



**STATUS OF VITAL AND MORBIDITY STATISTICS AND STATISTICS ON  
HEALTH RESOURCES AND SERVICES  
IN THE COUNTRIES OF THE AMERICAS**

**BARBADOS**

**Status of the country's vital and health statistics 2005  
Preliminary, subject to revision**

**November, 2007**

## CONTENT OF THE REPORT

This document presents a summary of the *Regional Report on the Status of Vital and Health Statistics in the Countries* (RR), prepared on the basis of information from a guide developed by PAHO in 2005 and completed by the countries in conjunction with the Meeting of Directors of Statistics (RD-2005) held in Buenos Aires in November of that year.

The data are both qualitative and quantitative in nature and give an overview of the situation with regard to the coverage and quality of vital and morbidity statistics and statistics on health resources and services in each of the countries of the Americas. At the same time, they also point to possible determinants of problems involving data, bearing in mind that such determinants can occur at a number of different points along the production process, from the time the event or practice actually occurs up to dissemination of the products of the statistical system.

The information gleaned from this exercise provides a useful basis for strengthening these statistics, thanks to contributions from the main statistics offices responsible for the production of health data in each of the countries—and thanks also to the Organization, for directing its technical assistance to this area and collaborating with the countries on the design, monitoring, follow-up, and ongoing support of activities that have made it possible to improve the coverage, quality and timeliness of statistics, which above all enables governments to define health policies and monitor outcomes, as in the current case of the Millennium Goals to which the States are committed.

The countries of the Americas present a heterogeneous picture in terms of their health statistics, reflecting differences both in coverage and quality, with enormous disparities in subnational contexts. The results confirm that there is a cumulative mass of experience and knowledge in the Region that has permitted the development of good practices in solving problems relating to the validity, quality, reliability and timeliness of the information produced.

There is also great awareness in many areas of the importance of improving these aspects of the information being produced, as well as solidarity and willingness to share practices and disseminate them throughout the Region.

Encouraged by the countries, the Organization has developed a regional strategy for strengthening vital and health statistics and statistics on health resources and services that will be embodied in the short term in an Action Plan that will reflect the realities of the countries, with the possibility of taking advantage of the numerous resources available for the development and implementation of regional activities, promoting horizontal cooperation, and coordinating with other international agencies that have similar goals for the quality of the health data that they use.

It is hoped that the analysis contained in the RR can soon be updated for all the countries for two reasons: first, because important advances have been made in some of them in terms of coverage and quality as a result of changes in their information production processes, and second, because, given the complexity of the information

being analyzed, there may be some vague areas in the description of the processes that need to be reviewed with the producers of the information in the countries.

The report, which is therefore must only be preliminary, contains a description of the antecedents leading up to the analysis of the statistical situation in the countries, and it then describes that situation in terms of both the production processes and the outcome of the evaluation of the coverage and quality of the country's statistics. Finally, some reflections are offered on the lines along which the Action Plan defined by the PAHO Strategy for the Strengthening of Vital and Health Statistics is expected to be carried out in conjunction with the countries.

## **1. Introduction**

Each passing day bears out more strongly the need to have information that is valid, reliable, timely, and as fine-grained as possible in terms of geographical and topical breakdown for the formulation, monitoring, and evaluation of public policies in the area of population health.

The countries recognize that it is not always possible to meet the needs for the production of statistical data that actually reflect the quality of the data available. They also recognize the challenges they have to overcome as they attempt to design programs for strengthening health statistics, implementing them, and sustaining them over time.

These limitations become more evident, and the need to solve them becomes more pressing, when the countries agree on the importance of having indicators of higher quality at the subnational, national, and regional levels, not only for policy-making but also for monitoring the fulfillment of international commitments such as those subscribed to by the International Conference on Population and Development (ICPD, Cairo, 1994), the World Conference on Women (Beijing, 1995), the countries' Millennium Declaration (2000), the World Conference against Racism, Racial Discrimination, Xenophobia, and Related Intolerance (Durban, 2001), and other forums that have focused specifically on human rights in terms of access to information.

Indeed, almost all the countries have a challenge of some kind yet to resolve with regard to the coverage and quality of their vital and health statistics. Thus, quite apart from the need for political will to monitor progress toward the goals, there is also need to improve the quality of the health data being produced both in the offices of health statistics (especially health records) and the central bureaus of statistics through their censuses and surveys (often conducted in collaboration with the health offices).

The incorporation of programs for strengthening health statistics in the countries (especially vital and morbidity statistics and statistics on health resources and services) is almost as urgent as the need to develop policies for improving the health of the population. Moreover, it requires political commitment not only on the part of authorities in the technical offices, but also from those responsible for the fulfillment of these goals. Support from international agencies for the maintenance of these programs over time is fundamental, and PAHO has incorporated this concept in its strategic objectives.

The present document is a summary of the Regional Report, which analyzes the situation of vital and health statistics in the countries of the Americas as of the end of 2005. The Regional Report and a series country reports form part of the input taken into account in developing a strategy to improve these statistics and provide more effective assistance to the countries in order to promote horizontal cooperation, establish a format for collaboration between areas of PAHO, and coordinate actions with other international agencies and stakeholders that are working to strengthen these statistics in the countries of the Region.

The analysis presented in this document is based on preliminary data provided by the countries in 2005 and will be updated with their cooperation in a second phase scheduled to start in 2008. These updates will make it possible to adjust the ranking of the countries presented here, if necessary, as well as to update and revise the country reports.

During 2005 the countries responded to a set of questionnaires through their responsible and statistics offices, with guidance from the PAHO focal point in each country representative office.<sup>1</sup> Without their valuable contribution, it would not have been possible to implement the first phase, which began with the Regional Meeting of National

Directors of Statistics and Directors of Health Statistics in the Countries of the Americas, held in Buenos Aires in November 2005 (RD-2005), or to design an approach which culminated in October 2007 in approval of the Strategy for Strengthening Vital and Health Statistics in the Countries of the Americas (SSVHA) by the Governing Bodies of PAHO, which defines the second stage of the joint effort that the countries will be embarking upon in 2008.

## **2. Background**

The Regional Advisory Committee on Health Statistics (CRAES), a PAHO advisory body, recommended at its last meeting, held in September 2003, that a sustainable mechanism be created to facilitate the development of plans in the countries to strengthen vital and health statistics.<sup>2</sup>

Starting in 2004 and over the course of 2005, PAHO conducted an initial analysis of the situation of vital and health statistics based on a guide designed especially for this purpose.<sup>3</sup> The information was obtained with the collaboration of the two agencies responsible for the production of health statistics in the countries (the central bureau of statistics and the national office of health statistics). This activity yielded a 28-country

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<sup>1</sup> Our thanks to Angela Hunte and Ingrid Layne of the national statistics offices of Barbados mentioned above and to Kam Suan Mung and César Gattini (PAHO focal points in Barbados) for their participation in the production of the analytical guides.

<sup>2</sup> For further details, see OPS (2004). *Informe de la Segunda Reunión del Comité Regional Asesor en Estadísticas de Salud de la OPS/OMS* [Report of the Second Meeting of the PAHO/WHO Regional Advisory Committee on Health Statistics]. Washington, DC, 10-12 September 2003, Washington, D.C.

<sup>3</sup> *Guía para el análisis de las Estadísticas Vitales, de Morbilidad y Recursos de Salud. Documento General*. [Guide for the Analysis of Vital, Morbidity, and Health Resources Statistics]. The Guide looks at the situation of data production from both a qualitative perspective (using six questionnaires) and a quantitative one (through two applications), both of them complementary to the analysis of the situation for each type of statistics.

database and made it possible to prepare a preliminary<sup>4</sup> diagnosis in which the countries were ranked according to selected indicators of coverage and quality.

This preliminary diagnosis was presented at the Regional Meeting of National Directors of Statistics and Directors of Health Statistics in the Countries of the Americas (RD-2005), held in Buenos Aires in November 2005. One of the main outcomes of RD-2005 was the recommendation that a regional strategy be drafted that would make it possible, on the one hand, to develop national plans for strengthening vital and health statistics and on the other, to harmonize these plans in the regional context,<sup>5</sup> with the Secretariat serving as coordinator

With a view to facilitating harmonization and coordination of the development of these statistics, the Secretariat adopted the goal, objectives, and principles of the Health Metric Network (HMN), a world partnership that brings together health systems and promotes global standards for the development and better performance of the countries' information systems.<sup>6</sup>

The year 2006 saw consolidation of the database and preparation the Regional Report, which provides information that can be used to identify weaknesses and strengths in the production of the countries' statistics. In addition, the report allows for the determination of relative differences, with a view to drafting an Action Plan at both the national and regional level that takes national differences and needs into account and will strengthen capacity for the management, operation, and maintenance of health information systems, which include vital and morbidity statistics and statistics on health resources and services.

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<sup>4</sup> OPS/OMS (2005a). *Diagnóstico para el análisis de la situación de las estadísticas vitales y de salud de los países de las Américas* [Diagnosis for Analysis of the Situation of Vital and Health Statistics in the Countries of the Americas], AIS/OPS. Buenos Aires, Chile, November 2005.

<sup>5</sup> For further details, see: PAHO/WHO (2006a), Meeting of National Directors of Statistical and Directors of Health Statistics in the Countries of the Americas (RD-2005), Buenos Aires, 21-22 November 2005. Working Group Report. Washington; PAHO/WHO (2006b), Meeting of National Directors of Statistical and Directors of Health Statistics in the countries of the Americas (RD-2005), Buenos Aires, 21-22 November 2005. *Preliminary Report*. Washington, DC; and PAHO/WHO (2005b). Meeting of Directors (RD-2005). Guidelines for the discussion of the working group session (various documents), Washington, DC.

<sup>6</sup> In this sense, it subscribes to and adopts to goal, objectives, and principles of the Health Metrics Network (HMN), a world partnership that brings together health systems and promotes global standards for the development and better performance of the countries' information systems., with a view to facilitating harmonization and coordinating the development of health information systems in its member countries, and facilitates the effective development of capacity at the national level. In this sense, the document *A Framework and Standards for Country Health Information System Development. Health Metrics Network* (WHO, Geneva, 2006) proposes that the goal of the HMN shall be to increase the availability of precise and reliable health information in countries at the world level through agreed-upon goals and coordinated investments in health information systems. The Objectives of the Network are: to develop a framework and standards for health information systems; support the countries in their initiatives to develop and apply plans within the framework of the HMN; and offer incentives to increase the dissemination and use of high-quality health information. Finally, its Principles are predicated on the involvement of the countries and the participation of all who are interested; harmonization and coordination; and integrated approach to health information. Like the HMN, the Plan for Strengthening Vital Statistics encourages inter-country relations and the exchange of experiences between countries and regions with the application of good practices in the development of health information systems. See also [www.healthmetricsnetwork.org](http://www.healthmetricsnetwork.org).

Also, the conceptual and operational aspects to be considered in designing the Strategy for the Strengthening of Vital and Health Statistics in the Countries of the Region, as well as the corresponding Regional Plan of Action, were explored and defined in collaboration with other technical areas of PAHO/WHO and with international organizations, including the United Nations Statistics Division, UNICEF, UNFPA, World Bank, CARICOM.<sup>7</sup>

In addition, within the framework of the agreement signed in 2006 between PAHO and the Economic Commission for Latin America (ECLAC) and through a joint initiative with the Latin American and Caribbean Center of Demography (CELADE), ECLAC Population Division, discussions on the conceptual and operational content were conducted in 2005 and 2006 with representatives of the countries and international organizations within the scope of the United Nations Statistical Commission and the Americas Statistics Conference.

### **3. The Statistics Being Analyzed**

It is important to be aware of some general considerations with regard to the vital and other health statistics, especially the statistics on morbidity and health resources and services, produced by the countries on the whole. Why is there discussion about strengthening these statistics in the countries? How can PAHO collaborate with the countries in designing and monitoring a strategy that can be sustained over time? Three observations can be made in this regard.

In the first place, these statistics are part of a country's health information system (HIS), which is the group of entities or agencies which, regardless of whether or not they are part of the health system, contribute information on health to society and to the States.<sup>8</sup> "Information" includes data related to health, disease, and death in the population and also to the corresponding institutions and their material, human, and financial resources. Most health policies and monitoring processes rely on these statistics, which are produced almost exclusively by statistics offices within the ministries of health, which

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<sup>7</sup> The Strategy for Strengthening Vital and Health Statistics was presented and adopted at the 140th Session of PAHO's Executive Committee, held in Washington from 25 to 29 June 2007. The document and resolution can be accessed at <http://www.paho.org/spanish/gov/ce/ce140-15-s.pdf> and <http://www.paho.org/spanish/gov/ce/ce140.r16-s.pdf>. See also OPS/OMS (2006c). *Plan de Fortalecimiento de las Estadísticas Vitales y de Salud de los países de las Américas (PSVHS). Aspectos conceptuales de su diseño*. Santiago. Chile. 2006.

<sup>8</sup> The countries' HISs tend more and more to be a reflection of the so-called National Statistical Systems (NSSs), which in most of the countries are governed by laws that entrust the National Statistics Bureaus with the role of coordinating all the country's statistics, especially sectoral statistics, and with the latter typically attached to the NHS. Thus, the development of a strategy that will be respected over time in this area cannot be done by PAHO alone in each and every country in the near term, since this means assuming functions that are already being carried out by the Ministries of Planning and Finance, which come under the NSSs in most countries. PAHO participates actively in the natural environments in which these subjects are addressed, including the United Nations Statistical Commission (Statistics Division) and the Americas Statistics Conference organized by the Economic Commission for Latin America and the Caribbean (CEPAL). Both organizations have are tied to the Directors of the national statistics bureaus, which may have various titles in the different countries.

need to be strengthened as part of the national statistical system, which tend to rely on censuses and sampling surveys as their sources of information.<sup>9</sup>

Second, the subject areas and dimensions covered by the so-called Health Information System are so broad that diagnoses almost always show the system to be fragmented, uncoordinated, disorganized, and overlapping, which can result in producing the same information in different ways, or, equally troubling, not producing what the country needs or producing it badly. It is no accident that the system is seen in this way, because the State itself fragments the production of health statistics by assigning it to several different offices and/or agencies.

This leads us to the third point. How can PAHO collaborate in a comprehensive way so that the countries can improve the production of basic vital and morbidity statistics and statistics on health resources and services by their sectoral offices using mechanisms that will be sustainable over time? The answer is to develop a short-, medium-, and long-strategy, based on a diagnosis of the situation in each country, which includes an action plan aimed at improving the coverage and quality of the aforementioned statistics, fostering the dissemination of good practices developed by the countries themselves, regularly channeling fulfillment of the organization's own need for statistical information, and leading the call for coordination with other international agencies.

Of the four types of statistics considered, vital statistics are perhaps the most compromised in terms of the presence of possible factors that might affect quality and monitoring. This is because it is the only type of statistics that involves a broad system of institutional stakeholders in its production<sup>10</sup> and does not depend on the health system alone. Vital statistics are almost always referred to in conjunction with the civil registry, so much so that it is common to regard vital statistics and the civil registry as unique or univocal<sup>11</sup> subsystems.

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<sup>9</sup> Of all the components of the HIS, with rare exceptions a subsystem is considered tangential, but not secondary, if it does not typically report to the national health areas; this is the case of population censuses and household surveys (usually the responsibility of the central bureau of statistics), which can provide valuable information for the health sector. Often the central bureau and the health statistics offices work together on designing the instruments and even carrying out the surveys, but the inclusion of health topics is almost exclusively the strategy of the central bureau as part of an annual statistical plan. This is one of the reasons why a strengthening strategy is unsustainable without the active and coordinated participation of both institutions. The other components of the SIS, which are important for the development of a health system, are not taken into account in the strengthening strategy for reasons explained elsewhere.

<sup>10</sup> The names given to the different components of the HIS is another matter that sometimes gives rise to confusion. However, we do not believe this needs to be regarded as a problem unless the topic itself is being addressed, and it is beyond the scope of the present document. For practical purposes, all components of the HIS will be referred to hereafter as subsystems.

<sup>11</sup> This is no accident. It is broadly related to the history itself of statistics in the region (and not unlike experience in other regions of the world). The collection of vital statistics is an institution that dates back to Spanish colonial times, and even British colonial administration which shared many important similarities. The recorder was always to be found in the most remote corners of the colonized territory, to be replaced later by institutions that had their own buildings or special offices in municipal city halls, which were the hub of colonial power. In other words, the system of civil registries that exists today in the Americas goes back hundreds of years. In many places it remains unchanged, while in others it may have weakened or have serious operational problems. In any case, it is an institution well-established in the heart of the population.

Together, the two subsystems constitute a magnificent machine used by national states to address at least two essential needs. First, it establishes citizenship and therefore the entitlement of citizens to their rights (to have a name, vote, inherit property, go to school, receive social security benefits, move around within inside and outside the national territory, and have access to health care and other social benefits). In addition, the statistics that the system generates provide the essential basis for learning about the natural growth of the population and also their state of health and the nation's epidemiological profile—information that underlies much of national health policy.

Unfortunately for the quality of vital statistics, sometimes the cost of mobilizing all the actors involved exceeds the capacity of national health budgets. The process of identifying individuals, screening for purposes of the electoral systems, empowering citizens to exercise their rights and duties, and producing statistics in one way or another involves the civil registries, electoral committees, and national registry of citizens (these three usually assigned to the ministries of planning or the interior, or sometimes established as separate and independent entities), the central bureaus of statistics (in the ministries of economy or planning), and the ministries of health, through their sectoral offices of statistics.

Treatment of a problem in one part of the subsystem should be addressed by all the offices involved, which does not always happen or happens in the wrong way or in an untimely fashion. Institutions have different cultures and objectives; their regulations may differ, overlap, or conflict; budgets vary, and priorities may not always coincide. Coordination and joint action are most important at this level, and there should be specific provision for coordination at the highest levels of policy-making as a national priority. Paradoxically, while this subsystem is the best known and the most analyzed by the parties involved in the production process, it is also the most difficult to grasp when it comes to targeting a strategy for dealing with the problems associated with this multiplicity of functions. Hence, treatment of this issue is delicate and it is not easy, as can be seen in the complexity of solutions, ranging from merely technical fixes to political and strategic proposals for sustaining a democratic state.

Most important, the starting point of the production process (here we will concentrate on the production of statistics) is crucial and highly complex. Statistically, it is defined as the place where the event occurs, and this cannot be changed (except in the case of essentially scientific assumptions and adjustments). Thus, during the intimate processes of birth and death, especially the latter and often the former as well, individuals are experiencing the most critical moments of life, and they require privacy and anonymity. At the same time, society has a pressing need to become involved in the event—in the case of death, to know how it occurred, why, and what the determinants were, and to attempt to correct them. These needs are not always compatible, no matter how much care is taken.

To complicate the picture even more, the statistical events of birth and death are like none other: neither the newborn child nor the person who has died can speak for him/herself. In both cases, the characteristics of the event are assigned by others. It is a complex complicated (Vieira Pinto<sup>12</sup>) involving the individual experiencing the event, who is not in a position to declare it; the person who declares it, who does not always

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<sup>12</sup> Vieira Pinto, Alvaro. *El pensamiento crítico en demografía*. Santiago, Chile. CELADE, 1973.



know, or is in a position to consider, the characteristics that surrounded the event (the event itself and the family context, which is so important in defining the determinants of the event); and the person who records the event, who in the best of circumstances has to record the event based on a declaration by someone who did not actually experience it and may never know that actually happened.

Another factor is the role of the civil recorder, whose primary function is to record the event in the legal registry, for which purpose the statistical function may appear to be unrelated. When there is only one official, the two contradictory functions overlap: legal certification, and collection of statistical records. In the first case, valid proof is required: it is not possible to record the event unless proof of identity has been provided by a responsible official. On the other hand, statistical information is based on what the person says and no proof is required to report a characteristic (for example, residence or occupation) or an event, and this contradiction often ends up being reflected in unanswered questions or data being filled in without previous consultation.

Unlike vital statistics (VS), the morbidity (MORBI) and resources and services (RECUR) subsystems depend exclusively on the national health system. This presumes that any problems are proper to the statistical system itself and can only be resolved at that level. This is an advantage, because then the offices of health statistics only have to deal with their own limitations.

In most of the countries, MORBI and RECUR statistics are much newer subsystems than vital statistics, having emerged for them most part when health system development began looking for increasingly broader information in order to target policies and understand the health status of the population, which was first affected by epidemics that decimated entire populations and later by other, more modern causes, framed and analyzed within the context of epidemiological changes taking place in societies, particularly since the mid-19th century. Today, for example, there is no clarity regarding the definitions of some of the events and processes that affect this type of phenomenon and even less clarity about which morbidity statistics and which statistics on resources and services should be captured.

They are affected by problems that mainly relate to processes associated with health sector reform. It is common, for example, to question whether the epidemiological surveillance subsystem is in fact part of this subsystem. Strictly speaking, if the system is functioning properly, the event that has to be reported immediately for surveillance reasons should be recorded by the MORBI and RECUR information subsystems.

MORBI statistics cover hospital discharges, consultations in outpatient clinics and emergency rooms, and the daily movement of patients, while RECUR statistics cover human resources, establishments, equipment, beds, and services.

Accordingly, the output of these subsystems should make it possible to characterize the epidemiological profile of the population, the ways in which it becomes ill, and how it solves its health problems. In addition, the information produced should account for the direct and indirect determinants of the population's health. At the same time, there are also statistics on the health system's services to the population, considered from the standpoints of quantity, quality, timeliness, and access at the different levels. The efficiency and effectiveness of the health system is reflected in statistics of this kind.

The countries are still debating which indicators are most appropriate for studying some of the aspects related to services and resources, and how to define these indicators. It is therefore likely that in many cases the statistics are not appropriate. More often than not, insufficient monitoring of the production systems would stand in the way of adopting a given indicator. There is too much overlap between what the statistical system produces and what is being produced by specific programs that address health policies. Much remains to be organized and understood, although it is possible that everything might be handled through a single system. This is reflected, as it will be seen further on, in the way the countries report the status of the MORBI and RECUR statistical subsystems.

In the case of particular countries, emphasis will be placed on certain characteristics of the vital and morbidity statistics subsystems and the health resources and services subsystems that may generate unwanted factors in the acquisition of data of the desired coverage, quality, and timeliness.<sup>13</sup> Comments on the modality of a subsystem or the characteristics of a process point exclusively to the area identification of areas that should be taken into account when formulating a strategy for strengthening a country's health statistics production.<sup>14</sup> These areas do not necessarily generate problems in terms of the validity and reliability of the data produced, but in some cases they do.

#### **4. The Regional Situation**

It is customary to treat countries independently or interact with them through regional groups that in reality represent trade agreements such as MERCOSUR, the Andean Community of Nations (CAN in Spanish), the Central American Integration System (SICA in Spanish), the Caribbean community (CARICOM), or the North American Free Trade Agreement (NAFTA). However, such geographical and commercial groupings encounter problems when it comes to harmonizing their statistics, particularly in the social field, since the differences in their production systems can show up in the coverage and quality of their data.

Not all regional groups face these problems, but one reason for delays or inadequacies in the implementation of joint programs or plans is precisely the relative differences among members within a single group. The dynamics of the better-situated countries can lead to group actions that do not always help bridge the gaps in the field of certain statistics.

Take, for example, the existence in a single bloc of countries with almost universal coverage of vital statistics alongside other countries that barely reach 50%. The needs are clearly different. In the first group of countries, the approach may be to improve the quality of information, or incorporate computerized steps into the coding processes, while the countries in the other group still need to expand the coverage of the

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<sup>13</sup> There may be some inaccuracies in the description of the production systems for the two types of statistics in light of the fact that the work was based on information provided by the countries. Any such defects will be corrected in the second working phase, which includes interviews with the statistics directors in the countries. This is the main reason the present document should be regarded as preliminary and subject to review. It is being disseminated only for purposes of analysis in consultation with the spokespersons themselves.

<sup>14</sup> These aspects are to be discussed with each country at the time for the national SS is defined.

registration offices or launch major campaigns to raise the awareness of the data gatherers and the population itself.

On the occasion of the RD-2005 Meeting, the significance of grouping the countries by their statistics situation— analyzed before the meeting – was recognized. This meant on the one hand, that the speakers in a single group felt they were speaking from similar levels about similar problems. But when solutions were proposed, they were based on different starting points. General principles existed that were presented by all. However, for example, expanding coverage of vital statistics was not a priority in the group with almost universal coverage. Yet this issue was the main objective of the groups of countries in which any estimate is biased due to such problems. Curiously, the countries in the middle groups proposed solutions that went beyond the limits of the others with more extreme positions.

This fact led to the meeting to recommend the creation of a mechanism that would take advantage of these similarities and develop activities of a different nature that would favor the existence of a joint plan in some fields.<sup>15</sup> The idea of taking advantage of the experience acquired by the relatively better-situated countries and even of the less-advantaged countries was stressed to encourage horizontal exchange, not only in the area of best practices but of lessons learned from failed efforts.

The regional strategy thus has a set of objectives of successive approximations that begin with the need to encourage national analysis and the delimitation of realistic activities to develop and sustain a plan to improve national statistics. The next step is a strategy to harmonize national plans into a regional plan, seeking common factors and differences that on the one hand will allow a given country to carry out its own activities (which due to its characteristics, are difficult to compare with others) and on the other, to propose activities that can be shared by a group of countries or by groups of countries that, respecting their idiosyncrasies, can advance a common standardized activity, harmonized for multiple purposes.

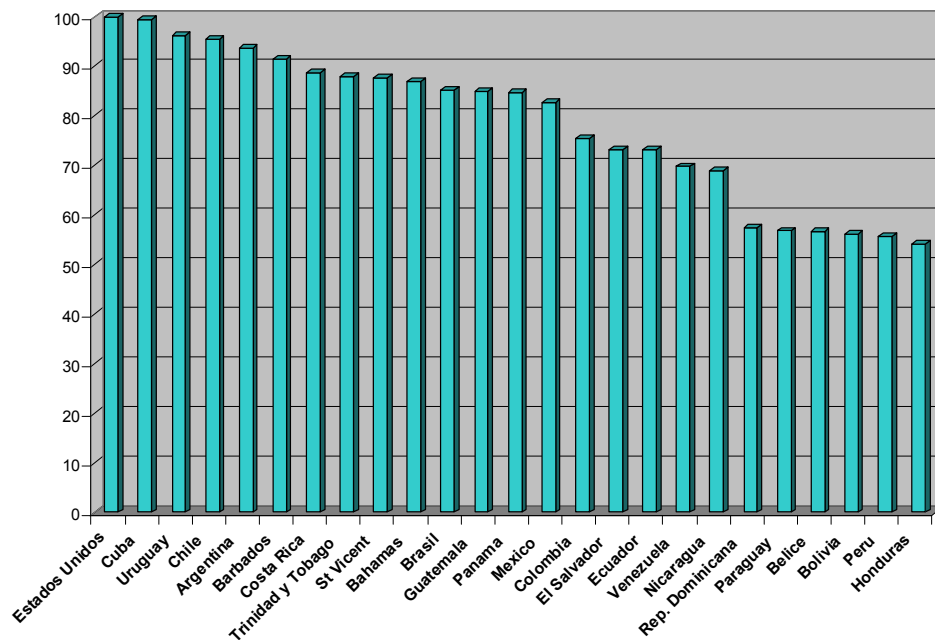
Based on those general principles, Figure 1 presents the ranking of countries that emerged from the compilation of a series of indicators considered relevant for their ranking: the coverage of their most important vital statistics (births and deaths); the qualitative view of the producers on the status of their vital statistics, and statistics on morbidity, resources, and services (their viewpoint on the importance of administrative, technical, and personnel factors that define the system's capacity); and the view of external stakeholders on the country's vital statistics system (their viewpoint on the importance of certain factors affecting the system).<sup>16</sup>

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<sup>15</sup> For more details, see: PAHO/WHO (2006a and b). op.cit.

<sup>16</sup> Based on information provided by countries through the *"Guía para el análisis de las Estadísticas Vitales, de Morbilidad y Recursos de Salud Documento General."* (AD/AIS. Washington. 2005).

Gráfico 1  
Situación de las EEVV y de salud los países



[INSERT TEXT IN PICTURE]

Figure 1.  
Status of vital and health statistics in the countries

[From left to right:]

United States

Cuba

Uruguay

Chile

Argentina

Barbados

Costa Rica

Trinidad and Tobago

St. Vincent

Bahamas

Brazil

Guatemala

Panama

Mexico

Colombia

El Salvador

Ecuador

Venezuela

Nicaragua

Dominican Republic

Paraguay

Belize

Bolivia

Peru

Honduras

Based on this ranking, it is possible to outline differences and determine strategies to address problems in the three types of statistics, which can be shared in the near future. It can be seen that progress in the diagnosis itself and in the knowledge of strategies to overcome problems is much more developed in the field of vital statistics. Later, it will be shown how problems connected with the other statistics disrupt the ranking.<sup>17</sup>

A preliminary overview of the situation is presented below, which will be reviewed and adjusted with the countries in the design of regional and national action plans; as mentioned earlier, the classification is based on 2005 data. The overview can be used to help draft more detailed country reports, in support of the national plans that the Regional Meeting of Directors (RD-2005) agreed to harmonize in the Regional Plan of Action for Strengthening Vital and Health Statistics in the Countries of the Americas (PSVHS)<sup>18</sup> and approved by PAHO's Executive Committee at its 140th Session.

Based on this ranking and the analysis of determinants of common problems, it is possible to outline differences and determine strategies to address the three types of statistics.<sup>19</sup> It can generally be said that:

- ✓ Progress in the diagnosis itself and in the knowledge about strategies to overcome problems is much further along in the area of vital statistics. It is a subsystem that already exists and has been present in all countries since their founding as a national State.
- ✓ This is not true for the statistics on morbidity, resources, and services, which are newer and stem from the development of health systems requiring increasingly broader information to target policies and determine the population's health status. Today, for example, the definitions of the events and processes behind this type of phenomena are unclear, and it is even less clear what the statistics on morbidity, resources, and services should capture.
- ✓ The producers of statistics have a more positive view of the vital statistics subsystems and more erratic views about the other subsystems. In the countries with better relative advantages, the statistics are considered to be reliable, although the need for improvements and even considerable improvements in one or more of the

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<sup>17</sup> Two general questions worth mentioning prior to a more-detailed analysis: first, several producers of statistics who responded to the questionnaire have more immediate negative or positive opinions than those shown in the classification, which are very significant and coherent in the majority of cases. In the better-situated countries, authorities on statistics themselves express the need for improvements, sometimes considerable, in their statistics systems. Aspirations for more highly skilled human resources, greater coordination between producing offices, expansion of sectoral coverage of some statistics -- these are valid in the context of countries with good statistics. In other cases, the countries with serious problems in coverage or quality view the statistic system favorably in comparison with other aspects of the state and thus they have a positive and benevolent attitude toward the reliability of the system in question, despite empirical evidence showing need for change in some aspects. Second, given that the ranking of the countries is defined by four indicators, one of them a composite, a significant coverage of vital events may have modified the positioning of the country given a less-favorable opinion of the producers and users on the respective systems and vice-versa. This is obvious given the nature of the classification, but is worth mentioning explicitly.

<sup>18</sup> For more details, see PAHO/WHO (2006a) op. cit.

<sup>19</sup> The ranking could lead to definitions of country groups for the treatment of specific objectives. Belonging to one group or another could never be exact in the sense of complete homogeneity within one group and heterogeneity between groups, but it could contribute to the design of a collaborative strategy within a group and between groups, of more viable plans.

subsystems are proposed in some cases. The less the development in comparison with the rest of the countries, the greater the perception that considerable improvements are needed, whatever set of statistics is being considered.

- ✓ The centralization or decentralization of health systems does not necessarily determine the quality of statistics, which seems to have more to do with the degree of economic and social development attained in the country. When omissions occur for different reasons, those most seriously affected are the most unprotected groups (indigenous populations, rural populations, etc.) and the subsectors of social security and the private sector, which tend not to report, or even more problematic, tend to maintain statistics systems parallel to the official systems.
- ✓ Limited communication between health statistics offices and central statistic offices, the waste of available resources, the overlapping of activities in a single office at different administrative or geographical levels, or between different offices, the limited standardization of norms at different levels, and the lack of human resource training are determinants of coverage and quality.
- ✓ The interinstitutional committees are few and those that do exist need to be revitalized. When some evaluation activity is conducted and corrective measures taken, the results benefit statistics, although circumstantially. Clearly there is a need for more stable evaluation and monitoring mechanisms over time.
- ✓ Most countries have not routinely adopted procedures to evaluate coverage and quality, an issue more evident among the statistically less-developed countries (and most evident for statistics on morbidity and resources).
- ✓ The positive experiences of some countries can be applied in other countries in the Region. Through horizontal cooperation, the progress identified in better-situated countries in terms of evaluation techniques, standardizing norms and procedures, and designing training courses can be of benefit to other countries.

## 5. The Case of Barbados

Table 1, below, contains basic information about Barbados that was collected through PAHO's Regional Core Data Initiative (RCDI). The following sociodemographic data were selected to provide a context for the situation that has produced the vital and health statistics analyzed in this document.

**Table 1. BARBADOS. Selected Demographic and Health Indicators. (2005)**

|                                                   |      |
|---------------------------------------------------|------|
| Total population (thousands)                      | 270  |
| Urban population (%)                              | 52.9 |
| Dependency ratio (100 pop..)                      | 40.7 |
| Annual birth average (thousands)                  | 3.2  |
| Annual death average (thousands)                  | 2.2  |
| Crude birth rate (1,000 pop..)                    | 11.8 |
| Crude death rate (1,000 pop..)                    | 8.3  |
| Annual population growth (%)                      | 0.2  |
| Total fertility rate (children/woman)             | 1.5  |
| Maternal mortality rate (per 100,000 live births) | 14.3 |
| Infant mortality rate (per 1,000 births)          | ...  |
| Life expectancy at birth (men)                    | 72.3 |
| Life expectancy at birth (women)                  | 78.9 |
| Life expectancy at birth (total)                  | 75.8 |

|                                                                |                  |
|----------------------------------------------------------------|------------------|
| Calorie availability (kcal/pc/day) (2002)                      | 3,091            |
| Gross national income (standard value) (US\$ per capita) 2003  | 9,260            |
| Gross national income (PPP value) (US\$ per capita) 2003       | 15,060           |
| Annual GDP growth % (2003)                                     | 1.3              |
| National health expenditure (public in GDP) (%) (2002)         | 6.74 <b>h, q</b> |
| National health expenditure (private in GDP) (%) (2002)        | 1.85 <b>t, h</b> |
| Population under the international poverty line (%) (95-02)    | ... ..           |
| Population with access to improved potable water source (2002) | 100              |
| Population with access to full sanitation services (2002)      | 99               |
| Literate population (15 years and older) (%)                   | 99.7             |
| Physicians per 10,000 population (2001)                        | 13.7             |
| Hospital beds per 1,000 population (2004)                      | 7.3 <b>a</b>     |

\* Source: Basic Health Indicators:

<http://www.paho.org/spanish/dd/ais/BI-brochure-2006.pdf>

[Translator's note: No reference for highlighted terms above]

#### a. The Subsystem for Production of Vital, Morbidity, Resources, and Health Services Statistics

##### *Type of System*

The Barbados system is **centralized** and is an agency of the National Ministry of Health's Planning and Research Unit. This means that there are no autonomous bureaus in the subnational areas, but if there were any, they would be part of the MoH's statistical area at the national level. In this way, the statistics system's operating standards and procedures are generated at the central level, which disseminates them to the local levels. This could be an advantage over decentralized systems, but we have already seen in other countries that the coverage and quality of health statistics are not dependent on the type of the health system model or, consequently, the statistical model.

Related to these aspects is the fact that, in this country, an important part of the MORBI and resource statistics production takes place at the local level, while with vital statistics, once the event has been recorded, the rest of the production process is performed at the central level. In the case of Barbados, it would be necessary to determine whether this way of producing data has a positive impact on data quality.

Barbados has **other sources of data** that provide health information, the majority of which comes from population censuses and household surveys conducted by the Statistical Department. The most important of the surveys are those on nutrition, drug addiction, expenditures and income, and other surveys that can delve further into specific health matters (e.g., the disability survey).

##### *Training and Technical Cooperation*

The statistical bureau of the MoH conducts **training activities** organized by PAHO and CAREC (Caribbean Epidemiology Center), without utilizing a structure or permanent plan, where staff members are trained in aspects related to the coding of the causes of death. Additionally, Barbados has a **technical cooperation program** with PAHO for health-related information.

## **b. Vital Statistics**

### ***General Characteristics in Barbados***

#### Central Level

**Several agencies** are in charge of vital statistics production in Barbados: the Registration Department (Civil Registry), the Statistical Department (national office of statistics), and the MoH. The system depends to a large extent on input from the Civil Registry, which collects the statistical reports at the time of registration or certification. Apparently, the three aforementioned bureaus produce their own vital statistics information. If this is in fact the case, this overlapping of subsystems would generate a lack of standardization – whether in the use of different instruments for data collection, the existence and use of different standards and procedures, or different data transmission mechanisms. These differences can affect the production process and result in differences in coverage and quality levels.

There is one **form** for the legal registration of an event and another for the statistical record, with questions defined by the central level. As in most countries, there is **also a legal and regulatory framework** for statistics production: here, the Vital Statistical Registration Act of 1980. There is an official form that is the same throughout the country, which is used to provide statistical information on births, deaths, and fetal deaths. This guarantees standardization of the information submitted by the local level to the central level.

The central level always **communicates** with the local level when problems are encountered that must be corrected or explained, and communication always flows in both directions, as there is always a response. There is no specific **software** for data entry and consistency, nor is there any documentation with guidelines for consistency and validation reflected in data entry manuals for each life event.

This is the level with the greatest potential for meeting the demands of other entities in the system since, as stated above, most of the methodological decisions and tasks related to the production processes take place here. Many of the **tasks** are performed at this level: the coding of geographical units and causes of death, for which they only have the ICD-10 manuals. Data are stored in the MoH registry. Consistency is achieved through validation guides with automatic correction at the time the data are entered. After the data are entered into the system, consistency guidelines are applied.

The data are disseminated annually and monthly in hardcopy. Users usually need information on totals and indicators. There is an institutional budget for making vital statistics publications available.

#### Local Level, where the Event Occurs

The local civil registry is in charge of filling out the report, although it is possible that in some cases, this is done by the health facility.<sup>20</sup> The data on the three life events (births,

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<sup>20</sup> Some contradictions have been detected among items in the responses to the questionnaires. With regard to filling out the report, It is not clear from the questionnaire who is in charge of filling out the



deaths and fetal deaths) are obtained through the statement of the individual reporting the event. While the legal certificate remains in the possession of the local civil registries, statistical reports are sent to the MoH and the Department of Statistics. The information entered in the statistics forms is also copied into the record books at the local level. Hence, it is important to coordinate and have agreements with the Civil Registry, especially when there are two offices that belong to separate bodies and often have different regulations and procedures.

First, an event occurs, and then there is some action that sends the statistical report to the civil registry, together with the medical certification authorizing the legal registration of the event. Thus, for practical purposes, most of the quality of the information about the event derives from this level. If the statistical report is not filled out correctly and questions remain unanswered, if the place of residence, education, or cause of death are not completed correctly when the information is required, barring very fluid and frequent communication between the Civil Registry and the office producing the vital statistic, it is likely that the inaccuracies will necessitate the use of very complicated control mechanisms and adjustments.

Clearly, the production of the statistical report at this level, which depends on the modalities and the human, financial, and technology resources of the local civil registries, could be affected at some point. Thus, it is important to know in detail what processes occur at this level to be able to control factors that could potentially affect the coverage and quality of the data to be transmitted.

### Second Administrative Level

As stated above, the production processes take place entirely at the central level, once the information has been submitted by the local levels.

### Current Coverage and Quality of Vital Statistics

The country has an estimated coverage of 97% for births and 96.1% for deaths. Despite the low level of urbanization (half the population resides in rural areas), the high coverage in Barbados may be attributable to high literacy levels, the size of the country, the limited number of events, and the population's awareness of the importance and desirability of registering life events. On the other hand, it could be said that the quality problems should be the focus of attention for statistics authorities.

The country does not conduct systematic evaluations of the coverage and quality of these statistics. The quality itself is not evaluated systematically either, so it is impossible to establish the levels of error or non-specificity in the variables, which could point to the areas and levels where the quality problems are occurring. The country has not been able to complete the applications that would permit a discussion on its position relative to the other countries in the Region, something that would be advisable before designing a Strengthening Strategy.

This strategy should include mechanisms to evaluate vital statistics coverage and quality levels, at both the national level and smaller geographical levels.

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forms or whether there are variations in different areas of the country. These problems will be reviewed with the country in another stage.

## Strengthening Strategies Implemented in the Country

From the standpoint of links with other institutions involved in the production of vital statistics, in this country **there is an Interinstitutional Vital Statistics Committee**, made up of the Statistical Department and the Registration Department. However, reports indicate that it has not developed a work plan to promote improvement activities, discussions about changes to the system, or the implementation of measures to oversee the system. In this regard, the country lacks a systematically applied strengthening strategy, and the Committee does not really have formal operations.

It is important to take advantage of the connections that already exist between agencies involved in the vital statistics process in order to implement a future Strengthening Strategy. These connections can serve as the basis for the developing a Strengthening Strategy that avoids the duplication of efforts resulting from the production of vital statistics by more than one agency.

Barbados has taken some action, moreover, that has helped improve the status of the Civil Registry and vital statistics system, although much of it was not necessarily taken within the framework of a permanent and sustainable Strengthening Strategy. An assessment should be made on the impact of those actions on the quality and timeliness of the data provided by the system. For example, mention is made of attendance at a regional meeting in Guyana in 2005 on how to improve these systems. Other important areas:

- ✓ Training outside the country of key administrative personnel of the national registration agency
- ✓ Introduction of computers for the vital statistics division responsible for the national vital statistics program
- ✓ Training seminars on the coding of causes of death
- ✓ Courses in coding under ICD-10
- ✓ Training courses for civil registry workers

One aspect that should be taken into account when designing a Strengthening Strategy is the relative importance that the data producers assign to different factors (administrative, technical and public) when considering the operation of the MORBI and RECUR subsystems.

### **For the Civil Registry**

#### IMPORTANT:

- ✓ Public is apathetic towards the civil registry, since it does not perceive any social or personal benefits

### **For VITAL STATISTICS**

#### VERY IMPORTANT

- ✓ The forms for reporting vital statistics are held for too long at the local registry offices, which

- ✓ causes failures to report data
- ✓ Insufficient time allotted for the production of the annual tables of vital statistics, which causes late reports to be omitted.
- ✓ Not enough personnel for data processing at the compiling agency
- ✓ Loss of statistical reports during the processing stage due to inadequate control over document flow
- ✓ Lack of computers at the compilation agency to speed up data processing
- ✓ Limited printing services at the compilation agency delay publication of vital statistics

#### IMPORTANT

- ✓ Vital Statistics are not given the desired priority for data processing at the agency responsible for the vital statistics program, which causes delayed publication/dissemination of vital statistics
- ✓ Not enough personnel at the local registry offices to comply with the periodic statistical report requirements for life events
- ✓ Little demand for vital statistics in the country

### Evaluation of Vital Statistics

The vital statistics authorities believe that the Vital Statistics system is **GOOD BUT NEEDS IMPROVEMENT** since “*there is a need for more statistical analysis.*” [TN: Use original English]

At any rate, as mentioned above, Barbados does not have a mechanism for evaluating and monitoring the quality of the statistics, at least systematically, which is something that we recommend they develop in a Strengthening Strategy.

#### **c. Statistics on Morbidity (MORBI) and Resources and Services (RECUR)**

##### ***General Characteristics in Barbados***

##### Central<sup>21</sup> Level

In Barbados, the MORBI subsystem includes the production of data on admissions, hospital discharges, patient movements, and other medical visits. It is also in charge of reportable diseases. The Records Department of the Queen Elizabeth Hospital (the main state hospital) is the office in charge of producing morbidity statistics. As for RECUR, the MoH Planning and Research Unit is in charge of the data related to services. The entire health statistics system reports to this office.

As a centralized system, it has the same characteristics as those mentioned for Vital Statistics--that is, a central office in the MoH in charge of receiving the information sent by the local offices, according to the type of statistics in question.

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<sup>21</sup> Some contradictions between items in the answers to the questionnaires. In the case of the MORBI and RECUR statistics, the questionnaires do not clearly indicate at what stage of the process they are entered electronically (whether in Queen Elizabeth Hospital or a central office). These problems will be reviewed with the country in a later stage.

Throughout the country, there is one **form** for all MORBI and RECUR statistics, and unlike the situation for vital statistics, there is no **legal and regulatory framework** for the production of these statistics.

The central office always communicates with the lower levels to correct erroneous data or omissions on the forms. Data are entered manually at the central level. It is here that the consistency and consolidation processes for a national database are carried out. The central office is responsible for preparing indicators and disseminating the data, although there is no standardized plan for tabulation. There is an international budget for the monthly and annual publication of statistics.

The subsystem's **coverage** is not complete, since the information comes from the public sector and information from the private sector has not been integrated yet. Therefore, only partial information is available.

#### Local Level, where the Events Occur<sup>22</sup>

The information is completed and transmitted to the central level. At this level, some control and consistency procedures are performed on the questionnaires and the forms. A copy of the data collection instruments generally remains at the health center.

The information collected by the health centers is sent annually to the central health statistics office.

#### Second Administrative Level

As mentioned above, the production processes take place entirely at the central level, once the information has been submitted by the local levels.

#### Current Coverage and Quality of MORB and RECUR Statistics

As with the majority of the countries in the Region, it can be said that these statistics are in an early stage of development. No coverage analyses are done since, unlike Vital Statistics, there are no indirect techniques or external sources for evaluating these aspects. On the other hand, it is certain that, for MORBI and RECUR, the private health sector is not included in the official statistics. Hopefully, in the future, a Strengthening Strategy will focus on improving and expanding the information captured by this subsystem.

#### Strengthening Strategies Implemented in the Country

In this country, there is **no Inter-institutional Committee** on health statistics in general or contacts with the national statistics office to agree on definitions and better indicators for disseminating information at the national level. There is mention of an improvement plan for morbidity statistics under the Health Information Unit, but further details are not available.

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<sup>22</sup> As just indicated, the analysis of these aspects has revealed a defect in the instructions on how to respond to the questionnaire, which in some cases caused the countries to confuse activities at each level with activities in general. As a result, for example, one country might mention entering or coding at two different levels when it is presumed that it actually should do it at a single level (although this is not necessarily the case). This will therefore be discussed with each country.

In addition, Barbados has included some actions with a view to improving the operations of the MORBI and RECUR statistics subsystems. At any rate, when designing of a Strengthening Strategy there should be a review of the tangible results of these activities in terms of coverage, quality, and strengthening in general. This will not only endorse or correct the future design or implementation of the strategy but will also disseminate the most successful practices to other countries. The following issues are important:

#### **MORBIDITY**

- ✓ Provision of office equipment to some local offices
- ✓ Introduction of computers in the morbidity statistics division responsible for the national statistics program
- ✓ Adaptation/installation of computer software for data entry, review, tabulation, and analysis of morbidity statistics
- ✓ Courses in coding under ICD-10

#### **RECUR**

- ✓ Training inside or outside the country for personnel of the national agency responsible for compiling and disseminating statistics on resources
- ✓ Strengthening the management skills and technical capabilities of the national agency in charge of the resources statistics program
- ✓ Introduction of procedural reforms
- ✓ Introduction of computers in the resources statistics division responsible for the national statistics program
- ✓ Adaptation/installation of computer software for data entry, review, tabulation, and analysis of resources statistics
- ✓ Regional training seminars

#### Evaluation of the MORBI and RECUR Statistics Subsystem

The statistics authorities believe that the MORBI system is **GOOD BUT NEEDS IMPROVEMENT** since “*it does not include information from private health providers.*” The RECUR system requires the same measures, since “*more statistical analysis and more resources are needed*”. [TN: Use original English text.]

One aspect that should be taken into account when formulating a Strengthening Strategy is the relative importance that the producers assign to different factors (administrative, technical, and public) when considering the operation of the MORBI and RECUR subsystems.

#### **MORBIDITY**

##### **VERY IMPORTANT**

- ✓ Lack of government commitment to the entire morbidity statistics program, due to the low coverage of those statistics throughout the country
- ✓ Failure to distribute the essential statistical reporting forms in a timely fashion
- ✓ Poor control over the private sectors sending statistical reports to the local registry offices

- ✓ Morbidity statistics are not given the desired priority in data processing at the office responsible for the health statistics program, delaying the publication/dissemination of those statistics
- ✓ The administrative channels are too intricate for transmitting the statistical reporting forms
- ✓ Losses of statistical reporting forms during transmission from the registry offices to the compilation office
- ✓ Not enough personnel at the local statistics offices to produce the periodic statistical reports on morbidity in a timely manner
- ✓ The weather and topographical conditions in some areas of the country hinder regular reporting of statistics
- ✓ Not enough time is allotted for producing annual morbidity statistics tables, causing late reports to be omitted. .
- ✓ Not enough personnel for data processing in the compilation office
- ✓ Losses of statistical reports during the processing stage due to inadequate control over document flow
- ✓ Lack of computers in the compilation office that could speed up data processing
- ✓ Limited printing services at the compilation office causes delays in the publication of morbidity statistics
- ✓ The legal framework needs substantial reforms
- ✓ Lack of technical guidance for local statistics officials
- ✓ No instruction or circulars for statistics officials
- ✓ Lack of countrywide uniformity in the f morbidity statistics reporting forms
- ✓ Insufficient training for statistics personnel
- ✓ Absence of manuals to guide the correction and manual coding of the morbidity statistics forms
- ✓ Blank spaces in the statistical reports
- ✓ Absence of quality controls during various phases of data processing
- ✓ Limited number of tables, which are prepared by hand because there are no computers available
- ✓ Little demand for morbidity statistics in the country

#### VERY IMPORTANT

- ✓ Lack of skilled personnel for electronic data processing

#### RECUR

##### VERY IMPORTANT

- ✓ Resources statistics are not given the desired priority for data processing at the office responsible for the statistics program, delaying the publication/dissemination of those statistics
- ✓ Lack of computers in the compilation office to speed up data processing
- ✓ Losses of statistical reports during the processing stage due to inadequate control over document flow
- ✓ Lack of technical guidance for local officials
- ✓ Limited number of tables, which are prepared by hand because no computers are available

##### IMPORTANT

- ✓ Lack of government commitment to the entire resources statistics program, due to low coverage by the registry offices in the country
- ✓ Failure to distribute the essential statistical reporting forms in a timely fashion
- ✓ Administrative channels are too intricate for transmitting the statistical reporting forms
- ✓ Not enough time allotted for production of the annual health resources tables, which causes late reports to be omitted.
- ✓ Not enough personnel for data processing in the compilation office
- ✓ Lack of uniformity countrywide in the statistical reporting forms
- ✓ Poor training of statistics personnel



**Acronyms** [TN: This list will need to be reconstructed to reflect the acronyms actually used. Since the list here was very selective and did not by any means reflect all the acronyms found in the Spanish text, the translator has left it blank. The Unit can decide what, if anything, it wishes to include.]



