CARDIOVASCULAR DISEASES

The relative importance of cardiovascular diseases in the overall mortality of Latin America and the Caribbean appears to have increased significantly in recent years. The report presented here reviews the general situation and suggests measures needed to improve individual countries' epidemiologic understanding of the problem.

Noncommunicable diseases—regarded until a few years ago as peculiar mainly to industrialized countries—have been gradually displacing communicable diseases as the leading cause of death in the Region of the Americas. The reasons for this epidemiologic circumstance are very complex and have not yet been sufficiently studied. However, the phenomenon is explained in part by a marked increase in life expectancy at birth, progress made in controlling infectious diseases, heavy migratory flows from the countryside to cities, and the existence of risk factors primarily associated with particular occupations and lifestyles.

Within the group of noncommunicable chronic diseases, cardiovascular diseases rank first in the Americas. Table 1 shows the mortality from heart and cerebrovascular diseases, as well as the percentages of total deaths caused by them, in selected countries around 1978. It may be observed that there appears to be some slight correlation between the heart disease mortality and cerebrovascular disease mortality in these countries. Nonetheless, it is a fact that the ratio of heart disease mortality to cerebrovascular disease mortality is 4:1 in the United States, Canada, and Suriname but only 1.5:1 in Barbados and Chile. These differences point up the importance of conducting epidemiologic studies capable of probing more deeply into the characteristics and behavior of these diseases in the Latin American and Caribbean countries.

Figures 1 and 2 provide sex-specific rates of mortality due to ischemic heart disease and

Table 1. Mortality per 100,000 population and percentages of total deaths due to heart disease and cerebrovascular disease in selected countries, 1978.

Country	Heart disease[a]		Cerebrovascular disease[b]	
	Mortality per 100,000	% of all deaths	Mortality per 100,000	% of all deaths
Argentina	247.3	28.0	84.8	9.6
Barbados	173.5	22.4	112.4	14.5
Canada	247.3	34.5	64.6	9.0
Chile	92.6	13.6	58.6	8.6
Costa Rica	70.3	16.7	25.3	6.0
Cuba	169.2	29.8	53.6	9.5
Dominican Republic	41.7	9.2	18.3	4.1
Guadeloupe	129.1	20.3	50.3	7.9
Honduras	47.0	8.9	14.5	2.8
Nicaragua	60.7	11.2	19.1	3.5
Puerto Rico	163.8	27.3	51.7	8.6
Suriname	108.0	14.8	25.1	3.4
Trinidad and Tobago	162.3	24.8	82.0	12.5
United States of America	330.9	38.1	79.1	9.1
Uruguay	237.5	24.3	119.8	12.2
Venezuela	82.5	14.9	32.2	5.8

Source: Health of Adults Program, PAHO.

[a]Heart diseases are defined as those listed in the *International Classification of Diseases (ninth revision),* categories 390-398, 402, and 404-429.
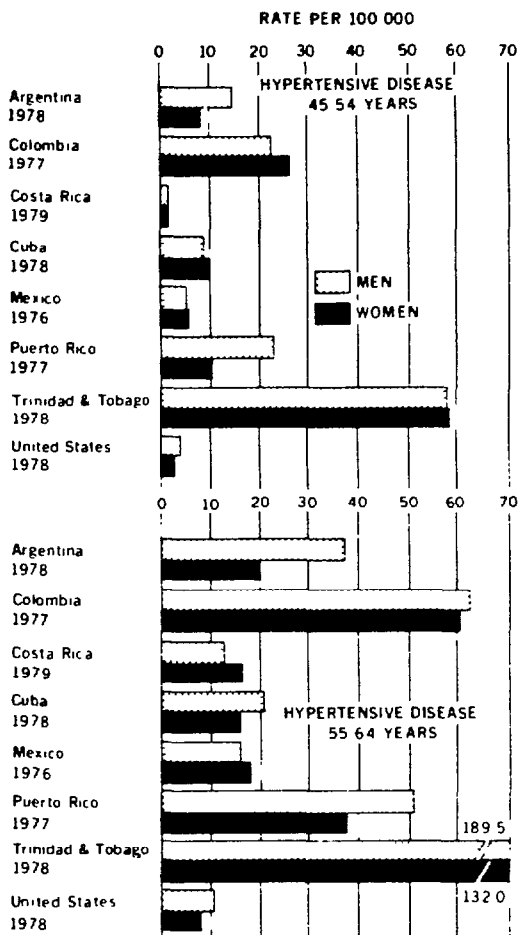
[b]Cerebrovascular diseases are defined as those listed in the *International Classification of Diseases (ninth revision),* categories 430-438.

Figure 1. Mortality from ischemic heart disease in various years among men and women in the 45-54 and 55-64 age groups, by sex, in seven countries and Puerto Rico.
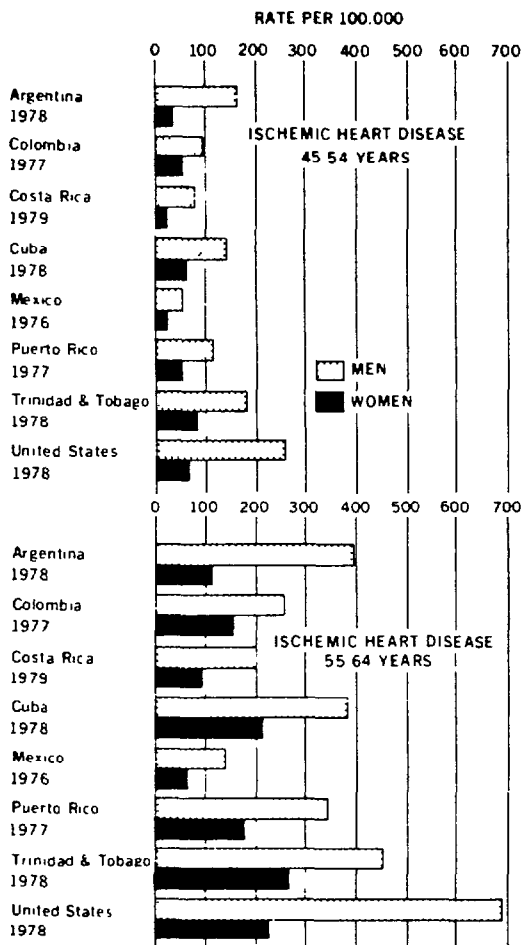
Figure 2. Mortality from hypertensive disease in various years among men an women in the 45-54 and 55-64 age groups, by sex, in seven countries and Puerto Rico.

hypertensive disease in seven countries and Puerto Rico among men and women in two strongly affected age groups (those 45-54 and 55-64 years of age). The data corroborate the finding that mortality due to these problems tends to rise with age in both sexes and indicate the predominance of ischemic disease in males, a phenomenon especially apparent in the countries with the highest rates: Argentina, Chile, Trinidad and Tobago, and the United States.

With regard to hypertensive disease, the mortality data do not indicate as marked a predominance among males; in fact, the reported rates in Colombia and Cuba among the 45-54 year age group were actually higher among females.

Such sex differentials, with males generally predominating at all ages and in both classes of disease, are a little-studied phenomenon. Two factors have been considered in an attempt to explain these differences: women's greater capacity to adapt to conditions of environmental stress and behavior by men that is less conducive to sound health *(1)*. It is possible that sex differentials in cardiovascular disease mortality are influenced significantly both by biological (especially hormonal) factors and by factors associated with types and degrees of exposure to such risks as habitual smoking, ingestion of alcohol, occupational hazards, and stress. In any event, this is a matter that deserves to be investigated in the countries of the Region.

The differences existing between countries with respect to mortality attributed to heart disease, and specifically to coronary disease, show a positive correlation with the countries' relative degrees of socioeconomic development. The same does not appear to hold true with respect to mortality from hypertensive disease, which has been clearly shown by population surveys to be more widely prevalent. That is, prevalence surveys in countries such as Brazil, Chile, Colombia, and Cuba have revealed high rates of arterial hypertension. However, differences in mortality from country to country may be influenced by the use of different criteria in classifying causes of death.

According to the data supplied to PAHO by its Member Countries, the trend of general mortality was downward in the 1970s, but the trend of specific mortality from certain cardiovascular diseases was upward. For example, reported ischemic heart disease mortality rose in all the countries except Argentina, Canada, Chile, and the United States. Moreover, when the percentage distribution of the total number of deaths in the same decade in the various countries is analyzed, the increase in deaths attributable to heart disease is seen to be in the same range for all the countries except Canada, Trinidad and Tobago, and the United States.

Mortality information, while subject to limitations deriving from deficiencies in records and classification criteria, is nonetheless highly useful for analyzing health problems. Analysis based on such data indicates that cardiovascular diseases are one of the major components of the health profile of several countries in the Region and that the epidemiology of these diseases needs to be more thoroughly assessed. One approach, proposed by the Government of Canada *(2)*, uses an epidemiologic model of disease and death determinants in four basic areas: human biology, the environment, lifestyle, and health care organization. Applying this model, Dever *(3)* found that the most important element in the occurrence of cardiovascular diseases in the state of Georgia, United States, was "lifestyle." This indicates that efforts to reduce the damage wrought by such diseases in the United States, should strongly emphasize preventive programs involving changes in harmful behavior and maintenance of healthy habits.

Despite the fact that conditions in the United States and Canada differ considerably from those prevailing in the rest of the Americas with respect to the physical, economic, social, and cultural environment and with respect to the level of sophistication of health service systems, it would seem logical for developing countries to avail themselves of the information generated in developed countries on cardiovascular risk factors and the methods devised for studying those factors. Likewise, any viable experiments that contribute to primary prevention of cardiovascular disease should be assimilated by them with a view to inclusion in their health programs. This

matter assumes especially great importance because of the complexity of the many interrelated factors contributing to cardiovascular diseases and their complications, a situation requiring strategies based on an integrated approach to control.

References

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MEASLES SURVEILLANCE IN THE UNITED STATES

In 1983 the reported occurrence of measles in the U.S. reached its lowest level since national reporting of the disease began in 1912. A provisional total of 1,436 cases was reported, representing an incidence of 0.6 cases per 100,000 people of all ages. This is a 99.7% reduction below the prevaccine era of 1950 to 1962, when an annual average of 525,730 cases was reported (315.2 cases per 100,000 population), and a 16.2% reduction below the 1,714 cases reported in 1982, the previous year of record low incidence (0.7 cases per 100,000 people). Fewer than 100 indigenous cases were reported each week in 1983 except during the twelfth week, when 138 such cases were reported.

Of 1,136 indigenous cases, 877 (77.2%) were reported from four states—Indiana (402), Illinois (173), California (153), and Florida (149). Most other areas reported few or no measles cases. Twenty-six states and the District of Columbia reported no indigenous cases all year, compared to 22 states in 1982. Of the remaining 24 states, 20 states and New York City reported fewer than 50 indigenous cases, and 15 states reported fewer than 10 such cases. Of the nation's 3,139 counties, 3,002 (95.6%) reported no measles cases during the entire year, compared to 2,944 (93.8%) in 1982. Every county was free of reported measles for at least six consecutive weeks in 1983. Only six counties

(0.2%) reported measles during the last four weeks of 1983.

Most measles transmission in 1983 occurred in settings other than primary or secondary schools. Of 31 discrete chains of transmission[1] involving 1,233 cases, five chains accounted for 62.7% (900 out of 1,436) of all the cases reported in 1983. All five occurred primarily in settings other than primary or secondary schools. The largest chain, which accounted for 32.4% (465) of all cases, occurred mainly among college students.

In all, chains of transmission in primary and secondary schools accounted for only 14.6% (209) of the 1,436 reported cases.

According to detailed information received by the U.S. Centers for Disease Control's Division of Immunization, international importations and associated cases together accounted for 14.7% (211) of all the measles cases reported in 1983.

NOTE: The target date for elimination of measles was 1 October 1982. Although such elimination has not yet been achieved, the foregoing provisional data demonstrate substantial

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[1] A chain of transmission is defined as a series of measles cases consisting of an index case followed by at least two generations of epidemiologically linked cases.