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Editorial

The PAHO Epidemiological Bulletin (EB) is now in its twentieth year. Beginning with its first issue in 1980, the EB has established itself as a source of epidemiological information for the Region of the Americas. Covering the practice and teaching of epidemiology, the EB is committed to stimulating the use of epidemiology among the Member Countries in the Region.

With respect to epidemiological training and promotion, the EB actively participated in reporting the conclusions of the 1983 regional seminar on Current Uses and Future Prospects in Epidemiology, held in Buenos Aires.

The EB's reporting of the recommendations from the XIV Conference of Latin American and Caribbean Association of Schools of Public Health, with the participation of the U.S. Association of Schools of Public Health (Taxco, Mexico, 1987), was taken into consideration in the restructuring of epidemiological training programs at national schools of public health and health services throughout the Region. During that time, practically all the countries held national conferences on epidemiology in order to promote its knowledge and practices in the areas of disease control, health services organization, and health policy and planning.

The EB has published articles on the health situation, the frequency and distribution of communicable, noncommunicable, emerging, and reemerging diseases most significant to public health, as well as information related to disease surveillance, prevention, and control. Many important epidemiological events have been reported over this period, including: the 1981 epidemic of dengue hemorrhagic fever in Cuba, the onset of AIDS and its rapid spread through the Americas; the 1991 reappearance of cholera in Peru; the eradication of poliomyelitis; and the impact of Hurricane Mitch on Central America.

The EB has also reported on resolutions and recommendations of international significance concerning disease prevention and control, policy formulation, and strengthening of health services infrastructure. In the context of the Health For All strategy (HFA), the EB has given priority to publishing summaries of how epidemiology has been applied in the programming and evaluation of health services coverage.

The EB makes every effort to adapt to the diverse interests of its readership, providing articles on epidemiological theory, methodology, and practices, as well as the decentralization and reform of the health sector.

In addition to coverage of health situation analysis and trends, future editions of the EB will **regularly** include brief conceptual and methodological articles, emphasizing public health surveillance, situation analysis, and tools for measuring inequities in health. The EB will report norms, standards, and recommendations for the practice of epidemiology, with a view to supporting the definition and performance of the state essential public health functions. News on courses and meetings of interest will be also included, along with reports on public health meetings, regional projects, and articles of special interest by outside authors.

Beginning in June 1999, the EB will be available on the World Wide Web at: <http://www.paho.org/english/sha/beindexe.htm>. The new format will simplify editing and management tasks, while reducing costs. Likewise, the electronic format will make it possible to expand and illustrate articles in greater detail, provided that they are relevant to the field of epidemiology and of general interest. Thus, the EB's electronic format will allow immediate access to greater numbers of readers in the field of epidemiology and public health.

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Assessment of the 1980-1998 Health Situation and Trends in the Americas, by subregion

The Pan American Health Organization (PAHO), Regional Office of the World Health Organization (WHO) for the Americas, is responsible for disseminating information on the health situation and its trends. Since 1956, when its first assessment of the health situation in the Americas was published ⁽¹⁾, PAHO periodically provides these health situation assessments. Since then, the Organization produces and distributes publications containing data and information of the health situation in the countries of the Region, among them *Health in the Americas*, *Health Statistics from the Americas*, *Basic Health Indicators*, the *Epidemiological Bulletin* and other reports. This article contains an analytical summary of the health situation and trends in the Americas for the 1980-1998 period using some basic indicators, included in the above publications. Its aim is to underscore some important inequalities occurring in various subregions of the Americas over that period.

Data

A total of 38 indicators pertaining to four categories, namely demographic, socioeconomic, morbidity and mortality and resources and coverage of health services, were included. Further detail on their definition and calculation is shown in the technical notes at the end. Data have been updated and validated from various sources. Demographic indicators were obtained from the United Nations World Population Prospects 1996 Revision ⁽²⁾, the United Nations World Urbanization Prospects 1996 Revision ⁽³⁾, from the U. S. Census Bureau International Data Base ⁽⁴⁾ and from the World Health Organization Demographic Data for Health Situation Assessment and Projections ⁽⁵⁾. Socioeconomic indicators were obtained from the UNESCO Statistical Yearbook 1996 ⁽⁶⁾ and from the PAHO Mid-Decade Evaluation of Water Supply and Sanitation in Latin America and the Caribbean ⁽⁷⁾. Morbidity and mortality indicators were obtained from Technical Reports from PAHO/WHO Country

Representatives in the Region of the Americas, from Technical reports from PAHO/WHO Regional Programs and from the PAHO Technical Information System Regional Mortality Database ⁽⁸⁾. Health services indicators were obtained from Technical reports from PAHO/WHO Regional Programs and from PAHO's *Health in the Americas 1998* ⁽¹⁾ publication.

Because of their large number and geopolitical nature of Member States, the Region of the Americas was divided into subregions to allow comparisons of country groups instead of individual countries. Regionalization was defined according to geographic location, population size and socioeconomic criteria, including the following subregions: North America; Latin America, comprising the Andean Area, Brazil, Central American Isthmus, Latin Caribbean, Mexico, and Southern Cone; and the Non-Latin Caribbean. Additional detail of their composition by country and territories is given in the footnote for Table 1.

To highlight disparities and inequities in health and their secular trends, data are compared by subregion, indicator and year period. Aggregate subregional figures were estimated by averaging the country values and weighting for population size when required.

Demographic situation and trends

The overall population in the Region was estimated at nearly 800 million in 1998, that is, nearly 14% of the total population in the world. It is estimated that by the year 2000 the population in the Region of the Americas will be 823,255 millions, an increase of 25% compared to 1980 (Table 1). Around 37% of the population resides in North America, while another third can be found in two other countries: Brazil and Mexico. The remaining is scattered among the other 43 countries and territories in the Region.

The Region of the Americas is going through the denominated demographic transition, with marked changes in total fertility, infant mortality and life expectancy, with their consequent impact in

Table 1.
Selected Demographic Indicators by Subregion of the Americas, 1980 and 2000.**

Indicators	The Americas	North America	Latin America & the Caribbean	Total	Latin America						Non-Latin Caribbean	
					Mexico	Central America	Latin Caribbean	Brazil	Andean Area	Southern Cone		
Total Population (In 1,000s)												
1980	614,355	255,053	359,302	352,926	67,570	22,203	23,956	121,672	72,257	45,268	6,376	
2000	823,255	308,569	514,686	506,814	98,881	36,616	31,390	169,202	109,711	61,014	7,872	
Annual Population Growth Rate (%)												
1980-1985	1.6	1.0	2.1	2.1	2.2	2.4	1.4	2.1	2.3	1.6	1.4	
1995-2000	1.3	0.8	1.5	1.5	1.6	2.5	1.2	1.2	1.8	1.4	1.0	
Urban Population (%)												
1980	68.6	73.9	64.9	65.1	66.3	41.7	53.8	66.2	64.1	79.8	49.0	
2000	76.0	77.2	75.3	75.6	74.4	48.3	63.4	81.3	75.0	85.3	58.9	
Crude Birth Rate (Per 1,000)												
1980-1985	24.0	15.6	30.0	30.0	31.9	38.3	25.1	29.5	32.1	23.9	25.9	
1995-2000	19.4	13.6	22.9	22.9	24.6	31.6	21.7	19.6	25.1	20.7	20.1	
Average Annual Births (In 1,000s)												
1980-1985	15,423	4,067	11,356	11,185	2,282	905	623	3,790	2,460	1,125	171	
1995-2000	15,416	4,113	11,303	11,149	2,338	1,089	662	3,210	2,628	1,222	154	
Crude Death Rate (Per 1,000)												
1980-1985	8.1	8.5	7.8	7.8	6.4	9.1	8.4	8.3	7.6	8.0	7.0	
1995-2000	7.2	8.6	6.4	6.4	5.1	5.8	8.0	7.1	5.9	7.3	6.4	
Average Annual Deaths (In 1,000s)												
1980-1985	5,168	2,212	2,956	2,910	457	216	208	1,072	579	378	46	
1995-2000	5,791	2,597	3,194	3,145	481	199	244	1,173	619	429	49	
Total Fertility Rate*												
1980-1985	3.0	1.8	3.8	3.8	4.2	5.2	3.1	3.6	4.1	3.1	3.2	
1995-2000	2.4	1.9	2.7	2.7	2.8	3.9	2.7	2.2	3.0	2.7	2.3	
Infant Mortality Rate (Per 1,000 live births)												
1980-1985	36.9	11.0	55.3	55.7	47.0	65.0	64.0	64.0	59.0	32.0	32.0	
1995-2000	24.8	7.0	35.5	35.7	31.0	36.0	45.0	42.0	35.0	22.0	22.0	
Life Expectancy at Birth (Years)												
1980-1985	69.2	74.7	65.4	65.3	67.7	61.3	65.5	63.3	64.5	70.1	69.3	
1995-2000	72.4	76.9	69.8	69.7	72.5	69.7	68.3	67.1	69.7	73.3	72.6	

* Average number of children born alive to a woman during her reproductive years, according to prevailing fertility rates for each age group.

Source of basic data: United Nations, *World Population Prospects, 1996 Revision, 1998. Analyses and computations by the Special Program on Health Analysis, PAHO.*

** - North America = Bermuda, Canada and United States of America.

- Latin America = Andean Area, Brazil, Central American Isthmus, Latin Caribbean, Mexico and Southern Cone.

- Central American Isthmus = Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

- Latin Caribbean = Cuba, Dominican Republic, Haiti and Puerto Rico.

- Andean Area = Bolivia, Colombia, Ecuador, Peru and Venezuela.

- Southern Cone = Argentina, Chile, Paraguay and Uruguay.

- Non-Latin Caribbean = Anguilla, Antigua & Barbuda, Aruba, The Bahamas, Barbados, Cayman Islands, Dominica, French Guiana, Grenada, Guadeloupe, Guyana, Jamaica, Martinique, Monserrat, Netherlands Antilles, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, Suriname, Trinidad & Tobago, Turks & Caicos Islands, Virgin Islands (UK) and Virgin Islands (US).

population structure.

Birth rates have decreased in the Region of the Americas by an average of 19%, between 1980-1985 and 1995-2000. Although birth rates in the Southern Cone, the Latin and the Non-Latin Caribbean are twice as high as that of North America, they showed a similar trend of decrease (13%). The rest of the subregions experienced decreases of 20% or more. Also showing a decreasing trend, the overall total fertility rate in the Americas in the 1980-1985 period was 3.0 children born alive per woman compared to 2.4 in 1995-2000. Except in North America, where there was a slight increase, total fertility decreased in all the other subregions. Reductions over 1 child per women occurred in Mexico, Brazil, Central America and the Andean Area. In spite of the overall decrease in birth rates and total fertility, the number of births has not changed dramatically in the Americas between 1980-1985 and 1995-2000. This will have important implications for health care planners.

Death rates exhibit a similar distribution pattern as fertility, the differences arising from the population's size, age structure and specific mortality of each age group. In the Region of the Americas, the crude death rates decreased from an estimated 8.1 deaths per 1,000 population in 1980-1985 to 7.2 in 1995-2000. There was a slight increase in North America (8.5 to 8.6) while the most dramatic decrease was observed in Central America (9.1 to 5.8). Over the past decades, infant mortality in the Americas has decreased around one third, from an estimated 36.9 deaths per 1,000 live births in 1980-1985 to 24.8 per 1,000 in 1995-2000. Although their infant mortality rates are still higher than the 1980-1985 average, the largest gains occurred in Central America (45% reduction), Brazil (34%) and the Latin Caribbean (30%).

The annual population growth also decreased in the Americas from an estimated average of 1.6% in the 1980-1985 period to 1.3% in 1995-2000. The subregions with slowest population increase were North America (0.8%) and the Non-Latin Caribbean (1.0%). Brazil, Mexico and the Andean Area had an important decrease of their population growth of between 22 and 27%. In contrast with other subregions, Central

America saw its growth rate slightly increased from 2.4 to 2.5% in the same period.

As a consequence of decreased mortality, in particular among infants, life expectancy at birth has increased in the Americas an average of 3.2 years from an estimated 69.2 years in 1980-1985 to 72.4 in 1995-2000. North America reached the highest levels of life expectancy at birth with 76.9 years in the 1995-2000 period. In contrast, Brazil, the Latin Caribbean, Central America and the Andean Area are still lagging the other subregions by several years, although they have experienced increases between 3 to 8 years.

Urbanization of the population of the Americas increased in the 1980-2000 period, as a result of both natural growth and rural-urban migration. This form of migration, where people move in search for jobs and better living conditions, has had a major impact by creating additional pressure over the resources in the urban areas. It is estimated that the rural population in the Americas will shrink from nearly 31% of the total population in 1980 to 24% in 2000. The smallest changes will occur in Central America decreasing from 58% to 52%, respectively, followed by the Non-Latin Caribbean, while the most dramatic changes will take place in Brazil (from 36 to 19%), the Andean Area (36 to 25%) and Mexico (34 to 26%).

Socioeconomic situation and trends

The Region of the Americas has been characterized as one with most dramatic and unequal socioeconomic change, as reflected in some human development indicators: literacy, access to public services and health expenditure (Table 2).

For example, population literacy has increased from 88 to 92% in the period 1980-1997. The highest levels were achieved in the North America (99%) and the Southern Cone (96%) subregions. Yet, at the other extreme, two subregions, the Central American Isthmus (75%) and the Latin Caribbean (79%), are reaching literacy levels that were attained by others more than 15 years ago.

The availability and access of public services of drinking water and basic sanitation are essential for

Table 2.
Percent Distribution of Selected Socioeconomic Indicators by Subregion of the Americas,
1980 through 1997

Subregion*	Literate population (%)		Population with access to drinking water (%)		Population with access to sewerage services (%)		National health expenditures as % of GDP **	
	1980	1997	1980	1997	1980	1997	1984	1995
The Americas	88.2	91.6	75.5	80.1	64.6	76.2	6.8	9.5
North America	99.5	99.0	96.7	90.9	94.3	86.4	10.5	13.9
Latin America & The Caribbean	80.1	87.2	60.3	73.5	43.2	70.0	4.2	6.8
Latin America	79.9	87.1	60.4	73.3	43.3	69.7	4.2	6.9
Mexico	83.0	89.6	62.0	85.1	55.0	73.3	3.8	4.8
Central American Isthmus	62.3	75.0	50.0	67.0	40.4	70.2	9.5	6.7
Latin Caribbean	75.0	79.5	57.9	70.1	48.8	70.2	1.3	6.3
Brazil	76.1	84.4	62.0	69.0	22.0	67.0	3.5	7.6
Andean Area	82.5	90.5	58.7	74.6	45.9	66.8	4.0	6.6
Southern Cone	92.8	95.7	62.7	69.4	78.1	75.8	6.0	8.9
Non-Latin Caribbean	92.5	91.2	51.3	86.4	35.4	93.8	3.1	5.4

* See footnote for Table 1.

** GDP=Gross Domestic Product.

Source of basic data: Data tapes from various United Nations bureaus. Analyses and computations by the Special Program on Health Analysis, PAHO.

maintaining a healthy environment. On average, the population in the Americas covered by drinking water services increased from 76% in 1980 to 80% in 1997. In spite of having increased over that period, coverage in Central America, Brazil and the Southern Cone is still below 70% and between 70 and 75% in the Latin Caribbean and the Andean Area. The overall situation of basic sanitation in the Americas followed a similar trend of increased coverage.

Average national health expenditure, expressed as a percentage of the Gross Domestic Product (GDP), was chosen as an indicator of the effort devoted to health promotion, prevention and care. There was an increase in health expenditure in the Region of the Americas, from 6.8% in 1984 to 9.5% in 1995. Although Mexico had a modest increase, its health expenditure was the lowest (4.8%) in the Region. The Central American Isthmus subregion was the only one that experienced a marked reduction of health expenditure, from 9.5% to 6.7%. Since these

percentages are higher than the rate of population growth, the trends suggest real growth in absolute terms of *per capita* resources of health.

Mortality and morbidity situation and trends

Mortality and morbidity are important indicators of the health situation, providing an insight of the magnitude and patterns of ill-health in the population. The age-adjusted risk of dying from four broad groups of causes, communicable diseases, malignant neoplasms, diseases of the circulatory system and external causes, according to sex, is presented in Table 3.

One of the foremost impacts of improved living conditions and basic technology is a reduction on mortality due to communicable diseases. In the case of the Americas, the risk of dying from communicable diseases was reduced to almost one half between 1980-1985 and 1995-2000, from 112.4 deaths per 100,000 population to 67.4 among males and from 89.0 to 51.2

Table 3.
Age-Adjusted* Mortality Rates, by Subregion of the Americas,
Main Group-Specific Cause and Sex, 1980-85 and 1990-95

Subregion	All Causes		Communicable Diseases		Malignant Neoplasms		Diseases of the Circulatory System		External Causes	
	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95
Men										
The Americas	940.7	844.8	112.4	67.4	150.5	141.9	349.3	283.6	118.8	109.7
North America	783.3	691.7	28.6	31.0	175.9	168.5	352.2	259.7	86.7	73.6
Latin America & The Caribbean	1,057.8	939.0	180.9	94.1	129.6	122.4	347.0	301.0	145.0	136.1
Latin America	1,065.2	939.5	181.6	94.3	129.7	122.5	346.7	300.9	145.3	136.4
Mexico	1,006.4	818.1	178.7	93.0	79.4	81.7	205.4	178.1	186.5	131.1
Central America	1,272.7	962.5	324.7	104.2	86.2	82.0	214.1	209.1	259.9	159.6
Latin Caribbean	793.5	955.2	88.9	56.5	121.2	128.4	286.4	254.6	90.3	99.2
Brazil	1,252.7	1,050.1	181.4	110.4	154.6	142.8	472.9	388.1	137.2	142.0
Andean Area	1,036.2	912.0	274.3	84.6	117.5	111.3	256.2	274.8	124.2	168.1
Southern Cone	947.7	855.8	73.3	66.3	173.9	158.9	382.7	326.0	95.2	87.6
Non-Latin Caribbean	431.7	818.8	77.2	56.9	112.8	108.7	388.0	305.5	94.2	78.1
Women										
The Americas	654.7	595.8	89.0	51.2	112.8	108.8	260.2	220.2	33.8	30.2
North America	498.4	474.9	20.0	24.9	118.9	119.9	234.0	192.5	30.3	26.3
Latin America & The Caribbean	770.9	670.3	145.5	70.4	107.8	100.7	281.6	240.5	36.6	33.0
Latin America	776.2	670.3	146.1	70.5	107.8	100.7	281.4	240.3	36.6	33.0
Mexico	729.9	596.3	146.4	74.9	86.8	79.5	188.8	160.2	41.2	30.2
Central America	949.6	731.9	291.2	85.0	101.2	95.3	191.1	197.0	44.6	38.1
Latin Caribbean	612.9	766.7	71.7	41.7	93.4	89.4	243.7	205.6	36.4	43.6
Brazil	903.6	697.4	138.5	76.6	116.7	106.4	380.1	298.6	36.2	32.3
Andean Area	808.3	703.4	231.7	70.4	115.5	111.8	217.8	239.7	33.7	38.7
Southern Cone	611.7	569.4	52.0	46.9	118.0	110.7	264.0	224.9	29.8	28.1
Non-Latin Caribbean	320.7	665.9	53.9	45.6	98.7	97.8	313.4	279.6	28.5	27.1

*Age-adjusted on basis of United Nations standard population. Rates per 100,000 population.

Source of basic data: PAHO Regional Database on Mortality. Analyses and computations by the Special Program on Health Analysis, PAHO.

among females. This mortality pattern of significantly higher risk among males than females occurred in most subregions, except in the Southern Cone and the Non-Latin Caribbean where the excess of mortality risk among males tended to be smaller. In North America a slight increase of risk was observed among males and females, possibly resulting from an increase of emerging diseases such as AIDS and tuberculosis, among others. In spite of the overall reduction,

communicable diseases still accounted for a large contribution of the risk of dying (nearly 10%) in Central America, Brazil, the Andean Area and Mexico.

Overall, mortality from malignant neoplasms has remained at relatively similar levels between 1980-1985 and 1995-2000 in the Americas, accounting between 9% of the mortality in Central America and nearly 25% in North America in the latter period. Mortality rates were higher in North America and the Southern Cone

Table 4.
Proportional Mortality by Selected Causes by subregion of the Americas, 1980-85 and 1990-95

Subregion*	Under 5 registered deaths due to (%)				Number of registered deaths from						III-defined causes of death (%)	
	ADD**		ARI***		Homicide		Suicide		Motor vehicle injuries			
	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95	1980-85	1990-95
The Americas	16.5	5.3	13.1	7.5	77,998	118,711	46,061	55,720	107,121	127,459	8.0	6.6
North America	1.9	0.6	3.3	2.4	20,502	23,041	31,735	35,254	47,401	45,406	1.5	1.2
Latin America & The Caribbean	21.6	8.2	16.5	10.7	57,496	95,670	14,326	20,466	59,720	82,053	12.8	10.1
Latin America	21.6	8.2	16.6	10.7	57,344	95,292	14,145	20,015	59,174	81,634	12.8	10.2
Mexico	25.5	7.6	21.6	14.5	13,323	14,508	1,193	3,020	15,938	14,206	5.4	1.7
Central American Isthmus	26.7	15.1	14.2	11.6	10,894	3,567	789	1,137	2,596	2,659	19.1	32.9
Latin Caribbean	19.2	7.3	14.2	7.3	1,042	2,590	2,137	2,680	2,507	3,951	8.1	5.7
Brazil	20.7	6.9	15.0	8.0	17,390	38,894	4,585	6,743	20,061	35,545	20.6	15.1
Andean Area	24.0	12.1	17.8	13.3	12,940	33,048	2,174	2,762	12,880	18,993	10.1	6.0
Southern Cone	8.7	2.7	12.4	8.4	1,755	2,685	3,267	3,673	5,192	6,280	6.3	4.0
Non-Latin Caribbean	15.7	13.5	10.8	7.5	152	378	181	451	546	419	8.4	7.2

* See footnote for Table 1.

** ADD = Acute diarrheal diseases

*** ARI = Acute respiratory infections

Source of basic data: PAHO Regional Database on Mortality. Analyses and computations by the Special Program on Health Analysis, PAHO.

than among the other subregions, among both males and females. However, except in Mexico and Central America, where rates were the lowest, an excess of mortality risk was observed among males in the rest of the subregions, the largest differences (nearly 50%) occurring in North America and the Southern Cone.

Although there was a decreasing trend of 15-20% between 1980-1985 and 1995-2000, mortality from diseases of the circulatory system accounted for almost one third of the risk of dying in the Americas. The mortality pattern of these causes of death followed a similar distribution as that of malignant neoplasms, with an excess among males. The highest rates were observed in Brazil, North America, the Southern Cone and the Non-Latin Caribbean. Proportionally, these causes represented a major problem in North America, the Southern Cone and the Non-Latin Caribbean where they represented nearly 40% of the overall mortality.

Also, there was an overall trend towards reduction of mortality rates from external causes among males between 1980-1985 and 1995-2000. The most dramatic reduction of mortality occurred among males in Central

America, possibly as a consequence of pacification in conflict areas. In contrast, Brazil and the Andean Area experienced an increase of mortality rates from these causes. Overall in the Americas, external causes of death tended to be more than three times more frequent among males than in females. Except in the Latin Caribbean, where mortality was only twice as frequent, this pattern was followed in all the other subregions.

Changes in mortality patterns tend to be more sensitive to variations among children. Also, the relative importance of some specific health problems was analyzed by using proportional mortality (Table 4). Mortality patterns varied significantly among the subregions of the Americas. Thanks to the availability and promotion of simple and low-cost technologies (i.e. oral re-hydration therapy, immunizations, and simplified protocols for managing of respiratory disease), major reductions in the proportion of deaths due to acute diarrheal diseases (ADD) and to acute respiratory infections (ARI) have been observed between 1980-1985 and 1995-2000.

As seen in Table 5, the effort to prevent and control

Table 5.
Average Annual Incidence From Selected Diseases Under Surveillance,
by Subregion of the Americas, 1980 through 1997

Subregion	Measles		Cholera		Tuberculosis		Malaria		AIDS	
	1980	1997	1992	1997	1980	1995	1980	1997	Until 1991	In 1995
(Number of notified cases)										
The Americas	251,257	51,910	358,169	17,690	227,137	255,581	537,948	1,057,337	334,221	100,559
North America	26,875	708	102	4	30,507	23,321	2,675	1,265	267,906	68,858
Latin America & The Caribbean	224,382	51,202	358,067	17,686	196,630	232,260	535,273	1,056,072	66,315	31,699
Latin America	219,716	51,084	357,483	17,686	195,748	231,435	526,777	1,007,903	62,532	29,892
Mexico	29,730	28	8,162	2,356	11,528	17,159	25,734	5,046	9,057	4,310
Central America	15,680	41	30,028	2,640	11,870	13,376	225,558	152,981	3,362	2,123
Latin Caribbean	14,422	1	0	0	12,042	14,669	13,043	850	6,061	599
Brazil	95,154	50,460	37,572	2,927	72,608	89,233	176,237	392,976	34,478	17,666
Andean Area	43,466	171	281,095	9,122	59,003	76,440	85,724	454,881	6,868	3,033
Southern Cone	21,264	383	626	641	28,697	20,558	481	1,169	2,706	2,163
Non-Latin Caribbean	4,666	118	584	0	882	825	8,496	48,169	3,783	1,807

Source of basic data: PAHO Regional Database on Mortality and AIDS Surveillance in the Americas, September 1998. Analyses and computations by the Special Program on Health Analysis, PAHO.

communicable diseases has had mixed results. Some of the major notifiable diseases like tuberculosis, malaria and cholera have re-emerged in the Americas. Tuberculosis continued to be a public health problem, the overall number of cases of tuberculosis increasing by 13% between 1980 and 1997 to 255,581. Although the absolute number differed significantly, these figures were higher in Mexico (49%), the Andean Area (30%) and Brazil (23%). The endemic areas of malaria in the Americas have been reduced over the past decades; however, the number of cases sharply increased between 1980 and 1997, almost doubling its number to more than one million. The number of cholera cases decreased between 1992 and 1997, becoming an endemic problem in certain subregions, including the Andean Area, Brazil, Mexico and Central America. AIDS cases also continued to be a major concern in certain areas, particularly North America, Brazil and Mexico. Except for an important epidemic in Brazil, measles cases occurred less frequently in the Americas, contrasting with other infectious diseases.

Resources and coverage of health services situation and trends

Most of the countries in the Region of the Americas have gone through modernization of the state processes and health care reforms. Actions derived from them impacted the political, social and economic dynamics in general, and their health systems, in particular. Health systems structure and function had to be adjusted to respond accordingly. Health resources and coverage represent the response of the countries to cope with the health needs, including the human and structural resources and health programs. Table 6 summarizes the trends of some of these indicators.

In terms of human resources, the overall number of physicians in the Americas increased from 13.1 per 10,000 population to 19.6 between 1980 and 1997. Likewise, the number of nurses and dentists almost doubled in that period from 23.1 to 41.2 and from 2.6 to 5.3, respectively. Central America and the Non-Latin Caribbean continued to have the lowest figures in terms of physicians, while North America and the Southern

Cone had the highest. In the case of nurses, Central America, Brazil and the Andean Area had the lowest numbers and North America and the Latin Caribbean the highest.

In contrast to human resources, health infrastructure, as measured by the number of hospital beds, dropped in the Americas from an overall of 4.2 per 1,000 population in 1980 to 3.6 in 1995, reflecting changes in the health system. Mexico, Central America and the Andean Area are the least equipped subregions, while North America, Brazil and the Southern Cone have most hospital beds per population.

There has been an overall increase of immunization coverage of children against childhood diseases. Interestingly, the coverage of immunization services of all four vaccines has increased dramatically over the 1980-1997 period, while the incidence of vaccine-preventable disease in childhood has decreased and even been eliminated. This is a unique example of what can be achieved when the financial resources, the political

will and social mobilization are put together.

Conclusion

The situation of health in the Americas indicates a demographic re-shape and an overall improvement of health indicators over a 20-year period. Changes had also occurred in the health profile populations, shifting from the communicable diseases to the chronic ones. This double health burden is unique in the Americas.

From the analysis of subregional indicators it was apparent that there are subregions with health inequalities that have not reached the same levels of well-being as their counterparts. A first step towards the reduction of such unfair inequalities is their recognition and a more precise characterization. This knowledge is essential for assisting policy makers and health managers in the formulation of sound health and environment policies, the reorganization of basic health services, and of health promotion, disease prevention and control, programming and evaluation. PAHO

Table 6.
Indicators of Resources and Health Services Coverage by Subregion of the Americas, 1980 through 1997

Subregion	Human Resources Per 10,000 population						Hospital Beds per 1,000 population		Immunization Coverage in Infants under Age 1 (percent)							
	Physicians		Nurses		Dentists		1980	1995	DTP*		OPV*		BCG*		Measles	
	1980	1997	1980	1997	1980	1997			1980	1997	1980	1997	1980	1997	1980	1997
The Americas	13.1	19.6	23.1	41.2	2.6	5.3	4.2	3.6	45	87	71	87	54	97	48	90
North America	18.9	27.4	49.8	96.5	5.5	6.0	6.2	5.3	67	94	61	84	0	0	68	90
Latin America & The Caribbean	9.1	14.8	4.2	7.6	3.3	4.9	2.8	2.5	38	83	74	88	54	97	41	90
Latin America	9.2	14.9	4.0	7.4	3.4	5.0	2.8	2.5	38	83	74	88	54	97	41	90
Mexico	10.2	15.6	5.8	10.8	3.6	1.0	0.8	1.2	44	93	91	94	48	99	35	84
Central America	4.1	8.8	3.6	4.4	1.1	2.6	1.9	1.2	41	89	41	90	43	95	33	87
Latin Caribbean	9.2	24.7	9.6	30.7	1.9	3.6	3.6	3.0	33	75	47	74	47	79	25	74
Brazil	7.2	12.7	1.9	4.1	4.6	8.5	3.7	3.5	40	79	99	89	56	99	56	99
Andean Area	7.1	13.0	3.2	4.4	2.8	3.8	2.0	1.5	24	80	33	84	56	97	25	85
Southern Cone	18.8	21.5	5.1	6.3	2.7	5.8	4.6	3.9	50	86	80	91	65	96	55	92
Non-Latin Caribbean	4.7	10.8	17.3	21.8	0.8	1.3	3.0	3.1	28	89	36	89	42	97	31	88

* DTP=Diphtheria, tetanus and pertussis. OPV=Oral poliomyelitis vaccine. BCG=*Bacillus Calmette-Guerin* (tuberculosis).

Source of basic data: Data tapes from various United Nations bureaus. Analyses and computations by the Special Program on Health Analysis, PAHO.

supports countries to analyze their health situation at the subnational level, to improve targeting of health interventions in populations and areas with the largest basic unmet health needs.

Technical notes (additional details in quoted data sources).

Demographic indicators are the mid-year values; they are obtained by linear interpolation of the corresponding quinquennial projection (using the fertility medium variant).

Total fertility rate shows the average expected number of children born alive to a woman during her reproductive years, according to prevailing fertility rates for each age group.

Population with drinking water supply services and with sewerage refers to house connection and to easy access facilities.

Proportion of under-5 registered deaths due to ADD and to ARI uses the total number of registered deaths from defined causes in children under 5 years of age as the denominator.

Estimated age-adjusted mortality rates were computed on the basis of registered mortality data, applying a correction algorithm for mortality underregistration and a redistribution algorithm for deaths from ill-defined causes, following the methodology presented in Health Statistics from the Americas, 1992 edition (PAHO/WHO, Scientific Publication No. 542). These rates represent the average quinquennial figure, built with mortality data from, at least, three years within the same quinquennium. In order to remove the effect of age distribution differences and to make the rates comparable, adjustment was carried out using estimated age-specific mortality rates, applying the United Nations standard population (2,400

under 1 year; 9,600 from 1 to 4 years; 19,000 from 5 to 14 years; 43,000 from 15 to 44 years; 19,000 from 45 to 64 years; and 7,000 older than 64 years) (WHO. World Health Statistics Annual; Geneva, 1994).

AIDS basic indicators refer to year 1995; most recent figures, although available, could be distorted due to delayed notification effect.

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Methodological Summaries: Measuring Inequity in Health

The aim of this new section of the Epidemiological Bulletin is to provide in a regular basis a series of methodological considerations and tools available for its application in epidemiology. In this issue, the section begins with a summary on tools for measuring inequity in health.

Introduction

Equity in health is considered to be a basic principle for human development and social justice. With a view to guiding its programs and providing its technical assistance, the Pan American Health Organization is increasingly concerned about how to achieve higher levels of equity in countries undergoing different social, health and economic reforms, such as those of the Region of the Americas.

Debate on what constitutes equity in health is currently under way in various national and international forums (WHO/PAHO, world banks, health foundations, national governments, universities and research centers). Likewise, efforts committed in the search for methods and indicators to measure equity in health are increasing. Considering the high degree of social inequity in the Region of the Americas, the available empirical information has to be used to document the Region's progress in this endeavor.

Inequity *versus* Inequality

The concept of **inequity** has been considered synonymous with the concept of **inequality**; however, it is fundamental to differentiate between the two. While inequality implies differences between individuals or population groups, inequity refers to differences which are unnecessary and avoidable but, in addition, are also considered unfair and unjust. Not all inequalities are unjust, but all inequities are the product of unjust inequalities. The definitions of *just* and *unjust* are subject to various interpretations. In the context of health, one of the more accepted definitions of "just" refers to equal opportunities for individuals and social groups, in terms of granting access to and using the health services, in accordance with the needs of the various groups of a population, regardless of their ability to pay.

Measuring Socioeconomic Inequity

The indicators used to measure social inequity in health can be classified as measurements of effect and total impact. On the one hand, measurements of effect are used to analyze fixed categories from a health variable; for example, pregnant women with no prenatal care *versus* pregnant women receiving complete prenatal care. On the other, measurements of total impact are used to analyze proportions of the population, using a socioeconomic variable. Continuing with the previous example, a measurement of total impact would involve the comparison of the health variable (prenatal care) for the poorest quintile (20%) of the female population *versus* the same variable for the richest quintile of that population.

There are several methods for quantifying relative differences in the distribution of a socioeconomic indicator. The classic one is the **Gini coefficient**, used extensively in Economics to measure the degree of inequity in terms of a population's income distribution. The Gini coefficient is based on the **Lorenz curve**, which indicates the cumulative frequency for comparing a variable's empirical distribution with its uniform distribution (equality). This uniform distribution is represented by a diagonal line. Consequently, the more distance between the Lorenz curve and the diagonal line, the greater the inequality. The Gini coefficient measures the degree of inequity, summarizing the deviation shown of the Lorenz curve with respect to the diagonal line (representing equality). The possible values of the Gini coefficient range from zero to one. The indicator would be equal to zero in conditions of perfect equity; for example, when income is distributed equally among all individuals of society. This procedure and indicators can also be applied to health issues.

The Nordic countries (Finland, Norway and Sweden) have the most equitable distribution of income, with Gini coefficient values ranging between 0.25 and 0.30. The average Gini coefficient for the world as a whole is 0.40. However, the countries of the world with the highest levels of inequity in terms of income distribution, have a Gini coefficient on the order of 0.60. In 1995, for example, the Gini coefficient for the countries of Latin America was estimated at 0.58.

Norms and Standards in Epidemiology: Case Definitions

The use of case definitions is very important in epidemiology in order to standardize criteria for identification of cases. All case definition must include the three classical dimensions of epidemiological variables: *time, place* and *person*. It is of foremost importance to precisely define what will be considered as a case, in order to accurately monitor the trends of reported diseases, to detect their unusual occurrences and, consequently, to evaluate the effectiveness of intervention. Thus, the usefulness of public health surveillance data depends on its uniformity, simplicity and timeliness.

According to the Dictionary of Epidemiology, edited for the International Epidemiological Association by John M. Last, a case in epidemiology, is a person in the population or study group identified as having the particular disease, health disorder, or condition under investigation. A variety of criteria may be used to identify cases, e.g. individual physician's diagnoses, registries and notifications, abstracts of clinical records, surveys of the general population, and population screening, among others. The epidemiological definition of a case is not necessarily the same as the ordinary clinical definition.

In the United States, requirements for reporting diseases are mandated by state laws or regulations, even though the list of reportable diseases in each state differs. The Centers for Disease Control (CDC) have established a policy that requires state health departments to report cases of selected diseases to the CDC's National Notifiable Diseases Surveillance System (NNDSS). However, before 1990, the usefulness of such data was limited by the lack of uniform case definitions for public health surveillance. There was no explicit criteria for identifying cases for public health surveillance purposes.

In October 1990, CDC published Case Definitions for Public Health Surveillance, which, for the first time, provided uniform criteria for reporting cases to increase the specificity of reporting and improve the comparability of diseases reported from different geographic areas.

In 1996, the CDC revised the list of diseases under epidemiological and public health surveillance, and

published it as "*Case Definitions for Infectious Conditions Under Public Health Surveillance*" (MMWR 1997;46). The definition of terms used in this list for case classification is established as follows:

Clinically compatible case: a clinical syndrome generally compatible with the disease, as described in the clinical description.

Confirmed case: a case that is classified as confirmed for reporting purposes.

Epidemiologically linked case: a case in which (a) the patient has had contact with one or more persons who either have/had the disease or have been exposed to a point source of infection (i.e., a single source of infection, such as an event leading to a foodborne-disease outbreak, to which all confirmed case-patients were exposed) and (b) transmission of the agent by the usual modes of transmission is plausible. A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed.

Laboratory-confirmed case: a case that is confirmed by one or more of the laboratory methods listed in the case definition under Laboratory Criteria for Diagnosis. Although other laboratory methods can be used in clinical diagnosis, only those listed are accepted as laboratory confirmation for national reporting purposes.

Probable case: a case that is classified as probable for reporting purposes.

Supportive or presumptive laboratory results: specified laboratory results that are consistent with the diagnosis, yet do not meet the criteria for laboratory confirmation.

Suspected case: a case that is classified as suspected for reporting purposes.

Since case definition is an important component of epidemiological surveillance, the Epidemiological Bulletin will publish periodically the CDC's case definitions. This issue presents cholera, plague, and yellow fever, the three international quarantine diseases established by the International Health Regulations (1969), third annotated

edition of 1983, which was updated and printed in 1992 by WHO. These diseases are also part of WHO's epidemiological surveillance system.

CHOLERA (Revised September 1996)

Clinical Description: an illness characterized by diarrhea and/or vomiting; severity is variable.

Laboratory Criteria for Diagnosis

- Isolation of toxigenic (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomits, or
- Serologic evidence of recent infection

Case Classification

Confirmed: a clinically compatible illness that is laboratory confirmed

Comment: illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should not be reported as cases of cholera. The etiologic agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139. Only confirmed cases should be reported to NNDSS by state health departments.

PLAGUE (Revised September 1996)

Clinical description: plague is transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets; the disease is characterized by fever, chills, headache, malaise, prostration, and leukocytosis that manifests in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague);
- Septicemia without an evident bubo (septicemic plague);
- Plague pneumonia, resulting from hematogenous spread in bubonic or septicemic cases (secondary pneumonic plague), or inhalation of infectious droplets (primary pneumonic plague);
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague).

Laboratory criteria for diagnosis

Presumptive:

- Elevated serum antibody titer(s) to *Yersinia pestis* fraction 1 (F1) antigen (without documented fourfold or greater change) in a patient with no history of plague

vaccination, or

- Detection of F1 antigen in a clinical specimen by fluorescent assay.

Confirmatory:

- Isolation of *Y. pestis* from a clinical specimen, or
- Fourfold or greater change in serum antibody titer to *Y. pestis* F1 antigen.

Case classification

Suspected: a clinically compatible case without presumptive or confirmatory laboratory results

Probable: a clinically compatible case with presumptive laboratory results.

Confirmed: a clinically compatible case with confirmatory laboratory results.

YELLOW FEVER

Clinical description: a mosquito-borne viral illness characterized by acute onset and constitutional symptoms followed by a brief remission and a recurrence of fever, hepatitis, albuminuria, and symptoms and, in some instances, renal failure, shock, and generalized hemorrhages.

Laboratory criteria for diagnosis:

- Isolation of *Y. pestis* from a clinical specimen, or
- Fourfold or greater rise in yellow fever antibody titer in a patient who has no history of recent yellow fever vaccination and cross-reactions to other flaviviruses have been excluded, or
- Demonstration of yellow fever virus, antigen, or genome in tissue, blood, or other body fluid.

Case classification

Probable: a clinically compatible case with supportive serology (stable elevated antibody titer to yellow fever virus, e.g., greater than or equal to 32 by complement fixation, greater than or equal to 256 by immunofluorescence assay, greater than or equal to 320 by hemagglutination inhibition, greater than or equal to 160 by neutralization, or a positive serologic result by immunoglobulin M-capture enzyme immunoassay). Cross-reactive serologic reactions to other flaviviruses must be excluded, and the patient must not have a history of yellow fever vaccination.

Confirmed: a clinically compatible case that is laboratory confirmed.

Epidemiological Calendar 1999

EW		Su	M	T	W	Th	F	Sa	
1	Jan	3	4	5	6	7	8	9	Jan
2	Jan	10	11	12	13	14	15	16	Jan
3	Jan	17	18	19	20	21	22	23	Jan
4	Jan	24	25	26	27	28	29	30	Jan
5	Jan	31	1	2	3	4	5	6	Feb
6	Feb	7	8	9	10	11	12	13	Feb
7	Feb	14	15	16	17	18	19	20	Feb
8	Feb	21	22	23	24	25	26	27	Feb
9	Feb	28	1	2	3	4	5	6	Mar
10	Mar	7	8	9	10	11	12	13	Mar
11	Mar	14	15	16	17	18	19	20	Mar
12	Mar	21	22	23	24	25	26	27	Mar
13	Mar	28	29	30	31	1	2	3	Apr
14	Apr	4	5	6	7	8	9	10	Apr
15	Apr	11	12	13	14	15	16	17	Apr
16	Apr	18	19	20	21	22	23	24	Apr
17	Apr	25	26	27	28	29	30	1	May
18	May	2	3	4	5	6	7	8	May
19	May	9	10	11	12	13	14	15	May
20	May	16	17	18	19	20	21	22	May
21	May	23	24	25	26	27	28	29	May
22	May	30	31	1	2	3	4	5	Jun
23	Jun	6	7	8	9	10	11	12	Jun
24	Jun	13	14	15	16	17	18	19	Jun
25	Jun	20	21	22	23	24	25	26	Jun
26	Jun	27	28	29	30	1	2	3	Jul
27	Jul	4	5	6	7	8	9	10	Jul
28	Jul	11	12	13	14	15	16	17	Jul
29	Jul	18	19	20	21	22	23	24	Jul
30	Jul	25	26	27	28	29	30	31	Jul
31	Aug	1	2	3	4	5	6	7	Aug
32	Aug	8	9	10	11	12	13	14	Aug
33	Aug	15	16	17	18	19	20	21	Aug
34	Aug	22	23	24	25	26	27	28	Aug
35	Aug	29	30	31	1	2	3	4	Sep
36	Sep	5	6	7	8	9	10	11	Sep
37	Sep	12	13	14	15	16	17	18	Sep
38	Sep	19	20	21	22	23	24	25	Sep
39	Sep	26	27	28	29	30	1	2	Oct
40	Oct	3	4	5	6	7	8	9	Oct
41	Oct	10	11	12	13	14	15	16	Oct
42	Oct	17	18	19	20	21	22	23	Oct
43	Oct	24	25	26	27	28	29	30	Oct
44	Oct	31	1	2	3	4	5	6	Nov
45	Nov	7	8	9	10	11	12	13	Nov
46	Nov	14	15	16	17	18	19	20	Nov
47	Nov	21	22	23	24	25	26	27	Nov
48	Nov	28	29	30	1	2	3	4	Dec
49	Dec	5	6	7	8	9	10	11	Dec
50	Dec	12	13	14	15	16	17	18	Dec
51	Dec	19	20	21	22	23	24	25	Dec
52	Dec	26	27	28	29	30	31	1	Jan

In order to carry out epidemiological surveillance activities, disease outbreaks or epidemiological events must be grouped around a given period of time. Ordinarily, this is a seven-day period known as the *epidemiological week*. Likewise, the 365 days of the calendar year are divided into epidemiological weeks, known as the *epidemiological calendar*, which is a standardization tool of the variable time for the purposes of the epidemiological surveillance.

The importance of these divisions, especially the epidemiological week, is that they provide a means to compare the epidemiological events occurring in a given year, or period within a year, with those of previous years. Moreover, because the international community has officially adopted this methodology, epidemiological data can be compared between countries.

The epidemiological week begins on Sunday and ends on Saturday. The first epidemiological week of the year ends on the first Saturday of January, provided that it falls at least four or more days into the month. Therefore, the first epidemiological week may actually begin in December of the previous year. To illustrate this point, the following correspond to the first epidemiological weeks of recent and future years:

1997	December 29 – January 4
1998	January 4 – 10
1999	January 3 – 9
2000	January 2 – 8
2001	December 31 – January 6

For the reference and practical use of the reader, an upcoming issue of the PAHO Epidemiological Bulletin will include the epidemiological calendar for the year 2000 in its norms and standards section.

News: Creation of the Special Program for Health Analysis (SHA)

As part of its restructuring, the Pan American Health Organization has established the Special Program for Health Analysis (SHA). The SHA program began operations on 1 March, 1999.

The new SHA Program is designed to strengthen the capacity of the Bureau and Member States to produce, analyze, utilize, and disseminate information that can be used to evaluate the health situation and trends, focusing on the identification of inequities in the area of health and the use of epidemiology in the formulation of public health policies and programs. This information will also provide the means to monitor changes in health status and living conditions and evaluate the impact of health-related interventions.

Areas of Work and Lines of Action

During the period 1999-2002, SHA initiatives will focus on supporting the processes of change in epidemiological practices in the countries in order to address current health problems and living conditions. Accordingly, PAHO technical cooperation will be geared toward strengthening: (i) health information systems, with emphasis on systems of vital statistics; and 2) the epidemiological capacity for the analysis of the health situation and its trends, with emphasis on the conceptualization, methodological development, quantification, analysis, and monitoring of inequities in health.

Brief descriptions of SHA's areas of work and lines of action are listed below.

1. Reorganization and Operation of Epidemiological Services and Health Statistics

The current health problems of the population and the demands of health sector reform require strengthening the epidemiological and analytical capacity of health services, based on information and scientific knowledge. The lines of action are as follows:

- To support the *strengthening of epidemiological practices in order to monitor the health situation*. This information will be used to: prioritize health actions; define health policies and interventions; monitor changes in the health situation and living conditions; evaluate the impact of policies and extrasectoral actions on health services; and promote the use of available information for local management.

- To support the *development of health databases and statistical information systems* in order to meet country needs in terms of defining basic data and utilizing knowledge generated in the planning, implementation, monitoring, and evaluation of health programs. The development of integrated networks and the dissemination of health information using the Internet will also be supported.
 - Preparation of the Spanish version of the *International Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10)*, was completed in 1995 and its implementation started thereafter. Efforts to consolidate national groups contributing to the implementation and revision of ICD-10 will also continue. An e-mail forum has been established for the discussion and review of methodology and the adequate use of information generated by ICD-10 for health programming.
 - To reactivate the *PAHO Regional Advisory Committee on Health Statistics*, which will advise PAHO on appropriate methods for evaluating the status of the Region's vital statistics, health situation, and population data.
 - To provide technical cooperation, in the area of *Geographic Information Systems in Epidemiology (GIS-Epi)*, for training activities, the establishment of collaborating centers, and the development of operational applications.
- ### 2. Surveillance of the Health Situation in the Region
- In coordination with the Secretariat, a network of PAHO databases will be created and maintained, containing reliable public health and epidemiological data for use at the regional and national levels. Support will be provided to conduct health studies in the Region, including estimates and projections. Support will also be provided for new studies to evaluate the impact of the renewed strategy of Health for All (HFA).
- The *Core Health Data and country health profiles* within the current Technical Information System (TIS), contains up-to-date mortality and population information. Using the new technologies available, work will begin on preparing periodic country health profiles, which will include mechanisms to update, verify, maintain, and

disseminate information in electronic format on the World Wide Web and other media.

- With respect to *monitoring strategies for HFA 21*, SHA will collaborate with other programs in the review of monitoring activities associated with the renewal of the HFA strategy in the Region.
- Work on *Health in the Americas*, 2002 edition, will begin in 1999. Compilation of the document will be approached through an ongoing modular process, based on the positive experiences gained during the publication of *Health in the Americas 1998*. The process is expected to result in better quality country health profiles and improved applications for the programming and evaluation of PAHO technical cooperation.

3. Production and Dissemination of Health Information

SHA will promote the rapid dissemination of pertinent epidemiological information to facilitate effective public health interventions, including publication of an SHA Web page, linked to the *PAHO Home Page*. At present, the SHA computerized information system includes mortality and population databases, the *Information System of the Core Health Data Initiative*, as well as country health profiles. The main publications are: the *Epidemiological Bulletin*, *Health Statistics from the Americas*, the Selected Bibliography of Epidemiology (*Bibliografía Seleccionada en Epidemiología*), the *International Classification of Diseases*, and other *ad hoc* epidemiological publications. In the period 1999-2002, the PAHO Public Health Surveillance Network will be adopted in order to integrate the various public health surveillance databases available in PAHO.

4. Support for Training in Epidemiology, Statistics, and Health Situation Analysis

The SHA Program, in conjunction with the Division of Health Systems Development, will provide long-term support

for a training program based on epidemiological principles of health management. The program has two basic lines of action:

- To develop a variety of *training materials for professionals* working in general health care services and programs.
- To provide training activities such as: (1) *continuing education in epidemiology and situation analysis*; (2) *training events in specific areas*, such as the use of epidemiology in health services planning and evaluation, public health surveillance; computer software for research and epidemiological surveillance; and (3) coordination and execution of the *Summer Session in Intermediate Epidemiology*.

5. Research and Development of Methodological Tools and Analytical Processes to Document Inequity in Health

This important component is designed to promote, support and develop comparative analysis of existing research on health and inequity in health, as well as to develop methodological tools for identifying groups of the population with the greatest levels of disease burden and inequity in health. Likewise, this component will support: operational epidemiological research to monitor the health situation and its trends; prioritization of health initiatives; identification of unmet health needs; and evaluation of population-based health-related interventions.

6. Support for Health Outcomes Assessment

The SHA Program will coordinate an interprogram workgroup that will examine the development of methodologies and techniques for assessing health outcomes in the Region of the Americas. Activities will include a review of the conceptual frameworks, protocols, procedures, and guidelines available. The results of applications and projects geared toward priority subgroups of the population will be also be reviewed. Likewise, methodological recommendations will be prepared as a tool to promote the maximum potential benefits of policies, programs, and health services.

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