

# DISASTERS

## PREPAREDNESS AND MITIGATION IN THE AMERICAS



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July 2001

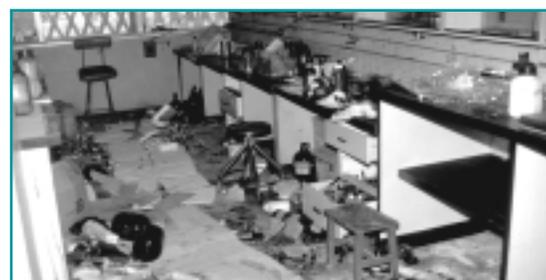
### Editorial

## Protecting the Health Services Network

*The knowledge gained by the countries of Latin America and the Caribbean in reducing the vulnerability of their hospitals to disasters must be extended and applied to all health services in the country. The past has demonstrated that less complex (although no less important) health infrastructure such as health centers, the offices of coordinating authorities, warehouses and blood banks are just as likely to be affected by floods, earthquakes, hurricanes and other natural hazards.*

The health sector's response to a disaster depends in part on its level of preparedness. But it is also conditioned by the level of damage caused to health infrastructure—hospitals as well as smaller health centers, laboratories, blood banks, warehouses, etc.—all components of what is referred to as the country's health services network.

Planning an integrated health sector response to disasters requires knowledge of the physical vulnerability of its facilities. Emergency preparedness plans that have been tested and updated become meaningless when a hospital is unable to function following a disaster. Well-established epidemiological surveillance programs are of little use if the laboratories required to process the information cannot function. It is not practical to maintain a stock of emergency medicines and supplies if the warehouse is vulnerable; likewise, it is useless to establish a hospital referral system to care for disaster victims if the health services network collapses. And evacuating patients from well-built health facilities where structural damage is unlikely can be costly and dangerous to the occupants. For all these reasons, health sector planning and preparedness should be based, to a



**If disaster response plans are to be effective, countries must ensure the safety of all components of the health services network. Damage to laboratories, as shown here in the wake of Hurricane Keith in Belize, can paralyze disease surveillance systems.**

*Photo: PAHO/WHO*

large degree, on the physical and functional vulnerability of its infrastructure as a whole.

Recent examples point to the need to focus on the health services network. During the 1997-98 El Niño phenomenon in Ecuador and Peru, more than 34 hospitals and 485 small health centers were affected by floods—many of these were the only health facilities for miles around. The December 1999 floods in Venezuela indiscriminately affected health facilities, both large and small. Hurricane Keith in Belize in 2000 seriously affected the Karl Heusner Memorial Hospital. The

*(cont. on page 7)*

## INSIDE

News from  
PAHO/WHO **2**

Other  
Organizations **3**

Member  
Countries **4**

Publications and  
Multimedia **6**

Selected  
Bibliography **8**



### Upcoming course

• March 2002 - Buenos Aires, Argentina

# News from PAHO/WHO

## Agencies Meet to Discuss a Common Logistical Support System

New



See the enclosed flyer for more information about PAHO/WHO's newest publication on supply management

The logistical management of humanitarian supplies represents a formidable challenge for any agency that provides immediate assistance to disaster victims. Several international organizations have developed parallel systems to correct certain aspects of the problem, but for the most part, these operate independently with little exchange of information.

Realizing that sharing information is a first step to unclogging the supply chain in humanitarian operations, more than 50 experts from UN Organizations, the Red Cross system, humanitarian NGOs and national disaster coordinators from affected countries met at WHO headquarters in Geneva to discuss and identify steps toward a common approach to logistical support in emergencies. WHO, WFP and OCHA co-sponsored this interagency workshop with PAHO.

The participants agreed that the result of a common logistical approach can best be described as a common "data warehouse" on supplies, from those in the pipeline (three months) to those entering a disaster-stricken country or area, and at a

later stage, to those at the intermediate point in the distribution chain. The same approach should be used for all types of emergencies (natural disasters, complex emergencies, etc.), as the logistical challenges are similar.

Steps are underway to move beyond discussion to action. UNICEF and WFP will lead all actors in common classification of items and commodities that will make it easier to exchange data. A capacity-building initiative to strengthen local institutions and NGOs will be undertaken, adapting and expanding the experience of SUMA in the Americas. This SUMA Global initiative will be led by WHO. Channels of communication among all interested parties will be strengthened by OCHA to provide for continuous dialogue and exchange of information as this initiative moves forward.

More information on the progress toward a common logistic support system for humanitarian operations will appear in future issues of this Newsletter.

LIDERES

2001

San Jose,  
Costa Rica  
2 - 19 July

The second LIDERES course took place in early July in San Jose, Costa Rica. The University of Costa Rica cosponsored this 120-hour course and provided the facilities at the university's Faculty of Engineering. Twenty-seven participants from 16 countries formed the training group at this multisector, multidisciplinary event. As with the LIDERES 2000 course in Quito, Ecuador last September, the participants were all high-level managers responsible for emergency management in government and non-governmental sectors.

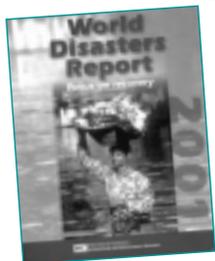
This year's LIDERES course featured field visits to the municipalities of San Jose, Moravia and Santa Ana to discuss local experiences and risk management capacity and to observe, first-hand, the risks facing these communities. Costa Rica's Arenal volcano was the site of the second field visit, where participants had the chance to discuss with community leaders and the local emergency committee the state of preparedness and how communities viewed their own disaster risk.

In the foreground, members of the 2001 class of LIDERES, and the Arenal volcano, site of one of the field visits.



# Other Organizations

## IFRC Publishes 2001 World Disasters Report



The 2001 edition of the World Disasters Report looks at how humanitarian agencies and governments can best help disaster-affected communities to recover, to become stronger and more disaster-resilient. Published annually since 1993, the World Disasters Report presents trends, facts and analysis of global humanitarian crises.

Available online at <http://www.ifrc.org/publicat/wdr2001>.

## World Disaster Reduction Campaign Targets Vulnerability

The theme of the 2001 World Disaster Reduction Campaign is *Countering Disasters, Targeting Vulnerability*. The campaign aims to give practical examples of what society can do to be less vulnerable to natural hazards. Information on how to target vulnerability falls under the headings of science and technology in disaster reduction, building disaster-resistant infrastructure and mobilizing local communities. The ISDR has organized risk mapping contests for children and local communities. Visit the ISDR web site to

learn how to participate and for more ideas. [www.unisdr.org](http://www.unisdr.org).

## New Director Named at ISDR

The U.N. Under-Secretary-General for Humanitarian Affairs has announced the appointment of Mr. Salvano Briceño, a national of Venezuela, to the post of Director of the International Strategy for Disaster Reduction (ISDR) in Geneva. Mr. Briceño has taken up his position and may be contacted at [briceno@un.org](mailto:briceno@un.org).

## University of Cranfield Offers Disaster Degree

The University of Cranfield (U.K.) is offering a Master of Science Degree in Disaster Management through the university's Disaster Management Centre. The full-time program lasts 45 weeks and attempts to strike a balance between the theoretical and the practical; considers the different stages of planning necessary for a wide variety of disasters—complex, natural and man-made—and takes into account distinct levels of social, economic and technological development. Request the complete syllabus or additional information on costs from the Administrator, Cranfield Disaster Management Centre at [disprep@rmcs.cranfield.ac.uk](mailto:disprep@rmcs.cranfield.ac.uk) or by fax (44-1793) 785-883.

## Contribute to the Next Biblio-des

The importance of community participation in disaster preparedness and prevention is becoming more and more important. It is key to reducing vulnerability and improving the response, both during and in the aftermath of emergencies. Helping communities to organize themselves to face disasters requires sustained efforts in planning and participation.

CRID, the Regional Disaster Information Center, PAHO and ISDR are preparing the next issue of Biblio-des, the series of selected bibliographies on specific disaster-related topics. This new issue of Biblio-des will focus on three broad areas:

1) community participation in the process of building an organized community; 2) community participation in the design and use of local risk maps; and 3) preparing and putting into practice community response guidelines.

If your organization has articles (maximum 3 pages in length), publications or other documents related to the topic of community participation which could be included in the next Biblio-des, please send them to the CRID at the address on page 8 before 1 October. View the latest issues of Biblio-des at <http://www.crid.or.cr/crid/eng/services/services.htm>.





# Member Countries

## Country Progress Reviewed, Priorities Targeted at Caribbean Health Disaster Coordinators Meeting

Caribbean Health Disaster Coordinators met in St. Maarten in July to review the Health Disaster Coordinators (HDC) System and to discuss strategies and plans of action to improve health sector disaster management.

Analysis of country reports and a survey of the HDC system indicated areas of distinct progress: the monitoring of national health disaster programs by senior officers and communication between those senior officers and HDCs; the use of Internet technology and meeting of national needs by PAHO. Less success was noted in integrating health disaster management into national health programs and promoting community partic-



ipation and public awareness of health issues following disasters. The critical weakness of the HDC system was identified as a lack of adequate resources for national health disaster programs, including the lack of full time HDCs in some countries.

Among the participants' recommendations were improving the allocation and effective management of financial resources, designating of full time HDCs, improving intra and inter-island cooperation including communication and sharing of resources among neighboring islands.

Highlights of the regional priorities targeted for action included:

- Sharing of plans/networking and communication.
- Standardization of training – regular simulations including evaluations.
- Inventory of disaster related resources.
- Review and dissemination of terms of reference for health disaster coordinators.

For more information, contact Dr. Dana van Alphen, Subregional Disaster Advisor, PAHO/WHO at fax (246) 436-6447; e-mail: [vanalphd@cpc.paho.org](mailto:vanalphd@cpc.paho.org).

## Earthquake in Peru



Following is a brief overview of the effects of the June 2001 earthquake in Peru. The PAHO/WHO office in Peru and the Ministry of Health continue to prepare information, available online at: [www.disaster.info.desastres.net](http://www.disaster.info.desastres.net) (click on earthquake in Peru).

### Health Effects

The June 23 earthquake that struck Peru caused serious damage to infrastructure, housing and the population in the country's most vulnerable regions. As is the case in most major disasters, the following sectors were hardest hit: health, water, sanitation, food and temporary housing.

### Damage Assessment

Moquegua, in southern Peru, sustained the greatest damage, where approximately 50% of the dwellings were damaged or destroyed. All electric systems failed, partially or totally.

In larger cities such as Arequipa and Tacna,

## Lessons from El Salvador

More than 200 participants from government institutions, the armed forces, relief agencies, universities, NGOs, municipalities and international organizations met in El Salvador from 4-6 July to analyze the strengths and weaknesses in 12 distinct areas of the response to the earthquakes earlier this year.

The Ministry of Public Health, PAHO and the ISDR cosponsored the meeting, which highlighted some of the following findings:

- ◆ Government agencies provided an adequate rapid first response to the disaster and local communities and NGOs demonstrated great solidarity in the response phase, but the magnitude of the quakes and the frequency of the aftershocks surpassed the national capacity to respond in a coordinated and coherent manner.
- ◆ Lesson learned from previous disasters, including the 1986 earthquake that left more than 1200 dead in El Salvador and Hurricane Mitch, were not taken into account, but the lessons brought forth at this meeting, collected in the form of Proceedings, will be welcome and should be widely disseminated.
- ◆ Weaknesses in social communication and the flow and dissemination of information following disasters were in evidence.

hospitals suffered the greatest damage. Patient care was interrupted for a time, as damaged areas of the hospital were evacuated and patients relocated.

Three hundred forty eight of the 465 public health facilities in the affected area reported damage. Of these, 322 establishments required low to medium-level repairs; five require structural reinforcement; and in 11 cases, health facilities will need to be completely rebuilt at an estimated cost of US\$18 million.

### Water and Sanitation

There are 335 water systems in the departments of Tacna, Arequipa, and Moquegua, and 30% of these were damaged and 15% were destroyed.

Half of the water systems in Tacna collapsed, forcing approximately 70% of the affected population to consume water from unsafe sources sometimes with high levels of arsenic, iron or with significant turbidity. Equipment to store, distribute and purify water was a priority.

### Epidemiological Surveillance

In the rural areas, a lack of shelter, damage to dwellings and

The Proceedings of this important workshop will be published later this year and made available through this Newsletter. For further information contact Dr. Horacio Toro, PAHO/WHO Representative in El Salvador, fax (503) 298-0021; e-mail [htoro@els.ops-oms.org](mailto:htoro@els.ops-oms.org).

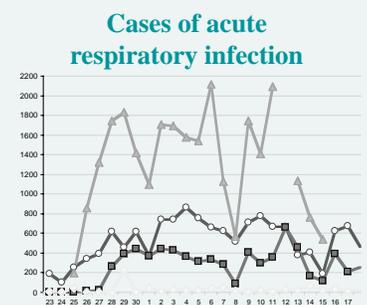
### WORK GROUP ON SOCIAL COMMUNICATION

One of the working groups dealt with the quality and flow of health information to the public. This group recognized that a common form to collect field data would have made it quicker to transfer data to the central level in a uniform fashion.

Few alliances had been forged between national authorities and international NGOs. This weakened the position of national health authorities when it came to disseminating health information, because in many instances, the foreign press first sought the opinion of the international NGOs. A joint public information plan, crafted by actors from a variety of sectors and institutions, would improve coordination among them.

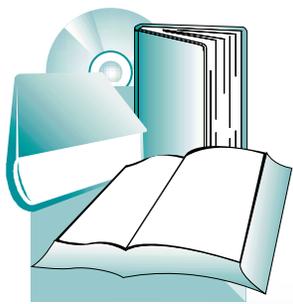
The social communicators present agreed that the aftermath of a disaster is no time to try to validate the material they are distributing or select the optimal communication channels to ensure the greatest impact. These tasks should be carefully thought out during the preparedness phase.

low temperatures produced an increase in acute respiratory infections. In parts of Tacna the number of cases tripled. Epidemiological surveillance also showed an increase in cases of conjunctivitis and acute diarrheal disease.



### Management of Humanitarian Supplies

Peru's Civil Defense system was in charge of the management of donations and the SUMA system helped to guarantee a transparent and expeditious management of relief supplies. Eight foreign and local experts installed the system in the three principal points of arrival and distribution: Arequipa, Tacna and Moquegua. The SUMA warehouse module was also set up in most storerooms of institutions involved in the emergency. After several weeks local personnel had assumed responsibility for the system.



# Publications and Multimedia

## New CD-ROMs

CD-ROMs have become a widely-used and low-cost way to produce and distribute information. PAHO has just produced two new CD-ROMs on disaster mitigation and the SUMA supply management system. Both have an easy-to-use interface that resembles a web page and contain information in English and Spanish. Although created to run on any PC, they work best on at least a Pentium I or equivalent with a minimum 40Mb hard drive. Both will soon be available on the Internet ([www.paho.org/disasters](http://www.paho.org/disasters)). A limited number is available for distribution (contact PAHO at the address on page 8).



## Mitigation of Disasters in Health Facilities

Over the last several years, PAHO has published many information products on the important topic of disaster reduction. Despite the achievements, we must continue to stress that it is of little use to invest in preparedness, response or reconstruction of health facilities, if the vulnerability factors, and especially the necessary mitigation measures, are not considered.

This CD-ROM offers training materials to learn about, promote and apply disaster mitigation measures, including:

- Two PowerPoint presentations about structural and non-structural aspects of disaster mitigation
- A series of posters on hospital mitigation
- Eleven publications (English and Spanish)
- The software needed to use this disk.

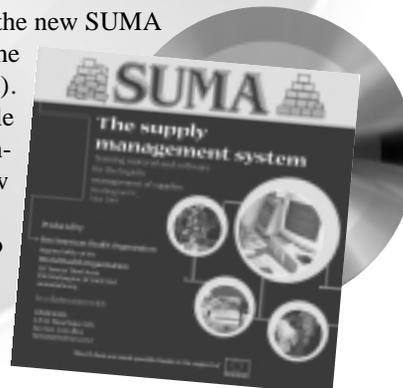
## SUMA (Supply Management System)

Contains:

- The latest Windows version of the SUMA software (and the previous DOS version) and users manuals (English and Spanish).
- Training materials for SUMA's two main components: the software and integral management of emergency supplies. This section includes manuals and PowerPoint presentations.
- Information about SUMA, including reports from former missions, a list of contacts and a wide selection of photographs of SUMA operations.

This CD also introduces a preliminary version of the new SUMA *Pledges* module, developed together with CDERA (the Caribbean Disaster Emergency Response Agency). Parallel to registering incoming donations, this module allows information on needs to be registered. The consolidation of this information will improve how resources are assigned.

This disk contains all the necessary elements to know more about, use and teach the SUMA System.



## PAHO/AIDIS Publish Guide for Water Systems

Although many countries in Latin America and the Caribbean have plans to deal with disasters in their drinking water and sewerage systems, recent disasters such as hurricanes Georges and Mitch (1998), the heavy rains and landslides in Venezuela (1999), and the earthquakes in El Salvador (2001) have shown that it is not enough to simply have a plan. The plan must work and have been prepared based on the specific vulnerability of the system in question.

PAHO and the Inter-American Association of Sanitary and Environmental Engineering (AIDIS) have prepared this new publication (Spanish only) which offers practical guidelines on this topic. It updates and enhances other technical documents published in the past by PAHO, and it constitutes an essential complement to the 1998 Guidelines for Vulnerability Analysis.

The new guide is aimed at managers, planners and designers, as well as operations and maintenance personnel. It provides answers for these professionals to ensure the quality and continuity of the services, and this way, protecting and preserving the population's health.

On the Internet at: [www.paho.org/english/ped/agua.htm](http://www.paho.org/english/ped/agua.htm). A limited number of print copies is available from the Editor (see page 8).



## Protecting the Health Services Network

(from page 1)

loss of the contents of the Central Medical Laboratory and the Blood Bank, the only institutions of their kind in the country, produced much more serious consequences. More recently, the earthquakes in El Salvador forced major hospitals in the affected areas to provide services from makeshift tents. How the health services network fares following a disaster has a significant impact on health, as it affects both the quality of and the access to health services. For this reason, it is necessary to consider overall vulnerability of the health services network when planning and preparing for disaster response.

Determining how the health services network will function in disasters involves identifying what facilities are key to meeting emergency needs, taking into account their level of security, complexity, available human resources, strategic location and specialized services. The functionality of these key areas must be guaranteed if the health sector's emergency response plan is to be successful. For this to happen, the level of damage they sustain must be minimized.

It is not prudent to randomly select certain hospitals or health centers as targets of disaster mitigation measures. It is imperative to select the right facilities. By identifying the key compo-

nents of the health services network at the regional and national level, countries can focus their resources on studying the vulnerability and implementing the necessary disaster mitigation measures to ensure they are functional following a disaster—thus guaranteeing that emergency plans are able to meet the needs they were designed for.

Although it is hoped that damage to all infrastructure can be minimized in the wake of a disaster (an elusive goal given the recent experiences in the Americas), it is essential that emergency response plans take into account the physical and functional vulnerability of the health services network. Only in this scientific manner will we be able to determine if we can count on the infrastructure that is key to the success of the emergency plan and avoid costly mistakes such as evacuating facilities that, in the eyes of the occupants appear unsafe, but that, from an engineering or architectural point of view, may be sound.

The appropriate design and construction of all new health infrastructure and the carrying out of vulnerability studies in existing structures will yield the necessary insight and facts to ensure that health sector facilities plan and execute a realistic emergency response plan.

### Effective Disaster Donations: We're Not There Yet !

**T**o be sure, a disaster alone is enough to challenge the logistical preparedness of any country or agency. Why add another complicating factor to the already difficult equation? Yet spontaneous or uncoordinated in-kind donations often do just that when they are more burdensome than beneficial.

The well-meaning desire to help – on the part of organizations, governments or individuals—should be tempered by an understanding of what to give in different disaster situations, according to the conditions of the affected population. It is better to take a few extra moments and adhere to time-tested principles: know the real needs of the victims; find out and refrain from sending what is not needed; cash is the best kind of donation; avoid double standards when it comes to in-kind donations—what is unacceptable in the donor country is also unacceptable as a donation.

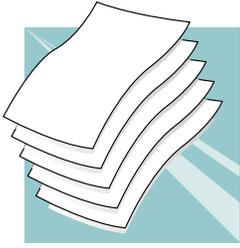
These and other recommendations are the topic of a new PAHO/WHO brochure, produced in collaboration with the Italian Cooperation and UNDP. Contact the Editor for copies or to find out how you can duplicate this brochure for your organization. Also available on the Internet at [www.paho.org/disasters](http://www.paho.org/disasters).



### Hurricane Season in Full Swing !

The Atlantic hurricane season started on 1 June, and so far, only two tropical storms—Allison and Barry—have passed, neither of which (as we go to press) has become a hurricane.

The World Meteorological Organization (WMO) selects the names for storms and retires the names of particularly devastating hurricanes. Six lists of names are used in rotation. The names of the remaining 2001 hurricanes and tropical storms (which will be used again in 2007) are: Chantal, Dean, Erin, Felix, Gabrielle, Humberto, Iris, Jerry, Karen, Lorenzo, Michelle, Noel, Olga, Pablo, Rebekah, Sebastien, Tanya, Van and Wendy.



# Selected Bibliography

The articles listed in this section may be of interest to health professionals and others responsible for disaster preparedness, mitigation and relief. They have been reproduced and recently added to the collection of articles available from the Editor of this Newsletter. A complete list of reprints is available upon request. Please quote the reference code listed to the left of the publication title when requesting articles.

- C.8** Bisbal Sanz, Alberto. "Plan de mantenimiento preventivo y correctivo en instalaciones sanitarias en hospitales y edificaciones." Revista Ingeniería Sanitaria y Ambiental, pp. 13-17, Nov. 1998.
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- D.2** Scanlon, Joseph. "The perspective of gender: A missing element in disaster response." In: The Gender Terrain of Disaster: Through Women's Eyes. pp. 45-54, 1998.
- D.3** Mouriño Doval, Juan M. "Trabajos en espacios confinados." In: Revista de la Fundación MAPFRE Seguridad, pp. 3-13, año. 20, No. 80, 2000.

*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 International Humanitarian Assistance Division of the Canadian International Development Agency (IHA/CIDA), the Office of Foreign Disaster Assistance of the U.S. Agency for International Development (OFDA/AID), and the Department for International Development of the U.K.

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