

# Epidemiological Bulletin

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## Infant Mortality in the Americas

In this century, the concept of health as the intersectoral product of a general process of development whose goal is the well-being of society has been endorsed by experts in the social sciences throughout the world. The close relationship between the traditionally used health indicators—in particular, infant mortality and socioeconomic factors—has been increasingly recognized, so much so that health indicators have become indicators of social development.

Infant mortality not only points to the occurrence of a biological phenomenon but also suggests conditions of housing, nutrition, education, environment, and other phenomena that characterize the style and quality of life of a particular society.

In recent years technologies have been developed that make it possible to prevent and successfully treat the diseases that cause the majority of infant deaths. Their use in the more advanced countries has brought about significant and steady declines in the mortality in the early age groups. In the developing countries, where deaths due to preventable diseases of early childhood account for more than 60 per cent of the total, it has thus become possible to reduce mortality through the use of appropriate technologies.

Although almost all the Latin American countries have seen their infant mortality rates decline, they have not been able to narrow the gap that exists between them and the developed countries.

In analyzing the various goals established for the Americas in the 1960's, the Pan American Health Orga-

nization found that, in regard to the goal of reducing infant mortality, only a third of the proposed reduction of 50 per cent had been attained.<sup>1</sup> In the 1970's there was also a downward trend in almost the entire Region, but few countries succeeded in reaching the goal (Table 1). Around 1977, only 17 out of a total of 32 countries had reduced their rates by 20 per cent or more, while two others showed slight increases.

An analysis of infant mortality rates shows that, in general, the limitations of underdevelopment affect registration systems. As a result, data are available for only 23 of 32 countries. It is also clear that some of the figures reflect substantial underregistration of vital events.

Table 2 shows the information PAHO has received from the countries in recent years. Neonatal mortality (which includes deaths in infants aged 28 days or under) is more connected with biological factors (endogenous mortality), while postneonatal mortality is connected with socioeconomic factors derived from adverse environmental conditions (exogenous mortality). This explains why neonatal mortality is considered more difficult to reduce, at least in the conditions prevailing in the Region of the Americas, since, to do so, major efforts are required in developing institutionalized services of greater complexity. Postneonatal mortality can be substantially reduced through the application of primary health care

<sup>1</sup>Pan American Health Organization, *Facts on Health Progress, 1971*. Scientific Publication 227. Washington, D.C., 1971.

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**Table 1. Infant mortality rates per 1,000 live births, around 1960, 1969, 1977 and total and percentage variations.**

Country	1960	1969	1977 <sup>a</sup>	Variation 1960-1977 <sup>a</sup>	Variation %
Argentina	62.4	61.1	44.9	-17.5	-28.0
Canada	27.3	19.3	11.9	-14.9	-54.6
Chile	120.3	78.7	47.5	-72.8	-60.5
Colombia	99.8	71.4	46.7	-53.1	-53.2
Costa Rica	68.6	67.1	27.8	-40.8	-59.5
Cuba	35.4	47.7	25.0	-10.4	-29.4
Dominican Republic	100.6	61.9	40.7	-59.9	-59.5
El Salvador	76.3	63.3	53.4	-22.9	-30.0
Guatemala	91.9	91.3	75.3	-22.2	-24.2
Mexico	74.2	66.7	54.7	-27.6	-37.2
Nicaragua	70.2	54.4	35.2	-35.0	-49.9
Panama	56.9	39.9	33.0	-23.9	-42.0
Paraguay <sup>b</sup>	90.7	91.1	95.2	+ 4.5	+ 5.0
Peru	92.1	68.9	72.4	-30.7	-33.3
Puerto Rico	43.7	29.7	20.9	-22.8	-52.2
Trinidad and Tobago	45.4	39.8	25.5	-19.9	-43.8
United States of America	26.0	20.9	14.1	-11.9	-45.8
Uruguay	47.4	48.7	40.8	- 6.6	-13.9
Venezuela	52.9	46.9	39.5	13.4	-25.3

<sup>a</sup> Around 1977.

<sup>b</sup> Reporting area.

measures; accordingly, the study of this mortality is of interest in defining levels of infant health.

As may be seen from Table 2, in ten countries of the Americas neonatal mortality is still higher than post-neonatal mortality. But this obviously does not mean that the greater efforts should now be concentrated on perinatal care.

Table 3 shows the leading causes of death by order of importance in infants under 1 year of age in the Americas in 1969 and 1975. The harmful environmental factors that cause deaths are expressed, inter alia, in diseases such as enteritis, diarrheal diseases, influenza, and pneumonia.

Deaths due to infectious and parasitic diseases fell from 693 per 100,000 population to 484 (30 per cent) between 1972 and 1975. This reduction was probably due in part to the lower mortality from enteritis and other diarrheal diseases, which are an important component of the group of infectious and parasitic diseases that are responsible for a high percentage of deaths in children under 1 year of age in many Latin American countries.

Mortality from respiratory diseases fell from 470 per 100,000 population in 1972 to 361 (23 per cent) in 1975. Those due to congenital anomalies and diseases of early childhood declined by 15 per cent during the same period (from 299 to 253 per 100,000 population). Mortality from ill-defined causes and the remaining diseases fell by 26 and 12 per cent, respectively.

**Table 2. Mortality rates in children under 1 year of age per 1,000 live births in 23 countries in the Americas (most recent year for which data are available).**

Country/Year	Infant mortality	Postneonatal mortality	Neonatal mortality
Argentina (1977)	44.9	21.5	23.4
Canada (1977)	11.9	3.9	8.0
Chile (1977)	47.5	26.6	20.9
Colombia (1975)	46.7	27.8	18.9
Costa Rica (1976)	33.3	15.8	17.5
Cuba (1977)	25.0	9.6	15.4
Dominican Republic (1976)	40.7	20.0	20.7
Ecuador (1974)	70.2	49.5	20.7
El Salvador (1974)	53.4	...	...
Guatemala (1976)	75.3	51.7	23.6
Martinique (1975)	22.8	13.0	9.8
Mexico (1974)	46.6	28.5	18.1
Montserrat (1972)	31.4	...	...
Nicaragua (1977)	35.2	27.3	7.9
Panama (1974)	33.0	15.3	17.7
Paraguay (1977) <sup>a</sup>	95.2	...	...
Peru (1973)	61.4	39.5	21.9
Puerto Rico (1975)	20.9	4.5	16.3
Saint Kitts, Nevis, and Anguilla (1977)	41.76	21.5	20.6
Trinidad and Tobago (1976)	25.5	11.2	14.2
United States of America (1977)	14.1	4.2	9.9
Uruguay (1976)	40.8	18.2	22.6
Venezuela (1977)	39.5	20.3	19.3

<sup>a</sup> Reporting area.

... No data available.

**Table 3. Leading causes of death in children under 1 year of age in North America, Middle America, and South America, around 1969 and 1975.**

1969					
North America		Middle America		South America	
Cause	%	Cause	%	Cause	%
1	57.1	3	22.9	3	19.7
2	15.5	4	22.2	1	18.6
3	9.4	1	17.4	4	16.5
5	3.5	2	2.8	6	6.3
4	1.2	8	2.5	2	3.5
7	13.3	7	32.2	7	35.4
Total	100.0	Total	100.0	Total	100.0

  

1975					
North America		Middle America		South America	
Cause	%	Cause	%	Cause	%
1	52.2	4	22.4	1	21.1
2	17.4	3	21.0	3	17.8
3	4.4	1	18.2	4	17.1
5	2.9	2	3.3	6	4.7
4	1.4	6	2.5	2	4.4
7	21.7	7	32.6	7	34.9
Total	100.0	Total	100.0	Total	100.0

  

1. Causes of perinatal mortality	5. Accidents
2. Congenital anomalies	6. Bronchitis, emphysema and asthma
3. Influenza and pneumonia	7. Other diseases
4. Enteritis and other diarrheal diseases	8. Avitaminosis and other nutritional deficiencies

Source: Pan American Health Organization. *Las condiciones de salud del niño en las Américas*. Scientific Publication 381. Washington, D.C., 1979.

In South America and Middle America deaths from infectious and parasitic diseases, expressed as percentages, were approximately seven times higher than in

North America for the age group 0-1 year. The data are for around 1975 (Table 4). Adverse environmental effects and limited access to primary health care services are the probable direct causes of this excess of deaths.

Mortality from malnutrition is undoubtedly a determining cause that is often not identified as such but which underlies another final diagnosis of the cause of death.

Despite this obvious underregistration, it should be pointed out that malnutrition is among the five leading causes of death in 19 out of 29 countries in the Americas, according to data available for 1975 for the age group under 1 year.

Table 4 shows the deaths from this disease in three subregions of the Americas, based on data provided by 29 countries, around 1975.

The Inter-American Investigation of Mortality in Childhood<sup>2</sup> found that the rate for all types of nutritional deficiencies reached a peak in children aged 2-3 months of age and then declined in the older age groups. The frequency of protein malnutrition steadily increased and reached its peak in children aged 12-16 months, and then declined toward the end of the second year of life.

(Source: Maternal and Child Health Program, Division of Comprehensive Health Services, PAHO)

<sup>2</sup>Puffer, R.R. and C.V. Serrano. *Patterns of Mortality in Childhood*. PAHO Scientific Publication 262. Washington, D.C., 1973.

**Table 4. Number of deaths from infectious and parasitic diseases, avitaminosis and other nutritional deficiencies in children under 1 year of age, with rates per 100,000 population, and as a percentage of all deaths (around 1975).**

Area	Infectious and parasitic diseases						Avitaminosis and other nutritional deficiencies					
	Number		Rates		Per cent		Number		Rates		Per cent	
	All ages	Under 1 year	All ages	Under 1 year (A)	All ages	Under 1 year	All ages	Under 1 year	All ages	Under 1 year (A)	All ages	Under 1 year
North America	16,958	2,225	7.2	63.5	0.8	4.0	2,791	110	1.2	3.1	0.1	0.2
Middle America	129,202	53,140	132.2	1,397.3	18.1	30.2	11,470	3,457	11.7	90.9	1.6	2.0
South America	92,991	31,751	97.5	1,585.7	12.8	27.0	13,300	4,174	13.9	208.5	1.8	3.5

Source: Pan American Health Organization. *Las condiciones de salud del niño las Américas*. Op. Cit.