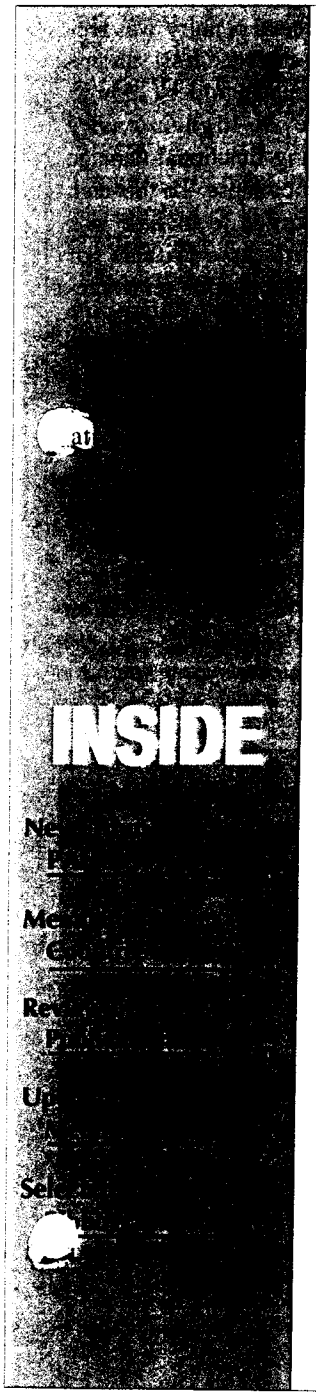
DISASTERS

PREPAREDNESS AND MITIGATION IN THE AMERICAS

Issue No. 66 | News and Information for the International Disaster Community | April 1996



Editorial

Prevention - Mitigation - Preparedness Who Should Lead?

Twenty-five years ago, the question of who should lead in the disaster prevention and preparedness field would never have been asked! The roles seemed clear: relief workers rushed to help victims, agencies provided temporary shelters and food, and, after a while, society would purge disaster from its memory and its agenda.

Today, society's interest in disaster management precedes and outlasts the response phase of the disaster cycle. There is increasing recognition of the interdependency of development and disasters: disasters cause permanent damage to socio-economic development, and the path taken for development may contribute to the destructive consequences of natural hazards. "Prevention, mitigation, and preparedness" are part of the lexicon of the disaster manager.

The boundaries between "prevention, mitigation, and preparedness" are somewhat blurred, and in any case not universally agreed upon. First, let us define these terms.

- *Prevention* includes those measures designed to provide complete protection from natural disasters by controlling the effects of natural phenomena.
- *Mitigation* means to act before a disaster occurs to minimize human and material losses. Mitigation can be seen as "prevention in an imperfect world."

(Cont. on pg. 7)

Safe Hospitals by the Year 2001

In February, more than 500 people, mostly from Latin American and Caribbean countries, took part in the International Conference on Disaster Mitigation in Health Care Facilities, which was organized by PAHO to provide a forum for establishing measures to reduce risks to hospitals in this Region. The Government of Mexico hosted the Conference, and agencies such as the Regional Office of the IDNDR of the U.N. Department of Humanitarian Affairs, the Economic Commission for Latin America and the Caribbean, the Organization of American States and the World Bank actively supported it.

Earthquakes, hurricanes and other natural hazards put nearly half of the hospitals and health

(Cont. on pg. 2)

Dr. George A.O. Alleyne, Director of PAHO (front left), and Dr. Juan Ramón de la Fuente, Minister of Health of Mexico (second from left), sign the "Safe Hospitals" agreement at the Conference on Disaster Mitigation in Health Facilities. The project will certify hospitals that meet international standards in reducing their vulnerability to natural disasters.

(Photo: PAHO/WHO)

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Safe Hospitals *(from pg. 1)*

After three days of meetings, Conference participants toured the laboratory at Mexico's National Center for Disaster Prevention (CENAPRED), to view experiments being conducted on structural seismic resistance, pictured at right.

centers in Latin America and the Caribbean at risk. The health sector has had—and continues to have—serious losses due to these events; health services are interrupted, or even worse, buildings collapse, causing death or injury to patients and health personnel.

In the past few years, there has been progress on many fronts in increasing hospital safety. Several countries in the Region completed assessments of the vulnerability of their most important hospitals; certain structures have been retrofitted or are in the process. Activities promoted by the International Decade for Natural Disaster Reduction have increased cooperation and exchange of information among experts in the fields of engineering, architecture, and hospital administration. But much still has to be done to convince policy makers that reducing the health sector's vulnerability to natural disasters is an essential part of national planning.

Delegates at the Mexico Conference showed much enthusiasm and commitment to promoting disaster mitigation strategies. Participants examined the economic and political advantages of promoting hospital safety, heard case studies on vulnerability analysis and mitigation strategies, and progress reports from national delegations. Technical experts discussed specific mitigation strategies for earthquakes and hurricanes.

A highlight of the Conference was the agreement signed by the Minister of Health of Mexico and the Director of PAHO to certify safe hospitals in that country. The Mexican Government designed a project that will recognize the hospitals that meet international standards for reducing vulnerability to natural hazards, and PAHO will provide technical assistance in the review process. National delegates expressed interest in initiating similar programs in their own countries.

Conference participants defined strategies to mitigate the impact of disasters in the design, construction, retrofitting, and maintenance of health facilities. A five-year plan for initiating or strengthening the disaster mitigation process in each country was recommended, so that by the year 2001, all priority hospital structures should be able to withstand moderate- to high-intensity events without suffering functional damage and without danger of collapse. To this end, international agencies are urged to include risk analysis for natural hazards as a criteria for approval of loans for construction or reinforcement of health facilities.

The Conference "Recommendations and Goals", the reports of the Technical Commissions on seismic and hurricane mitigation, and other documents and case studies presented during the Conference (see p. 8 of the newsletter) may be requested, in Spanish or English, from the Editor of this Newsletter. In late May, these documents will be available via the Internet: *gopher://gopher.paho.org*; or can be viewed on PAHO's Web site at:

http://www.paho.org/english/disaster.htm ❑

Literature on mitigation measures and other disaster related issues was a hot item at the Conference. Pictured here, participants place orders for reprints from the Regional Disaster Documentation Center.

(Photo: PAHO/WHO, H. Molin)

News from PAHO/WHO

PAHO/WHO Staff Review Roles in Disasters

When a disaster occurs, the PAHO/WHO Representatives in the disaster-affected countries play a critical role in assisting national disaster officials and in coordinating international response. In the same way that PAHO encourages key institutions in Member Countries to appoint disaster coordinators, each PAHO country office has a "focal point" for disaster-related issues. In May, the focal points from PAHO Offices in Argentina, Brazil, Bolivia, Chile, Paraguay and Uruguay will meet in Montevideo to review their responsibilities in case of disaster, and to examine PAHO's ongoing work with the health sector and other national counterparts in training, hospital mitigation programs, library and Internet networks, use of SUMA, etc.

Recently the PAHO/WHO Representatives in Honduras, Nicaragua, and Panama gave special attention to their own disaster response plans. Local fire brigades and structural engineers visited to evaluate the vulnerability of the PAHO buildings to earthquakes, fires, etc.

Defining the Military's Role in Humanitarian Assistance

Assigning armed forces the responsibility for disaster assistance is an increasingly popular proposal in some industrialized countries. But military intervention can eclipse local operations in the disaster-affected countries if the appropriate civilian agencies are not involved early on in the decision-making process.

To improve communication between the military and civilian humanitarian assistance agencies, PAHO organized the Joint Civilian-Military Public Health Humanitarian Assistance Workshop in Arnprior, Canada, in early March. Forty people attended, representing Ministries of Health, NGOs, international and national emergency management agencies, and regional and national defense forces; the majority were from Caribbean institutions.

The participants examined issues in the context of recent events in the Caribbean, namely the foreign military response to the Haitian crisis and to Hurricanes Marilyn and Luis in 1995. Some of their observations and recommendations follow:

- The emphasis of military health assistance is more on medical supplies and treating individuals than on restoring public health, the main priority following disasters. The most useful military assistance may be in transport, maintenance, manpower, communication, water and sanitation, engineering, and supply management. Recipients should be aware of the type of military assets that can be made available.
- Foreign military health assistance should be mobilized based on needs assessment made by the requesting country jointly with an international health authority (in this Region, the Pan American Health Organization), and should complement the capacity of local and regional health authorities.
- Because both civilian and military institutions have very complicated organization, focal points should be identified to help open channels of communication.
- Joint military and civilian field exercises should be organized following the model of "Tradewinds", a simulation conducted each year in the Caribbean. High level meetings should also be held between command-level defense forces of major donor countries and the coordinators of health planning of potential recipient countries.

To receive the Workshop report, contact the Newsletter editor, or view it on the WWW at: *http:/www.paho.org/english/pedcanen.htm* ❑

...ium on Chemical Acc... AIDIS Congress

The Inter-American Association of Sanitary Engineering (AIDIS) will host its XXV Congress in Mexico City from 3 to 7 November 1996. Held every two years, this is one of the most important events for professionals in sanitary engineering and environmental protection in this Region. Organizers expect some 2,000 persons to attend.

Courses will be held prior to the Congress, including a PAHO-sponsored symposium on chemical accidents from 30 October to 1 November. Because space is limited for this symposium, those interested in participating should contact, as soon as possible, the Advisor in Health and Environment at the PAHO/WHO Representation in their countries. Participants are expected to pay for their own travel and accommodations. Contact the Congress Office, Av. Claudio Castro #40 Col. Guadalupe Insurgentes, C.P. 07870 Mexico, D.F. Tel: (525) 537-9703; Fax: (525) 537-6281. ❑

Member Countries

Univ. of Puerto Rico Launches Disaster Management Program

Puerto Rico's State Civil Defense and the University of Puerto Rico recently signed an agreement to create a Bachelor's Program on Emergency and Disaster Management. Courses will begin in September 1996. In preparation for the new program, university faculty are attending classes provided by FEMA, the American Red Cross, and USAID/OFDA's "Training for Trainers". These courses are also open to health professionals who can receive credit toward recertification by attending the sessions on "Shelter Management", "Emergency Feeding," and "Emergency Management." For more information please contact: Dr. Juan Bigio Ramos, Assoc. Dean, Univ. of Puerto Rico, Apartado 21876, Estación Postal UPR, San Juan, PR 00931-1876; Fax: (809) 753-3081. ❑

Earthquake in Ecuador

An earthquake measuring 5.7 on the Richter scale hit Ecuador at just after 6 p.m. on 28 March. Cotopaxi and Tungurahua Provinces, located about 80 km south of Quito, were seriously affected; 25 persons were reported killed, 115 injured, and an estimated 15,000 left homeless. In population centers, up to 85% of adobe construction collapsed or was severely damaged. Water supply was interrupted, and rescue workers could not reach isolated rural communities because landslides blocked secondary roads. The roof of one health center failed, and medical treatment was suspended; other health centers received some damage but continued functioning.

The Government of Ecuador issued an international appeal for assistance two days after the event. The Red Cross mobilized SUMA to sort and inventory incoming relief shipments.

Cotopaxi is one of Ecuador's poorest provinces, and sanitation problems became critical after the earthquake. PAHO and the Ministry of Health of Ecuador signed an agreement for the immediate installation of 1,200 latrines in Cotopaxi. Education regarding their construction and maintenance will be provided to the community. ❑

Project on Disaster Preparedness in Eastern Caribbean

Since 1992, the French Ministry of Cooperation and Development, the Organization of Eastern Caribbean States, and PAHO have administered a project to improve the capacity of hospitals, emergency health personnel, and others to prepare for and respond to disasters. One objective of the Project is to improve mutual assistance not only among the English-speaking islands in the event of a disaster (Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines), but to draw on resources and provide support to neighboring French dependencies.

Ongoing training and simulation of disaster plans play a major part in sustaining advances made. Three of the Eastern Caribbean States have hosted the Tradewinds exercise, a helpful way to identify strengths and weaknesses in national and regional operations. The Project uses training in mass casualty management as a way to foster collaboration among a variety of sectors. Besides increasing preparedness for large-scale disasters, this training improves day-to-day emergency care management in hospitals and by all emergency services.

Certain Eastern Caribbean States are taking concrete steps to ensure that their health facilities will stand up to hurricanes. St. Lucia conducted a vulnerability assessment of all its hospitals in 1994. Hurricane-resistant building techniques are being used in the new construction at St. Vincent's Kingston General Hospital. One positive result of the devastation caused by the 1995 hurricane season in the Caribbean is that hurricane-resistant measures are being applied in the repair of damaged health facilities in St. Kitts and Antigua.

For more information on the Project contact the PAHO Subregional Advisor on Disasters, c/o CPC, PO Box 508, Bridgetown, Barbados; Fax: (809) 436-6447; e-mail: *vanalphd@paho.org* ❑

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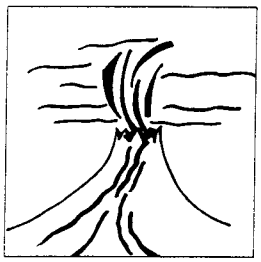
(from pg. 4)

CIQUIME Database on Hazardous Materials

The Center on Chemical Information for Emergencies (CIQUIME) develops and distributes the Sistema de Seguridad Quimica de Argentina (SISQAR), a Spanish language database of over 6,000 chemical products, associated hazards, health effects in case of accident, and other information developed for safe handling of hazardous materials in Argentina. The software is available from CIQUIME, San Pedrito 220 (1406) Buenos Aires, Argentina; Fax (541) 613-3707; e:mail: *postmaster@ciqe.sld.ar* Other CIQUIME news is available in their quarterly newsletter. They also host a discussion list on the Internet; to subscribe, send an e-mail message to *listserv@ciqe.sld.ar* with the command *subscribe chemacc <your e-mail address>* in the body of the message. ❑

Montserrat Volcano Threatens

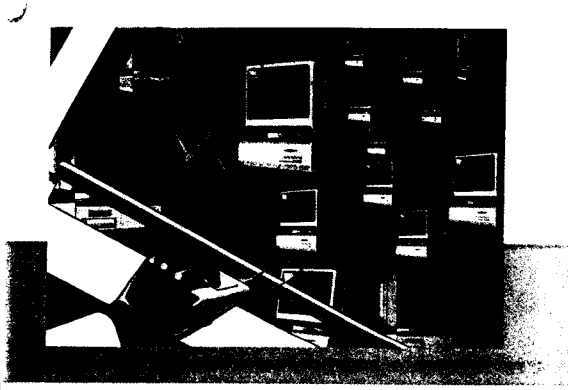


The Soufriere Hills Volcano in Montserrat started its current phase of eruptions in July 1995, with two major crises in July and December, each resulting in the evacuation of the population from the southern part of this small island. On 27 March 1996, the volcano started its most acute and violent eruptive episode. Added to intermittent ejection of ash, sulphur gases and steam with frequent earth tremors, and continuous lava dome growth, ash plumes reached a height of some 6000 m, and pyroclastic flows ignited dead trees on the eastern slopes of the volcano.

At the recommendation of scientists at the Montserrat Volcano Observation, more than 4000 persons were evacuated from their homes in the capital city of Plymouth and from areas south and east of the volcano to shelters on the north of the island. PAHO and the Red Cross have stepped up mass casualty management and first aid training for health workers. Personnel in the island's polyclinics and hospital received treatment protocols for burns.

Neighboring islands are participating in advance planning, their emergency response teams remain on standby, and they have committed human and material resources should the need arise.

Updated information on the volcano's activity is available on the WWW at *http://www.geo.mtu.edu/volcanoes/west.indies/soufriere.* ❑



Expanding the Disaster Net in Central America

Disaster managers at the country level must consistently maintain a fluid, continuous, and informal dialogue, both within and across borders. The Internet is one tool that makes it possible for individuals and agencies to keep in touch following face-to-face meetings. PAHO, in a joint project with the National Aeronautics and Space Administration (NASA), is supporting access to the Internet in Central America by updating software in health institutions and emergency management agencies, and sponsoring workshops at the subregional and national levels on how to make the best use of the Internet's most useful features.

One of these features is "listserv," or electronic mailing lists. Disaster managers or other interested persons with e-mail addresses can subscribe to a newly created "listserv" called "desastres-ca" which is maintained by PAHO's country office in Nicaragua. Communications will be predominantly in Spanish.

To subscribe, send an e-mail message to **majordomo@ops.org.ni** Leave the subject line blank; include in the body of the message:

subscribe desastres-ca <type your e-mail address>

To see who is on the list, send an e-mail message to **majordomo@ops.org.ni** Leave the subject line blank; include in the body of the message:

who desastres-ca

To send a message to the list: send your e-mail message to:

desastres-ca@ops.org.ni

Review of Publications

The books referred to in this section have been abstracted from review copies sent to the Editor of this Newsletter. *Except where noted otherwise, none of the books is available from PAHO. The publisher and the list price (when available) are included for readers who are interested in obtaining the books.*

Guerre et Santé Publique (War and Public Health), by Pierre Perrin, International Committee of the Red Cross, Geneva. Sw francs 35.

This book is written for health workers and other personnel dealing with conflict-related humanitarian operations. It addresses, among other things, major health hazards that arise when large groups of people are displaced. Presently available in French; the English version will be available in May. Orders should be addressed to Mr. Michel Clapasson, ICRC, 19 avenue de la Paix, CH-1202, Geneva, Switzerland; Fax: (41-22) 733-2057. ❑

New Selected Bibliographies Available

BIBLIO-DES is a periodic bibliographic bulletin issued by the Regional Disaster Documentation Center that contains listings of documentation in the DISASTERS database on a particular subject. Three new BIBLIO-DES are available:

Women and Children in Disasters (No. 19) cites documents related to the effects of disasters on women and children as well as their role in disaster preparedness in the home and community.

Disaster Prevention and Construction (No. 20) contains citations for studies on various aspects of earthquake, hurricane and other natural disaster mitigation measures in the built environment, including guidelines on specific construction methods for a variety of types of installations.

Economic Aspects and Natural Disasters in Latin America and the Caribbean (No. 21) includes citations of documents on direct and indirect economic costs of disasters in this Region and their effect on social development.

These selected bibliographies represent just a sampling of the literature available in these areas. The Documentation Center depends on users contributing additional materials so they can be duplicated and distributed throughout the Region.

To date, there are 21 BIBLIO-DES available on topics ranging from earthquakes to the effects of disasters on hospitals. To receive these BIBLIO-DES or other material on disaster related issues, write to the Regional Disaster Documentation Center, Apartado postal 3745-1000, San José, Costa Rica; Tel: (506) 296 3952; Fax: 506 23[illegible]-5973; e-mail *cddcor@ paho.org*.

You can view the English version of the BIBLIO-DES on the Internet:

gopher://gopher.paho.org:70/11/info/ped/center/info/BIBLIOD.ENG

Upcoming Meetings

July-August

Pan Pacific Hazards '96

Earthquakes, tsunamis and volcanoes are the focus of Pan Pacific Hazards '96, in Vancouver, B.C., from 29 July to 2 August, organized as a Canadian contribution in support of the UN International Decade for Natural Disaster Reduction (IDNDR).

For Conference information contact the Disaster Preparedness Resources Center, Univ. of British Columbia, 2206 East mall, 4th Floor, Vancouver, B.C. V6T 1Z3. Tel: (604) 929 4560; Fax: (604) 929-4561.

Abstracts of Conference papers can be accessed on the Internet Web sites of:
EPIX: *http://hoshi.cic.sfu.ca*
or FEMA:
http://www/fema.gov/homepage.html ❑

October

Organizers are making a final call for papers to be presented at the International Conference on National Experiences in Disaster Response and Rehabilitation from 11 to 14 October 1996 in Mérida, Venezuela.

The deadline for receipt of abstracts has been extended until 15 May; the deadline for final presentations is 15 July. Submissions can be made either in Spanish and English to the Organizing Committee, Conferencia Internacional sobre Manejo de Desastres, Apartado postal 344, Mérida 5101, Venezuela. Tel/fax (58-74) 441-270; e-mail: *confmer@bolivar.funmrd.gov.ve.* ❑

- *Preparedness*, defined as pre-disaster activities aimed at strengthening the capacity for rescue, relief, and rehabilitation, is something of a last resort since prevention is not a realistic alternative, and mitigation, by definition, is imperfect.

In most instances we can only hope to reduce (mitigate) the impact of disasters on life or property, rather than prevent it. For the sake of this discussion, however, prevention/mitigation will be treated together.

Who Should Lead?

Be it prevention/mitigation or preparedness, it is now accepted that disaster management is everyone's responsibility: the public and private sectors, government and nongovernmental organizations, families and their communities. However, in the final analysis, protecting the nation from disasters remains a duty of the State, and, therefore, one institution should lead, coordinate, and be accountable!

The point of this editorial is to discuss which (national or international) agency or sector is best equipped to receive the mandate or lead function in prevention/mitigation and which is better suited for preparedness. In the 1980s, agencies responsible for humanitarian response assumed, de facto, the "mandate" for preparedness, and in the 1990s they added prevention and mitigation to their portfolios. Anything dealing with "disaster" was part of their territory.

It is time to revisit this issue and address it on a rational basis. What factors influence the decision of who should lead?

Prevention/mitigation

Prevention/mitigation is a development function. To promote the reduction of disaster vulnerability, one should reach out to the world of finance, economics, and industry, not to the disaster community. The future of disaster mitigation at the multisectoral level lies with urban planners, the financial policy-makers, those involved in the preparation of industrial or housing blueprints, the institutions molding the future of the metropolis or country (often without due consideration to the underlying risks and natural hazards), and in some cases in the Prime Minister's Office or the Presidency. It does not lie with the Ministries of Health or Education, nor in the Ministry of Defense, which is most effective in the response mode.

Those agencies that have taken the lead in the economic development process at national or UN level are best equipped to assume responsibility for prevention and mitigation, and the primary responsibility should be assigned to one of the key players. A logical candidate in the UN System is the UN Development Program (UNDP).

Preparedness

Preparedness means to prepare those who will respond to a disaster. The actors have been clearly identified for some 25 years: the civil defense, the health sector, humanitarian NGOs, the Red Cross. The agency that leads or coordinates the response is obviously the best equipped and "networked" to promote preparedness. In our opinion, response and preparedness are as interdependent and inseparable as are development and disaster prevention/mitigation.

In summary:

- True disaster reduction will not be achieved if the key agencies in the development process at UN or national level do not also assume a leading role in prevention/mitigation.
- Effective humanitarian response cannot be dissociated from the preparedness effort. Indeed, the inappropriateness of many international efforts results from their divorce from local preparedness. Improving preparedness implies that we learn from the mistakes made during response.

Some conclusions at the multisectoral level (national or UN) are inescapable.

- The time may have come for the primary socioeconomic development agency to assume the leading role for disaster prevention/mitigation, while the coordinating humanitarian or response agencies at the national or international level limit their efforts to preparedness/response.
- At the sectoral level, maintaining the status quo is perhaps the best approach. Education, health, and agriculture sectors should maintain the holisitic and integrated approach of prevention/mitigation for their facilities, and specialized preparedness and response in their fields of competence. ❑

Selected Bibliography

The following documents were presented at the International Conference on Disaster Mitigation in Health Facilities. They are available from the Editor of this Newsletter or can be accessed through the Internet at gopher://gopher.paho.org as of 1 June. Please quote the reference code listed to the left of the title when requesting the document by mail.

R.6 "General Policies on Considerations of Natural Disasters in Proposals for Investment in Health Infrastructure," by Vanessa Rosales, PAHO.

R.7 "Role of International Development Financing Agencies," by Stephen O. Bender, OAS.

R.8 "Economic Impact of Natural Disasters in Health Infrastructure," by Daniel Bitrán Bitrán, ECLAC.

R.9 "The Mexico Earthquake, September 1985," by Dr. Felipe Cruz Vega and Dr. Carlos A. Rojas Enriquez.

R.10 "The Response Capability of Hospitals in Seismic Disasters: Non-Structural Aspects," by Ruben Boroschek K., Maximiliano Astroza I., Claudio Osorio U., Dept. Civil Engineering, University of Chile.

S.1 "Establishment of a National Plan for the Reduction of Seismic Effects on Health Systems," by Ruben Boroschek K., Maximiliano Astroza I., Claudio Osorio U., Dept. Civil Engineering, University of Chile.

S.2 "Reconstruction and Mitigation Programs in Jamaica post Hurricane Gilbert," by Alfrico D. Adams.

S.3 "Impact of Hurricanes on Health Facilities," by Tony Gibbs.

S.4 "Hospitals Under the New Colombian Legislation on Seismic Protection: Demonstrating Political Commitment to Risk Mitigation," by Omar Dario Cardona.

S.5 "Seismic Risk and Reinforcement of Hospitals in Costa Rica," by Miguel F. Cruz.

Disasters: Preparedness and Mitigation in the Americas is the Newsletter of the Emergency Preparedness and Disaster Relief Coordination Program of the Pan American Health Organization, Regional Office for the Americas of the World Health Organization. The reported events, activities and programs do not imply endorsement by PAHO/WHO, nor do the statements made necessarily represent the policy of the Organization. The publication of this *Newsletter* has been made possible through the financial support of the Canadian International Development Agency (CIDA) and the Office of Foreign Disaster Assistance of the U.S. Agency for International Development (OFDA/AID).

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