnel—must be forthcoming, but also that there must be informed motivation on the part of the mothers themselves.

In most of the Latin American countries the prenatal care coverage of pregnant women is frequently under 30 per cent (Table 6) (*22*). On the basis of the foregoing data, a reasonable target over the next four-year period (1972-1975) would be the progressive achieve-

TABLE 5–Priorities in maternal and child protection programs according to level of socioeconomic development.

Pertinent health situation	Socioeconomic level		
	High	Medium	Low
Prevalent risks			
Maternal health	Minimun maternal mortality	High maternal mortality	Very high over-all maternal mortality
Child health	Perinatal mortality	Neonatal and post-natal mortality	Mortality in young children
Priority groups			
Maternal programs	First confinements, adolescents, and unmarried mothers	First confinements and repeated abortion cases	All pregnant women
Child programs	Underweight newborns	Newborns Unweaned babies	All young children
Preferential activities			
Education for family life	Limited	Considerable	Considerable
Primary prevention	Moderate	Considerable	Considerable
Medical care	Moderate	Considerable	Considerable
Mental health	Considerable	Moderate	Limited
Social welfare	Limited	Moderate	Considerable
Professional staff available			
Specialists	Obstetrician-pediatrician Nurse and/or midwife (***)	Obstetrician-pediatrician Nurse and/or midwife (**)	Obstetrician-pediatrician Nurse and/or midwife (o/*)
Basic	General physician and nurse (***) Technical auxiliary (*)	General physician and nurse (**) Technical auxiliary (**)	General physician and nurse (*) Technical auxiliary (***)
Nonprofessional staff available	Volunteers (*)	Community promoters and empirical personnel (**)	Community promoters and empirical personnel (***)

Note: The asterisks denote the relative level of resources available.

TABLE 6–Coverage of prenatal control in selected Latin American countries.

Country	% of women receiving services[a]
Barbados	52.2
Colombia	28.1
Ecuador	20.5
El Salvador	28.5
Guatemala	7.1
Honduras	24.2
Jamaica	78.9
Nicaragua	15.9
Panama	67.6
Peru	39.2
Trinidad and Tobago	87.3
Venezuela	16.7

[a]Per 100 live births.

Source: Health Conditions in the Americas (1965-1968), Scientific Publication PAHO 207 (1970), p. 142.

ment of an average coverage of not less than 60 per cent of the estimated number of pregnant women, if possible enrolled before the third month of pregnancy.

As regards the frequency of visits, it is felt that there ought to be at least five consultations per registered patient, including extra care in the event of gynecological or obstetrical complications.

These targets involve the enlistment for the program of additional auxiliary personnel, adequately trained and regularly supervised, and the establishment of priorities for selective treatment, so that cases involving high risk can be handled by professionals, especially in the areas where resources are particularly scarce.

Technical Care during Childbirth

Adequate technical care during the confinement is the next essential stage after prenatal care. Today there are vast differences from one Latin American country to another; but it is fair to say that a large proportion of confinements are not in professional hands, and where they are, it is as a rule because the patients are treated in hospitals, mostly in the capital or the larger provincial towns (Table 7).

The major challenge in this respect occurs in countries or parts of countries combining a high birth rate with extensive rural populations and hence inaccessibility to medical care. In such circumstances it is inevitable that, for a long time to come, realistic solutions must be found that include both the use of auxiliaries (*12*), with *ad hoc* training and surveillance, and arrangements by which emergency beds are installed in health units for this purpose.

In the light of the foregoing, the target for increase in technical care during confinement in the period 1972-1975 should be an average coverage of approximately 60 per cent. Obviously, this means, among other measures, the standardization of resources in terms of installed capacity based on a level of utilization of 70 per cent and an average stay in hospital of four days.

TABLE 7–Technical care during childbirth in selected Latin American countries, 1968.

Country	Technical care during childbirth (%)
Barbados	71.9
Chile	80.6
Colombia	29.3
Costa Rica	65.0
Cuba	91.4
Ecuador	26.6
El Salvador	26.2
Haiti	10.1
Honduras	19.8
Jamaica	65.5
Panama	61.2
Paraguay	18.6
Peru	25.0
Trinidad and Tobago	53.3
Venezuela	63.0

Source: PAHO document "Quadrennial Projections of the Latin American Countries, 1971-1975," and *Health Conditions in the Americas (1965-1968), Scientific Publication PAHO 207* (1970), p. 142.

Care during the Puerperium

Supervision during the puerperium is important in maternal care; it provides an indispensable gynecological check, promotes education in regard to family life, and makes for an earlier start in supervising the child during the neonatal period. This type of activity has as a rule extremely low coverage in Latin America; in most of the countries it does not reach even 5 per cent of nursing mothers.

It seems highly likely that with the efficient coordination of maternal and child health protection activities, this problem will be overcome by making full use of the opportunities for mothers and children to make contact with the appropriate health services. Thus a target of progressive coverage might be set aiming at 50 per cent of mothers during the puerperium, wherever possible under the supervision of nurse-midwives with adequate training and supervision.

Regulation of Fertility

The regulation of fertility is at the present time one of the objectives of the maternal protection program, to be carried out in close coordination with other activities involving the regular care of maternal health. Because of the serious biological effects on the family of early, frequent, and often involuntary procreation, and the type of practices used for coping with it, particularly abortion, during the last decade family planning activities have been developing in Latin America progressively and in accordance with the way of life of the people (*5, 6*).

Family planning activity has been gaining ground in the countries of the Region, beginning with national private bodies, which have received outside help. In the last few years there has been an increase in collaboration to this end by international agencies, including the

World Health Organization (*7-11, 13-15*) and the Pan American Health Organization (*19, 21*), the United Nations (*30*), the United States Agency for International Development, the Population Council, the International Family Planning Federation, the Ford Foundation, and the Pathfinder Foundation.

During the last five-year period, the Governments of the Region have been gradually assuming the leadership of activities designed to regulate fertility, and have strengthened the maternal and child health divisions within the ministries to include family counselling. This complies with the pertinent recommendations of the Meeting of Ministers of Health of the Americas (Buenos Aires, 1968).

As is indicated in Table 8 (*4*), the coverage achieved in activities for the regulation of fertility in Latin America is low: in 12 countries it reaches less than 2 per cent of women of childbearing age, and only four countries record figures of over 10 per cent.

One thing is certain: if the program in question is to be expanded, there must be a different approach from that used hitherto, especially as regards the incorporation of auxiliary health workers in the program and increased delegation of responsibility to them. Provided they are really well trained and supervised, auxiliaries can form a link with the community in promoting effective motivation and/or expansion of fertility regulation. Similarly, such action must be better coordinated than at present with the other activities of the maternal and child health program, and advantage must be taken of all contacts made in connection with the program, whether at the time of attendance at the hospital or health center, or in the course of home health visiting.

In this connection, stress must be placed on the importance of postnatal consultation, which has a threefold function to fulfill: supervision during the puerperium, care of the newborn child, and family counselling, which obviously implies the promotion of harmonious collaboration among the relevant professionals in the health team. With these activities goes the rational and selective cytological examination, making for early detection of cervico-uterine cancer and appropriate arrangements for treating it in time.

In the light of the above premises, a tentative target for the period 1972-1975 might be an average coverage of 15 per cent of women of childbearing age (15-44 years), with up to four consultations a year for each of the methods adopted, to be given in accordance with a systematic schedule by doctors, nurses, midwives, and health auxiliaries.

The targets fixed must of course be regarded as progressive for each country, and they must be achieved parallel with the development of the education program. This means establishing priorities, notably those necessitated by clandestine induced abortions, excessive childbearing, the family situation, both socio-economic and emotional, and in general the special health conditions of the mother and the children in the individual household. But such activities must in no circumstances be carried out to the detriment of any of the activities specifically concerned with maternal and child health care. Due respect must be paid to the

TABLE 8–Coverage of activities for regulation of fertility in Latin America, 1968.

Country	Acceptances	Proportion A/W[a]
Argentina	30,345	0.5
Barbados	22,239	37.7
Bolivia	2,251	0.3
Brazil	69,362	0.4
Chile	213,108	10.3
Colombia	71,778	1.7
Costa Rica	37,067	11.9
Cuba	8,572	0.5
Dominican Republic	6,888	0.9
Ecuador	18,496	1.7
El Salvador	34,216	5.4
Guatemala	19,875	2.0
Haiti	6,000	0.6
Honduras	23,171	4.8
Jamaica	12,731	2.8
Mexico	38,534	0.4
Nicaragua	4,406	1.2
Panama	10,755	4.1
Paraguay	4,730	1.1
Trinidad and Tobago	23,711	10.9
Uruguay	7,000	1.0
Venezuela	24,885	4.3

[a]A/W: Acceptances/Women of childbearing age.
Source: María Luisa García. CELADE Publication Series A-97, 1970.

freedom of the individual and the dignity of the family, the process being complemented by additional measures: education, and economic, social and employment safeguards, designed to promote the well-being of the family.

Supervision of the Health of the Young Child

Comprehensive supervision of the health of the young child and subsequent care are the master key to child protection, combining prevention and cure (*29*). The process must start early and at the appropriate operational level. Here it must be stressed that coverage in most of the Latin American countries is defective, to judge by the scanty information available (*22*).

Child supervision is a continuing operation, and the factors determining where the emphasis should be placed are prevention of the maximum risks to which early childhood is exposed, biological peculiarities in the child (congenital abnormalities, premature birth, malnutrition, etc.) and the socioeconomic and cultural situation of the family (work stoppage, alchoholism, legal or psychosocial complications between the spouses, and illiteracy).

Integrated supervision includes, basically, evaluation of anthropometric growth and physical, psychic and emotional development, care in sickness, education in family hygiene, encouragement of maternal feeding, supplementary feeding where necessary; prevention of communicable diseases and accidents; and sound psychosocial adaptation of the child as a member of the household and of the community.

Special mention must be made of actual sick care of the child. In an integrated health service this should be carried on jointly with the supervision of development as described above, and advantage should be taken of the existing medical care coordination and/or regionalization system while hospital centers should provide specialized consultant services and/or inpatient treatment where necessary.

In the light of the above, a target coverage for the four-year period 1972-1975 of up to 80 and 60 per cent might be set for the child population under 2 years and from 2 to 5 years of age, respectively. A program calculated to achieve such a coverage should provide for health consultations at the rate of 12, 8, and 1 in the first, second, and each succeeding year of childhood. Obviously, these consultations could coincide with casual illness, but this would not prevent regarding the contact with the health services on such occasions as an opportunity for keeping an eye on the basic aspects of child development (*18*).

It seems likely that increased morbidity will call for substantial help from auxiliary and outside personnel if the objectives in question are to be fullfilled.

With regard to hospital pediatric care, a utilization rate of approximately 80 per cent and an average of 10 days hospital stay will have to be obtained before medical care is sufficient to ensure the general expansion of the program.

Health Safeguards for the Schoolchild and the Adolescent

The biological protection of the schoolchild and the adolescent is the prolongation of the work carried out during early infancy and childhood, rounding off the health promotion operation covering the whole of the development cycle.

In Latin America, health safeguards for the schoolchild and the adolescent are based, usually without adequate coordination, on non-specific activities carried out in general health services or in medical units at the school, university or workers' level, through a multidisciplinary team of professionals (orthopedists, gynecologists, endocrinologists, psychiatrists, nurses, psychologists, and sociologists). At the present time it is difficult to provide systematic and efficient youth care on a national scale. This is only feasible in the context of a health policy in which medical care is regionalized and the aforementioned centers take the form of technical assistance nuclei and reference centers for specialist consultation. This necessitates

training for the various types of personnel within the health team to carry out the relevant activities in close cooperation with teachers, vocational guidance centers, and youth organizations.

Teaching, Training, and Research Objectives

In establishing training targets, account must be taken both of the type of personnel undergoing training—multidisciplinary in the case of maternal and child protection programs—and of the responsibilities assigned to such personnel.

The basic curriculum and the schedule of research work should preferably include, among other subjects, the biological and health aspects of human reproduction and child development, and the organization of health services, particularly those concerned with maternal and child protection, with due regard to the demographic problem involved.

Mention should be made of the opportunities for advanced training available to the Latin American countries through various international organizations, including the Pan American Health Organization: regular courses in clinical and social pediatrics (Santiago, Chile, and Medellín, Colombia); health and population dynamics (Santiago, Chile, and São Paulo, Brazil); administration of maternal and child health (Santiago, Chile, and Buenos Aires, Argentina); and intensive care of the mother, the fetus, and the newborn child (at the recently established Latin American Center for Perinatology and Human Development, Montevideo, Uruguay) (*25*).

Again with regard to maternal and child health teaching, stress must be placed on the coordinated activities carried out by PAHO in conjunction with the International Children's Center in Paris and the Inter-American Children's Institute, a specialized agency of the Organization of American States, by means of seminars designed to analyze the most important problems connected with the health of the child and the family (*25*).

Finally, a word should be said about the serious attention given in Latin America to the training of auxiliary medical personnel specifically for carrying out maternal and child care activities.

In the field of research, maternal and child health programs in Latin America should as far as possible help to stimulate and/or strengthen basic or operations research studies designed *inter alia*, in conjunction with other agencies, to enhance our knowledge of the vital factors governing these health problems. Here, undoubtedly, a considerable contribution has been made through the PAHO sponsorship both of the Inter-American Investigation of Mortality among adults (1962-1964), which brought to light significant epidemiological data connected with the study of maternal mortality (*27*), and of the current research in 13 selected areas of Latin America on mortality hazards during childhood. The preliminary findings of this current investigation make for greater precision in assessing the extent and knowledge of the problem and in determining the causes of mortality—often avoidable mortality occurring early in life (*26*).

At the present time, apart from the research being carried out in specialized centers, mostly on the problems of human fertility, nutrition, and child growth and development, great interest has developed in Latin America in operations research designed to establish the most appropriate techniques and procedures for achieving the best results and efficiency in maternal and child care.

As a corollary to this, it should be pointed out that the attainment of the medical care, training, and research objectives referred to above is bound up with the possibility of a joint policy on the part of ministries of health and universities in regard to these activities.

Summary

The unsatisfactory health status of mothers and children in Latin America is closely related to general development and demographic changes in the various countries, and reflects the equally unsatisfactory state of the health services in most parts of the Region. The

situation is complicated by the underregistration and unreliability of vital and other statistics.

What can be said with reasonable certainty is that the maternal mortality rate in Latin America is some five times higher than in Northern America, and that the main causes of maternal death—toxemia, hemorrhage, sepsis, induced abortion, etc.—are largely preventable. The corresponding figures for young children suggest that the main hazards are gastroenteritis, communicable diseases, and respiratory disorders, but the statistics tend to underestimate the major cause: malnutrition.

Some of the chief factors contributing to maternal and child health deficiencies are low income levels, primitive rural conditions, poor water supply, illiteracy, and lack of calories in the diet. At the same time the facilities for dealing with these problems—an adequate proportion of the scarce funds allocated to health services, a sufficient number of hospital beds, and a plentiful supply of doctors and nursing personnel—are not forthcoming.

The article advocates an integrated maternal and child protection program, with the following basic aims: to reduce maternal mortality resulting from unduly frequent childbearing, induced abortion, cervical cancer, etc.; to lower the death rate for young children by better and more prompt action against reducible health hazards; and to improve family well-being by education in the rights and duties of responsible parenthood. The means of achieving these aims include the establishment of priorities in the light of social and economic factors; comprehensive family protection (legal, psychosocial, hygienic, educational, etc.), with the cooperation of all the health agencies; prenatal care (medical, dental, economic, etc.); professional care during confinement; care during the puerperium; regulation of fertility (family planning); health supervision in infancy, including nutrition; protection of health of schoolchildren and adolescents; teaching, training, and research. Under each of these headings, the author gives current statistics where available and suggests coverage targets attainable in the light of the varying stage of development of the countries. □

REFERENCES

(*1*) Latin American Center for Demography (CELADE). *Boletín Demográfico.* Year II, No. 3, Santiago, Chile, 1969.

(*2*) CELADE. *Boletín Demográfico.* Year II, No. 4, Santiago, Chile, 1969.

(*3*) Inter-American Development Bank. *Socio-Economic Progress in Latin America. Social Progress Fund. Ninth Annual Report.* Washington, D.C., 1969.

(*4*) García, M. L. *Programas de planificación familiar en América Latina, 1969.* CELADE Publication Series A-97, Santiago, Chile, 1970.

(*5*) Miró, C. *Un programa de encuestas cooperativas de fecundidad en América Latina. Refutación de algunos conceptos erróneos.* CELADE Publication Series A-49, Santiago, Chile, 1965.

(*6*) Miró, C. and F. Rath. *Resultados preliminares de las encuestas comparativas de fecundidad en tres países latinoamericanos.* CELADE Publication Series A-47, Santiago, Chile, 1965.

(*7*) World Health Organization. Eighteenth World Health Assembly, Document A-78/P and B/4, Geneva, 1965.

(*8*) World Health Organization. Nineteenth World Health Assembly, Document A-18/P and B/19, Geneva, 1966.

(*9*) World Health Organization. Twentieth World Health Assembly, Document A-19/VR/14, Geneva, 1967.

(*10*) World Health Organization. Twenty-First World Health Assembly, Document A-21/P and B/9, Geneva, 1968.

(*11*) World Health Organization. Twenty-Second World Health Assembly, Document WHA/22.32, Geneva, 1969.

(*12*) World Health Organization. *The Midwife in Maternity Care—Report of a WHO Expert Committee.* Technical Report Series No. 331, Geneva, 1966.

(*13*) World Health Organization. *Developments in Fertility Control—Report of a WHO Scientific Group.* Technical Report Series No. 424, Geneva, 1969.

(*14*) World Health Organization. *The Organization and Administration of Maternal and Child Health Services—Fifth Report of the WHO Expert Committee on Maternal and Child Health.* Technical Report Series No. 428, Geneva, 1969.

(*15*) World Health Organization. *Biological Components of Human Reproduction: Studies of their Variations in Population Groups—Report of a WHO Scientific Group.* Technical Report Series No. 435, Geneva, 1969.

(*16*) Pan American Health Organization. *Salud—Crecimiento económico y progreso social en la América latina.* Miscellaneous Publication PAHO 68, Washington, D.C., 1961.

(*17*) Pan American Health Organization. *Task Force on Health at the Ministerial Level, Final Report.* Official Document PAHO 51, Washington, D.C., 1964.

(*18*) Pan American Health Organization. *A Health Care Program for Mothers and Children.* Scientific Publication PAHO 130, Washington, D.C., 1966.

(*19*) Pan American Health Organization."Participation of the Health Sector in Population Policy." In: *English Edition of the Boletín de la Oficina Sanitaria Panamericana–Selections from 1969,* Washington, D.C., 1970, pp. 1-18.

(*20*) Pan American Health Organization. *Facts on Health Progress.* Scientific Publication PAHO 166, Washington, D.C., 1968.

(*21*) Pan American Health Organization. *Special Meeting of Ministers of Health of the Americas (Buenos Aires, October 1968)–Final Report.* Official Document PAHO 89, Washington, D.C., 1968.

(*22*) Pan American Health Organization. *Health Conditions in the Americas, 1965-1968.* Scientific Publication PAHO 207, Washington, D.C., 1970.

(*23*) Pan American Health Organization. *Maternal Nutrition and Family Planning in the Americas.* Scientific Publication PAHO 204, Washington, D.C., 1970.

(*24*) Pan American Health Organization. "Quadrennial Projections of the Latin American Countries, 1971-1975." Mimeographed document, Washington, D.C., 1970.

(*25*) Pan American Health Organization. *Quadrennial Report of the Director, 1966-1969.* Official Document PAHO 101, Washington, D.C., 1970.

(*26*) Pan American Health Organization. "Progress Report of the Inter-American Investigation of Mortality in Childhood." Mimeographed document of the Ninth Meeting of the PAHO Advisory Committee on Medical Research, Washington, D.C., 1970.

(*27*) Puffer, R. R. and G. W. Griffith. *Patterns of Urban Mortality.* Scientific Publication PAHO 151, Washington, D.C., 1967.

(*28*) Rath, F. "América Central. Tendencias tasadas y perspectivas de su población." Mimeographed document, University of Costa Rica, 1968.

(*29*) Rosselot, J. "La salud del niño, valores, riesgos y metas, con especial referencia a Latinoamérica." Mimeographed document, PAHO/WHO Seminar on Family Planning, Panama, 1969.

(*30*) Pan American Union. "Declaration of the Presidents of America." In: *Meeting of American Chiefs of State (Punta del Este, Uruguay, April 1967).* Publication 34.1.1-E-7480, Washington, D.C., 1967.

(*31*) United Nations Economic and Social Council, Committee on Coordination. "Special Report on Coordination in Certain Fields Designated by the Council in Resolution 1277 B (XLIII)." Mimeographed document, New York, 1968.

(*32*) World Health Organization. *World Health Statistics Report,* Vol. 22, No 1, 1969.