Epidemiological Bulletin

Pan American Health Organization:
Celebrating 100 Years of Health

Vol. 24, No. 2 **June 2003**

Techniques to Measure the Impact of Mortality: Years of Potential Life Lost

Introduction

Mortality data represent essential elements for the quantification of health problems. Death counts and related rates are among the simplest indicators to analyze mortality. They represent a summary measure of a population's mortality experience that may be used to establish and monitor health priorities or objectives. However, general crude or adjusted[1] mortality rates are highly influenced by the health problems of the more advanced age groups, where most deaths occur. As a result, when they are measured only with rates, causes characteristic of the oldest age groups often appear as a population's first causes of mortality.

A main objective of public health work is to increase life expectancy in the best health conditions possible.[2] It is therefore important to identify and monitor mortality trends at all ages. This article presents a review of a technique that reflects more precisely the mortality experience of the younger age groups and gives more weight to deaths that occur at a younger age. This technique is that of the *Years of Potential Life Lost* (YPLL).

YPLL is a measure of the relative impact of several diseases and health problems in a society,[3] which illustrates the losses suffered as a consequence of the death of young people, or premature deaths. A death is considered premature when it occurs before a given predetermined age, for example the life expectancy at birth in the population under study. Considering the age of death rather than the mere event of death allows assigning a different weight to deaths that occur at different moments of life. The underlying assumption for the YPLL is that the more "premature" a death (i.e. the younger the person when he/she dies), the greater the loss of life. YPLL for a specific cause of death in a population are the sum, in all the persons that die of this cause, of the additional years they would have lived if they had survived to their life expectancy.

The objective of this indicator is to provide a wider view of the relative importance of the most relevant causes of premature mortality and it is used primarily in the planning and definition of health priorities.[4]

Methodological considerations

The indicator of YPLL for a specific cohort is calculated from the total number of years of life that people who die prematurely have not lived. It is the cumulative sum of the differences between the age at death and the selected age limit (superior limit). In general, an age limit of 70 years is used; however, other ages, or even the life expectancy of the population under study, can also be used. For populations with a high life expectancy, choosing a relatively low age limit can be a drawback, since in that case, age groups or causes of death that can provide important information on the state of health of the older population groups will be omitted from the calculation. For populations with lower life expectancy, it is obviously recommended to use a lower limit, for example of 65 years.

The use of life expectancy at birth as an age limit for the YPLL adjusts the calculation to the population profile of the country or area. The problem with this approximation is that the YPLL will not be comparable with that of other populations with different life expectancies. This is very important to remember to avoid making comparisons between two or more territories if the criterion used is different. The YPLL cannot be used to compare two or more situations if the criterion for calculation is not the same. In short, the final decision on the cut-off point is relatively arbitrary and depends on the objective of the analysis, if it is carried out for purposes of studying a single population or for comparisons between several populations.

In calculating YPLL in an entire population, the causes of infant mortality may represent an important weight in the indicator. However, it is recommended to include all the age

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groups starting at 0. In any case, if this determination is made at different age intervals (for example, adults between 25 and 65 years), this should be clearly indicated. The choice of the age range for calculation of YPLL will depend on the purpose of the study. If the YPLL is used in a study of maternal mortality, for example, the group of women between 15 and 50 years old can be included, considering causes related to maternal deaths exclusively.

YPLL is obtained by summing the products of the number of deaths at each age by the difference among this age and a set limit (See Box 1). This sum is expressed in years lost. Depending on the availability of data, the calculation of years lost can be done with individual deaths or deaths aggregated by age groups. In this case it is assumed that the deaths occur uniformly in the age group, which means that there can be some differences between the calculations using individuals and groups of individuals. However, the calculation is usually done using grouped data and it is considered that the deaths occur at the age group median. It is recommended to use 5-year or 10-year age groups so that the assumption of a uniform distribution of deaths is more realistic.[4] The result of the YPLL divided by the population (usually the population below the age limit selected) and multiplied by a factor (1,000, 10,000 or 100,000) is an index defined as Years of Potential Life Lost Index (YPLLI).

It is important to keep in mind that two populations of different sizes experiencing different mortalities may produce a similar absolute number of YPLL. To obtain a more complete panorama of the situation, it is therefore important to calculate the absolute number of YPLL along with the YPLLI.

The YPLL has the advantage of being easy to calculate, since it requires only deaths by age and the total population. If deaths are available by cause of death, YPLL can be calculated for every cause. However, as for any study based on data of highly variable quality, the quality of the indicator will depend on the quality of its components. It is also important to take into account that the age structure of the population affects this indicator. Standardization techniques, which were presented in a previous issue of the *Epidemiological Bulletin*,[1] can be applied to the calculation of YPLL in order to control for the effect of confounding variables. However, this adjustment should not be made in place of the decision-making process by which an upper age limit is selected for the calculation of the YPLL, as mentioned in the previous paragraph.

To illustrate this concept, table 1 presents the calculation of YPLL and YPLLI for all causes of death in men between 0 and 85 years in Colombia, for the period 1995-1997.

Box 1: Elements for the calculation of YPLL and YPLLI

The calculation of YPLL for a defined cause consists of adding all the deaths for that cause in each age group and multiplying that sum by the years between the median of the age group and the chosen age limit, as in the following formula:

$$YPLL = \sum_{i=I}^{L} [(L - i) \times d_i]$$

where

I is the lower age limit established
L is the upper age limit established
i is the age at death
d_i is the number of deaths at age i

The YPLLI is calculated as follows:

$$YPLLI = \frac{YPLL}{N} \times 1{,}000 \quad \text{(or another factor)}$$

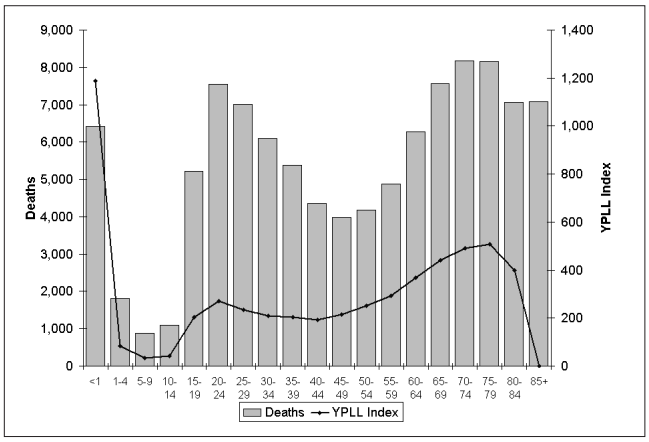
where

N is the population between the lower and upper age limits.

Table 1: Calculation of YPLL and YPLLI in men, Colombia, 1995-1997

Age groups (1)	Median point of the interval (MPI) (2)	85-MPI (3)	Deaths (4)	YPLL (5) = (3) x (4)	Population (6)	YPLL Index (7) = (5) / (6) x 1,000
<1	0.5	84.5	6,417	542,237	456,024	1189.05
1-4	2.5	82.5	1,804	148,830	1,774,598	83.87
5-9	7.5	77.5	878	68,045	2,001,883	33.99
10-14	12.5	72.5	1,092	79,170	1,891,892	41.85
15-19	17.5	67.5	5,213	351,878	1,739,738	202.26
20-24	22.5	62.5	7,541	471,313	1,745,963	269.94
25-29	27.5	57.5	7,013	403,248	1,730,914	232.97
30-34	32.5	52.5	6,092	319,830	1,524,377	209.81
35-39	37.5	47.5	5,385	255,788	1,262,455	202.61
40-44	42.5	42.5	4,364	185,470	966,579	191.88
45-49	47.5	37.5	3,978	149,175	697,613	213.84
50-54	52.5	32.5	4,180	135,850	538,850	252.11
55-59	57.5	27.5	4,884	134,310	457,899	293.32
60-64	62.5	22.5	6,267	141,008	382,671	368.48
65-69	67.5	17.5	7,558	132,265	299,442	441.70
70-74	72.5	12.5	8,183	102,288	208,232	491.22
75-79	77.5	7.5	8,156	61,170	120,769	506.50
80-84	82.5	2.5	7,064	17,660	44,404	397.71
85+	85	0	7,075	0	28,552	0.00
Total			**103,144**	**3,699,532**	**17,872,855**	**206.99**

Figure 1: Distribution of the YPLLI in Colombian men, 1995-1997



The distribution of these data is shown in Figure 1, which presents YPLLI in Colombian men between 1995 and 1997. The distribution presents three peaks: one for the youngest age, one for young adults and a third one for older adults (65 and older). Although the number of deaths is similar in the three peaks, the YPLLI are 2 to 5 times greater in the younger age group (more premature deaths). Figure 2 presents the distribution of the YPLLI in Colombian men and women for the same period. The profile of the distribution by age is similar in both sexes except in young adults, where a noticeable peak can be seen in men. In terms of absolute deaths there are 1.52 deaths for men for each death for women. On the other hand, when this information is analyzed according to the YPLLI, it can be said that for every 100 YPLL for women there are 215.52 for men, the 20-24 age group shoes the greatest difference; for every 100 YPLL for women, there are 581.52 for men, i.e. 6 times more. This indirectly measures the impact of violence among young men in this country.

Table 2 presents the calculation of YPLL using a limit of 70 years in the 29 departments of Chile. Besides showing the YPLL for each department, it also presents the population, which makes it possible to calculate the YPLL Index. The department with the least YPLL and a small population (Gral. Carlos Ibáñez) is comparable in terms of YPLLI to more populated departments like Arauco and Bio-Bio. In this case, quartiles were defined where quartile 1 (25% of the departments) corresponds to the least and quartile 4 to the most health problems.[5] This example is simple and makes it possible to order the different territories and define the departments with greater risk using this mortality indicator as a health planning tool.

Figure 2: Distribution of the YPLL Index per 1,000 population in Colombian men and women, 1995-97.

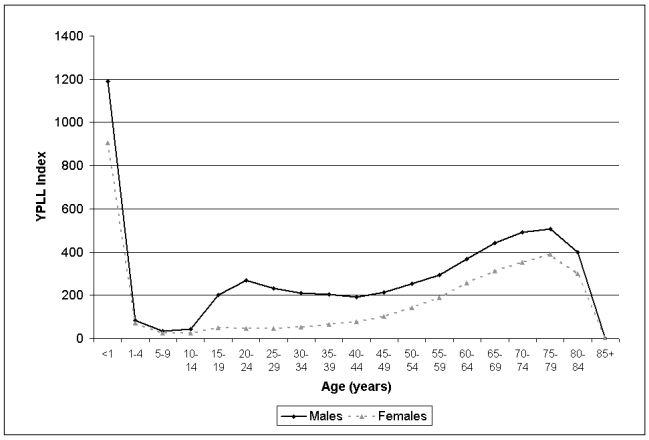


Table 2: Distribution of YPLL in the 29 departments of Chile, 1998

Department	YPLL1998	Population	Index per 1.000 pop.	Quartiles
Arica	15,171	193,649	78.34	1
Iquique	18,736	192,577	97.29	4
Antofagasta	44,196	456,083	96.90	3
Atacama	20,787	264,464	78.60	1
Coquimbo	45,907	561,665	81.73	1
Valparaiso-San Antonio	41,074	444,213	92.46	2
Viña del Mar-Quillota	71,718	863,923	83.01	2
San Felipe-Los Andes	17,598	217,358	80.96	1
Metropolitano Norte	59,668	628,146	94.99	3
Metropolitano Occidente	92,947	1,031,721	90.09	2
Metropolitano Central	64,753	788,900	82.08	1
Metropolitano Oriente	70,678	1,092,887	64.67	1
Metropolitano Sur	96,658	1,067,473	90.55	2
Metropolitano Sur Oriente	95,573	1,313,863	72.74	1
Lib. Bdo. O'Higgins	68,966	768,663	89.72	2
Maule	83,176	898,418	92.58	3
Ñuble	45,843	448,729	102.16	4
Concepción	52,595	556,383	94.53	3
Talcahuano	32,342	373,940	86.49	2
Bio-Bio	35,703	351,297	101.63	4
Araucania-Sur	61,940	640,093	96.77	3
Valdivia	33,956	351,229	96.68	3
Osorno	23,560	222,082	106.09	4
Llanchipal	44,359	466,167	95.16	3
Gral. Carlos Ibañez	9,360	92,214	101.50	4
Magallanes	14,021	155,274	90.30	2
Arauco	16,716	164,811	101.43	4
Araucanía Norte	21,273	215,492	98.72	4
Total	**1,299,274**	**14,821,714**	**87.66**	

To summarize, YPLL may be used in different ways: looking at the value of YPLL in each group or evaluating the total for the population; calculating it by sex or for a particular population group; or studying the value of YPLL for a specific cause. Comparisons between populations or causes can be made from these values. When analyzing the YPLL by cause, it should not be inferred that the years lost due to a cause would not have been lost if the cause had been controlled in the population. Indeed, just because a death is not due to a cause does not mean that the person could not have been exposed to other risks that could have caused death as well.[4] By observing the evolution of this indicator in time, it is also possible to compare periods and carry out trend analyses. It allows uncovering and comparing populations with occurrence of premature death.

Finally, it may be commented that this indicator is also used as methodological support in the evaluation of Unnecessarily Premature and Sanitarily Avoidable Mortality (MIPSE, for its Spanish name). This topic related to mortality assessment will be reviewed in another issue of the Epidemiological *Bulletin,* as well as other techniques related to mortality analysis.

References:

(1) PAHO. Standardization: A Classic Method for the Comparison of Rates. *Epidemiological Bulletin* 23(3):9-12; 2002

(2) PAHO. Years of Potential Life Lost - Brazil, 1980. *Epidemiological Bulletin* 5(5):3-6; 1986

(3) Last J. *A Dictionary of Epidemiology, Fourth Edition*. New York, New York: Oxford University Press. 2001

(4) PAHO, Xunta de Galicia. *Ayuda del módulo de demografía*. EPIDAT 3.0 [Computer program]. 2003 In print

(5) Ministerio de Salud de Chile. Indicadores Comunales para el Estudio de la Desigualdad en Salud. *El Vigía.* 3(11):7-13; 2000

Source: Prepared by PAHO's Area of Health Analysis and Information Systems (AIS).

Case Definitions
Ebola-Marburg viral diseases

Rationale for surveillance

Ebola haemorrhagic fever is a rare but severe disease occurring primarily in areas of the African rain forest. The disease is characterized by person-to-person transmission through close contact with patients, dead bodies or infected body fluids. Epidemics of the disease can be dramatically amplified in health care centers with poor hygiene standards; the attendant potential for explosive nosocomial infection constitutes the main threat to public health posed by the disease. Surveillance is aimed at early detection of cases in order to avoid epidemics and possible international spread of the disease.

Marburg virus infections are extremely rare. They appear to be similar to Ebola hemorrhagic fever and recommendations for both viral infections are the same.

Recommended case definition

Clinical description

Ebola hemorrhagic fever begins with acute fever, diarrhea that can be bloody (referred to as "diarrhée rouge" in francophone Africa), and vomiting. Headache, nausea, and abdominal pain are common. Conjunctival injection, dysphagia, and hemorrhagic symptoms such as nosebleeds, bleeding gums, vomiting of blood, blood in stools, purpura may further develop. Some patients may also show a maculopapular rash on the trunk. Dehydration and significant wasting occur as the disease progresses. At a later stage, there is frequent involvement of the central nervous system, manifested by somnolence, delirium, or coma. The case-fatality rate ranges from 50% to 90%.

Laboratory criteria for diagnosis

Supportive

– Positive serology (ELISA for IgG and/or IgM), **or**

Confirmatory

– Positive virus isolation (*only in a laboratory of biosafety level 4*) **or**
– Positive skin biopsy (immunohistochemistry) **or**
– Positive PCR

Case classification

Suspected: A case that is compatible with the clinical description.

Probable *(in epidemic situation):*

– Any person having had contact with a clinical case and presenting with acute fever, **or**
– Any person presenting with acute fever and 3 of the following symptoms: headache, vomiting / nausea, loss of appetite, diarrhea, intense fatigue, abdominal pain, general or articular pain, difficulty in swallowing, difficulty in breathing, hiccoughs, **or**
– Any unexplained death.

Confirmed: Any suspected or probable case that is laboratory-confirmed.

Contact *(in epidemic situation):*

An asymptomatic person having had physical contact within the past 21 days with a confirmed or probable case or his/her body fluids (e.g., care for patient, participation in burial ceremony, handling of potentially infected laboratory specimens).

In epidemic situations and after laboratory confirmation of a few initial cases, there is no need for individual laboratory confirmation and the use of "suspected or probable" case classifications is sufficient for surveillance and control purposes.

Recommended types of surveillance

In endemic areas and in the absence of an epidemic:

Immediate reporting of suspected cases from the periphery to intermediate and central levels to ensure rapid investigation and laboratory confirmation.

Note: Routine surveillance of Ebola haemorrhagic fever must be integrated with routine surveillance for other viral haemorrhagic fevers (e.g., Crimean-Congo fever, Lassa fever, Rift Valley fever, yellow fever).

In epidemic situations:

– Intensified surveillance and active finding of all suspected and probable cases for immediate isolation, and of all contact subjects for daily medical follow-up.

– The surveillance area should be monitored for a duration corresponding to 2 estimated incubation periods after the date of death or hospital discharge of the last case.
– A rumour registry should be established to create a systematic registration of rumours of cases reported by the population.
– A single source of official information is essential to ensure coherence and avoid confusion in the public.

Recommended minimum data elements

Case-based data for reporting and investigation
– Case classification (suspected/probable/confirmed).
– Unique identifier, name, age, sex.
– Geographical information, name of head of family, name of father (if child).
– Profession, place of work.
– Date of onset of fever, symptoms, signs.
– Hospitalization, including date.
– Death including date.
– Contact with previous case, including date.
– Nature and date of clinical samples taken for laboratory investigation (if any).

Aggregated data for reporting
– Number of cases (suspected/probable/confirmed) by age, sex.
– Number of deaths.

Recommended data analyses, presentation, reports *(epidemic situations)*

An epidemiological bulletin should be sent daily to local health authorities and to WHO headquarters. It should include the following information:

Cases:
– Total cumulative number of cases
– Total cumulative number of deaths
– Current number of patients
– Current number of hospitalized patients
– Date of last identified case
– Date of death or hospital discharge of the last reported case

Breakdown by sex and age group can also be provided

Contacts:
– Current number of contacts requiring follow up
– Current number of contacts under proper follow-up

Breakdown by sex and age group can also be provided

When possible, the geographic distribution of cases and contacts should be provided, as well as a simple epidemic curve.

Case-fatality rates, attack rates, and age-specific attack rates can be calculated for epidemiological assessment.

A more detailed report summarizing events and data should be produced weekly and a complete report should be available at the end of the epidemic.

Principal uses of data for decision-making

Routine surveillance data
– Detect an isolated case or an outbreak and immediately take appropriate measures to avoid an epidemic.

Active case finding and contact tracing during outbreaks are essential for control
– Identify all cases and contacts
– Assess and monitor the spread of an outbreak
– Evaluate control measures
– Provide a basis for research (epidemiological data, clinical specimens)

Special aspects

Since extreme biohazard is associated with sampling, transportation and laboratory investigation, strictly applied biosafety procedures and appropriate isolation of patients are essential.

All known Ebola strains from Africa produce disease in humans; one Ebola strain from the Philippines (Reston) has infected humans without producing disease.

Source: "WHO Recommended Surveillance Standards, Second edition, October 1999", WHO/CDS/CSR/ISR/99.2

Onchocerciasis (River Blindness)

Rationale for surveillance

Onchocerciasis is endemic in 34 countries of Africa, the Arabian peninsula and the Americas. Success at controlling the disease in West Africa was achieved through the strategy of larviciding for vector control in order to interrupt transmission; since 1988 this has been combined with treatment by ivermectin, a safe, effective drug. In Africa, annual distribution of ivermectin is being used to replace the larvicidal vector control activities of the Onchocerciasis Control Program in West Africa (OCP). It is distributed annually in community-directed country programs and is currently the core of the African Program for Onchocerciasis Control (APOC), which covers all the non-OCP African countries (and the Yemen) wherein ochocerciasis is endemic. As OCP phases out, it will need to ensure that detection and control of onchocerciasis recrudescence is integrated within, and become a routine function of national disease surveillance and control services. The risk of recrudescence must be kept to a minimum.

While elimination is not a realistic goal in Africa, it is in the Americas. Elimination of the parasite population from a defined geographical area means the sustained absence of transmission until the adult parasite population within that area has died out naturally or has been exterminated by some other intervention. This should occur within 15 years after interruption of transmission. Several foci in the Americas are now approaching this goal. WHO Regional elimination of

onchocerciasis will be considered to have been achieved when all countries in that Region have been certified as having eliminated onchocerciasis. In Latin America, ivermectin, given 6-monthly, is the basis of the strategic plan for the elimination of onchocerciasis in all endemic areas.

Recommended case definition

Clinical case definition

In an endemic area, a person with fibrous nodules in subcutaneous tissues.

Laboratory and ophthalmological criteria for confirmation

One or more of the following

– Presence of microfilariae in skin snips.
– Presence of adult worms in excised nodules.
– Presence of typical ocular manifestations, such as punctate keratitis and/or positive identification of microfilariae (e.g. slit-lamp observations of microfilariae in the cornea) in the eye.

Case classification

Suspected: A case that meets the clinical case definition.
Probable: Not applicable.
Confirmed: A suspected case that is confirmed by any of the criteria listed above.

Recommended types of surveillance

In zones of the Americas where onchocerciasis is endemic:

Some of the older programs in the Americas such as those of Mexico and Guatemala have well characterized foci as a result of thorough assessments conducted over the last 5 to 6 decades. All other currently known foci (and suspect communities) in the Americas have been characterized by rapid epidemiological assessments (REA). REA is based on the prevalence of nodules and/or microfilaremia in a sample of 30 adult males who have lived in the community for at least 5 years. Program implementation and impact assessments rely on periodic surveillance in sentinel communities. Sentinel communities are pre-selected hyperendemic communities where in-depth epidemiological evaluations take place at regular intervals; first before treatment starts, then again after two years, and finally at 4-year intervals thereafter. These evaluations include parasitological (microfilariae in biopsies and adult worms in nodules), ophthalmological (microfilariae in anterior chamber and punctuate keratitis), and entomological (by PCR) indicators.

Suppression of infectivity following 4 years of uninterrupted bi-annual treatment means the absence of infective larvae (L3s) in the Simulium vector population as determined by polymerase chain reaction (PCR) or any other valid method, coupled with a 5-year cumulative incidence of <1 new case per 1,000 children under 5 years of age. Even after suppression of infectivity has been achieved there can still be a population of adult worms capable of reinitiating transmission if the drug pressure is removed. Interruption of transmission will occur only by sustaining drug pressure during the entire length of the adult parasite's lifespan, this is approximately 15 years after beginning of treatment activities sustaining a coverage of no less than 85% of the eligible population.

Entomological evaluation, using PCR to detect parasite larvae in vector populations, is recommended because of the long prepatent period in human infection. If positive flies are detected, epidemiological surveys should be carried out to identify and treat both infected people and the at-risk population. This post endemic surveillance should be carried out until elimination of onchocerciasis is declared for the Region.

The International Certification Team is encouraged to use other villages (extra-sentinel sites) for monitoring, precertification or certification activities.

Migration investigation:

Programs should carry out a systematic investigation to rule out introduction of the infection in areas with a transmission potential (presence of vector) and where migration would pose a risk to the spread of a focus.

No active surveillance takes place in non-endemic areas in the Americas.

Recommended minimum data elements

Individual patient record at peripheral level in the Americas:

Name, age, sex, date and number of current treatment round and number of tablets received.

Aggregated data for reporting:

Treatment coverage over the eligible population at risk.
Prevalence and incidence rates (microfilaremia, nodules with adult worms, microfilariae in the eye, and/or punctuate keratitis) in sentinel communities.
Community Microfilarial Load (CMFL) in sentinel communities.

Recommended data analyses, presentation, reports

Graphs: Coverage over eligible population
Tables: Coverage by level of endemicity
Maps: Coverage by geographical area, location of the communities by level of endemicity, using geographical information system (GIS).

Principal uses of data for decision-making

– Eliminate onchocerciasis as a disease of public health and socio-economic importance.
– Prevent recrudescence of infection in the onchocerciasis-freed zones.
– Assess effectiveness of intervention.

Special aspects

New diagnostic tests, such as those based on serology (chromatographic-based antibody detection test) or the DEC (diethylcarbamazine citrate) patch test may become suitable for use in the field.

Source: Adapted from "WHO Recommended Surveillance Standards, Second edition, October 1999", WHO/CDS/CSR/ISR/99.2

Diagnosis on the Use of Bulletins for the Dissemination of Epidemiological Information in the Region of the Americas

Introduction

The value of public health information in general – and epidemiological information in particular – depends in part on its efficient dissemination to those who can use it and benefit from it. An essential part of the work of epidemiologists is to ensure that the results of their activities are not only disseminated, but also that the information resulting from the analyses is interpreted and used by decision-makers and the general public.

First and foremost, the second essential public health function of any health system – public health surveillance - requires the timely dissemination of the information generated by existing networks, both to those who helped generate it and to those who can benefit from it. Bulletins and other types of periodic reports are the usual means for achieving this. Because they present the raw material required in rational decision-making, they are indispensable instruments used in information-based planning and in the design of prevention and control measures for public health problems. Further, the publication of epidemiological research findings in peer-reviewed journals, bulletins, or other publications that reach the scientific community, operational groups, and the general public, is a means of dissemination of the available information that transforms it into scientific knowledge. In addition, the different types of epidemiological publications brings all sorts of information of interest to professionals, guaranteeing the sharing of experiences and increasing epidemiological knowledge.

The management and diffusion of epidemiological information reflects to a certain extent the functioning of the health system. Indeed, the availability of information creates better conditions to define strategies that respond adequately to health problems. Unfortunately, despite new information technologies and methodologies that facilitate the collection and analysis of health data, the dissemination of the resulting information is still deficient. It can be presumed that it is partly due to the difficulty of achieving an efficient publication and distribution of the information. Indeed, communicating epidemiological information requires that elements of the health system related to data collection, validation, analysis, and regular presentation be managed effectively. Beyond the basic need for communications media, *adequate* media are required, able to answer the needs of the audience and presenting general characteristics – in terms of periodicity, content, and extension, among others – that contribute to achieving an important objective: rational decision-making based on available evidence.

Given the importance of information dissemination for surveillance and epidemiology in general, a need was identified to carry out an assessment of dissemination instruments in the Region of the Americas, particularly bulletins. This exercise intends to provide an overview of the countries' current experience in terms of disseminating epidemiological information using this instrument, in particular surveillance data and information of interest to participants in epidemiological activities in the Region of the Americas.

Methodology

The information for a first description was obtained through a survey submitted to the authorities of the Ministries of Health and technical personnel of each country through the PAHO/WHO Representative Offices. Additional information was obtained through a search of existing Ministries of Health Web sites.

Results

Part of the information obtained is presented in table 1. In Canada and the United States, a Bulletin has been published since 1975 and 1951, respectively. Of the 17 countries of Latin America,[1] 16 publish epidemiological bulletins. Each of the 4 countries of the Latin Caribbean (Cuba, Haiti, Puerto Rico and the Dominican Republic) has a bulletin. Information was obtained on bulletins published in 3 of the 23 countries of the non-Latin Caribbean, and does not take into account that the epidemiological information from many of the small islands is published through the Caribbean Epidemiology Center (CAREC) in Trinidad. Although a majority of countries in the Region of the Americas use bulletins to disseminate epidemiological information, this situation is relatively recent since many of the existing bulletins were inaugurated at the end of the 1990s or at the beginning of 2000. Among the bulletins studied, the oldest is Venezuela's *Boletín Epidemiológico*, established in 1945. It is also important to note that although the bulletins have some common characteristics, they vary in format, content, and periodicity. Some of the analyzed characteristics are presented below.

In all the countries, the *responsible institution* was identified as the public health entity (in general Ministries and Secretaries of Health), specifically the epidemiology offices or their equivalent; in some cases, as in Colombia and Cuba, National Institutes of Health participate.

The *objectives* of the bulletins are generally the same: to disseminate the data notified to the surveillance system, to report on the epidemiological situation, and describe the results of research and/or news of interest for epidemiology and public health. Furthermore, there is a certain homogeneity in the principal audiences of the bulletins. Among those identified were health managers from the different levels of health services, epidemiologists, and the technical personnel from health institutions, universities, libraries specializing in health, researchers, and international agencies. However, the periodicity selected to respond in a timely fashion to these objectives varies, from daily (Argentina's *Epinoticias*) to annual (*Boletín Epidemiológico Nacional*, also from Argentina). The available information indicates that the weekly periodicity seems to be the most frequent. In countries

[1] Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Paraguay, Perú, Uruguay y Venezuela

that have more than one publication, as in Argentina, Canada, Colombia, Brazil, or Venezuela, a weekly Bulletin is often used to disseminate tables summarizing surveillance information. However, there are frequent delays in the weekly reports.

The *distribution*, when carried out efficiently, permits a timely use of the information contained in bulletins. It is dependent on characteristics of the country –geographical and technological among others –and it may represent an important difficulty for countries with a deficient distribution infrastructure, which sometimes leads to obsolescence and lack of use of the information. All the bulletins are published in printed format, with few exceptions such as Chile's *e-Vígia*, which is only published in electronic format. In some cases, the printed versions are distributed among the public sector users and the electronic version is made available to the general public. More than two-thirds of the bulletins analyzed are available in electronic format, which facilitates the distribution, yet limits it to an audience with access to the Web.

Another important characteristic of the bulletins is the *regularity of their publication*, which often dictates its relevance and the timely use of the published information by users. Several countries reported interruptions in their bulletins' publication, due to insufficient technical human resources or restructuring of the responsible units.

Despite the limitations that may exist in the quality and use of the bulletins, the majority of the countries do not carry out any *periodic evaluation*, of its content or use. Among those that have an established evaluation process, Colombia's *Informe Quincenal Epidemiológico Nacional* reported bi-yearly evaluations; Cuba's *Boletín Epidemiológico Semanal del IPK* indicated monthly evaluations by its Editorial Committee, and annually through readership surveys; Peru's *Boletín Epidemiológico Semanal* reported weekly evaluations for timeliness, quality, representativeness, and coverage; and Venezuela's *Alerta Epidemiológico* indicated evaluations at a periodicity defined by the epidemiological situation and users' needs.

Conclusions

The information presented in table 1 reflects the work carried out by the countries in the Region of the Americas to disseminate epidemiological information through bulletins. It is important to point out recent efforts of countries with limited infrastructure or incipient surveillance systems, such as Paraguay, Bolivia, and Haiti, as well as those of countries with established networks, such as Venezuela or Brazil, which have maintained their bulletins during the last decades and expanded their scope.

The dissemination of epidemiological information through bulletins is highly sensitive to the adequate operation of the surveillance system and the permanent availability of financial and human resources devoted to their preparation and distribution. In the context of the different health systems of the countries of the Americas, weaknesses continue to exist in the dissemination of epidemiological information through this instrument, especially apparent in the lack of continuity and in publication and distribution delays.

A possible concern is that beyond the logistical problems, this situation reflects the limited availability –and resulting under-utilization – of epidemiological information at the decision-making levels. As a result, it is important to put the priority and the necessary resources into the generation, analysis, and dissemination of timely and accurate information. This information will feed epidemiological bulletins and other media that stimulate the managerial and political use of the information, such as health situation rooms. Whatever the particular situation of the different countries of the Region, this analysis illustrates that there already is a positive experience on which to develop a culture of use of epidemiological information as intelligence for public health. This will hopefully lead to adequate responses to the needs of the populations of the Americas.

Table 1: List of the Bulletins of the Region of the Americas

Country	Institution	1st Year	Periodicity	URL (July 2003)
Argentina				
♦ *Boletín Epidemiológico Nacional*	Dirección de Epidemiología, Ministerio de Salud	1980	Yearly	www.direpi.vigia.org.ar/publicaciones.htm
♦ *Reporte Epidemiológico Periódico*	Programa Nacional de Epidemiología (SINAVE)	2002	Monthly	www.direpi.vigia.org.ar
♦ *Epinoticias*	Dirección de Epidemiología, Ministerio de Salud	2002	Daily	N/A
Barbados				
♦ *Weekly Report of Notifiable Diseases*	Ministry of Health	1969	Weekly	N/A
Bolivia				
♦ *Boletín Epidemiológico*	Unidad de Epidemiología, Servicio Departamental de Salud de La Paz	2000	Quarterly	N/A
Brazil				
♦ *Boletim Eletrônico Epidemiológico*	Fundação Nacional de Saúde (FUNASA)	2001	Bi-monthly	www.funasa.gov.br/pub/pub00.htm#
♦ *Informe Epidemiológico do SUS*	Centro Nacional de Epidemiologia (CENEPI/ FUNASA)	1992	Quarterly	www.funasa.gov.br/pub/pub00.htm#
Canada				
♦ *Canada Communicable Disease Report*	Population and Public Health Branch, Health Canada	1975	Bi-weekly	www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc/
♦ *Chronic Diseases in Canada*		1980	Quarterly	www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/

Colombia				
♦ *SIVIGILA*	Dirección Nacional de Salud Pública, Ministerio de Salud	1997	Weekly	www.col.ops-oms.org/situacion/vigilancia.asp
♦ *Informe Quincenal Epidemiológico Nacional*	Instituto Nacional de Salud, Ministerio de Salud de Colombia	1996	Bi-weekly	www.ins.gov.co/epidemiologia/cce/iqen.htm
♦ *Revista Epidemiológica de Antioquia*	Servicio Seccional de Salud de Antioquia	1978	Quarterly	N/A
Costa Rica				
♦ *Boletín Epidemiológico*	Dirección de Vigilancia de la Salud, Ministerio de Salud	2001	Weekly	N/A
Cuba				
♦ *Boletín Epidemiológico del Instituto de Medicina Tropical "Pedro Kuri"*	Instituto de Medicina Tropical "Pedro Kuri"	1991	Weekly	www.ipk.sld.cu
Chile				
♦ *El Vigía*	Departamento de Epidemiología del Ministerio de Salud	1998	Variable	epi.minsal.cl/epi/html/frames/frame4.htm
♦ *e-vigía*		2001	Monthly	epi.minsal.cl/epi/html/frames/frame4.htm
Dominican Republic				
♦ *Boletín Epidemiología*	Dirección General de Epidemiología, Secretaría de Estado de Salud Pública y Asistencia Social	1986	Quarterly	N/A
♦ *Boletín Epidemiológico Semanal*		2001	Weekly	N/A
Ecuador				
♦ *Boletín Epidemiológico*	Dirección Nacional de Epidemiología, Ministerio de Salud Pública	2002	Bi-yearly	N/A
El Salvador				
♦ *Boletín Epidemiológico Semanal*	Dirección de Control y Vigilancia Epidemiológica, Ministerio de Salud	*	Weekly	N/A
♦ *Boletín Epidemiológico Mensual*		*	Irregular	N/A
French Guiana, Martinique, Guadeloupe (France)				
♦ *Bulletin Epidémiologique Hebdomadaire*	Institut de Veille Sanitaire, Ministère de l'Emploi et de la Solidarité	*	Weekly	www.invs.sante.fr/beh/default.htm
Guatemala				
♦ *Boletín Epidemiológico Nacional*	Ministerio de Salud Pública y Asistencia Social	2001	Quarterly	www.mspas.gob.gt/
Haiti				
♦ *Bulletin d'Epidémiologie*	Ministère de la Santé Publique et de la Population d'Haïti	2000	Irregular	N/A
Honduras				
♦ *Boletín Epidemiológico*	Departamento de Epidemiología, Secretaría de Salud	*	Weekly	*
Jamaica				
♦ *Weekly Surveillance Bulletin*	Epidemiology Unit, Ministry of Health	*	Weekly	N/A
Mexico				
♦ *Epidemiología*	Dirección General de Epidemiología, Secretaría de Salud	1995	Weekly	www.epi.org.mx
Nicaragua				
♦ *Boletín Epidemiológico*	Dirección de Vigilancia Epidemiológica, Ministerio de Salud	1992	Weekly	www.minsa.gob.ni/vigepi/html/boletin.htm
Panama				
♦ *Boletín Epidemiológico*	Departamento de Vigilancia de Factores Protectores y de Riesgos a la Salud y Enfermedades, Ministerio de Salud	1976/77	Monthly	N/A
Paraguay				
♦ *Boletín Epidemiológico*	Dirección General de Vigilancia en Salud, Ministerio de Salud Pública y Bienestar Social	1995	Irregular	N/A
Peru				
♦ *Boletín Epidemiológico Semanal*	Oficina General de Epidemiología, Ministerio de Salud	1993	Weekly	www.oge.sld.pe
Puerto Rico				
♦ *Boletín Epidemiológico*	Departamento de Salud	1984	*	*
Suriname				
♦ *Epidemiological Bulletin*	Epidemiological Department, Bureau of Public Health	*	Bi-yearly	N/A

United States of America ♦ *Morbidity and Mortality Weekly Reports*	United States Centers for Disease Control and Prevention	1951	Weekly	www.cdc.gov/mmwr/index.html
Venezuela ♦ *Alerta Epidemiológico* ♦ *Boletín Epidemiológico Semanal*	Dirección de Vigilancia Epidemiológica, Ministerio de Salud y Desarrollo Social (con participación de la Dirección de Salud Ambiental y Contraloría Sanitaria)	 1997 1945	 Weekly Weekly	 www.msds.gov.ve/ (Section: "Estadísticas") N/A

* = Information not available; N/A = Not applicable

Table 2: Bulletins from International Organizations

Name of the Bulletin	Institution	1st Year	Periodicity	URL
♦ *Epidemiological Bulletin*	PAHO (DD/AIS)	1980	Quarterly	http://www.paho.org/english/DD/AIS/bsindexs.htm
♦ *EPI Newsletter Expanded Program on Immunization in the Americas*	PAHO (FCH/IM)	1979	Bi-monthly	http://www.paho.org/english/hvp/hvi/epi_newsletter.htm
♦ *Disasters Newsletter*	PAHO (DD/PED)	1979	Quarterly	http://www.paho.org/english/dd/ped/newsletter.htm
♦ *Weekly Epidemiological Record*	WHO	1929	Weekly	http://www.who.int/wer
♦ *CAREC Surveillance Report*	Caribbean Epidemiology Centre, CAREC (PAHO/WHO)	1981		http://www.carec.org/publications/reg-pub.html
♦ *Challenges of Border Health (United States/Mexico Border Field Office Bulletin)*	Field Office United States/Mexico Border (PAHO/WHO)	2003	Quarterly	http://www.fep.paho.org/english/publicaciones/desafios/num-02/Revista.asp?pag=01

Source: Prepared by PAHO's Area of Health Analysis and Information Systems (AIS) in Washington, D.C. and at the PAHO/WHO Representations in the Dominican Republic and Honduras.

A Time Capsule of Health Situation Analysis in the Americas, 1902-2002

In 2002, many events and activities throughout the Western hemisphere commemorated PAHO's 100 years of existence and the Organization's accomplishments in its different areas of work. From its creation in 1902, the Pan American Sanitary Bureau, PAHO's technical arm, has had the strategic function of collecting and disseminating information on the health of the peoples of the Americas. This has given way to many programs and projects, and generated a myriad of related products, some of which have an important historical value.

In order to preserve the memory of some of the Organization's activities of collection, analysis and dissemination of health information over the last century, the Brazilian National Epidemiology Center (Centro Nacional de Epidemiología, CENEPI) and PAHO's Special Program for Health Analysis have created a Time Capsule of Health Situation Analysis that will remain at the Museum of Public Health of the Brazilian National Health Foundation (Fundaçao Nacional de Saúde, FUNASA) in Brasilia, Brazil for the next 50 years. Its content consists of a collection of documents considered to reflect PAHO's history in health statistics and the evolving nature of its technical cooperation in epidemiology. It also illustrates the changing state of health of the populations of the Region over the last century and efforts in health situation and trends analysis that have accompanied them, as well as some historic and current tools and the International Classifications used in health data management and analysis.

The Time Capsule was officially closed on 10 December 2002. It is hoped that the materials placed in it will provide future generations with a general view on the evolution of Epidemiology and Health Situation Analysis in the Americas, from the creation of PAHO to the beginning of the XXI Century. The Capsule will remain in the custody of the Museum of Public Health in Brasilia until it is reopened in 2052.

Severe Acute Respiratory Syndrome (SARS) Update

Since 28 May 2003, the SARS epidemic has been on a decline. In fact, at the time of this publication, the last reported probable case in the world was detected and isolated on 15 June 2003 and it has been more than 20 days, or twice the incubation period, since the detection of the last case. The chain of human-to-human transmission is therefore considered to be broken, which means that the SARS coronavirus is no longer thought to be circulating in the human population. WHO continues to receive rumors of possible cases, which indicates that surveillance systems are working well. To date, all recently reported probable cases have been investigated extensively and determined to have other causes.

However, scientists cannot at present guarantee that SARS has been eliminated, as questions remain about the origins of the virus and its possible seasonal occurrence. In addition, transmission may be occurring somewhere in the world at such a low level as to defy detection.

The world population must be considered vulnerable to a return of SARS pending better understanding of the origins of the virus and the circumstances that might have allowed it to jump from an animal host or environmental source to infect humans. Without such an understanding, predictions of the future evolution of the outbreak – including its end – cannot be made with certainty.

Since the start of the SARS global epidemic in March 2003 until July 9, there have been a total of 8,436 probable cases and 812 deaths worldwide in 29 countries. Most of the cases occurred in health care workers and close contacts to patients. In the Americas, SARS has directly affected Canada and the United States the most. Brazil reported 3 probable cases (2 of them were later discarded) and Colombia 1 probable case.

WHO is moving from an emergency response to a research-based agenda aimed at protecting the world against any future resurgence of SARS. Far too little is understood about the origins of the SARS virus and the possible role – if any – that animals play in the transmission cycle. In addition, an adequate point-of-care diagnostic test is still not available for SARS. The laboratory tests would likewise need to be sufficiently simple and affordable to be used in countries with different health systems and resources for health care. These issues are expected to top the research agenda on this disease.

In the meantime, WHO has good reason to believe that, should SARS resurface later this year, the global impact will be milder than experienced during the initial global emergency. Five reasons support this view.

First, the world's public health systems have demonstrated their capacity to move quickly into a phase of high alert. The prompt detection and isolation of imported cases in Latin America, Africa and India are good examples of both the level of vigilance and its effectiveness in preventing further spread. Some of the former SARS hotspots, including Hong Kong and Singapore, plan to maintain a high level of vigilance, supported by measures for screening and detection, until at least the end of the year.

Second, the world knows what to do. Control measures have demonstrated their capacity to completely halt outbreaks. In the Americas, countries have mobilized national resources to review and adapt international surveillance, prevention and control guidelines to face the potential introduction of the disease and investigate possible cases.

Third, the intensive research effort currently underway can be expected to improve scientific understanding of SARS and yield better diagnostic and control tools.

Fourth, resolutions adopted during the May World Health Assembly have strengthened WHO's capacity to respond to outbreaks, allowing it to move from a passive reliance on official government notifications to a proactive role in warning the world as soon as evidence indicates that an outbreak poses a threat to international public health.

Finally and perhaps most importantly, SARS has underscored the importance of immediately and fully disclosing cases of any disease with the potential for international spread. In the present climate of opinion, influenced by the lessons learned from SARS, it appears unlikely that any country would choose to conceal cases, should SARS resurface. Countries are being urged to use their experience with SARS to strengthen epidemiological and laboratory capacity as part of preparedness plans for responding to the next emerging infection or the next influenza pandemic.

As SARS has clearly demonstrated, the appearance of a new disease in a highly mobile, interconnected and interdependent world can have serious repercussions outside the health sector and far beyond the areas worst hit by the outbreak. This sense of shared vulnerability is considered a strong motivation to continued international collaboration for the prevention and control of priority diseases.

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Source: Prepared by PAHO's Area of Disease Prevention and Control, Communicable Diseases Unit (DPC/CD).

Modules of Principles of Epidemiology for the Control of Diseases, Second edition (Spanish version)

Since its original production in 1980, the Modules of Principles of Epidemiology for the Control of Diseases (MOPECE for its Spanish name) have circulated widely in Spanish, English, Portuguese, and French-speaking countries of the Americas. They have become a recognized tool for training local health teams in basic epidemiology for the control of health problems.

The last quarter of the 20th century has been a time of rapid development for epidemiology as a basic scientific discipline of public health. This development has been accompanied by an intense effort of dissemination of knowledge through the production of epidemiological research and increased availability of epidemiology textbooks. The redefinition of the structure, functions, and role of epidemiology units within the Ministries of Public Health in Latin America and the Caribbean – in particular the operation of surveillance systems, in-service training, health situation analysis, and the definition of health measures – has gained greater importance within plans of institution strengthening.

For the above reasons, the need was expressed for reviewing the contents of the MOPECE, in light of changes that have occurred in the theory and practice of public health in the Americas, and stimulated by the continuous demand for MOPECE in countries of the Region.

Numerous health professionals with teaching and health service experience in epidemiology and other disciplines participated in the process of review of the MOPECE, led by the Special Program for Health Analysis (SHA) [since March 2003, the Area of Health Analysis and Information Systems (AIS)], and with the technical cooperation of PAHO's Regional Programs of Human Resources Development (HSR) [now the Unit of Human Resources Development (HR)] and Prevention and Control of Communicable Diseases (HCT) [now the Unit of Communicable Diseases (CD)]. For now, the new edition is only available in Spanish, and the French version is under review.

In this second edition, special emphasis has been placed on preserving the nature and structure of the original edition. This edition continues to be a training tool in basic epidemiology, directed to professionals in local teams and health networks, and oriented to the use of epidemiology in the management of health services, with the specific aim at facilitating the implementation of practical responses to daily health problems in communities.

The objectives of the MOPECE are:

- To support the training of professional staff and local health teams in the systematic application of concepts, methods, techniques, and the basic epidemiologic approach for the control of diseases and health problems in populations.
- To provide the "common language" necessary for the development of networks of communication and information in epidemiology among local multidisciplinary health teams, including the operation of interconnected public health surveillance systems.
- To strengthen the capacity of local health services for timely and efficient organization and response to epidemiological alert situations.
- To promote the development and strengthening of the epidemiological practice in local health management in terms of analytical and resolution capabilities.

MOPECE–Second edition is organized in the following six modular units:

Unit 1: *Presentation and conceptual framework*

Unit 2: *Health and disease in the population*, which describes the population dimension of concepts, methods, and applications of epidemiology as a basic public health discipline.

Unit 3: *Measurement of the health and disease conditions in the population*, which describes the basic elements of the quantification process for the analysis of population health problems.

Unit 4: *Surveillance in public health*, which describes and updates elements, approaches, and uses of surveillance as a basic epidemiological activity.

Unit 5: *Epidemiologic field study. Application to the study of outbreaks*, which describes the guidelines for epidemiologic field investigation and its use in the study of outbreaks from an operational standpoint at the local level.

Unit 6: *Disease control in the population*, which presents how the measurement, surveillance, and systematic analysis of health conditions in the population can lead to the identification, application, and evaluation, at the local level, of effective and appropriate control measures, and of other interventions.

MOPECE was designed to be applied within the framework of a training workshop and this orientation was maintained in the Second Edition. Accordingly, MOPECE–Second edition is not a textbook, but an **educational materia**l to be used in a **workshop**. The workshop should be understood as a collective training experience in applied epidemiology, in person and of a participatory nature. The principal recipients are professionals from **multidisciplinary health teams**, particularly if they constitute local health networks.

The MOPECE–Second edition includes a Facilitator's Manual with orientations for managing the specific working groups by modular unit, responses to the quantitative exercises, a basic set of scientific articles and technical reference documents.

This collection of materials and training options is available as of March 2003 through PALTEX and its 580 points of sale.

For more information, comments and suggestions on the MOPECE–Second edition, please contact: Pan American Health Organization, Area of Health Analysis and Information Systems 525 Twenty-third St., N.W., Washington DC 20037-4649, U.S.A., Fax: (202) 974-3674; e-mail: ais@paho.org

Report of the Thirty-fourth Session on Health Statistics of the United Nations Statistical Commission, March 2003

The Thirty-fourth Session of the United Nations Statistical Commission took place on 4-7 March 2003 in New York, NY, U.S.A. The session was attended by twenty-four Member States of the Commission. Observers for other Member States of the United Nations system and for intergovernmental and non-governmental organizations also attended. The World Health Organization (WHO) and the Pan American Health Organization/Regional Office for the World Health Organization (PAHO/WHO) were represented.

The Commission reviewed the ongoing work of groups of countries and international organizations in various fields of demographic, social, economic, and environmental statistics and on certain cross-cutting issues in statistics.[1] As presented succinctly below, issues addressed by the Commission included the overall coordination between international organizations and national statistical offices in the production and dissemination of health statistics; international support to build capacity in developing countries to respond to the needs of monitoring activities related to Millenium Development Goal 8 ("Develop a global partnership for development"); and the importance of statistical capacity-building as part of development programs.

WHO presented a paper that summarized its recent activities in relation to health statistics. The paper included a discussion on WHO's scientific peer review; development and dissemination of health statistics; World Health Survey; and strengthening country capacity. The Commission welcomed the report and, among other things:

a) Expressed support for the work of WHO on the WHO Family of International Classifications, and requested guidelines on the preparation of national health accounts.

b) Proposed that guidelines be prepared on implementing the automated coding systems for recording cause of death;

c) Requested WHO, in collaboration with the United Nations Statistics Division and other relevant bodies of the United Nations system, to explore alternative methods of estimating the prevalence of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS).

d) Requested that a group of Friends of the Chair be created to examine coordination among international organizations and between international organizations and national statistical offices in the production and dissemination of health statistics, recommend actions to be taken for improvement, and report back to the Commission.

e) Further requested that the sub-item entitled "Health statistics" remain in the agenda of forthcoming sessions of the Commission. [1]

The Commission also reviewed the report of the Secretary-General on the subject of Social Statistics and recommended actions to be taken. *Inter-alia*, the Commission said that, with respect to the international collection of disability statistics, it:

a) Emphasized the need to ensure the collection of internationally comparable disability statistics; and,

b) Recommended the compilation of gender-relevant statistics.[1]

The Commission also discussed the report on the status of the millennium development goal country reporting. The Commission agreed that further harmonization and prioritization in the field of development indicators were needed, in particular with regard to the indicators for the Millennium Development Goals (MDGs). The MDGs came into being as a result of the Millennium Declaration that was adopted by 147 heads of State and Government and 189 nations in September 2000. The objective of the Declaration is to promote a comprehensive approach and a coordinated strategy, tackling many problems simultaneously across a broad front. To help track progress, the development experts of the United Nations agencies, funds, and programs, as well as the International Monetary Fund, the Organization for Economic Cooperation and Development (OECD) and the World Bank derived from the Millennium Declaration a framework of measurable goals and targets for combating poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women.[2]

In its thirty-fourth Session, members of the Commission emphasized that:

a) Any international list of recommended indicators should be adapted in each country to the economic and social circumstances and priorities of that country, and take into account each country's statistical capacities and need for a phased, practical program of statistics development; and

b) National statistical services should have a leading role in developing national country reports.[1]

The Commission considered an agenda item entitled "Statistical Capacity-building." The corresponding report reviewed cooperative activities by the United Nations Statistics Division (UNSD) which seek to build the statistical capacity of countries in the respective regions. UNSD continues to pay particular attention to building capability by transferring technical expertise between countries and promoting common technical standards and methodology.[3]

The Commission emphasized the importance of statistical capacity-building and stressed that statistical capacity-building efforts needed to be an integral part of development programs.

These and other topics that relate to national statistics, their comparability, and the promotion of improved statistical methods will be included in the agenda of the Commission's thirty-fifth session in March 2004.

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(2) Organization of the United Nations. Statistical Commission. Report of the Thirty-Fourth Session. Harmonization of indicators and reporting on progress towards the millenium development goals. NY, USA: UN; March 2003. (E/CN.3/2003/21)

(3) Organization of the United Nations. Economic and Social Council. Report of the Thirty-fourth Session of the United nations Statistical Commission. Statistical capacity-building. New York, NY, USA: UN; March 2003. (E/CN.3/2003/23)

Source: PAHO's Area of Health Information and Information Systems (AIS).

Updating the International Classification of Diseases, Tenth Revision

Background

The World Health Organization has coordinated the periodic revision of the International Classification of Diseases (ICD) since 1948. As a result of a process initiated in 1983, the three volumes of the English and French versions of the Tenth and latest Revision of the ICD (ICD-10) were published between 1992 and 1994. The translation to other languages followed, coordinated by 6 WHO Collaborating Centers[1] and other institutions around the World. In particular, the Spanish version was published by the Pan American Health Organization (PAHO) in 1995.

Prior to the 10th Revision, updates were not published between revisions, which occurred in ten year cycles. Thus, the ICD-1, the first revision of the original 1893 Bertillon's Classification, was introduced in 1900, the ICD-2 in 1910, and so on until the ICD-9 was released in 1979. By request of several countries, the introduction of the ICD-10 was delayed up to 1994, when it started to be used in a few countries in Europe. It is being implemented in the rest of the world since 1995.

Updating process

In 1989, the WHO ICD-10 International Conference recommended the definition of an updating mechanism so that changes could be implemented between revisions. To that effect, two separate bodies, the Mortality Reference Group (MRG) and the Update Reference Committee (URC), were established in 1997 and 1999, respectively, to initiate and follow-up on that process (see Figure 1).

The MRG is composed of members from the different WHO Collaborating Centers and makes decisions on the application and interpretation of the ICD to mortality, as well as recommendations to the URC on proposed ICD updates. The URC receives proposals from the MRG and members through the WHO Collaborating Centers for the Family of International Classifications[2] and submits recommendations on proposed ICD updates for mortality and morbidity to the Collaborating Centers. Unlike in the past, these recommendations reinforce the process of *updating* the ICD-10 rather than creating the foundation of an ICD-11. This continuous process is facilitated by reports from countries to their corresponding WHO Collaborating Center for Classification of Diseases of any significant problems in the use of the ICD-10. In the Region of the Americas, the English-language center is located at the National Center for Health Statistics in the United States, the Spanish-language center is the Centro Venezolano de Clasificación de Enfermedades in Venezuela, and the Portuguese-language center is at the Universidade de São Paolo in Brazil. As WHO's Regional Office for the Americas, PAHO also serves as a fundamental link between countries and the URC in the updating of the Classification.

Changes to the ICD vary in nature from minor corrections, which are updated in the classification's tabular list every year, to major alterations that take place every three years.

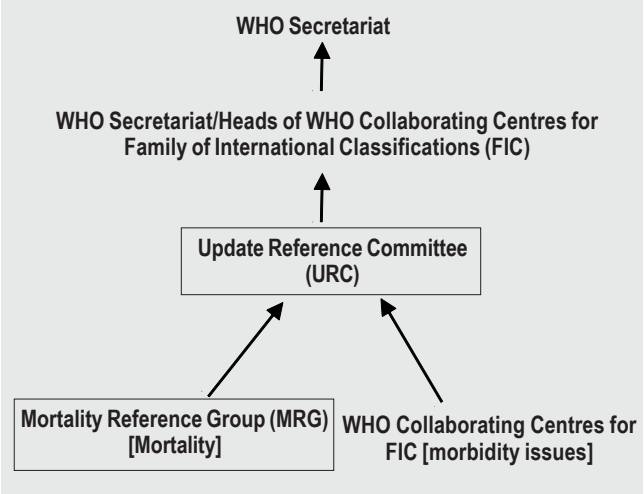
Minor changes include:
- Correction or clarification of an existing index entry that only changes the code assignment to a code within the same three-character category.
- Enhancements to the tabular list or index (such as the addition of an inclusion term to an existing code; the addition of an exclusion note; the duplication of an existing index entry under another main term).
- Change to a code description that enhances the description rather than changes the concept.
- Change to a rule or guideline that does not affect the integrity of morbidity or mortality data collections.
- Correction of a typographical error.

Major changes include:
- Addition of a new code.
- Deletion of a code.
- Movement of a code to another category or chapter.
- Change to an existing index entry that changes the code assignment from one three-character category to another three-character category (movement of terms).

[1] Peking Union Medical College Hospital, Beijing, China (Chinese), INSERM, Le Vésinet, France (French), University Hospital, Uppsala, Sweden (Nordic countries), Universidade de São Paulo, São Paulo, Brazil (Portuguese), The N.A. Semaško Institute, Moscow, Russian Federation (Russian), and the Centro Venezolano de Clasificación de Enfermedades, Caracas, Venezuela (Spanish).

[2] See following web site for the list of worldwide Collaborating Centers: (http://www.who.int/whosis/icd10/collabor.htm).

Figure 1: Relationship between URC, MRG, WHO Collaborating Centers and WHO Secretariat/Heads of Collaborating Centers



– Change to a rule or guideline that affects the integrity of morbidity or mortality data collections.
– Introduction of a new term into the index.

All updates are incorporated annually into the ICD index if they do not impact on the structure of the tabular list. The official updates to the published volumes of ICD-10 are produced in two formats: 1) a cumulative list of all changes made to ICD-10 from 1996 onwards, and 2) an annual list of changes made to ICD-10 since 1996. Both lists are available at: www2.fhs.usyd.edu.au/ncch/WHO%20URC/who_urc.html#WHO_Off_Updates.

The Spanish version of the cumulative updates, prepared by PAHO, will soon be available at: www.paho.org. Further, in the case of the Spanish-language ICD, the cumulative corrections and updates as of January 2003 have been incorporated in a *new (2003) Edition of the ICD-10* (see Box 1). All Spanish ICD-10 volumes acquired as of now will therefore include all the changes detected between 1996 and 2003. This is useful for new buyers of the ICD-10 volumes, who will not need to look up the changes made during the 1996-2002 period. However, it is important to note that the publication of the 2003 version of the ICD-10 does not imply that current users will have to replace their volumes of the classification. Indeed, although quite a few corrections were made (nine new codes were created, eight were eliminated, some conditions formerly included in a specific code are now included in another one, and some criteria for using rules in the coding process were changed), they are ultimately not significant enough to require replacing current sets of the ICD-10. Further, corrections and updates are constantly being disseminated through different mechanisms including the electronic "Forum-CIE" in Spanish and "ICD-Forum" in English[3], allowing users to enter the changes manually in their ICD-10 volumes. A web site on available resources on the ICD is also being developed.

Final comments

It should be noted that many other changes to the current revision of the ICD are not expected in the next few years, as the detection of errors and inaccuracies dwindles down with regular use of the Classification. As mentioned above, PAHO has already published the Spanish 2003 Edition of the ICD-10. The publication of the English and French versions of the same will be done by WHO, and in Portuguese by the Editora da Universidade de São Paolo (EDUSP) in coordination with PAHO and the Brazilian Collaborating Center.

Box 1: "Clasificación Estadística Internacional de Enfermedades y Problemas Relacionados con la Salud, Décima Revisión"

This new Spanish edition of the 10th Revision of the International Classification of Diseases includes all the updates approved between 1996 and 2003. It is also available in CD-ROM.

1995 (2003 updated reprint), ISBN 92 75 31554 X

– **"Volumen 1"**: Code: PC 554A; US$ 68.00/51.00 in countries of Latin America and the Caribbean
– **"Volumen 2"**: Code: PC 554B; US$ 27.00/18.00 in countries of Latin America and the Caribbean
– **"Volumen 3"**: Code: PC 554C; US$ 40.00/32.00 in countries of Latin America and the Caribbean
– **Complete set**: Code: ST 013; US$ 122.00/90.00 in countries of Latin America and the Caribbean

Contact: PAHO/WHO offices in the countries or PAHO headquarters in Washington, DC: Tel: (301) 617-7806; Fax: (301) 206-9789; email: paho@pmds.com; http://publications.paho.org

References:

- World Health Organization. *Statistical Classification of Diseases and Related Health Problems. - 10th Revision. v.3* Tabular list. Geneva, Switzerland: WHO; 1994
- World Health Organization. Meeting of Heads of the WHO Collaborating Centres for the Classification of Diseases. Copenhagen, Denmark: WHO; 14-20 October, 1997. (WHO/HST/ICD/C/97.65)
- World Health Organization. Meeting of Heads of the WHO Collaborating Centres for the Classification of Diseases. Paris, France: WHO; 13-19 October 1998. (WHO/GPE/ICD/C/98.60)
- World Health Organization. Meeting of Heads of the WHO Collaborating Centres for the Classification of Diseases. Cardiff, Wales: WHO; 17-22 October 1999. (WHO/GPE/ICD/99.56)
- World Health Organization. Meeting of Heads of the WHO Collaborating Centres for the Classification of Diseases. Rio de Janeiro, Brazil: WHO; 15-21 October 2000. (WHO/GPE/ICD/C/00.71)
- World Health Organization. Meeting of Heads of the WHO Collaborating Centres for the Classification of Diseases. Bethesda, MD, U.S.A.: WHO; 21-27 October 2001. (WHO/GPE/CAS/C/01.97)

Source: Prepared by PAHO's Area of Health Analysis and Information Systems (AIS).

[3] To subscribe Forum-CIE and/or ICD-Forum, send an e-mail to beckerro@paho.org or hazlewom@paho.org with your full name, city, country, position and name of your institution.

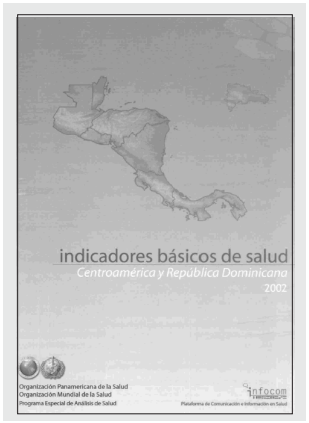
Core Data Initiative: New Brochures

The Regional Core Health Data Initiative was started in 1995 as a joint effort of Member Countries and the Pan American Health Organization (PAHO) through its Representation Offices, Divisions, and Technical Programs. Since then, it has been coordinated by PAHO's Special Program for Health Analysis (SHA), now the Area of Health Analysis and Information Systems (AIS). This effort has expanded the capacity of the Secretariat and of the Member States to collect, validate, and systematically analyze health information.

The Regional basic health indicators brochure has been published periodically for eight years and has served as a model for similar data dissemination instruments in at least 23 countries of the Region. Overall, this important data collection and presentation exercise has served as a building block for a more systematic analysis of the health situation in the countries. The 2003 Edition will be available in September 2003.

In response to the needs for reliable and comparable information as a basis for decision-making in specific geopolitical areas of the American Region, the following brochures have been recently published:

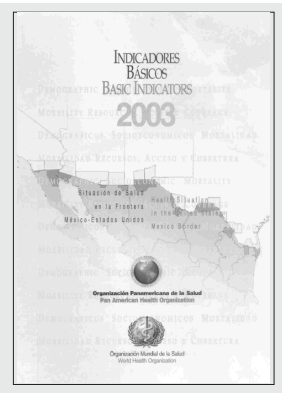
Basic health indicators for Central America and the Dominican Republic, 2002



It is the first brochure presenting information from the subregional level and it emerged from joint efforts of the Central American countries and the Dominican Republic carried out since 1995. That year, the project "Information and Communication for Health" (INFOCOM) was created, following an agreement of the Council of Central American Health Ministers (COMISCA) supporting the Plan of Immediate Actions in Health in Central America (PAISCA). The objective of this project is to implement a network of information and communication services in Central America, to support the health plans of the countries of this Subregion.

This brochure is a means of disseminating and sharing the existing information in Central America and the Dominican Republic. It includes information on 34 indicators (demographic; socioeconomic; mortality; morbidity; and resources access and coverage), disaggregated at the subnational level.

Basic Indicators 2003, Health Situation on the US-Mexico Border



This brochure is the product of the effort of PAHO's Field Office on the U.S.-Mexico border, with the participation of the governments of Mexico and the United States, as well as the state and local governments of both countries. This compilation of indicators places health problems in their social and economic contexts and represents a first step for the health situation analysis on the US-Mexico border. The brochure contains information on 40 indicators divided into five categories (demographic; socioeconomic; mortality; morbidity; and resources, access and coverage). It presents comparative information on data at the national, state and county level covering the 10 border states and the 29 border sister counties and municipalities.

The adoption of the Core Data Initiative in the countries has provided opportunities to strengthen health information systems while generating evidence on which to base the planning of health actions. Efforts should continue to advance its expansion and strengthening in the Region of the Americas.

Announcement: II Meeting of PAHO's Advisory Committee on Health Statistics (CRAES)

The second Meeting of PAHO's CRAES will take place in Washington, DC on September 10-12, 2003. The Committee was reactivated in 2000 and meets periodically to analyze the status of health statistics in the Region of the Americas while promoting improvements in the coverage and the quality of vital and other statistics of interest to the health sector.

Some topics of the 2003 Meeting are: the Millennium Development Goals at the national, regional, and international levels in the context of data quality issues, availability problems, and the implications of these indicators for strengthening national capacity; to review concepts and guidelines for mortality data analysis with specific focus on multiple causes of death and management of small numbers; to review a methodology for use in estimating mortality rates; to review instruments to assess various aspects of national civil registration and vital statistics systems in Member Countries; to make recommendations for guidelines for hospital morbidity coding using ICD-10; and to review a core curriculum for in-service training in the area of "*Management of health records*" and "*Basic statistical methods*".

PAHO's Epidemiological Bulletin is published quarterly in English and Spanish. Catalogued and indexed by the United States National Library of Medicine. Printed on acid-free paper.

Internet: http://www.paho.org/english/DD/AIS/beindexe.htm

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