Methodology for the Study of Inequities in Health Conditions

In recent years, the Pan American Health Organization has collaborated with Member Countries to promote the development of systems for evaluating and monitoring the health situation of different population groups based on living conditions[1]. The main objective is to identify and adapt practical options that are economically and technically viable to strengthen the countries' capabilities to analyze the health situation and to evaluate emergent changes and trends taking into consideration existing disparities and inequalities. Preliminary results of initial studies have stimulated the interest of the authorities since they represent a feasible approach for analyzing national and local level experiences. In certain cases, an analysis of the health situation was done and in others there were projects to monitor priority problems. This article presents some methodological considerations for a study of inequalities in health conditions with emphasis on the use of secondary information for the identification of problems; other applications, such as monitoring and management of local health services are not discussed.

Health situation analysis (HSA) consists of the production and processing of information for the identification of **profiles of priority problems** in various **population groups**. HSA is a fundamental function for **decision-making** on health and welfare policies, planning, and management and for **evaluating** the impact of such decisions on the population.

Health problems are not distributed randomly throughout the entire population, and their frequency and severity even less. It is easy to demonstrate that the profiles of priority health problems have changed in all societies throughout history. The health situation is related to the most **general** processes of such societies: long-term demographic and ecological processes, the development of their productive forces, their ways of organizing the production and distribution of goods and services, and their forms of political organization. In this regard it may be said that the health situation of a population bears a relation to the "historical times" of such societies.

However, in each "historical time" and in each society, different health profiles are found in different sectors of the population. These inequalities, at the group level, translate into different **particular** forms of insertion and participation in the general operation of the society, land use, and the goods and services that the society produces. Different living conditions are expressed in the daily life of each population group through different needs, risks, and health problems. The living conditions of each group thus mediate between the most general processes of the society and the health profiles specifically found in each of these groups. This is the field of public health actions.

At a third explanatory level, health differences are related to **singular** variations, that is individual (biological and social) variations that are translated into greater susceptibility, risk, or resistance with regard to certain health problems. This is the basic field of action of clinical practice. There are examples of good epidemiological studies on inequalities using this kind of approach, but their cost and operational complexity make them difficult to replicate and generalize in the health services.

These three levels of approach are complementary, each contributing to comprehensive knowledge of the health situation. Practically all categories and variables can be defined and operationalized in each of these approaches. However, the decision as to which level is to be employed has important practical consequences in terms of cost and usefulness. For these reasons the population-group approach is suggested for HSA in the field of public health.

Not every inequality can be considered an inequity, but any inequality that reflects

[1]See PAHO's *Epidemiological Bulletin*, 12(3):7-10, 1992.

differences in living conditions represents an inequity and raises a priority ethical challenge for health workers. As a result, the essence of HSA is the study of the inequalities and **particular** inequities of each population group, because these differences are precisely the area on which the health and welfare programs and services are expected to act.

At the group level and to the extent that it shows the relationships between health problems and living conditions, HSA is the indispensable basis for strengthening comprehensive social and intersectoral responses. Thus, it facilitates not only evaluation of the possible impact of such actions and decisions, but also the organized participation of the population, insofar as it relates the health problems of each social group to their daily life.

Some Practical Consequences of Methodological Problems

The study of inequalities and inequities in relation to decision-making in the area of health and welfare poses certain methodological challenges of great practical importance, for example:

1. It should use **relatively homogeneous population groups** *as study units.*

The use of large, highly heterogeneous population units, although easier, tends to conceal the true situation of each population group behind general averages and makes it difficult to adopt decisions and evaluate their impact. This may be useful in comparing major historical periods, but it has enormous limitations with regard to synchronization with the real political times of the decision-making processes. As a result it tends to become a purely academic or rhetorical exercise, more useful as a tool for criticism than for practical action by social leaders and those who govern.

2. It should use as study units **"real population groups"** *as they are organized and exist in* **daily life** *and as objects and subjects of health and welfare actions.*

The use of "artificial" population groups as units of analysis, classified into some individual attribute or variable, has great analytical potential in research aimed at establishing an association between a health problem and one or several determining processes. They are the basis of the studies of "individuals". However, they break with what is essential in all human groups--the interactions between their members--and as a result they make it difficult to appraise problems as they occur in the daily life of populations. Hence the use of units more closely linked to the way populations exist and interact in real life is related to the practical usefulness of HSA for governments and civil society. This is essential for "population studies."

3. It should refer not only to population groups but to **territories.**

At the present time, most social responses, both societal and community, are organized territorially. A territory is thus not only the space where a certain population has settled, but also where it has organized its life and where the interactions are established that make its own existence and social reproduction possible. They are, consequently, population-territories.

Hence, the practical consequences of the way in which the territorial units are organized must be considered . The more heterogeneous the territorial units are from the point of view of the living conditions of their populations, the less useful they will be for the study of health inequalities and inequities, and, as a result, for making and evaluating decisions concerning them.

4. Another important practical consideration refers to the **way of presenting the results** *of HSA. Even if it describes relatively homogeneous population groups, the mere enumeration of the leading causes of death and morbidity is of limited usefulness for decision-making.*

Reporting on avoidable deaths or cases, for example, has a greater impact. If, in addition, a procedure is used that does not use other countries as models for comparative purposes, but rather the lowest rates achieved in different population groups in the same country, its usefulness increases. Problems of inequity thus leave the field of rhetoric and become specific not only in terms of differences according to living conditions, but also as concrete and practical targets.

Methodological Proposal for the Study of Inequalities and Inequities

A synthesis of the principal phases of the methodology that was used in the actual project development in various countries of the Region is outlined below:

The **first step** consists of defining the minimum population-territory units (units of information). These are the territorial units with the smallest populations for which information can be obtained at the level of the entire country on the living conditions of the population, the health and welfare services, health impairments (deaths, morbidity, etc.), and basic demographic aspects (size of the population, structure by age and sex, growth). The smaller the unit, the greater its internal relative homogeneity.

The **second step** refers to the regrouping of these minimum population-territory units into "strata," respecting their relative homogeneity as much as possible. As a first approximation, we have promoted grouping based on the prevalence of poverty as shown in already existing poverty maps, or some similar indicator used for other purposes, when such maps are not available or when it is felt that other indicators are more discriminating in dealing with small territories.

It is suggested that from five to 10 population-territory strata be used, based on the prevalence of poverty, in order to enhance the power of the study.

Subsequent approaches may add other variables such as predominant economic activity, geoecologic location, and degree of urbanization. For each of these variables simplified scales have been developed which are being evaluated.

The **third step** consists of presenting the different profiles of mortality, morbidity, and other variables concerning the health services and impairments to health. For this purpose, the previously prepared data on the population-territory units incorporated into every "stratum" of relative homogeneity are regrouped. This is the step that requires the most preparation and requires the most caution because of the difficulties deriving from how the variables are grouped and from the potential for under reporting.

It is recommended that the list of cause groups, called 6/61 be used. This list, which is compatible with the Basis Tabulation List of the International Classification of Diseases (ICD-9) used by the countries[1], includes six large groupings based on the kind of intervention strategies that are employed and other criteria. It also permits, if necessary, subdividing each group into an average of 10 subgroups for a second, more detailed, scrutiny.

A procedure has also been developed for estimating unregistered and/or undiagnosed deaths and distributing them by age, sex, and cause group. This procedure was used in PAHO's *Health Statistics from the Americas, 1992 Edition*, Scientific Publication No. 542, 1992.

By constructing a vector with the lowest rates found in the different population "groups", a procedure has been adapted and promoted for estimating avoidable deaths in each population group[2]. By using this vector, the indirect adjustment procedure, and the standardized mortality ratio (SMR), the avoidable deaths in each group may be calculated.

Among the great advantages of this procedure is the use of the real values of the country for comparison purposes. In addition, the lowest rates for each age and sex do not usually correspond to a single population group and consequently point up the qualitative differences of living conditions and of health and welfare problems without proposing as a model the living conditions of any particular group.

Most of the work has been done with mortality because it usually supplies the most reliable and accessible information; however, adaptations of the same procedure can be utilized to estimate other kinds of avoidable events. Other technical precautions should be taken when required. For example, in countries with small populations it has been necessary to average information on mortality over a period of three years in order to stabilize rates.

[1]Groups are defined as follows: 0.00 Symptoms, signs and ill-defined conditions (780-799); 1.00 Communicable diseases, comprising all infectious and parasitic diseases (001-139), meningitis (320-322), acute respiratory infections (460-466), pneumonia (480-486) and influenza (487); 2.00 Neoplasms (140-239); 3.00 Diseases of the circulatory system (390-459); 4.00 Certain conditions originating in the perinatal period (760-779); 5.00 External causes of injury and poisoning (E800-E999), and 6.00 All other diseases (remainder of 001-779).

[2]Mortality analysis - New uses for old indicators. *Epidemiological Bulletin* 10(2):1-6, 1989.

Finally, based on the results indicated above, priority problems can be identified for use as "tracers" in observing the evolution over time of the various profiles of living conditions.

When it is useful and necessary, knowledge of the internal distribution of each stratum in population-territory units makes it possible to select typical units in each stratum for use as "sentinel" populations. Such selection would then make it possible to devote special care to these territorial units in order to obtain information, which, owing to their nature (for example, qualitative) or the quality of reporting, could not be obtained reliably for the entire national territory.

This is also the basis for the development of systems to monitor the health situation according to living conditions and to evaluate the impact of the decisions within relatively short periods of time.

Obviously, although these methodologies are still being developed, the challenges they pose are arousing the interest of researchers in the Region. However, even in their current stage of development these methodologies have already become tools that have demonstrated their technical and economic feasibility and viability, and more importantly, their usefulness for the authorities and social leaders of the countries.

Preliminary results obtained from studies in various countries which used this methodology will be published in future editions of the PAHO's *Epidemiological Bulletin*.

(*Source*: Health Situation Analysis Program, HDP/HDA, PAHO.)

Health Statistics from the Americas

Health Statistics from the Americas, 1992 edition, is the second in a series of yearbooks the Pan American Sanitary Bureau launched as part of its strategy to disseminate information on the health situation in the Region of the Americas. These yearbooks provide background data and complement the quadrennial publication, *Health Conditions in the Americas*.

This publication primarily presents estimated cause-group specific death rates for 24 countries, by age group and sex, for each five-year period between 1960-1964 and 1985-1989; rates by age group and sex, but not by cause group, also are provided for another two countries. The population of the 26 countries exceeds 99.5% of the total population of the Region of the Americas. In addition, this volume presents summarized mortality data for contry-year units that became available after publication of the 1991 issue of the yearbook, which represents 58 data years from 25 countries.

Starting with this yearbook, in addition to mortality, other types of health data will be progressively incorporated. To that end, the third chapter contains series of reported cases of certain communicable diseases. Future yearbooks will include series on other diseases, as well as health indicators and other types of data related to health status.

Pan American Health Organization. *Health Statistics from the Americas, 1992 edition*. Washington, DC: PAHO, 1992, 362 pp (Scientific Publication 542). ISBN 92 75 115427. Published also in Spanish (1992) with the title: *Estadísticas de Salud de las Américas, Edición de 1992*. Publicación Científica 542. ISBN 92 75 315426.