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PROGRESS REPORT ON NATIONAL AND REGIONAL HEALTH DISASTER PREPAREDNESS AND RESPONSE

Since the Directing Council established the Area on Emergency Preparedness and Disaster Relief exactly 30 years ago, countries have made considerable progress in reducing the health impact of major emergencies and disasters, due to the continuous support of the ministries of health. The topic is now one of the eleven essential Public Health Functions recognized by the Governing Bodies in 2001. Almost all ministries have a stable disaster management unit or office. In most countries they benefit from strong political support, have a permanent structure, as well as a minimal full-time professional staff, possess a meager but defined budget, have direct access to the highest level of decision making, as well as have responsibility for covering all types of disasters (multi-hazard) and clearly reach out to other sectors. In some countries the disaster units have been marginalized in times of major emergencies due to lack of prior political support.

Training and development of technical and multimedia educational material are increasingly shifting from the regional to the country level. The wealth of material produced by nationals is shared regionally through the Regional Disaster Information Center (CRID) supported by PAHO/WHO. The Organization is progressively focusing on pioneering new topics or publishing documents of broader regional interest. Countries have also largely contributed to the humanitarian supply management system (SUMA) through the Multiagency Logistics Support (LSS), that is becoming a multisectoral tool of global interest.

One of the major shortcomings of countries in the Region is the often limited focus on imminent or seasonal hazards. The preparedness of Member States for the influenza pandemic is an example and an indicator of the current shortcomings.

PAHO/WHO has taken a number of measures to strengthen the regional health response mechanism, at the request of the Directing Council, but also taking into account the changing international context which increasingly requires a massive global response to highly visible disasters. This document proposes to complement the strengthened PAHO/WHO regional response team with the resources of key institutions in Latin America and the Caribbean which have the expertise and capacity to share responsibility for providing emergency health services. The endorsement and support from the Governing Bodies is a prerequisite for this complementary approach and to start seeking a formal agreement.

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Background

1. The Region of the Americas has a history of being vulnerable to major natural disasters. Few countries are totally immune from the risk of catastrophic earthquakes, volcanic eruptions, or climatic events (as evidenced by the destructive 2005 hurricane season in the Caribbean and the United States of America). The Region also has a history of disturbances or conflicts that have created large population displacements and affected public health. Although Latin America and the Caribbean have not experienced large chemical accidents of the magnitude of Bhopal, India, the risk is becoming increasingly credible.
2. If the risk has been present for centuries, it was only in the 1970s that the health sector in Latin America and the Caribbean recognized preparing for disasters as a priority. In 1976, following the earthquake in Guatemala (23,000 deaths), the Directing Council adopted a landmark resolution CD26.R11 “to request the director to set up...a disaster unit...” instructing the Director of PAHO to establish a unit to assist the ministries of health to prepare and plan for disasters.
3. However, accepting the inevitability of disasters was not sufficient. In 1985, the destruction of the Juarez Hospital in the earthquake in Mexico City belatedly raised the awareness of Member States of the need to mitigate, if not altogether prevent, the loss of health facilities when they are most needed.
4. Finally, hurricanes Mitch and Georges, which set back development in the affected countries in Central America and the Caribbean in 1998, helped convince Member States to include “*reducing the impact of emergencies and disasters on health*” as one of the Eleven Essential Public Health Functions (EPHF) of the ministries of health.
5. Continued support from the ministers of health has permitted the Americas to play a leadership role in health disaster management at the global level. There is, nevertheless, room for improvement. The recent Tsunami that affected 12 countries in South Asia in December 2004 and the earthquake in Pakistan in 2005 illustrated many new challenges that health authorities face both following a large-scale tragedy and an overwhelming and uncoordinated flow of assistance¹. It is opportune for PAHO/WHO and the ministries of health to reflect on their collective achievements as well as the shortcomings and to make the necessary adjustments to sustain this leadership.

¹ In its 2004 Disaster Report, the Red Cross Movement qualifies the humanitarian assistance as the “world largest unregulated industry”

6. The present progress report, which is presented 30 years after the establishment of the Emergency Preparedness Program by the Directing Council, is based on the knowledge of national conditions by PAHO/WHO staff, the visit of a senior consultant to some countries and the results of two surveys:

- A 2001 survey to measure the performance of Member States under the essential public health functions (EPHF) initiative. The results were published in 2002² by PAHO/WHO, the US Centers for Disease Control and Prevention (CDC) and the *Centro Latino Americano de Investigaciones en Sistemas de Salud (CLAISS)*;
- A 2006 questionnaire, circulated by the Area on Emergency Preparedness and Disaster Relief,³ to which 33 Latin American and Caribbean countries responded. Detailed results are contained in Document CD47/INF/4.

7. This report complies with Resolution CD46.R14 requesting “*the Director of PAHO to present a report to the 47th Directing Council regarding advances made*”:

- (a) by Member States in giving priority “*to reduce the vulnerability of their population and health facilities and to strengthen preparedness and response mechanisms for major emergencies,*” as well as
- (b) by PAHO in “*establishing a regionwide mechanism for immediate disaster response.*”

8. This report will address these two points separately.

9. More information on technical progresses in disaster risk reduction is contained in CD47/INF/4.

Institutionalization of a Disaster Unit/Office in the Ministry of Health

10. Since the inception of the program in 1976, the formal establishment of a disaster management unit or office in each Ministry of Health has been PAHO’s prime objective and indicator of success. To be effective this unit must meet certain criteria:

² *Public Health in the Americas: conceptual renewal, performance assessment, and bases for action*
PAHO scientific and technical publication No 589

<http://www.campusvirtualsp.org/eng/pub/PublicHealthAmericas/index.html>

³ WHO is planning a comprehensive disaster preparedness survey of all its Member States in the near future.

- A scope ranging from prevention/mitigation to the coordination of the response to all types of major emergencies;
- A full-time dedicated professional staff and a budget line;
- Direct access and reporting to the policy level of the Ministry;
- Broad cross-sectoral outreach.

11. Presently, 26 (79%) of the 33 countries of America responding to the 2006 questionnaire have formally institutionalized a disaster reduction program and office. In six countries, the function is assigned to another program or individual. Only one country lack either a focal point or some other ad hoc arrangement.

12. Most offices or units are modestly staffed. Only fifteen of the 33 countries have a specific budget line for disaster health preparedness. Others (eighteen countries) fund their activities through ad hoc arrangements for health disaster response, which places them in a vulnerable and precarious situation. PAHO and WHO will closely monitor this situation in periodic surveys of the status of emergency preparedness of the Member States.

13. Appropriate access to decision makers has improved, as it is now rare to see these offices buried within a technical department. In 19 countries, this program is attached to the Cabinet of the Minister or to the Office of the Director General.

14. In all 33 countries, this unit actively links and reaches out to the institutions in charge of overall disaster management and reduction (civil protection or a similar organization). Cooperation with other nonhealth actors, whose support, collaboration and/or information are essential for reducing the health impact of disasters, varies: 25 (78%) health disaster program link with Civil Defense, 28 (85%) with Red Cross, 20 (61%) with the ministry of environment, 21 disaster programs (64%) with the Armed Forces. 22 programs (67%) with international nongovernmental organizations (NGOs) and United Nation Agencies, 18 (54%) with universities, 17 (51%) with the ministry of foreign affairs and fewer (14 – 42%) with other institutions.

Capacity Building/Training

15. Member States now have at least a small group of professionals with some experience in disasters. The extent of training activities carried out by the Ministry of Health is truly remarkable. Among the best covered topics are hospital disaster planning and mass casualty management (especially in the Caribbean), damage and needs assessment, and epidemiological surveillance. Training efforts at the national and subnational levels have contributed to building a critical mass of health workers exposed to the principles of disaster reduction. This is a major departure from the early days when almost all training activities were carried out by PAHO/WHO. Partnership with

universities and professional associations is still modest, although growing in the Region. The active involvement of other institutions/sectors with expertise and a stake in this issue has increased awareness among multiple key players. Most universities have integrated some aspect of disaster preparedness in their health facilities; however, very few have developed courses on disasters.

16. At the regional level, since 2000, 11 LIDERES (LEADERS) courses have been held in the Americas to improve the disaster health risk reduction skills of a wide range of senior level professionals in many sectors. Those courses have been taught thanks to the support of Member States that have provided facilitators and a network of universities who have played a key role in organizing and ensuring academic quality. LIDERES has generated growing support from partner agencies such as UNICEF and the International Federation of the Red Cross (IFRC). Expertise is now also provided by Latin American and Caribbean countries through a network of national experts like the Disaster Mitigation Advisory Group (DiMAG)⁴ and collaborating centers in Chile and São Paulo.⁵

Technical Publications, Guidelines and Standards

17. The number of technical publications, guidelines or standards developed or adapted at the *country level* is increasing rapidly.

18. PAHO/WHO's contribution is now to compile the knowledge accumulated in the countries and produce scientific material on new or highly specialized topics of common interest, a cost-effective approach. Recent examples include the publication *Management of Dead Bodies in Disaster Situations*⁶, a companion guide to the publication *Protecting Mental Health in Disaster and Emergency Situations*, the new version of *Hospital Planning for Disasters*, updated and expanded material on drinking water and sanitation, and a series of publications on safe hospitals. Future priorities will focus on complementing conceptual documents with practical guidelines (how-to) and standards in response to needs expressed by the Member States.

19. A mechanism is in place to inventory, digitalize and disseminate the scientific material produced by the countries. The Regional Disaster Information Center (CRID), located in facilities offered by Costa Rica, is jointly managed by the International Strategy for Disaster Reduction (ISDR) and PAHO. Countries are progressively but slowly developing their own capacity to manage and disseminate information. CANDHI, a regional network of disaster health information centers in Central America, was

⁴ DiMAG is an informal group of experts from Latin America and the Caribbean who volunteer to assist governments and PAHO/WHO by providing independent advice in disaster mitigation.

⁵ Chile – PAHO/WHO Collaborating Center on Disaster Mitigation in Health Facilities; São Paulo – PAHO/WHO Collaborating Center for Disaster Preparedness in the Americas.

⁶ Jointly with the International Committee of Red Cross (ICRC) and the International Federation of Red Cross Societies (IFRC).

initiated with the support from the US National Library of Medicine (NLM). More than 25,000 hits were registered on the web sites of these national information centers supported by the NLM and European Union donors. A similar initiative is in the planning stage in the Andean countries. It reflects the ability of countries to electronically access information. However, preference remains on printed material⁷.

Reducing the Vulnerability of Health Facilities: Safe Hospitals

20. In 2005, the Governing Bodies (CD46.R14) requested Member States to give priority *“to reduce the vulnerability of their population and health facilities and to strengthen preparedness and response mechanisms for major emergencies.”*

21. It is estimated that more than half of the hospitals in Latin America and the Caribbean are located in disaster-prone areas and are unsafe. This situation is not specific to the Region; the Tsunami and the earthquakes in India (Gujarat), Iran (Bam), and Pakistan also severely affected health infrastructure. Building codes for health facilities should not only ensure the survival of staff and patients but also be stringent enough to permit facilities to continue operations.

22. The destruction of Mexico’s Hospital Juarez in 1985 and the death of 561 patients and staff prompted the Region to launch a massive awareness campaign to increase the structural and nonstructural safety of the health facilities. This concern, at first a regional issue, evolved into a global priority in January 2005, the “Hyogo Framework of Action for 2005-2015,” the global blueprint stemming from the Second World Conference on Disaster Reduction held in Kobe, Japan, included a specific indicator on vulnerability reduction in the health sector.

23. Achieving the goal of safe hospitals requires strong support from other sectors, as well as a significant financial commitment. It must be a State priority, not a sectoral one. Unfortunately, political commitment is often lacking, as funds allocated for this purpose remain disproportionately low compared to the needs. Indicators to monitor funding allocated for hospital safety, the number of engineering vulnerability analyses performed, and the number of facilities strengthened will be included in periodic country surveys being developed together with WHO. PAHO/WHO is part of several global task forces and institutions such as the International Strategy on Disaster Reduction (ISDR) and ProVention Consortium to help advocate on the critical importance of health risk reduction.

⁷ Survey carried out by PAHO/WHO in 2004.

Challenges

24. As Hurricane Katrina clearly illustrated, there is room for improvement in any country of the Region. Member States face several challenges:

- The human and financial resources assigned to the Disaster Unit must be strengthened to raise awareness and preparedness to the level that the population expects. Greater progress is needed to implement Resolution CD46.R14 urging Member States “*to continue giving priority attention to the allocation of financial resources*” intended for this purpose.
- The political support provided to preparedness activities in most countries should be extended to response in times of major crises. Occasionally, in the aftermath of large-scale disasters, political implications lead decision makers to marginalize the trained disaster coordinators.
- Preparedness efforts at the national level should be matched at the provincial or State level. National coordinators should increasingly play a normative and supportive role. Direct uncoordinated emergency interventions often weaken local institutions⁸.
- Greater attention is required to ensure continuity and professionalism. The rapid turnover of key staff, often with each change of authorities, remains a systemic problem. The very distinctive nature of disaster management, the imperative need for prior emergency experience, and the web sites of external contacts required for proper coordination need continuity. This continuity will only be achieved by considering disaster management as a specialized post with its own educational requirements and subject to competitive selection.
- Resources should be earmarked and responsibility assigned to prepare for rarely-occurring events. Programs tend to focus disproportionately on the management of common seasonal emergencies. Indeed, these disasters are a major burden for the population and the health authorities; they are also where public pressure is most felt. However, their impact on public health is relatively minimal and reasonably well controlled. As a result, insufficient sustained attention is given to the infrequent, but historically inescapable, major disasters such as earthquakes, volcanic eruptions and others.
- Finally, national programs in the Americas should adapt to the rapidly changing international humanitarian environment. This point will be addressed in the next section.

⁸ The same problem has been seen at international level where response tends to substitute rather than support the national effort.

Influenza Pandemic: A Special Case

25. The threat of a pandemic underscores the complementary roles of communicable disease experts and disaster managers. Preventing the transmission, early warning, laboratory diagnosis, protocols for treatments, and general case management calls for the expertise of epidemiologists, veterinarians and other health experts, not the special skills of disaster coordinators. Nevertheless, should a particularly lethal pandemic take hold, it will become a socioeconomic, health and political disaster, particularly given the fear that has been instilled in the population and the lack of effective prevention and treatment measures. This is where the expertise of the disaster units in the ministries of health, PAHO and WHO will be critical. A significant number of countries may overlook the potentially catastrophic impact of a pandemic because national health experts too often focus primarily on diagnosis and treatment protocols and underestimate the societal chaos that a highly virulent and infectious influenza would cause.

26. Some countries are uncertain about which national agency should lead the management of a pandemic: health, agriculture or civil protection/disaster management. This is a rhetorical dilemma, as the solution is different for each phase of the pandemic: agriculture should take the lead during the current phase 3; the primary responsibility should pass to the Ministry of Health in phase 4 and 5 when human-to-human transmission emerges, and the cross-sectoral disaster management authorities should take over in phase 6 (active pandemic).

Regional Response Mechanism

27. In 2005, the Governing Bodies (CD46.R14) requested “*the Director of PAHO to further support Member States by establishing a regionwide mechanism for immediate disaster response.*”

28. Since Hurricane David struck Dominica in 1979, PAHO/WHO has maintained a disaster response team to assess needs and respond promptly in the Caribbean. This team has been on standby every year during the hurricane season and has responded effectively. There has been no opportunity to test it after a major earthquake.

29. A regionwide response mechanism will have the same objective, namely to assist the Ministry of Health to assess damage and emergency needs in the health sector and inform the humanitarian community accordingly, provide early warning of potential public health threats, formulate public health priorities and offer guidance and advice to external health actors. In addition, the mechanism will enable WHO to carry out its UN role as lead agency and “*provider of last resort*” of assistance for the health cluster.⁹

⁹ In 2005, the Inter Agency Standing Committee (IASC) on humanitarian affairs formulated the concept of a cluster of humanitarian actors and activities to be led and coordinated by one designated agency. WHO is the lead agency of the health cluster. Direct implementation of activities as “*last resort provider of*

Constraints and Strategic Approaches

30. The response to hurricanes in smaller countries usually does not require a large number of external experts. This will not be the case, however, in large-scale disasters with an overwhelming international response involving hundreds of NGOs, bilateral civilian and military contingents and large teams from UN agencies. As a case in point, ministries of health were overwhelmed (when not marginalized) during the response to the disasters in Asia. Most responders ignored WHO's technical guidelines on issues such as field hospitals and most actors, WHO included, met with considerable difficulty when it came to mobilizing an adequate number of experts familiar with the country and the dynamics of natural disasters. In this Region, a similar experience occurred with SUMA, the humanitarian supply management system. Over the last 15 years, PAHO/WHO, with the assistance of the Foundation managing SUMA, a specialized NGO, has trained almost 3,000 SUMA volunteers for this one task, yet it is still a challenge to mobilize a regional team of 15-20 volunteers on short notice.

31. The response to large-scale disasters in the Region requires a two-stage strategic approach:

- (a) A PAHO/WHO health disaster response team composed of staff members, consultants, advisors, and personnel seconded from donor agencies¹⁰. Under this first stage, PAHO/WHO would deal with individual experts.
- (b) An intercountry mechanism that mobilize the generous solidarity from neighboring countries and from the Region as a whole. This stage would provide, in a coordinated manner, an important number of experts that will increase substantially the team mobilized at the first stage. To achieve this, PAHO/WHO would deal with ministries of health, Civil Protection and other key institutions primarily from the Region. This second stage will be most critical in major disasters for which a large number of human resources may be required for any single task.

Progress to Date

32. Progress has been made over the last 12 months in operational planning for the first stage. A limited number of individuals have been identified and trained and standard operating procedures are being internally circulated for review. The Organization is one

services" will be limited to those for which PAHO/WHO has a definite comparative advantage. Early warning system is a positive example, while repairing or reconstructing health facilities is not).

¹⁰ In the aftermath of major disasters in other regions, donor agencies have shown a great willingness to second key staff to UN response mechanisms, often a convenient last resort alternative, given the great difficulties to attract senior experts on short notice for several weeks or months. Developing countries from the Region were underrepresented and missed an opportunity to gain experience.

of the few institutions that does not charge program support costs to any extrabudgetary funds received for emergencies.

33. Coordination mechanisms are also in place. The PAHO Disaster Task Force, created after Hurricane Mitch, was strengthened and an Emergency Operations Center (EOC) will be equipped and set up in the Headquarters building. This EOC will link closely with the EOC established by the Ministry of Health of the affected country. It will also assist PAHO to better fulfill its coordinating function in support of the Inter-American response mechanism by being an easily accessible venue for Organization of American States (OAS) disaster coordination meetings.

34. Finally, internal restructuring is taking place within the Area of Emergency Preparedness and Disaster Relief. Operational responsibility for the regional response mechanism is being relocated from Headquarters to the PAHO/WHO Office in Panama, where an increasing number of humanitarian and UN agencies have regional headquarters (UNICEF, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the Pan American Disaster Response Unit of the IFRC, the ISDR, etc.). PAHO/HQ and WHO will increasingly be called on to play a supporting role, as the key functions of information management and coordination (situation reports, briefing of donors, website) will be carried out as close to the site of the disaster as possible.

The Next Steps

35. At the administrative level, efforts must be stepped up to facilitate the rapid recruitment of experts (insurance, travel documents, etc) and the procurement of humanitarian supplies. Appropriate changes to the WHO/PAHO Manual should also be forthcoming.

36. For disasters of great magnitude, it will be necessary to formally call on assistance from institutions in the Member States. It is proposed that Member States (particularly those in need to be better prepared themselves¹¹) assist PAHO/WHO to identify institutions that may enter into formal agreements to assume part or full responsibility for fulfilling a given task or function. As these tasks and functions require health skills as well as general support (information technology and management, communications, logistics, etc.), national institutions outside the health sector might also provide valuable assistance. This assistance will vary with the magnitude of the disaster.

37. Proceeding further in this direction formal endorsement from the Governing Bodies will be required. Without a strong political commitment from the Member States

¹¹ A collateral but extremely important benefit for Latin American and Caribbean countries is the preparedness value of the training to be provided to the Health Disaster Response Team and of the experience gained during the response.

and flexible administrative procedures, a truly regionwide mechanism is unlikely to succeed.

Funding of the Regional Response Mechanism

38. Preparing for the regional response mechanism and boosting the surge capacity of the Organization will be a preparedness activity funded by regular or extrabudgetary programs. A response to emergencies cannot wait for funds to be mobilized; it must begin immediately after a disaster. When technical regional support is required, speed is essential.

39. The following regional sources of funds will be required:

- (a) Advances from the PAHO Emergency Disaster Fund (PD) established in 1976 to mobilize the response mechanism without delay: The PD Fund is only to advance cash according to pledges of donors. Over the last decade, the average annual cost of relief activities has been slightly above US\$3.5 million. The last biennium relief activities reached \$11.3 million. The PD fund, the unique source for immediate funding, has been capitalized with \$400,000 within the first years of its creation. That PD fund has allowed immediate response, but in view of the increasing size of operation it is still insufficient to start all necessary field response actions to assist Member States. Thirty years later, it is now recommended to increase the PD Fund in the amount \$1 million by seeking internal or external sources of funding.
- (b) In-kind support from the Member States: this could be accomplished by covering the cost of the personnel they make available to the regional response mechanism. The endorsement of the Governing Bodies is respectfully requested.
- (c) Extra-budgetary funds provided by the international community to reimburse.

Sustainability of the PAHO/WHO Effort

40. For decades, the results achieved at the regional level have been made possible by generous extra-budgetary contributions from many governments. However, this situation is precarious. In line with the recommendation that Member States increase their financial commitment to their *own* programs, the core regional activities for this essential public health function increasingly will be integrated into the Organization's regular budget.

Action by the Directing Council

41. The Directing Council is requested:
- (a) To note the present report on the progress of national and regional health disaster preparedness and response.
 - (b) To urge Member States to support the PAHO/WHO regional health response mechanism by making human and financial resources available; to systematically and regularly gather data using standardized formats that will permit monitoring progress in disaster preparedness and risk reduction at the national and regional levels; and to provide financial support, as specified in the progress report, to increase the PAHO/WHO Emergency Fund.

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PROGRESS REPORT ON NATIONAL AND REGIONAL HEALTH DISASTER PREPAREDNESS AND RESPONSE

In 1976, 30 years ago, the ministries of health (MoHs) of the Western Hemisphere endorsed Resolution CD24.R10¹ establishing a disaster preparedness and response unit, both at Headquarters and at the country level. This resolution represented the first formal indication of a change in approach from an ad hoc disaster response system towards an approach focusing on disaster preparedness. Since that visionary resolution for the health sector, there has been constant progress in disaster preparedness; however, these advances have never been systematically measured.

The present survey was carried out by the Pan American Health Organization (PAHO) in response to a request from the ministries of health of the Western Hemisphere to report on the status of disaster preparedness and risk reduction activities in the Region. This survey illustrates that, as of 2006, nearly all countries of the Western Hemisphere have adopted formal measures within the ministries of health to continually improve their level of preparedness and risk reduction. This document discusses the status of disaster preparedness and risk reduction based on a series of qualitative questions which were answered by the health disaster coordinators in the ministries of health of each country in the Region. Although there are limitations to this survey, this report represents the first exercise towards an objective description of the present reality across the Region.

One of the main results of the survey is that nearly all countries in the Region have some form of a disaster office or program present. Other key results demonstrate the Member States' vulnerabilities to natural hazards, as well as the percentage of the population who live in at-risk areas. In assessing the status of the disaster program, the results report on the positioning of the program within the ministry of health as well as the level of staffing, the budget allocations for preparedness and response activities, and the main functions of the disaster office. Lastly, the results also report on the progress towards the Safe Hospital Initiative in Member States of the Region. Ultimately, these results provide baseline data for measuring future progress in the Region, as well as evaluating areas for improvement in the existing disaster offices and programs.

¹ Resolution CD24.R10 Emergency Assistance to Countries of the Americas established the Unit on Emergency Preparedness and Disaster Relief by calling on the Director to "set up within the Pan American Sanitary Bureau a disaster unit with instructions to define the policy of the Organization."

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Introduction

1. The 46th Directing Council (September 2005, Resolution CD46.R14²) requested PAHO to report on the progress achieved by Member States in giving priority “to reduce the vulnerability of their population and health facilities and to strengthen preparedness and response mechanisms for major emergencies.”

2. Up until the mid-1970s, there was neither a regional response mechanism in place, nor was there a mutually agreed-upon regional technical approach for preparing countries to better respond to disasters in a coordinated way. The ministers of health at PAHO’s 1976 Directing Council agreed through Resolution CD24.R10 that countries could and should be better prepared to respond to disasters. This simple resolution was the first step in changing the approach of the health sector in the Americas, from an ad hoc response to a more systematic approach. Although most disaster experts recognize the progress achieved in the Region, no systematic records exist to give an objective idea of the advances attained.

3. In order to report on progress in the field of risk management and disaster preparedness and response, PAHO’s Area on Emergency Preparedness and Disaster Relief (PED) prepared a questionnaire for the ministries of health (MoHs) of 39 Member States and territories in the Americas, which was sent through the PAHO Country Representative Offices in March 2006. This report provides an analysis of the data collected from the surveys of 33 countries who responded to the questionnaire.

Methodology and Data Validity

4. In March 2006, questionnaires were sent to all of the ministries of health of the Americas, including Canada and the United States of America. These questionnaires were primarily completed by the disaster program coordinators within the MoHs, between March and July 2006. Of the 39 questionnaires, 33 were completed and validated; and the results were then tabulated, analyzed, and presented in this document. To date, six countries have not returned the questionnaires: Antigua and Barbuda, Guyana, Jamaica, Saint Lucia, Saint Vincent and Grenadines, and Venezuela.

5. The questionnaire contained 59 questions, grouped into seven chapters as follows: (1) characterization of natural hazards; (2) institutionalization; (3) functions and responsibilities of the disaster unit/office; (4) response capacity; (5) coordination and partnerships for mitigation and preparedness; (6) human resources for disaster management; and (7) mitigation - safe hospitals.

² <http://www.paho.org/english/gov/cd/CD46.r14-e.pdf>

6. Most countries had no major difficulties in answering the majority of the questions. However, some inconsistencies were noted. Several countries' responses referred to their national disaster response system—the overall national coordination entity—rather than the health sector's disaster response system. In other circumstances, the questions required greater precision as the responses did not refer clearly to what was requested. In those circumstances, it was necessary to clarify the requested answers, through PAHO's disaster focal points (PAHO staff in each country office in charge of disaster preparedness and risk reduction) in the Region, for clarification of the information provided.

7. Among the 59 questions included in the survey, this report focuses on the questions that were most clearly answered and provides an analysis of those that best characterize the disaster response situation of the countries.³ The omitted questions are not expected to change the overall picture regarding the state of disaster preparedness and risk reduction in the Region.

Limitations of the Study

8. Due to the short timeframe in which countries were requested to respond and to complete the questionnaire, some answers were incomplete or not given in-depth consideration. This was particularly true in the questions regarding the characterization of natural hazards in the Region, and regarding the preparedness and response capacity in their country. Furthermore, for the data we received, some countries did not specify the source of information.

9. The lack of baseline data on the existing state of disaster preparedness and response in the health sector was another issue that made the design of the questionnaire difficult, since there is no data with which to compare progress. Due to the complexity of the topic of disasters, assessing disaster policies and activities in the Region was further complicated. Moreover, countries in the Region are extremely varied and differ in regards to population size, economic development, and most importantly the organizational structure that governs each country. The questionnaires were not supported by explanatory materials such as a glossary of terms, which would have helped to obtain more objective and standardized answers.

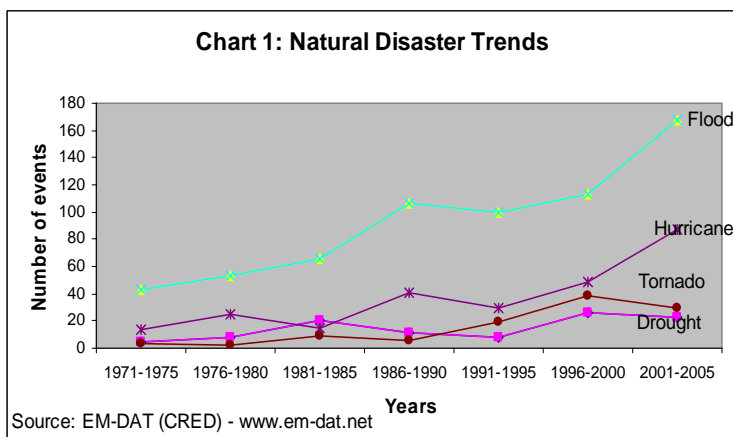
³ Questions omitted: questions 1 and 3 from Chapter I; questions 22-28, 30, and 32-34 from Chapter IV; questions 43 and 46 from Chapter VI; and questions 56 and 58 from Chapter VII.

Brief Summary of the Characteristics of Natural Hazards in the Americas

10. The EM-DAT Disasters Database⁴ of the Center for Research on the Epidemiology of Disasters (CRED), an authoritative source for data on international disasters, permitted us to briefly describe the regional picture of the major disaster events, between 1977-2005. EM-DAT data was used to calculate the average number of events in the Region during the specified period.

Type and Frequency of Disaster Events in the Countries according to EM-DAT

11. Since 1970, the Region has experienced a high number of destructive events. However, the number of natural hazards differs from country to country. In summary, the following frequency has been noted: droughts represent 3.66% of the total events; earthquakes, 5.76%; epidemics, 3.29%; floods, 23.46%; landslides, 3.95%; volcanoes, 1.88%; tsunamis and waves, 0.11%; hurricanes, 9.45%; winds storms and tornados, 12.06%; tropical storms, 1.45%; and snow, 2.24%.



12. Data on destructive man-made events in the Region is as follows: transport accidents represent 20.64% of the total; fires, 3.55%; and industrial accidents, 5.24%.

13. During the time period examined, the number of disasters has steadily increased, which is reflected in the frequency of events per decade. The general trend for selected disaster events in the Americas over the last 30 years is depicted in Chart 1, which shows

⁴ EM-DAT contains essential core data on the occurrence and effects of over 12,800 mass disasters in the world from 1900 to present. The database is compiled from various sources, including UN agencies, nongovernmental organizations, insurance companies, research institutes, and press agencies. www.em-dat.net

that the frequency of disasters has increased in the last few decades, particularly flooding. For example, in the Americas we observed the following trends:

- Between 1971 and 1975, an average of five droughts occurred. In comparison with the time period from 2001 to 2005 in which droughts averaged 23 disasters, this is almost four times higher. From the 1970s to the present, the estimated increased frequency of droughts is 360%.
- The number of hurricanes rose from an average of 14 between 1971 and 1975 among 10 countries in the Region to an average of 24 between 2001 and 2005 among 28 countries. In this period 87 disasters caused by hurricanes were reported. This reflects an increase of 521% in disaster frequency since the 1970s.
- Floods registered an average of 43 events between 1971 and 1975, and reached an average of 167 events between 2001 and 2005. This reflects an increase of 288% in frequency since the 1970s.

14. As there is no indication that this trend might change, the Region should be better prepared to face disasters.

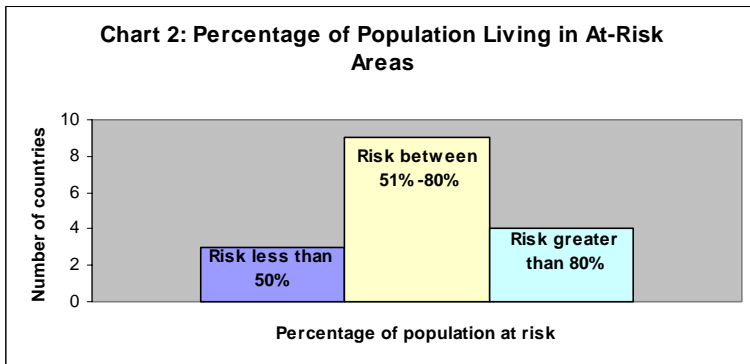
Results and Analysis of the Responses Received

Chapter 1: Characteristics of Natural Hazards

Number of Health Facilities Affected by Natural Disasters in the Last 30 Years

15. Of the 33 completed questionnaires, 18 countries responded to the question related to affected health facilities. According to the survey results, the number of health facilities affected by disasters in the last 30 years was 1,961 within Latin America and the Caribbean, although the same facility may have been affected several times in the last 30 years after reconstruction from previous damage. Currently, PAHO estimates there are 16,000 health facilities in the Region. Therefore, it can be concluded that if countries did not err in their reporting, in the last 30-year period, one in eight health facilities in the Americas has been affected at some point.

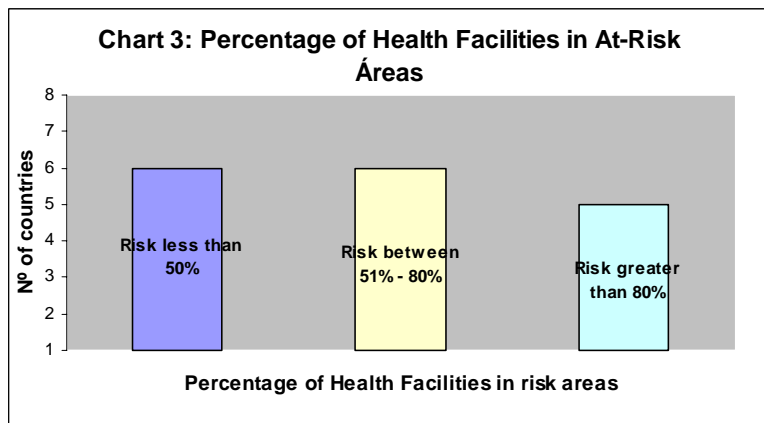
Percentage of General Population Living in At-Risk Areas



16. Of the 33 completed questionnaires, 16 countries responded to the question regarding the number and percentage of population that lives in at-risk areas. Among those 16 countries, on average 73% of the population are estimated to live in at-risk areas. While three countries

have less than 50% of their population living in at-risk areas, nine countries have between 51% and 80% of their population living in at-risk areas, and four countries have more than 80% of the population living in at-risk areas.

17. We have to mention that, despite the fact that we had indicated categories of risk in analyzing the answer to this question, our categories bear very “subjective” values. The most reasonable explanation is that risks are still perceived differently. For example, none of the ministries of health has developed a well-documented hazard vulnerability list. Even for a hazard such as earthquakes, there is no common agreement among health disaster planners regarding at what point the population would start to be at risk according to the Mercali scale.



Percentage of Health Facilities and Hospitals Located in Disaster Risk Areas

18. From data provided by 17 countries, it is estimated that 67% of health facilities of the responding countries in Latin America and the Caribbean are located in disaster risk areas. Although the estimation of this risk is

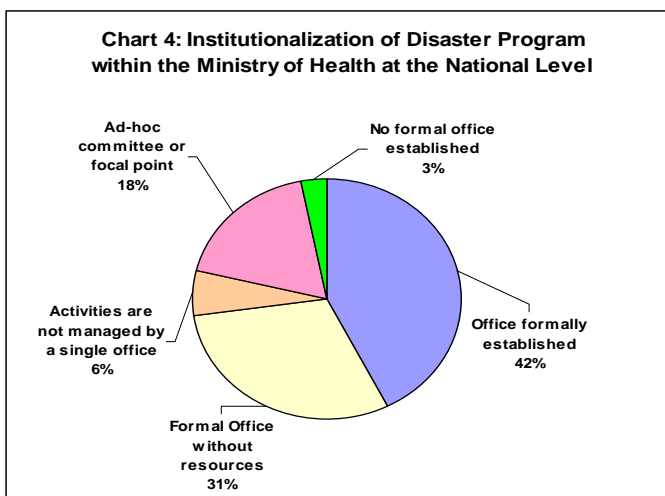
linked to the geographical location of health facilities (near human communities), the countries that respond to the previous question were not always the same as the ones that responded to this question.

19. From the 17 responses provided in the surveys, we observe that five countries are estimated to have more than 80% of their facilities in at-risk areas and six have less than

50% of their facilities in at-risk areas. The remaining six have between 51% and 80% of their facilities in at-risk areas.

20. Some responses are based on vulnerability studies, while others are based on the location of health facilities (hazard country maps). The overall data shows that countries estimate that most health facilities are generally at risk.

Chapter 2: Institutionalization



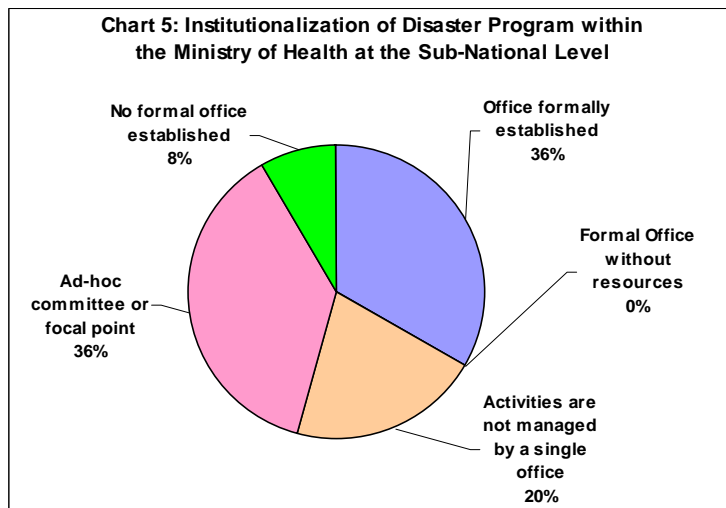
Disaster Management Institutionalization in the Ministry of Health (MoH) at the National Level

21. Ninety-six percent of the MoHs of the Americas have disaster programs at the national level. All large countries surveyed (those with more than 20 million inhabitants) have a formal disaster office within the MoH. This means that the country has a well-established office, with full-time

personnel specifically assigned to the office, and that specific financial resources have been allocated. Most countries with less than 500,000 inhabitants possess ad hoc committees or focal points within the government in charge of disaster issues. However, there are some small countries/territories (less than 500,000 inhabitants) which do have a formal disaster office: Belize, British Virgin Islands, Cayman Islands, and Martinique, Guadeloupe, and French Guiana.

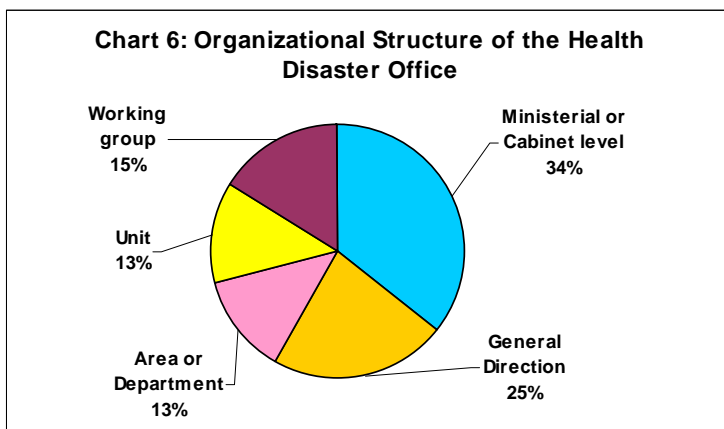
Institutionalizing Disaster Management in the Health Sector at the Subnational Level

22. Of the 33 respondents, 25 answered that they do have some kind of disaster function assumed at the subnational level, but only nine of them have a formal office working at this level. Four territories (Cayman Islands, Martinique, Guadeloupe, and French Guiana) have less than 500,000 inhabitants.



Positioning of the National Health Disaster Office

23. Nearly 60% of the countries have assigned the health disaster office to the MoH, at the level of the minister’s cabinet level, permanent secretary, or general direction.



Because the main function of these offices is health-sector response coordination in the case of disasters, it is important that they have direct and immediate access to the decision-making levels, in order to obtain the political support necessary to mobilize the maximum capacity of the ministry of health, as well as to coordinate with other institutions, both within and

outside of the health sector. In other words, the position of the disaster program in the ministry of health’s organizational chart not only projects the importance that the minister gives the topic, but it also predicts the likelihood that the ministry of health will be able to effectively mobilize the rest of the health sector.

Full-Time Personnel for Health Disaster Management

Countries	Full-time personnel
Bahamas – Barbados – Belize – Dominica – Saint Kitts and Nevis – Suriname – Trinidad and Tobago	0
Brazil – Cayman Island – Haití – Cuba – Dominican Republic – Nicaragua – Martinique-Guadeloupe-French Guiana – Paraguay – British Virgin Island – Uruguay - Turks and Caicos	1-5
Anguilla – Chile – El Salvador – Bolivia – Costa Rica – Grenada – Guatemala – Ecuador – Honduras – Panamá	6-10
Argentina – Colombia – México – Perú - Cánada	> 11

24. There is an extreme variation among countries in the number of staff dedicated to disasters issues. For example, Canada has 185 staff in the emergency center, while smaller territories have only part-time focal points assigned. Out of the 33 respondents, seven reported the absence of full-time personnel. Twenty-five countries which answered have full-time personnel assigned for such purposes. Eleven countries have between one and five people working full time in the disaster office at the central level.

25. Ten countries, or 30% of the respondents, have between 6 and 10 people working full time in their disaster office, and five countries or 15% of the

respondents have more than 12 people working in the disaster office at the central level.

26. Disaster management is becoming an area of specialty on its own. Undergraduate and postgraduate degrees now exist and are increasingly required for national and international posts. Also, the increasing complexity of disaster management issues at the national level requires a minimum of one full-time staff person assigned at the central level. However, this reasoning is difficult to sustain for smaller territories. For countries with a higher number of personnel assigned to the disaster office, this could also be explained by the fact that some disaster programs may include either emergency services or other very similarly related activities in these offices.

Countries with a Specific Budget for Health Disaster Management

27. Of the 33 countries, 15, or 45% of the total respondents, have a specific budget assigned for their disaster office. Five countries/territories—the British Virgin Islands, Costa Rica, Honduras, Paraguay, and Turks and Caicos Islands—have assigned between US\$ 11,000 and \$89,000 to their disaster office program. Four countries—Argentina, Colombia, Mexico and Peru— have assigned financial resources ranging from \$817,000 to \$2.7 million. Canada has the largest budget of all the countries surveyed in the Americas with \$20 million, excluding the United States of America.

28. In the questionnaire, some countries responded that they have a budget line item allocated by the MoH, but they did not include the amount. These countries are Brazil, Cayman Islands, Chile, and Cuba. Chile also indicated that their allocated budget includes the salaries of their personnel.

29. Budget allocations per 1,000 inhabitants differ greatly depending on population size. For example, small islands like the British Virgin Islands and Turks and Caicos Islands allocated more money per capita compared to larger countries such as Argentina, Mexico, and Peru. However, this data is seriously affected by the fact that the survey only requested the budget spent by the national disaster program. This figure only represents what was informed to the management of the central entity. It is not an accurate reflection of what was spent per inhabitant, especially for countries that have a decentralized budgeting system.

Chapter 3: Functions and Responsibilities

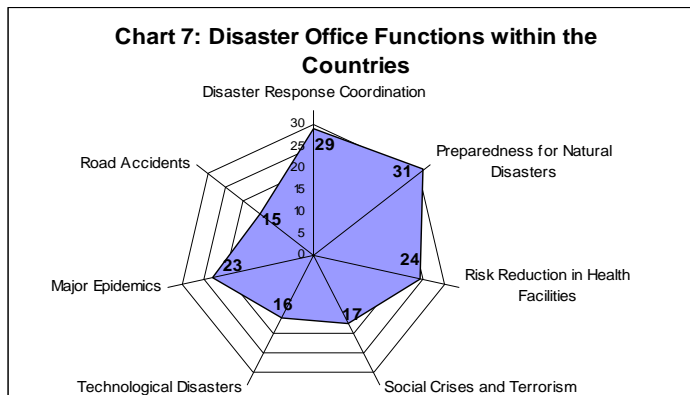
Formal Functions of the Health Disaster Office/Unit

30. Of the 33 respondents, 31 answered the question on the formal functions of the health disaster office, and all of them indicated that they have preparedness for natural disasters as a function of their disaster office.

31. Twenty-nine health disaster offices, or 88% of respondents, have the responsibility for coordinating health

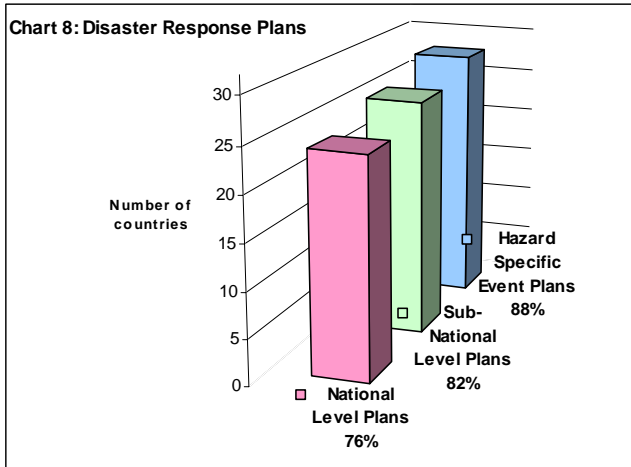
response issues following a natural disaster. However, for some this is not the case; for example, in Guatemala and Paraguay, this responsibility is not assumed by the health disaster program, as it is formally under the direct coordination of the cabinet of the minister of health. Risk reduction (mitigation and vulnerability reduction) in health facilities is carried out by 24 countries, or 73% of the health disaster offices.

32. Nearly 70% of the health disaster offices have the responsibility for coordination in the event of a major epidemic outbreak, while response to road traffic accidents is also a function of 45% of the offices. More than half of the MoHs (52%) have assigned to their disaster offices the responsibility for coordinating the health-sector response to social crises, terrorism, and technological disasters.

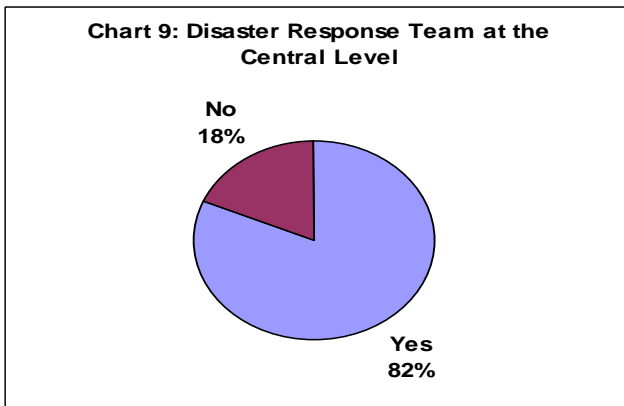


Chapter 4: Response Capacity

Health Disaster Planning and Response Teams

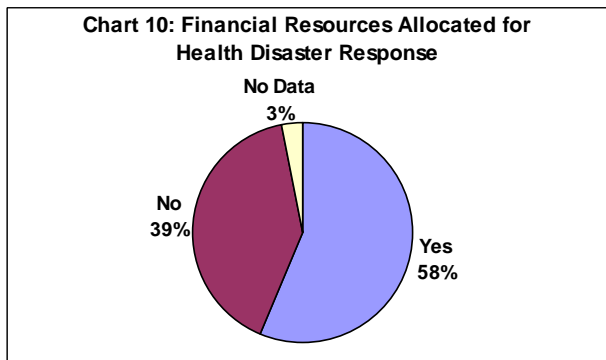


33. Seventy-six percent of the responding health disaster offices have a national and subnational disaster plan, which means that multihazard plans are prepared with the participation of other units within the MoH or other sectors, which are then formally approved by the health authorities. Eighty-eight percent of the responding countries also have hazard-specific contingency plans.



34. Eighty-two percent of the countries report having health disaster response teams at at the national or subnational levels. All the countries which have comprehensive multi-hazard disaster plans also have health disaster teams, with the exception of Bolivia and Grenada, which have a response team but not a a multihazard response plan.

Financial Resources, Emergency Supplies



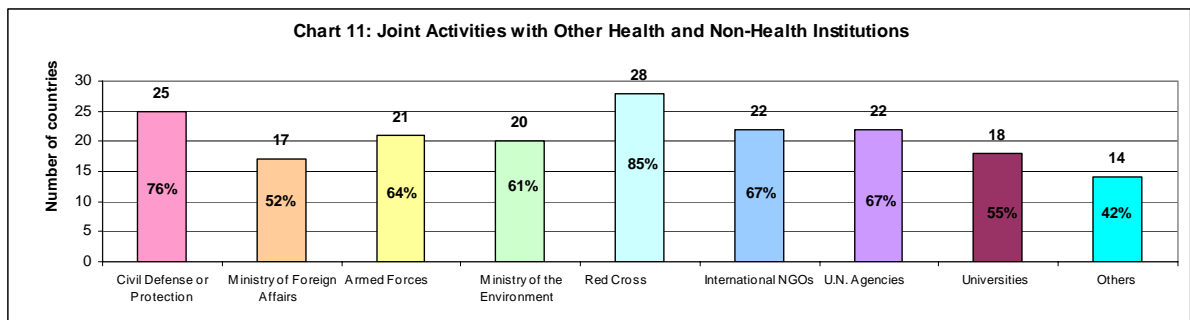
35. All 33 countries responded to the question regarding financial resources and emergency supplies for disaster response. Among these, 58% of the health disaster offices have specifically designated financial resources for disaster response operations. There is still concern that the other half of the offices do not have specific resources allocated for disaster response. However, in disaster

situations, these emergency funds may be provided by the MoH or other sources such as external funding.

36. Seventy-two percent of the MoHs have stocks of medicines and emergency supplies for disaster response. However, six countries do not have any financial resources for health disaster response nor do they have stocks of emergency supplies; these countries include Bolivia, Ecuador, El Salvador, Guatemala, Haiti, and Honduras.

Chapter 5: Coordination and Partnerships for Mitigation and Preparedness
Coordination with Other Health and Nonhealth Institutions

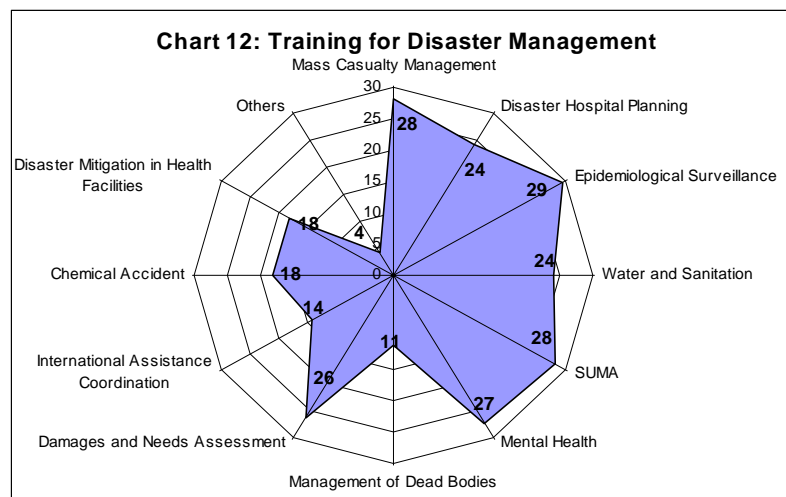
37. One of the most important activities of the disaster offices is the coordination with other institutions inside and outside the health sector. Fortunately, all health disaster offices, with only one exception (Ecuador), mentioned that they coordinate with other health institutions for disaster preparedness and mitigation. Most of them also coordinate and carry out joint activities with a series of institutions in other sectors including civil defense or civil protection, Red Cross, UN agencies, international nongovernmental organizations, and the military, among others.



38. Although the percentages are high, we had expected to observe 100% of existing disaster programs—whose primary function is coordination—to have joint activities with at least the national disaster institution. Coordination with other key actors in disaster response, such as the Red Cross, the armed forces, and other major stakeholders, is also extremely important.

Chapter 6: Human Resources for Disaster Management
Training in Disaster Management

39. Most of the health disaster offices organize, coordinate, promote, or participate in training activities for health personnel both at the national and subnational levels. Where training is performed, the main topics include: mass casualty management; epidemiological surveillance; humanitarian supplies management; damage, and needs assessment; mental health; water and sanitation; and hospital disaster planning.



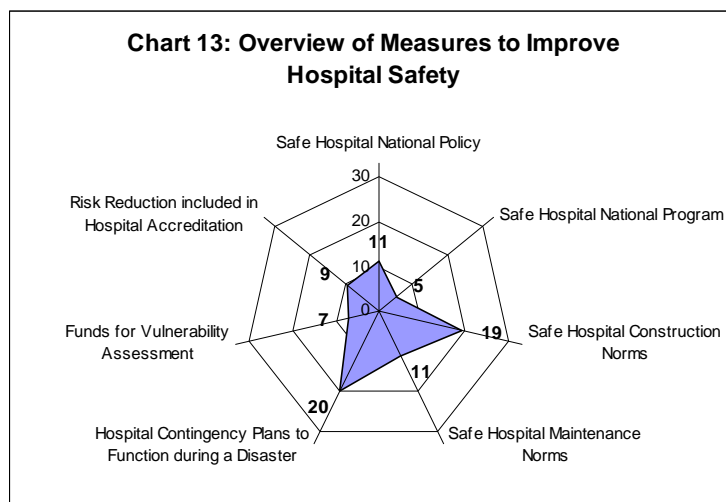
40. Training is a basic and continual necessity in preparedness and mitigation, because there is a constant need to review the rapidly evolving concepts. The absence of training in particular areas, such as the management of dead bodies could be explained by the novelty of the subject, but other topics such as chemical accidents or mitigation in health facilities illustrates the absence of support or promotion of the subject at the country level. Other topics, such as epidemiology in disasters, mental health, and water and sanitation, are more familiar in the Region, which is likely the reason for the institutionalization of the topic.

41. Thirty-three, or all of the respondents, report that their universities have formal training programs in disaster management at the undergraduate level, and 40% have included it as a curriculum component for postgraduate students. However, it is also possible that more universities have formal courses that the national MoH disaster program may be unaware of. The questionnaires were not designed to investigate the informal short-term training that the universities may have in place; however, the questionnaires also did not discriminate between disaster and emergency training. The number of formal courses offered in the Region indicates that a large number of professionals that are being trained in that field.

Chapter 7: Mitigation - Safe Hospitals

42. The 45th Directing Council approved Resolution CD45.R8⁵ on safe hospitals that was later endorsed at the global level at the World Conference on Disaster Reduction and adopted in Kobe, Hyogo, Japan, in January of 2005.⁶ The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters calls on nations to “Integrate disaster risk reduction planning into the health sector; promote the goal of ‘hospitals safe from disaster’ by ensuring that all new hospitals are built with a level of resilience that strengthens their capacity to remain functional in disaster situations and implement mitigation measures to reinforce existing health facilities, particularly those providing primary health care.”

43. Currently, 11 countries have a national policy on safe hospitals and they are implementing mitigation activities or the national disaster institution is participating on this topic. Most countries have specific norms for hospital construction and hospital planning for disaster response, but lack financial resources for vulnerability assessment and regulations maintenance. The hospital accreditation process does not include risk reduction as a category; and, therefore, this issue is not addressed in most countries.



44. Taking into consideration these results, there is a need to continue promoting and implementing the Safe Hospitals Initiative for existing and new health facilities in order

⁵ Resolution CD45.R8 Disaster Preparedness and Response.
<http://www.paho.org/english/gov/cd/CD45.r8-e.pdf>

⁶ <http://www.unisdr.org/wcdr/>

to assist countries to reach the goal of safe hospitals by 2015. Currently, 13, or 39% of all responding countries, have their national disaster organization participate in the Safe Hospitals Initiative. PAHO/WHO will use the 2008 International Strategy for Disaster Reduction Campaign on Safe Hospitals as a platform to step up efforts in this field.

Conclusions

45. The countries in the Region are exposed to different types of vulnerabilities and no country in the Region is immune to natural hazards, much less to technological hazards, civil strife, terrorism, or even biological threats including epidemics. The frequency of disasters among the surveyed countries follows the general global trend, which has increased in the period we analyzed from 1970 to 2005. Floods and droughts increased by an average of 324%, while hurricanes increased by 521% in that period of time.

46. The number of disasters and the affected populations can only increase as countries are recognizing new types of threats everyday. PAHO strongly supports that response plans or risk reduction programs must cover all hazards that exist in each country. The responses also illustrate the need for a universal agreement on the hazards present in each country and the need for the MoH disaster programs to have better access to hazard maps.

47. Some of the answers provided in this survey lacked precision or the questions were not answered. In some cases this was related to the formulation of the question, but in other instances, this observation is most likely attributed to the fact that the respondent did not have access to the information. A reasonable question would be to ask if proper response planning can be expected without accessing hard data on the exact magnitude and date of events. Some of the most significant results of the survey include the following:

- Three-quarters of the countries' populations live in at-risk areas. This high percentage is a matter of concern and requires a more in-depth analysis of these areas.
- Two-thirds of the health facilities are estimated to be in at-risk areas. An analysis of the level of vulnerability will be necessary to identify the likelihood of these particular facilities being able to operate after a disaster.
- Almost all of the MoHs of the Latin American and Caribbean countries incorporate the subject of disasters in their organizational structure. Among the countries in the Region, the size of a country is correlated with the type of disaster office and whether full-time personnel are dedicated in the country. In this

respect, the countries with more than 500,000 inhabitants usually have a formal office and personnel dedicated to work full time at the national level. For countries with populations smaller than 500,000, ad hoc committees or focal points are in charge of disaster issues. For smaller territories, with no full-time staff and in the framework of the CARICOM common market, the option should be explored for a full-time staff person to be shared among several islands.

- Less than half of the disaster offices within the MoHs are not under the direct coordination of the minister of health. This is worrisome inasmuch as in those countries it is unlikely that the staff are specially trained for disaster response or that they would be sufficiently exposed to the top political decision-making level in order to be useful in disaster response coordination.
- Only half of the countries in the Region have a specific budget assigned to develop activities within the ministry of health. Having a specific budget line item is not an absolute requirement in order to fund the disaster program; however it is nevertheless something useful to ensure proper visibility and appropriate political support in the institution.
- There is a significant difference in budget allocations for disaster programs at the central level.
- The response budget is less important than the preparedness budget, since most countries allocate response budgets at the moment of the disaster. However, it is notable that half of the health disaster offices have financial resources ready for disaster response. That budget appears not to be related to the level of risk which countries are exposed to, or to the contingency plans that exist within the country.
- Several countries in the Region do have national and subnational disaster plans developed. However, 24% of the countries do not have multihazard plans at the national level.
- The main function of a disaster response program is to coordinate with other related agencies, other government institutions, and particularly with the national defense. We are particularly preoccupied by the fact that 20% of countries do not report joint activities with other national disaster coordination entities, and more than 30% do not report joint activities with the implementing health institutions such as the Red Cross.
- The disaster offices of the MoHs are currently marginally considering social crisis, terrorism, technological disasters, and road traffic accidents as part of their mandates. Therefore, these issues must be addressed at the next health disaster coordinators' meeting.
- In accordance with the recently adopted Hyogo Framework for Action, countries are taking steps to implement the Safe Hospitals Initiative. The survey shows the

need to have a single common scoring methodology that would measure the vulnerability and likelihood for a facility to continue providing health services after a disaster. This would allow national monitoring and reporting on the International Strategy on Disaster Reduction (ISDR) regarding progress on the Safe Hospitals Initiative.

48. The survey illustrates that all of the 33 countries which have returned the questionnaire have made many decisions and developed activities to improve their preparedness and risk reduction. Even if this progress represents significant advances in the field of disaster preparedness, there are still many areas that require sustained attention.

49. This survey is the first comprehensive and objective account of the status of disaster preparedness and response in the Region. However, it also shows that most decisions made by the heads of disaster programs in the MoHs are still not based on fact, but rather on “instincts or perceptions.” At a regional meeting of health disaster coordinators in Lima, Peru, in May 2006, these representatives committed to routinely measure progress which will help to change the way disasters are handled in the Region. This pledge paves the way for more coherent and sustainable regional disaster preparedness and risk reduction programs. This survey provides the first step towards measuring progress in the Region.

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