

Epidemiological Bulletin

PAN AMERICAN HEALTH ORGANIZATION

ISSN 0256-1859

Vol. 11, No. 2, 1990

Violence: A Growing Public Health Problem in the Region

Introduction

Several of the health indicators that reflect the day-to-day reality of the Region have attested to a troubling increase, a wide range of forms, and identifiable trends in the distribution of violence. Its negative impact on the quality of life and living conditions for broad sectors of the population, its high toll in terms of lives coupled with the fact that it is concentrated in the teen-age and young adult population, its consequent social and economic cost, and the added burden that it places on health services with already stretched resources make violence one of the most serious of the public health problems in the Region.

Child abuse, the rape and battering of women, homicide and suicide rates, the floods of refugees, the numbers of people disabled in different ways by war and internal and intercountry aggression are some of the indicators that are being observed and quantified and are leading to the conclusion that the problem of violence is growing worse and becoming differentiated in terms of its causes, the subregions and social groups affected, the forms in which it is manifested, and its personal, institutional, and collective consequences.

In their concern over these trends, both WHO and PAHO have been registering and disseminating information on the problem. They have emphasized the need to understand it better through additional in-depth and long-term studies, and they have called society's attention to ways of dealing with it and of working to alter the conditions that continue to contribute to violence and cause it to increase.

Understanding the problem of violence involves a number of different disciplines: law, anthropology, sociology, economics, clinical medicine, epidemiology, surgery, planning and administration, psychiatry, rehabilitation. All these fields need to shore up their research efforts, their rational approach, their available technology, and their sense of day-to-day commitment if they are to address the situation and contribute to an adequate social response. As background for a review of the available data, it is well to reflect for a moment on what is meant by violence.

What Is Violence?

Violence involves the use of physical strength or psychological or moral coercion by an individual or group against itself, objects, or another person or group of persons which results in destruction or damage to the object or in infringe-

IN THIS ISSUE ...

- Violence: A Growing Public Health Problem in the Region
- Dengue Hemorrhagic Fever in Venezuela
- Epidemiological Activities in the Countries
- Calendar of Courses and Meetings
- Diseases Subject to the International Health Regulations
- Diarrheal Diseases Survey Guide
- AIDS Surveillance in the Americas
- Tenth Revision of the International Classification of Diseases

ment or violation of any of the established rights of the victim or victims. Such use of force usually stems from an intention to maintain, modify, or destroy a specific order of things or values. It is fostered by the existence of great inequities in terms of these rights, which means that violence is an essentially human activity of man as the member of a given society. This is why the context, the intensity, and the forms of violence will change from one moment to another, under different conditions, and in different social settings. Physical violence is the most obvious form of aggression, since it is manifested in visible injury and is a direct cause of disability and death. Its extreme and most devastating expression is war in all its forms, which is the cause of extensive damage to health, the uprooting of large groups of people, and in general a lowering of the quality of life.

It is also important to emphasize that violence is more than the immediately observable, usually tragic, violent act. It is the entire set of conditions that lead up to it, the forms in which it is manifested, the facts of this manifestation, and the direct and indirect consequences that involve both the perpetrator and the victim. In other words, violence is a process and not an isolated act, and hence there are different types, moments, forms, and intensities of violence. An approach to the problem, then, involves consideration of its causes, its different modalities, its concrete forms of expression, its agents, its victims, its consequences, and its implications. A typology of violence can be established according to the different causes (political, racial, sexual); forms of expression (suicide, homicide, torture, disappearance, abduction); severity (lethal, with sequelae, minor); the main groups affected (workers, women, children, ethnic groups, minorities); the weapon or instrument used (firearm, blade, or chemical, nuclear, or biological weapon); and the principal damage inflicted (physical, psychological).

By its very nature, violence affects many aspects of individual and social life and, accordingly, different disciplines and fields of knowledge. Health, as an area of knowledge and specific practices, is one that is most seriously involved in the problem. However, it is necessary to recognize that, despite the seriousness of the matter, the response of the health sector in general has been passive and has been limited to a few specific areas, such as the registration of violent events that come to the attention of the health services, the treatment of victims in emergency rooms, the development of a medico-legal classification of the violent acts that are perpetrated on wounded or fatal victims, and efforts to remedy their physical or psychological sequelae through rehabilitation services and psychiatric intervention. Even though the response has been limited, given the magnitude of the problem, each of these areas of activity is putting pressure on human, technological, physical, and financial resources and is calling for the production of knowledge, methods, and tools that are adequate, timely, and effective for meeting the demand. At the same time, other sectors, as well as society as a whole, are looking to the health sector for an increasingly active, organic, and

intersectoral response to the problem. This is one of the challenges that must be met with urgency, creativity, and adequate resources if society's demands are to be met and if some of the indicators most obviously working against the goal of Health for All by the Year 2000, to which PAHO and the Member Countries are committed, are to be reversed.

Violence-related Morbidity

To the extent that disease is a negative alteration of bodily integrity or organic or emotional functioning, violence produces disease. The use of one's own body or a biochemical agent or excess of force, generally through weapons or instruments, results in mutilation, disorders in fluid balance and organic components, lacerations, injuries, and impaired functioning at the cellular, organic, or systemic level. It also produces pain. Child or elderly abuse, sexual violence, wounds and injuries of war, torture--these are but a few of the forms of violence inflicted by physical and biochemical means. These expressions of violence are accompanied by collective psychological alterations, and aggravated thereby. For example, it is the breakdown of the incipient psycho-affective structure in a young girl who has been raped, which also has serious sequelae for her family, her neighborhood, and her school. Or it is the several alterations in a victim of torture, whose lacerations and pain at the physical level are probably less than the anguish and lacerations in his affective and intellectual metabolism. Despite the fact that only some aspects of violence are quantifiable and that the indicators and information available are limited, it is possible to have an approximate idea of the magnitude and complexity of the problem, beginning with the information recorded and provided by the health services. Practically all the data available refer to violence ending in death. Data are still scarce on violence that does not kill but causes injury and physical and psychological damage of varying severity.

Some of the forms of violence mentioned above have so far barely been differentiated; the figures on their magnitude are relatively scarce and for the most part have been estimated or extrapolated from specific studies. On the whole, they paint a bleak picture.

In 1985, 1% of the Central American population was physically disabled as a result of the wars in that region. By 1988 the number of refugees from the area was estimated at between 1 and 1.5 million. El Salvador alone had 750,000 refugees at the time, representing 17% of its population. In several of the Central American countries the refugee problem has become a serious public health matter.

During the most severe period of the Argentine dictatorship--el proceso--some 50,000 persons disappeared. And in Uruguay in the 1970s annual morbidity from torture was estimated at 296.6 per 100,000 population. The individual and collective sequelae of torture and disappearance remain today a deeply disturbing problem in several of the countries in the Region.

A 1984 study on child abuse in Cali, Colombia, estimated that 41 out of every 1,000 pediatric patients were abused. A

Medellín study on the same subject in 1987-1988 found that in 73.8% of the cases of abused children studied the weekly household income was below the minimum wage, while the group with income more than double the minimum wage accounted for only 6% of the cases studied. The same study found that the risk of abuse in children with lower-than-expected intellectual performance was 16 times greater than that in a control group of schoolchildren. Another study conducted in Medellín shows that violence is the second-ranking reason for people to seek rehabilitation services in that area, at 28% of the total. Obviously what is required are indicators that make for adequate registration of violence-related morbidity--which today is either unspecified or randomly embedded in diagnoses that refer to the altered organ or function but fail to recognize the association with violence--and more extensive, in-depth research in order to provide increasingly reliable data and analysis of the different forms of violence-related morbidity.

Violence-related Mortality

As an official cause of death, violence is included under the general heading of "death from external causes," which according to the International Classification of Diseases (ICD-9) include:

- All accidents (E800-E949)
- Suicide (E950-E959)
- Homicide (E960-E969)
- Injury undetermined whether accidentally or purposely inflicted (E980-E989)
- Injury resulting from legal intervention (E970-E979) and operations of war (E990-E999)

Strictly speaking, not every accident is an act of violence. However, many accidents are, or they conceal masked or mediate forms of violence. There is great difficulty--more of a legal than conceptual nature--in establishing the exact boundaries between accident and violence. The solution to this difficulty lies beyond the health sector, which complicates analysis of the problem. The situation becomes clearer when the information available is processed and interpreted. Without a doubt, a sizable proportion of the diagnoses appearing under the heading "injury undetermined whether accidentally or purposely inflicted" (E980-E989) should actually be under homicides, suicides, and operations of war, since it is impossible to determine the difference at the time the event is registered and still less so when the data are being analyzed later.

Accidents as a whole rank among the five leading causes of death in the general population in all the countries and territories of the Americas. When they are broken down by sex, they usually rise to even higher ranks among the five leading causes of death in men. In a breakdown by age groups, accidents start in early infancy, they increase after 5 years of age, and they are the leading cause of death for the 15-to-24 age group in almost all the countries of the Region with more

than a million inhabitants. In the 25-to-44 age group they remain in first place both for men and for the general population, but they begin to decline in the age groups over 45. The accident component of this category makes it an area for urgent, and possibly preventive and educational, intervention by society--a responsibility that it is incumbent on the health sector to assume without delay. Traffic accidents, given the high proportion they represent within the general category, will be the subject of another publication.

Objectively speaking, mortality from external causes in general is high in most of the countries (Table 1), with variations that range, in countries with more than a million inhabitants, from a low of 18.7 (Jamaica, 1984) to a high of 127.1 (El Salvador, 1984) per 100,000 population. Only three of the countries with more than a million inhabitants and with information available show accident and violence rates of under 40. This contrasts, for example, with mortality from enteritis and other diarrheal diseases, which in almost all the countries is under 40, and mortality from all infectious and parasitic diseases, which is now lower than 40 in 21 of the countries and territories of the Region. The problem is greatest among males and in the 15-54 age range. A study of violence in the area of Antioquia, Colombia, showed that for every 15 homicides among males there is one among females. In São Paulo, Brazil, the ratio was seven homicides among men to one among women. With suicides the difference is significantly less.

A breakdown of the overall rate into different components gives a better picture of the peculiarities and specific aspects of violence and permits a more thorough analysis. For example, while overall mortality from all accidents and violence in El Salvador (127.1) is triple the figure for Canada (40.3), the suicide rate (12.2) is just slightly greater than in Canada (10.6). The difference between the suicide rates in Canada and the United States (8.9) is not very great, but the homicide rate in the latter (7.5) is more than four times that in Canada (1.8). On the other hand, the suicide rate in the United States is more than double that of Ecuador (3.9), while the homicide rate in Ecuador (10.1) exceeds that of the United States. Other similar comparisons can be made. Of course, homicide (E960-E969) is perhaps the most explicit and quantifiable product of violence. Mortality from homicide is a good indicator of the status of violence in the Americas. A study of the data available for this publication shows that there has been a disturbing increase, which is associated, inter alia, with the aggravation of economic and social inequality, the direct and indirect effects of the economic and social crisis, the intensification of armed conflict both within the countries and internationally (which is why legal interventions and war have been included in these comments), and the increased circulation and use of drugs in both developed and developing countries.

Homicide--naturally and unfortunately--is most frequent in the male population in the 15-to-24 and 25-to-44 age groups, especially the former, in which they are the second

Table 1. Age-adjusted mortality rate per 100,000 population from accidents and violence in countries of the Region of the Americas with more than one million inhabitants, around 1986.

Country	Year	All accidents and violence (E800-E999)	Injury undetermined whether accidentally or purposely inflicted (E980-E989)	Homicide (E960-E969)	Legal intervention and operations of war (E970-E978) (E990-E999)	Suicide (E950-E959)
Argentina	1986	44.8	3.2	5.1	0.7	5.4
Brazil	1986	63.7	10.3	13.3	0.0	2.8
Canada	1986	40.3	1.3	1.8	0.0	10.6
Chile	1987	61.0	30.8	2.3	-	4.6
Costa Rica	1988	40.3	1.9	3.7	0.0	4.5
Colombia	1986	81.0	3.0	29.7	0.0	3.4
Cuba	1988	64.8	22.6 ^(a)
Dominican Republic	1985	35.0	3.6	4.9	1.0	2.1
Ecuador	1987	63.1	0.2	10.1	-	3.9
El Salvador	1984	127.1	26.2	41.6	0.0	12.2
Guatemala	1984	54.9	31.5	3.6	0.2	0.6
Jamaica	1984	18.7	1.2	1.3	0.5	0.2
Mexico	1986	77.4	1.9	19.6	0.0	2.1
Panama	1987	48.2	4.9	6.4	0.5	3.4
Paraguay	1986 ^(b)	40.0	1.5	6.5	-	2.4
Peru	1983	29.4	3.5	2.0	0.1	0.5
Trinidad and Tobago	1986	50.5	5.6	6.0	0.8	7.5
United States of America	1987	48.4	1.0	7.5	0.1	8.9
Uruguay	1986	43.1	0.0	2.4	0.1	5.3
Venezuela	1985	59.9	0.4	8.9	-	4.4

^(a) The crude rate was used because the age-adjusted rate was unavailable, Republic of Cuba, *Annual Report*, Havana.

^(b) Information area.

cause of death in half the countries of the Region that have more than a million inhabitants (Table 2). In Colombia, homicides have been the leading cause of death in the 15-to-46 age group since 1981, both for men and for the group as a whole. In 17 of the 27 countries for which information is available, homicides are one of the five leading causes of death in the general population. In El Salvador (1984) the rate of homicides in men 15 to 24 years of age was 144.4 per 100,000 population. The concentration of homicides and

other forms of violence in the younger groups makes it the principal cause of years of potential life lost in most countries of the Region, producing an average loss of from 30 to 40 years of life per death, and also representing a very high social and economic cost.

As was mentioned earlier, there are significant differences in the homicide rate among the countries of the Region. In Table 1 it can be seen that El Salvador had the highest overall age-adjusted homicide rate (41.6 in 1984), while Jamaica had

the lowest (1.3 in 1984). It has been estimated that the probability of dying from homicide in El Salvador in 1984 was 200 times greater than in Guyana and 23 times greater than in Canada. Although the percentage of homicide relative to overall mortality varies markedly, increases are noted in such countries as Colombia, Guatemala, El Salvador, Venezuela, and Panama. However, in others--for example, Canada and Uruguay-- this participation has stabilized at relatively low levels.

Suicide (E950-E959), or violence against oneself, even though usually less frequent than homicides and other forms of violence, is commanding greater attention. Beyond the efforts already made to understand the personality of the suicidal individual, it is necessary to understand the structure and dynamics of suicide as social pathology, and possibly relate it to such processes as the economic and political crisis, the values of different social groups, and, in some of the countries, to the role and socioeconomic situation of the elderly.

Of the countries included in Table 1, Cuba has the highest overall suicide rate: 22.6 in 1988. While this is a crude rate, it nevertheless denotes a serious problem; even if the figure is adjusted for age, it would probably continue to be highest on the list compared with the other countries. El Salvador had the second highest rate (12.2), followed by Canada (10.6), and the USA (8.9 in 1987). The lowest rates were in Guatemala (0.6 in 1984), Peru (0.5 in 1983), and Jamaica (0.2 in 1984). Among the countries with less than a million inhabitants (not included in Table 1), Suriname has a particularly high rate: 20.2 in 1985.

While generally speaking the predominance of males in lethal violence carries over to suicides, the difference with respect to females is less marked than with homicides and other forms of violence.

It is troublesome to see that suicide begins to appear among the five leading causes of death in the 5-to-14 age group--a phenomenon that has already been noted in several countries of the Region, including Canada, the USA, Puerto Rico, Suriname, and Uruguay. The problem is most serious in the 15-to-24 age group, it declines a little in the 25-to-44 group, and then after 45 years of age it falls outside the first five causes of death in all the countries. However, there are also high rates of suicide among the elderly, especially those over 75, in some of the countries. This last phenomenon should be examined in light of the social issues that it raises in addition to those associated with suicide in general, all the way from the nuclearfamily up to the macroeconomic and political level.

The foregoing data give an idea of the overall extent of the problem, its implications, and the need to pursue a range of actions aimed at reversing it. However, as it has been noted, the data refer only to the problem of violence-related mortality; moreover, some of the categories are still not sufficiently specific, the data are irregular and nonstandardized, and there

is a total or partial lack of information from some of the countries.

Violence and the Health Services

The relationship between violence and health goes beyond the mere registration of events. It is a threat to, or a negation of, those conditions that make for the fulfillment of life, and even life itself. The entire practice of the health sector, from education to medical care, is devoted to fostering those conditions that make life possible for individuals and social groups. In addition to the mortality it causes, violence is producing a growing number of non-fatal injuries and alterations that require emergency and physical or psychological rehabilitation. These effects of violence are overburdening the medical care centers and hospitals and placing increasing demands on resources of all kinds. The Region is on the verge of major changes in the coming years not only in terms of resources but also with respect to policies, education, and health care strategies. These changes will range from the development of adequate indicators to the reporting of morbidity from violence, the refinement of available indicators for the registration of mortality, the redesigning of strategies for emergency care services, the relocation of services, and the reformulation of content and methods in health education and manpower training in order to deal with the problem conceptually, programatically, and operationally.

Violence is also demanding that institutions responsible for the formation of professional personnel become more directly involved in the problem. Violence does not seem to be getting the attention it deserves in schools of nursing, medicine, and the other health professions, at either the undergraduate or graduate level, in terms of theoretical content, information, epidemiological analysis, criteria and attitudes, and the development of aptitudes and specific skills. It is not a matter of making violence a new field of study but rather of integrating the problem into the course content and taking it into account in the criteria, objectives, and skills being taught. As a public health problem, violence should be integrated into epidemiological orientation and training and also into such medical specialties as psychiatry, traumatology, forensic medicine, rehabilitation, and pediatrics, among others.

In some countries the health sector itself is feeling the effects of violence more and more because its services are overburdened or its workers are under psychological pressure, or even because its personnel are directly threatened as a result of the complex web of interests at stake. Each of these aspects deserves attention and should be studied systematically with a view to finding mechanisms that will adequately deal with them.

At the same time, also in research, despite the efforts under way in different countries and different groups, the gap between the pace of the work (and sometimes the quality) and the seriousness and opaque aspects of the problem is still very great. This gap is even more notorious in view of the treatment being given to other entities.

Table 2. Ranking of violence among the first five leading causes of death in the two most affected age-groups, in countries of the Region of the Americas with more than one million inhabitants, around 1986.

Country	Year	Accidents (E800-E949) and injury undetermined whether accidentally or purposely inflicted (E980-E989)		Homicide legal intervention and operations of war (E960-E978) (E990-E999)		Suicide (E950-E959)		Accidents (E800-E949) and injuries undetermined whether accidentally or purposely inflicted (E980-E989)		Homicide, legal intervention and operations of war (E960-E978), (E990-E999)		Suicide (E950-E959)				
		Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F
Argentina	1985	1	1	1	2	2	-	5	3	1	4	5	4	-	-	-
Brasil	1986	1	1	1	2	2	5	5	1	1	3	3	2	-	-	-
Canada	1986	1	1	1	4	4	4	2	1	1	2	-	5	3	2	3
Chile	1986	1	1	1	4	4	-	3	4	1	2	-	-	5	4	-
Colombia	1981 ^(a)	2	2	2	1	1	5	-	-	-	-	-	-	-	-	-
Costa Rica	1986	1	1	1	3	4	3	4	1	1	3	5	5	4	3	-
Cuba	1986 ^(b)	1	1	1	-	-	-	-	1	1	1	-	-	-	-	3 ^(c)
Dominican Republic	1985	1	1	2	3	2	-	5	1	1	4	5	3	-	-	-
Ecuador	1986	1	1	1	2	2	-	-	1	1	3	2	2	-	-	-
El Salvador	1984	1	1	2	2	2	5	3	1	1	2	2	2	4	5	4
Guatemala	1984	1	1	2	-	-	-	-	-	-	-	1	1	5	-	-
Honduras	1981	1	1	1	-	-	-	-	-	-	-	-	-	1	1	2
Mexico	1983	1	1	1	2	2	5	-	1	1	2	2	2	-	-	-
Panama	1986	1	1	1	2	2	-	4	1	1	3	4	2	-	5	-
Paraguay	1986	1	1	2	2	2	-	5	1	1	5	5	2	-	-	-
Peru	1983	1	1	1	-	4	-	-	-	-	-	-	-	1	1	5
Puerto Rico	1986	1	1	1	2	2	2	5	4	1	3	2	2	3	-	-
Trinidad and Tobago	1983	1	1	2	3	3	-	2	1	1	3	-	5	4	3	-
United States of America	1986	1	1	1	2	2	2	3	3	1	2	5	5	4	4	4
Uruguay	1986	1	1	1	5	-	4	2	2	1	2	-	-	5	4	-
Venezuela	1983	1	1	1	2	2	-	4	3	1	3	3	2	-	5	-

25 to 44 years old

15 to 24 years old

^(a) Includes age-group 15 to 44 years old.

^(b) Includes all accidents and violence.

^(c) Includes age-group 15 to 49 years old.

The health sector is not always the victim of violence. Unfortunately sometimes it can become an agent of violence as well. This is the case when medical or paramedical personnel impose certain procedures or hospitalization, when the medical knowledge adopts an attitude of superiority relative to the presumed ignorance of the patient, or simply when for different reasons large sectors of the population are deprived of the right to health services. These possible types of violence also deserve to be studied and understood so that the necessary steps can be taken to address them.

The fact that violence is complex should not be an excuse for remaining passive. It is not merely a question of one more fatality to learn to live with; it is a social reality whose historical trend can be changed and controlled. Since it goes beyond the limits of any one sector, the effort must be made, as has been pointed out, at all levels and across the board in different areas. Among these sectors, health should have a major role in reversing the situation described, as well as that

which is not specifically reported but learned about more and more each day through reports, accusations, and investigations in different countries of child abuse and violent acts against women, the elderly, and workers. Interdisciplinary efforts, specific and rigorous research, individual and institutional changes in attitude from the local up to the national and international levels, redefinition of policies, allocation of resources, reorganization of services, interinstitutional initiatives, and assignment of priority to the subject are some of the actions that should be undertaken by the sector forthwith as its contribution to conscience and as society's response to the challenge being posed by violence throughout the Americas.

(Source: Dr. Saúl Franco Agudelo, Health Manpower Development Program, and the Mental Health Subprogram, Program of Health of Adults, PAHO.)

Dengue Hemorrhagic Fever in Venezuela

Introduction

An epidemic of dengue hemorrhagic fever (DHF) was reported by Venezuela during December 1989. The first laboratory documented case occurred in a 3 1/2 year-old girl who died on 25 October 1989 in Maracay, State of Aragua. Retrospectively however, deaths due to DHF may have occurred in September, among young adults from the State of Portuguesa. New cases of DHF were recognized in November in Maracay and subsequently they were reported from most states and from Caracas Federal District, the capital of Venezuela. In early December the Ministry of Health initiated the epidemiologic surveillance of dengue and DHF throughout the country and clinical specimens were routinely collected for laboratory investigation of dengue etiology. As a result of this, dengue

virus serotypes 1, 2 and 4 were isolated from blood of sick persons.

During the period from 2 December 1989 through 17 April 1990 a total of 12,220 dengue cases were reported of which 3,108 were DHF cases. Recognition of DHF cases was based on criteria for clinical diagnosis of DHF/DSS established by WHO(1). There were 73 deaths. Dengue cases were reported from all 23 states and territories with the exception of Tachira State. Cases of DHF were reported from 17 of 20 states, the Federal District and from one of the two Venezuelan Federal Territories. Nevertheless, most DHF reports originated in the Federal District (1,137 cases) and from the States of Aragua (804 cases), Zulia (377 cases), Miranda (266 cases), Carabobo (130 cases), Barinas (112 cases) and Falcon (98 cases). The remaining states reported from 2 to 71 DHF cases.

Fifty-two percent of the deaths (38/73) were reported by the Federal District and two States (Aragua and Carabobo). Approximately 2/3 of cases (8,132/12,220) occurred among children under 14 years of age. The age of fatal cases had similar distribution: 67% of deaths were children 0-14 years old. The youngest case was a 22 days old baby who died in Maracay.

The overall case-fatality rate was 0,6% (73/12,220) but among DHF cases the rate was of 2.3%. Most hospitalizations of suspected DHF cases occurred in Maracay and Caracas.

Preliminary analysis of the temporal distribution of cases suggests that the outbreak peaked towards the end of January 1990. The distribution of cases over time by State shows that the epidemic moved from east to west (Figure 1). The Venezuelan Government officially declared the end of the epidemic as of 17 April 1990.

Clinical Features

Data collected from patients hospitalized at the Hospital Central of Maracay showed that petechiae/echymoses were the most common hemorrhagic manifestations (70%), followed by epistaxis (26%); gum bleeding, upper gastrointestinal hemorrhage and melena were seen in less than 10% of cases. The number of shock cases has not been reported.

At the Children's Hospital, Caracas, petechiae were also the most frequent hemorrhagic manifestations (66%); thrombocytopenia was reported in 29% of hospitalized cases, hemoconcentration in 23% and hepatomegaly in 19% (reported during the International Symposium on Dengue, Caracas, April 1990).

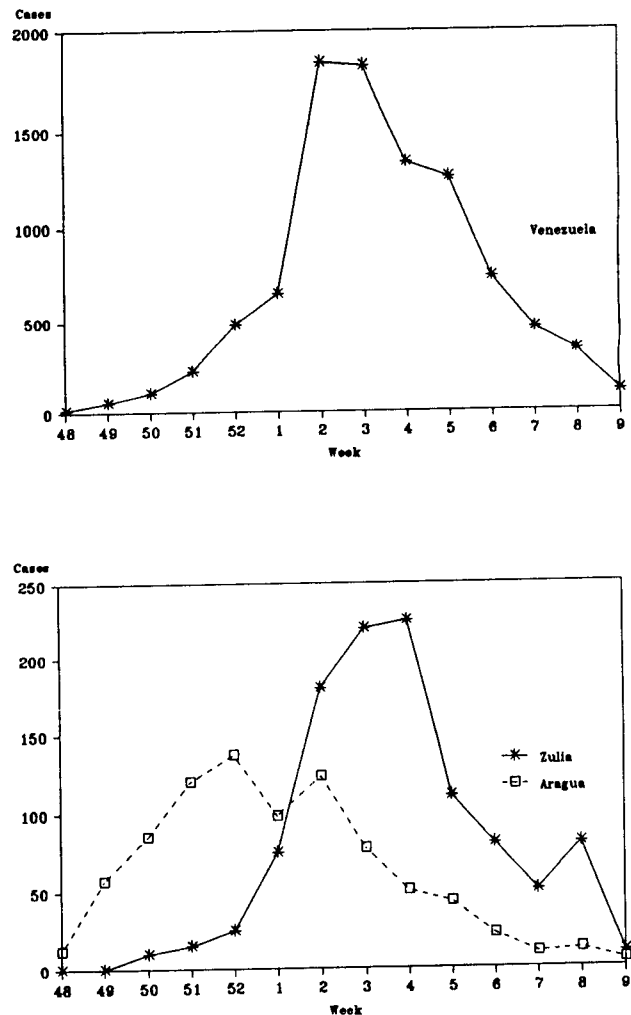
Etiology

Through April 1990, 20 dengue virus isolates were reported by the National Institute of Hygiene, Caracas. Most isolates belonged to serotype 2 (12), six were serotype 4 and two were dengue-1. The 20 isolates were obtained from a total of 60 inoculated samples. None of these isolates came from fatal cases. Nevertheless immunocytochemical studies conducted at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Maryland, with formalin fixed tissues of fatal cases revealed the presence of dengue-2 antigen in the liver of four patients.

Vector Control

Aedes aegypti control measures were implemented soon after DHF cases were recognized in Maracay. Such measures included selective insecticide spraying inside houses of areas where DHF cases occurred, environmental sanitation, ULV application of malathion using truck mounted equipment and ULV aerial spraying of malathion. The last measure was used mainly in Maracay and Caracas, using helicopters from the Venezuelan Air Force, with the support of the Vector Control

Figure 1. Dengue cases by epidemiological week. Venezuela, Aragua and Zulia States, 1989-1990.



Source: Ministry of Health and Social Action, Venezuela.

Unit, United States Navy, Jacksonville, Florida. Clean-up operations and chemical treatment of breeding sites were also implemented. An ample public information campaign was undertaken by the Ministry of Health aimed at educating the population about the disease and its vector and seeking for its cooperation to achieve source reduction of *Aedes aegypti*. The successful reduction of infestation is considered to be related to the integrated approach used.

This is the second large outbreak of DHF in the Americas. The first one occurred in Cuba in 1981 and resulted in a considerable impact(2). Although the magnitude of the Venezuelan DHF epidemic was smaller than the one in Cuba, it illustrates the increased risk of dissemination of DHF in this Region. Such risk rests on several factors of which undoubtedly the increase of areas infested by Aedes aegypti and the densities of the vector plays a major role.

References

- (1) *Dengue haemorrhagic fever: diagnosis, treatment and control.* World Health Organization, Geneva, 1986.
- (2) *Dengue haemorrhagic fever/dengue shock syndrome: lessons from the Cuban epidemic, 1981.* *Bull. WHO* 67(4):375-380, 1989.

(Source: Communicable Diseases Program, PAHO.)

Paralytic Shellfish Poisoning (Red Tide)

Between October and December 1989 an outbreak of paralytic poisoning from the ingestion of shellfish (PSP) affected the entire Central American isthmus and Mexico.

In El Salvador 106 cases and three deaths were reported. Most of the occurrences were in La Perla, but cases were also reported in Santa Tecla, El Zonte, and Mizata Canton. Epidemiological investigation associated the cases to the ingestion of clams. These mollusks, which were examined in the Food and Drug Control Laboratory of Guatemala's Ministry of Public Health and Social Welfare, were positive for saxitoxins in concentrations of over 10,000 mouse units/100g.

In Mexico 99 cases were registered, four of which died. In Guatemala, despite preventive measures, 7 cases of poisoning were reported in Las Lisas, Santa Rosa, all of which recovered without sequelae.

In all the countries of the isthmus the population had been alerted; in Guatemala and El Salvador the shellfish harvesting was prohibited. Samples were collected for toxicological tests and epidemiological surveillance was either instituted or reactivated.

The Guatemalan Ministry of Health is convening a subregional meeting on the subject, to be held in October 1990, which will bring together representatives from the Central American countries and Mexico, along with other international experts, to exchange experiences in preventing and controlling the effects of red tide. This initiative includes even

the participation of fishing cooperatives and fishermen's unions.

(Source: *Boletín Epidemiológico Nacional*, Ministry of Public Health and Social Welfare, Guatemala, Vol. 24, 1989.)

Editorial Note

Red tide is the popular term for sudden abundant growth of unicellular organisms in the sea. Red tides are usually produced by dinoflagellates, whose development process is governed by specific biological and hydrographic factors. These organisms are capable of producing saxitoxins, which are highly toxic for other organisms, vertebrate and invertebrate, that are sensitive to them. The toxic dinoflagellates include the following genera: *Gonyaulax*, *Protogonyaulax*, *Ptyrosodiscus*, and *Pyrodinium*. Red tides are not necessarily toxic, nor do they always stain the water around them.

When it occurs as a natural phenomenon, red tide also incurs heavy economic losses. There can be mass mortality in fish and other marine species. It is necessary to close down the harvesting and marketing of fish and shellfish. Shrimp exports may also be affected.

Paralytic poisoning from shellfish is produced in humans by the ingestion of bivalves that have accumulated toxins in their systems as a result of filtration feeding processes. The cases may be mild or fatal, depending on the amount of toxin ingested.

Epidemiological Activities in the Countries

First National Scientific Meeting on Epidemiology in the Dominican Republic

The following objectives were established in the Dominican Republic in 1989 for the purpose of further developing the practice of epidemiology at the health services level:

- To increase the use of knowledge on the health situation of different population groups and in geographical areas of the country, with a view to defining policies, planning and programming services and programs, and evaluating their impact on the health/disease profile.
- To strengthen activities involving epidemiological surveillance and the control of diseases and accidents considered most important based on morbidity, mortality, and trends; and the capacity of services and programs to respond to emergency situations due to risk of epidemics or catastrophes.

Two annual courses on epidemiology should be offered in order to update professional nurses knowledge.

- To strengthen research capacity regarding the use of epidemiological techniques in the evaluation of clinical diagnostic and therapeutic methods, causal hypotheses, and risk factors, as well as risk groups and the potential of new techniques for intervention and control at the public health level.
- To promote a scientific and creative attitude toward health and services problems, an interest in acquiring an in-depth understanding of the health situation in the Dominican Republic, as well as dedication to studies, and accessibility to current scientific information.
- To strengthen the integration of epidemiology in the health team, so as to contribute to a more harmonious and coordinated development of the different levels of health services organization.

Activities being developed are aimed at strengthening the following: epidemiology services (institutional); training in epidemiology (regionalized continued education, production of teaching modules, and of university education), and the scientific-technical production in epidemiology and its dissemination.

In context this important progress has been made in the Dominican Republic in understanding the health problems of different population groups. However, production is often scattered over numerous scientific meetings and is not rescued by those who show concern for the development of epidemiological research as an essential base for the necessary process of development and transformation of living and health conditions.

The first national scientific meeting on epidemiology, *To Develop Epidemiology for Health for All*, took place in Santo Domingo, from 28 November to 1 December 1989, and was a multidisciplinary and interinstitutional event. The meeting

was co-sponsored by the Ministry of Public Health and Social Welfare (SESPAS), the Ministry of Agriculture (SEA), the Pan American Health Organization/World Health Organization (PAHO/WHO), the Dominican Medical Association (AMD) and the Dominican Association of Veterinary Medicine (ADMV).

Its objectives were to provide an environment in which to present the varied scientific production of the country on health problems; to encourage the epidemiological research necessary for transforming the health conditions of the population; to promote the strengthening of epidemiology as a basic discipline of public health, and to contribute to the development of the scientific national community in health.

The meeting was attended by over 400 people and 165 papers were presented, summaries of which were distributed at the beginning of the program. The meeting was organized by thematic areas and included presentations on any subject, conferences, and a panel forum of commentators. The topics dealt with were the following: 1) Communicable diseases, AIDS, Sexually transmitted diseases, tuberculosis, diseases preventable by vaccination, diarrhea, zoonoses, and study of recent epidemics; 2) accidents as well as chronic and occupational diseases - environmental pollution, workers' health, chronic noncommunicable diseases, accidents and mental health; 3) studies on the health and evaluation of services - women and health, health experiences of inhabitants of sugar-producing areas (bateyes), experiences in community health; and 4) health research and services.

In addition, a workshop was carried out on improving education in epidemiology, which was co-sponsored by the public health graduate programs from the Autonomous University of Santo Domingo, the Central Eastern University, and the Eugenio María de Hostos University, with the participation of delegates chosen from seven schools of medicine.

Finally, a symposium was held on ciguatera and its biological, epidemiological, clinical, therapeutic, and biochemical aspects. This event was co-sponsored by the Dominican Institute of Technology (INDOTEC).

Among the international lecturers that were invited to participate were Drs. Elida Marconi, Ministry of Health, Argentina; Renate Plaut, PAHO/WHO, Washington, D.C.; Sebastião Loureiro, Federal University of Bahia, Brazil; Jorge Izquierdo, Cayetano Heredia University, Lima, Peru; Juan Kouri, Vice-Minister of Science and Technology at the Ministry of Health, Cuba; Daniel Rodríguez, Center for Human Ecology and Health, PAHO, Mexico; and Milton Terris, Editor, *Journal of Public Health Policy*, Vermont, USA.

Seminar-workshop in Costa Rica on bases of epidemiology applied to the nursing process

The School of Nurses of Costa Rica organized a seminar-workshop on fundamentals of epidemiology which took place from 19 to 24 October 1989 in San José with the participation of professionals from the School of Nursing of the University of Costa Rica, the Central America Autonomous University and from the courses for nursing aides, nurses from the health services (regional supervisors and chiefs of the nursing division of the Costa Rican Social Security Fund, regional supervisors under the Ministry of Health and of the National Insurance Institute), and from private clinics.

The objectives of the seminar were:

- To identify the basic concepts of epidemiology and the epidemiological method.
- To apply the epidemiological strategies and methods to each stage of the nursing process: assessment, planning, execution, and evaluation.
- To analyze the theoretical and practical teaching of epidemiology in the education of professional nurses.
- To identify the elements of epidemiology embodied in the performance of professional nurses in Costa Rica, and to design main strategies for strengthening them.

In addition, the seminar sought to achieve the following goals:

- To contribute to the strengthening and development of health services by training nurses enabling them to take part in defining the magnitude and distribution of the health problems of a community and in contributing strategies for action, to include the surveillance and monitoring of the process, and the evaluation of the effectiveness of the measures established.
- To promote research, to advance scientific knowledge, a better understanding of the natural history of the diseases in the community, therefore to establish the appropriate control and eradication interventions.

The method used was that of working groups and conclusions were presented for discussion during plenary sessions. Talks addressed topics such as the epidemiological strategy, the problem of measurement in epidemiology, analytical epidemiology, experimental epidemiology and the concept of risk and the risk approach. During the group work the analysis of the health situation at the country level and the national health plan were discussed.

Among the problems identified were the scarcity of human resources holding the Master's degree in epidemiology, as well as the lack of training of professional nurses in teaching

positions and in health services. It was proposed to support Master's degree studies.

Other problems identified were the scarce epidemiological research capacity in the different institutions of the health sector; difficulties to conform multidisciplinary groups to develop research projects; problems to develop integrated nursing education in the health services; the lack of an epidemiological approach among health teams working in the institutions, and a weak policy governing the provision of incentives for nursing personnel to carry out research.

Strengthening of academic and service activities in epidemiology in Ecuador

The Ministry of Public Health, in conjunction with the Graduate Course in Health Research and Administration, at the beginning of 1989 planned the execution of various activities in the areas of research, education, and service which have provided the means of achieving an evident strengthening of teaching and service as well as better use of the resources available. The following are some of the activities carried out:

- Seminar on health services epidemiology from 25 July to 31 October 1989, covering such areas as epidemiological practice in Ecuador, principles of epidemiology for disease control, surveillance and information systems, basic epidemiological techniques, spatial organization, the theory of focal points and endemic areas, and programs for disease surveillance and control.
- Course on the State and health from 5 June to 30 November 1989, to discuss the health situation and government health policies.
- Seminar on inferential statistics applied to research methodology and analytical epidemiology from 1 July to 30 November 1989.
- Course on epidemiology and occupational health, from 1 August 1989 to 1 February 1990.
- *Assessment of the health situation of the population in the neighborhoods of northwestern Quito, and of the epidemiological practice at the Ministry of Public Health.* This one-year project was initiated in August 1989, with the participation of a technical health team from the Federation of Popular Neighborhoods of Northwestern Quito. This participative research initiative will allow a better knowledge of the situation of that area, the programming of activities better reflecting their needs, the evaluation of programs and a more dynamic learning process for the Postgraduate Course students, professionals at the Ministry and the community.

Calendar of Courses and Meetings

First Brazilian Congress on Epidemiology

The Brazilian Graduate Association in Public Health (ABRASCO) announces the First Brazilian Congress on Epidemiology, which will take place from 2 to 6 September 1990 at the headquarters of the State University of Campinas in São Paulo State. It will provide an opportunity for researchers, educators, and professionals in the area of public health in Brazil to discuss from an epidemiological standpoint the effects that the social transformations of the end of the century will have on the health situation of the population. The event will include courses, workshops, poster sessions, joint communications, round tables, and lectures.

The courses will cover strong methodological and operational content, some of them of an advanced level that will offer credits through graduate-level programs. The proposed topics are:

- Analysis of survival and logistical regression.
- Design and analysis in prospective studies, in cases-control studies, in clinical trials, and in ecological correlation studies.
- Computer programs in epidemiology.
- Conceptual frameworks: causality, determination, categories of analysis.
- Epidemiology in the health services: diagnosis, surveillance, evaluation of services.
- Logical bases of biostatistics.
- Social determination of the health-disease process.
- Epidemiology and planning.
- Social medicine, public health, and epidemiology.
- Environmental epidemiology.

The workshops will be aimed to discuss specific topics related to the teaching, research, and application of epidemiology. The proposed topics are:

- Teaching of epidemiology in graduate, residency and specialization courses; in graduate, masters, and doctorate programs.
- Health information system: how to use data sources for the generation of epidemiological indicators.
- Epidemiological surveillance - reformulation of the system in connection with the municipalization of the health services.
- Analysis of the programs for disease control (AIDS, malaria, schistosomiasis, tuberculosis). Evaluation of their strategies of integration into the Unified Health System.
- Research policy in epidemiology - role of the agencies. Dissemination of knowledge - technological gap, exchange mechanisms.
- Critical appraisal of health indicators.
- Critical appraisal of the use of statistics in epidemiology.

Six topics will be discussed at round tables:

- The demographic question and epidemiological transition (demographic transition, fertility, migration and

mortality and their impact on the health of the population).

- Chaos and the crisis: health at the end of the century (projections for the end of the twentieth century regarding the social, political, economic, and health situation of Brazil and new epidemiological approaches).
- Poverty and health (the current situation of urban poverty from the conceptual standpoint linked to a definition of marginality and its implications for health).
- New thematic prospects for epidemiology.
- Theoretical paradigms epidemiological science.
- Methodological advances in epidemiology.

Four lectures will be given: health in development; Brazil: social inequity, disease, and death; the development of epidemiology in Latin America; and evaluation of, and prospects for, epidemiology in Brazil.

More detailed information on the congress may be obtained from the Secretaria do Primeiro Congresso Brasileiro de Epidemiologia, Departamento de Medicina Preventiva e Social, Faculdade de Ciências Médicas, UNICAMP, Caixa Postal 6111, 13.083 Campinas, São Paulo, Brazil.

XII Scientific Meeting of the International Epidemiological Association

The XII Scientific Meeting of the International Epidemiological Association (IEA) will be held from 5 to 9 August 1990 in Los Angeles, California.

Dr. Hiroshi Nakajima, Director-General of the World Health Organization (WHO) will give the Robert Cruickshank lecture at the opening ceremony, and WHO will conduct a symposium on the role of epidemiology in Health for All.

Oral presentation sessions will be conducted on cancer epidemiology, pediatric infectious diseases, occupational health problems, diet and nutrition, diabetes, infectious diseases, environmental problems, injury epidemiology, cardiovascular disease epidemiology, epidemiological methodology, AIDS and HIV infection, reproductive health problems, alcohol associated health problems, diarrhea, smoking--associated diseases, epidemiology and health services, asthma, and general health problems.

The workshop on Ethics, Health Policy and Epidemiology will take place prior to the Scientific Meeting from August 3 to 5, 1990 at the Campus of the University of California at Los Angeles (UCLA). The main purpose of the workshop will be to provide opportunities for epidemiologists and others to debate and clarify some of the important situations that can present moral and ethical ambiguities in epidemiological

- Epidemiology, health policy and society.
- Case studies: carcinoma - in-situ of cervix in New Zealand; access to research data; compulsion in relation to HIV infection; cultural variations in autonomy.
- Workshops on surveillance - related issues.
- *Plenary Session* - ownership of data, conflicts of interest: ownership by government industry, ownership by granting agencies, contracts and partiality.
- *Plenary Session* - moral obligations of epidemiologists: informed consent, safeguarding research subjects, protecting privacy, scientific honesty, who owns health - related information?
- *Plenary Session* - developing ethics guidelines for epidemiology.

For more information send correspondence to: IEA Organizing Committee, Department of Epidemiology, UCLA School of Public Health, 405 Hilgard Avenue, Los Angeles, California 90024-1772, USA

Fifth International Course on Epidemiology of Aging

The London School of Hygiene and Tropical Medicine is conducting the Fifth International Course on Epidemiology of Aging, from 3 to 28 September 1990, in collaboration with the World Health Organization Global Program on Health of the Elderly and Helpage International.

Participants will be required to bring with them pre-defined data on the elderly in their own countries. During the four-week course this data will be used to design protocols for activities to be followed up by the participants when they return to their home countries.

The course will be organized in four parts:

- Aging: Is it a problem? What are the implications for society? What does health mean in old age?
- Can we promote health in old age? How can epidemiology help? Examples.
- Do we need more information? How do we ensure the quality of information?
- What specific proposals for long term activities could be outlined? What sort of assistance is available?

The educational methodology for the course will emphasize active learning, have a multidisciplinary approach and will be topic and task oriented. Fluency in English is essential.

The course has been designed for people working in Ministries of Health responsible for planning and running existing services or developing new ones and senior staff in

academic departments with similar commitments to programs for the elderly. A medical degree is not required.

Applications should be made to: Epidemiology of Aging Course Administrator, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom.

Third National Congress of Hygiene and Epidemiology in Cuba

The Third National Congress of Hygiene and Epidemiology will be held on 24-27 October 1990 at the Havana International Conference Center.

The Congress program features discussions on pressing problems in Hygiene and Epidemiology by the way of plenary sessions, free-topic paper discussions, and poster sessions with the participation of major scientists and experts.

The following events will take place concurrently with the Congress:

- Fourth national symposium on hospital acquired infections.
- Latin American meeting on occupational health.
- Symposium on sanitary standardization and control methods.
- Symposium on medical and hygienic aspects of the teaching-learning process.
- Workshop on dengue and malaria control; case study.
- International symposium on epidemiology and prevention of accidents.
- Symposium on programming and evaluation in education for health.
- International symposium on environmental health problems.
- Symposium on multi-drug therapy in leprosy control.
- Symposium on the eradication of vaccine-preventable diseases.
- Symposium on acute respiratory infections.
- Symposium on food and nutrition.
- Surveillance system.
- Symposium on food-borne diseases.

For more information, contact the Permanent Secretariat, Third National Congress of Hygiene and Epidemiology, Calle No. 4 No. 407, e/15 y 17, Vedado, La Habana 4, Cuba.

Diseases Subject to the International Health Regulations

Cholera, yellow fever and plague cases and deaths reported in the Region of the Americas as of 30 June 1990.

Country and administrative subdivision	Cholera	Yellow fever		Plague
	Cases	Cases	Deaths	Cases
BOLIVIA	-	34	26	-
Cochabamba	-	26	18	-
Santa Cruz	-	8	8	-
PERU	-	-	-	4
Piura	-	-	-	4

Note: Since the publication of the last issue of the *Epidemiological Bulletin* in 1989 (Vol.10, No. 4), *Bolivia* reported one additional death by yellow fever in the Department of Cochabamba, for a total of 98 cases and 79 deaths in 1989; *Brazil* reported a total of 35 cases of yellow fever and 3 deaths, and *Peru* a total of 119 cases of yellow fever and 102 deaths for 1989. *Brazil* reported a total of 26 cases of plague for 1989. Two cases of cholera were notified in the Region for 1989: one case in New York, *United States of America*, and the other in British Columbia, *Canada*.
This table only includes countries who have notified cholera, yellow fever and plague cases and deaths.

Diarrheal Diseases Survey Guide

A priority requirement for national diarrheal diseases control program is the availability of information on diarrheal diseases morbidity and treatment practices to effectively plan, manage, monitor activities and evaluate program impact. To respond to this need, the PAHO/WHO Regional Program for the Control of Diarrheal Diseases (CDD) is promoting a survey methodology to collect information on the correct treatment of diarrheal diseases cases managed at the household level. The survey is based on diarrheal cases identified during the past 24 hours. Information is collected on program indicators such as rates of ORS use, ORT use, correct ORS preparation, correct preparation of recommended home fluids, continued feeding during diarrhea, increased fluid intake, and correct knowledge of referral.

Data collected from the seven CDD indicators can be used as a pool by national programs to evaluate the effectiveness of diarrheal cases treated in the home by the caretaker, to improve deficiencies in health facility case management

training, and to assess program impact and plan future activities. The survey guide describes step-by-step procedures for planning all aspects of the survey, including calculating sample size and limits of precision, interviewer training, sample survey questionnaires and data analysis. To assist countries in obtaining technical and financial assistance for this activity, requests should be made through the National CDD Inter-Agency Coordinating Committee (CDD/ICC) established in each country of the Region of the Americas. The Committee is the primary country planning organization for CDD activities. It ensures optimum cooperation among PAHO, the United Nations Children's Fund (UNICEF) and the United States Agency for International Development (AID) to strengthen and provide maximum assistance to national CDD programs in the Region.

(Source: Diarrheal Diseases Program,
Maternal and Child Health, PAHO)

AIDS Surveillance in the Americas

Cumulative number of cases^(a) and deaths as of 18 April 1990.

Subregion	Cases thru	Cases year	Cases year	Cases year	Cum. total	Total deaths
Country	1986	1987	1988	1989	cases	
Regional total	44,594	31,972	38,316	36,075	150,957	84,151
LATINAMERICA^(b)	3,620	4,428	6,382	6,688	21,118	8,434
ANDEANAREA	197	306	371	752	1,626	697
Bolivia	3	2	3	3	11	7
Colombia	84	119	105	335	643	207
Ecuador	13	19	25	15	72	23
Peru	9	60	68	117	254	110
Venezuela	88	106	170	282	646	350
SOUTHERN CONE	100	129	258	353	840	372
Argentina	69	72	174	251	566	242
Chile	22	41	55	60	178	71
Paraguay	1	7	1	4	13	9
Uruguay	8	9	28	38	83	50
BRAZIL	1,534	2,043	3,205	2,772	9,554	5,275
CENTRALAMERICAN ISTHMUS	86	155	309	538	1,088	431
Belize	1	6	4	0	11	8
Costa Rica	20	23	52	56	151	72
El Salvador	7	16	48	94	165	33
Guatemala	18	16	13	18	65	36
Honduras	15	66	130	301	512	192
Nicaragua	0	0	2	2	4	4
Panama	25	28	60	67	180	86
MEXICO	793	997	1,192	1,434	4,416	1,270
LATIN CARIBBEAN^(c)	910	798	1,047	839	3,594	389
Cuba	0	27	24	12	63	29
Haiti	795	477	731	328	2,331	297
Dominican Republic	115	294	292	499	1,200	63
CARIBBEAN	455	387	524	631	1,997	1,117
Anguilla	0	0	3	1	4	1
Antigua	2	1	0	0	3	3
Netherlands Antilles	0	23	16	2	41	16
Bahamas	86	90	93	168	437	229
Barbados	32	24	15	40	111	82
Dominica	0	6	1	3	10	10
Grenada	3	5	3	5	16	14
Guadeloupe	46	37	45	25	153	26
French Guiana	78	25	33	1	137	78
Guyana	0	14	36	34	84	33
Cayman Islands	2	1	1	1	5	5
Turks and Caicos Islands	3	4	1	0	8	6
Virgin Islands (US)	7	0	32	31	70	31
Virgin Islands (UK)	0	0	1	0	1	0
Jamaica	11	33	30	66	140	79
Martinique	25	21	25	44	115	57
Montserrat	0	0	0	1	1	0
St. Christopher-Nevis	1	0	17	0	18	9
St. Vincent and the Grenadines	3	5	8	6	22	12
Saint Lucia	3	7	2	4	16	10
Suriname	4	5	4	35	48	40
Trinidad and Tobago	149	86	158	164	557	376
NORTH AMERICA	40,519	27,157	31,410	28,756	127,842	74,600
Bermuda	51	21	28	35	135	102
Canada	1,139	823	868	714	3,544	2,150
United States of America ^(c)	39,329	26,313	30,514	28,007	124,163	72,348

^(a) Differences or changes in case definition may lead to discrepancies.

^(b) French Guiana, Guyana, and Suriname included in Caribbean.

^(c) Puerto Rico included in USA.

Tenth Revision of the International Classification of Diseases

Since publication of the Sixth Revision of the International Classification of Diseases (ICD) approved in 1948, the World Health Organization (WHO) has convened its Member Countries approximately every ten years for the purpose of approving a new revision. The International Conference on the Tenth Revision of the ICD was held in Geneva from 26 September to 2 October 1989. This Conference was the culmination of several years of preparatory work on the part of WHO, its Regional Offices, and the Member Countries.

The first meeting of the WHO Expert Committee on ICD-10, held in 1984, recommended that the numerical coding system be changed to an alphanumeric system. The draft of the first alphanumeric proposal for ICD-10 was circulated to the Member Countries, the WHO Collaborating Centers, and nongovernmental organizations in 1984. In that stage the main purpose was to elicit observations regarding the coding system, the slots to be allowed for under each chapter, and application of the coding system for expansion and future revisions within the chapters.

After considering and synthesizing the results from the meetings of directors of the WHO Collaborating Centers for the Classification of Diseases, WHO circulated a second proposal in July 1986.

Based on the observations and recommendations received, WHO then prepared a new draft for revision by the Member Countries, that became a regional counterproposal sub-

sequently revised at the second meeting of the Expert Committee on ICD-10 in November 1987.

A proposal with alterations was presented to the International Conference as the final stage prior to submission to the World Health Assembly in May 1990 for its approval. It contains 21 chapters, organized according to an alphanumeric structure, which has made it possible to greatly expand the classification. It now includes, in addition in the main body of ICD-10, a supplementary classification of external causes, together with what was formerly called the "V List" and now the "Z List", expanded to incorporate more risk factors that specifically influence the health status. The expansion envisages extending the use of the ICD to cover statistics on morbidity. For this reason, the "cross/asterisk" system, for double coding on morbidity, has been preserved with modifications. Categories on complications associated with procedures have also been included under the different chapters.

In addition to the tabular list, definitions were discussed and approved relating to maternal and perinatal health, rules for selecting and modifying the basic cause of death, and the summarized mortality and morbidity lists.

Finally, revisions have been introduced on activities related to the training of coders and the preparation of versions in different languages. ICD-10 should enter into effect as of 1 January 1993.



PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION
525 Twenty-third Street, N.W.
Washington, D.C. 20037, U.S.A.