Emergencies and disasters damage people, their property, and their environment in multiple ways. Whatever the impact, the priorities will be always to protect lives and the well-being of the affected communities and to reduce human suffering. The social, economic, and environmental cost of these events is enormous. Their impact can be felt for many years, particularly when health facilities stop functioning precisely when they are most needed.

The recent earthquakes in Haiti, Chile, and Japan showed that the loss of critical health services such as emergency rooms, intensive care units, operating rooms, and diagnostics services, among others, had to be covered by nearby hospitals or by setting up field hospitals. Services provided by damaged health centers and health posts had to be reestablished making use of almost any available building or of tents.

Smart Health Care Facilities

How can we incorporate climate change scenarios into the design of safer health facilities?

The negative impact of climate change on health includes worse sanitation conditions from limited water supplies and conditions that favor the spread of water and vector borne diseases like malaria, dengue and gastroenteritis, among others. But at the same time, health care facilities are one of the largest consumers of energy, with a large environmental footprint.

Furthermore, energy prices are constantly going up, and the resources used to pay for energy consumption could be used in improving health services and having safer health facilities. Indeed, there are potentially multiple gains in integrating disaster risk reduction with low carbon energy use and adaptation and environmental protection of the health sector.
Safe Hospitals: A Shared Responsibility, a Goal We Can Reach
(from page 1)

Preventing the structural collapse of hospitals is necessary to protect the lives of patients and health workers. It is also necessary to protect the investment in hospitals. Not only do hospitals account for more than two-thirds of the health sector budget, but 85% of the economic value of a hospital is in the equipment and installations. However, protecting the hospitals’ structural and nonstructural components is not sufficient. People need medical care, and it is essential that hospitals continue to function, especially in emergencies and disasters.

Protecting the more than 12,000 hospitals and hundreds of thousands of health centers and health posts in Latin America and the Caribbean that are located in disaster risk areas is practically impossible. It is necessary to begin with protecting those health facilities that have critical services, that are located in high-risk areas, that serve the most vulnerable populations, and that currently have safety levels that do not guarantee their continued functioning in disasters. In addition, since more than 61% of the damage caused to hospitals in the Americas is due to earthquakes, 17% to hurricanes, and 14% to floods, prioritizing interventions in the areas affected by these phenomena should cover more than 90% of possible scenarios.

It is no longer acceptable for new hospitals to be severely damaged by disasters. Sufficient technical know-how exists to ensure that new health facilities are safe from disasters, beginning with their planning, design, and construction, with an additional cost of less than 4%, or even close to zero if the new hospital is in a lower-risk location.

Evaluating the safety of hospitals in the event of disasters, using practical, low-cost, and highly sensitive instruments such as the Hospital Safety Index (HSI), is the first step necessary for prioritizing interventions. However, it is not enough to know the level of safety. It is also essential to steadily improve the structural, nonstructural and functional safety of hospitals until the goal established in the Hyogo Framework for Action is achieved. At the same time, it is necessary to protect the safety of patients, improve the quality of care, strengthen integrated health services networks, prevent hospital infections, and optimize prehospital medical care. In short, it is necessary to ensure that the population receives high-quality and compassionate health care in emergencies and disasters as well as in normal situations.

The implementation of the Regional Plan of Action on Safe Hospitals approved by the health authorities of our continent is a pressing social, moral, economic, political, and human imperative. All of us, whatever our place in society, have the obligation and ability to help preserve the most valued good: the life and health of the population.

8% Others
14% Floods
17% Hurricanes
61% Earthquakes

Prioritizing the intervention in the affected zones will cover more than 90% of scenarios.
Hospitals are Patients Too

*If we recall the proverb that says “doctors also die,” we can also easily understand that hospitals can get sick*

Even a brief review of the adverse events of recent years should be enough to remind us that natural phenomena in our region have on many occasions left health care facilities non-functional, even when not badly damaged.

The history of the Safe Hospitals Initiative goes back to the year 1985 in Mexico, when the earthquake, in September of that year, resulted in the loss of 25.2% of hospital beds (4,387 out of 17,406). That event was the catalyst to begin work on this issue, which was formalized in an international conference in 1996, when the countries of the region committed themselves to adopting policies to reduce the vulnerability of hospitals.

Several events over these 27 years have reminded us how hospitals can get sick and die as the result of volcanic eruptions, earthquakes, floods, and other disasters, as has happened in El Salvador, Chile, Peru, Colombia, and Haiti, among others.

Looking back, it is very important to note how much has been accomplished, but also how much still remains to be done. Just as the medical sciences have increased their technical capacity in early diagnosis and detection of pathologies that were previously incurable, hospitals now have a tool—the Hospital Safety Index—to move towards planning their response to an adverse event and adopting measures in time to have effect. What is important is that there can be no treatment without diagnosis.

The countries of the region have started the process of evaluating many of their health installations, some of high complexity, others of medium or low complexity. Moreover, they have started processes to strengthen structures, improve architectural conditions or vital supply lines, or simply to have good hospital plans. The most important point for the countries and their health authorities is that we are now capable of making diagnoses of hospital safety.

It is no secret for anyone that the health sector has financial problems. But without the planning required for action, supported by clear public evaluations, it will never be possible to obtain adequate resources from ministries of economy, finance, or planning. In that case, hospitals will continue to be like patients without diagnoses, with no alternative to suffering injuries and becoming ill when disasters occur.

The opportunity to make diagnoses of hospital safety has been created, and many countries have already set an example of their usefulness by making the diagnoses and sharing them with the authorities and communities. This has made it possible to reach mutual and comprehensive agreements to improve the health of service-providing installations, particularly those needed for coping with disasters.
One of the major challenges after disasters is the rapid recovery of the lost health services. Chile faced this problem after the earthquake and tsunami of 27 February 2010. The hospitals of Talca, Curicó, Cauquenes, Hualañé, San Antonio de Putaendo, Angol, Chillán, San Carlos and Félix Bulnes were completely destroyed and many others had multiple and significant damages.

Thirty days after the earthquake, recovery began for those hospital installations that were severely damaged. Available technical alternatives worldwide were analyzed and the concept of “accelerated recovery” was introduced into Chilean health structures. In less than 10 months, and with an investment of approximately US$60 million, the rehabilitation of the most damaged hospitals was achieved. Chile rehabilitated 26,320 m² of floor space, 863 beds, 16 surgery wings with the highest technology levels, rooms for resuscitation of critical patients, units for invasive digestive or urological endoscopic procedures, etc.

Over 8,000 surgeries were performed in these hospitals until the end of 2011. More than 20,000 patients were discharged and the healthcare efficiency was improved, benefiting 3,018,131 people.

The Chilean experience in hospital recovery using this technology has made it possible to reestablish lost public health network services with great speed, providing very good quality health solutions. This experience has been incorporated into the portfolio of hospital designs as a rapid, modern, efficient and high-tech solution.

For the first time the concept of “accelerated recovery” of health structures is being introduced in Chile to promote the rebuilding of the nine most damaged hospitals in a very short time frame.
The Safe Hospitals Initiative in the World

“Prevention is better than treatment” is more than a wise proverb. It is also at the center of the efforts of every health system that values the protection of the life and well-being of its population. It is also the challenge faced by disaster management systems, which aim at reducing risk to acceptable levels and thus contributing to sustainable development.

The Safe Hospitals Initiative, started in the Americas in 2004, has influenced the thinking of the 168 United Nations Member States, leading to the commitment as a goal for 2015 that all new hospitals should be built in such a way that continued operation in disasters is ensured and that existing hospitals should progressively improve their safety levels in this respect.

The development of instruments for safety evaluations, in order to understand and analyze the situation of hospitals, compare results, and prioritize interventions, proved to be the best strategy to move from theory to practice, giving priority to interventions in those critical services for which continuous operation can represent the difference between life and death.

Presently, the Hospital Safety Index (HSI) is the most widely used instrument of this kind in the world. In March 2012, 31 countries and territories in the Americas reported its use in setting priorities. It is also one of the central elements in the implementation of national and subnational policies and programs for safe hospitals. More than 1,400 hospitals have been evaluated with the HSI. The results showed that 51% are in category A, that is, they have high probability of continuing to function in disasters; 37% in category B, meaning that they can resist a disaster but that equipment and critical services are at risk; and 12% in category C, which indicates that they will very probably stop functioning in disasters and be unable to guarantee the lives of their patients and personnel.

WHO representatives from around the world met in Turkey to study the hospital safety evaluation instruments used in the different continents and agreed to take the HSI as a basis for a global instrument that can be adapted to different realities. Some regions of the world adopted the HSI as such, while others adapted it to their own context.

Countries in Europe that implemented actions for safe hospitals translated the HSI into their respective languages and have applied it without variations. In the countries of the Eastern Mediterranean, where there are high levels of social and political violence that require temporary and variable health services to be set up, the structural component is much less important than the availability and capacity of the health workers who operate these services.

In the countries of South East Asia, with highly diverse realities, the main focus is in having a series of tools based on the HSI, making it possible for the countries to apply the instruments and adapt the components to their levels of development and implementation of the Safe Hospitals Initiative. The countries of the Western Pacific, in turn, developed a series of goals (benchmarks) aimed at steadily increasing the response capacity of hospitals in the region. Although they did not try to assign numerical values in ranking hospital safety levels, they have established mechanisms for prioritization based on hospital complexity. In Africa, the application of the HSI has begun in Uganda, and the region is currently generating common policy papers to delimit the framework of action for disaster risk management in the health sector and the implementation of the program of safe hospitals, with the participation of experts from PAHO.

The evaluation of the safety of medium and small hospitals and health facilities of lower complexity is another important step that many countries of the Americas have initiated. The results to date show that it is necessary to check the instruments and the criteria for relative assessment in greater detail, so that they can provide useful results, especially for those communities that only have lower-complexity health facilities and, accordingly, should ensure their operation with no interruptions.
The probability of strong earthquakes in Mexico—particularly along the Guerrero Fault on the Pacific coast—is very high. Because of the accumulated energy in that region, one or more earthquakes of magnitude-8 or higher in the Richter scale are expected in the near future. The tremors that have shaken the country in recent weeks are an indication of the high seismic activity in this geographic area.

The Mexican authorities have worked for several decades in developing disaster risk reduction and preparedness measures to face disasters such as the one caused by the 1985 earthquake, when dozens of thousands of people died and the referral hospitals collapsed in Mexico City. The earthquakes of 2010 in Haiti and Chile were a wakeup call for countries in the Americas to be better prepared to face these phenomena.

Through a presidential mandate, in 2011 the Federal Plan for Preparedness and Response to a Large-scale Earthquake or Tsunami in Mexico (also called the Earthquake Plan) was launched. Under the framework of the National System of Civil Protection, the plan was created with support from more than 30 federal agencies. It will provide support and consistency to the implementation of all institutional response plans and the collective initiatives of civil society and the private sector to improve the response capacity and execute response actions in case of earthquakes.

Forty hospitals in eight states—in the highest seismic zone—were identified to be essential, due to their level of complexity and resolution capacity. These facilities must continue to be functional after an earthquake; therefore, based on the results of the application of the Hospital Safety Index, interventions have been prioritized to improve their safety. Fifty other hospitals in six federal areas, determined to be located in the second level of risk, according to the Earthquake Plan, were also evaluated. Of the 90 hospitals evaluated, 70% have been rated in Category A, 20% in Category B, and 10% in Category C.

The results of the application of the Hospital Safety Index help in the preparation of accurate response plans that include priority mobilization of health teams to areas where hospitals are likely to stop working. This way lost emergency services will be covered and more lives will be saved, reducing permanent disability and protecting the health of the population in affected areas.

Mexico has targeted the safety level of hospitals to include it in their System for the Analysis and Visualization of Risks (SAVER), and analyze hospital safety using hazard maps. This will be a valuable tool for better decision-making on risk reduction, preparedness and disaster response.

The Government of Mexico is working with PAHO/WHO and other UN agencies in identifying mechanisms for international humanitarian assistance. Also, as part of the implementation of the Earthquake Plan, a large-scale simulation exercise was conducted in Chiapas last March. It had the participation of the three levels of the Mexican Government, hospitals, civil defense forces from several countries, and the general population. This is definitely an example to follow.

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The Initiative in Other Sectors: Safe Schools

When a disaster occurs, children in schools and patients in hospitals are two of the most vulnerable groups. They run greater risks of losing their lives when these installations are not safe. In addition, an educational center that remains undamaged can serve as a shelter and/or a gathering place, while another installation can be identified to resume classes.

Within the Risk Reduction Commission1 created in Guatemala in 2009 as part of the National Program for Disaster Prevention and Reduction, the idea arose of adapting the Hospital Safety Index (established by PAHO/WHO in 2008) to create an instrument for educational centers, thus responding to the need for having a diagnosis of the safety level of the country’s educational system in case of disasters.

In May 2010, the preliminary version of the Educational Center Safety Index was launched, after several workshops on validation of the instrument and its testing in several educational centers to ensure its functionality.

Since then, more than 300 evaluators have been trained, including teachers, architects, and architecture students, and 10% of the official educational centers of the country have been evaluated. In addition, the application of the instrument is planned for the 2,500 educational centers on the list for use as shelters, for those in high-risk areas, and for those for which the educational community has requested an evaluation from the Ministry of Education.

Future plans call for continuing with the preparation of a Safety Index for Smaller Educational Centers similar to the Hospital Safety Index - Guide for the Evaluation of Small and Medium Health Facilities and for continuing to evaluate educational centers in Guatemala. In addition, the tool will be shared at Latin American level so that other countries can adapt it to their own needs.

The Hospital Safety Index, together with the experience of safe hospitals evaluators, made it possible to develop the Educational Center Safety Index, putting in place another of the priorities for achieving resilient communities and cities.

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1 This commission is coordinated by the Vice-Presidency of the Republic of Guatemala and includes CONRED (Executive Secretariat of the National Coordinator for Disaster Reduction), the Ministry of Public Health, and the Ministry of Education, among others. It has support from PAHO/WHO, the World Bank, UNDP and CEPREDENAC (Coordination Center for the Prevention of Natural Disasters in Central America).

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Investing in this kind of efforts has financial and social benefits in addition to those related to health. Key co-benefits include lower operation and maintenance costs, thereby freeing money for allocation towards patient care and health in the community; reduced impact of volatile and high energy costs and greenhouse gas emissions; improved environmental performance; and a healthier healing and work environment.

In light of these issues, PAHO/WHO with the support of the United Kingdom Department for International Development (DFID), will work in 2012 towards achieving health care facilities that are both environmentally greener and safer against disasters and the impact of climate change.

The initiative will be piloted in two health care facilities in two countries in the Caribbean in the frame of the Safe Hospital initiative. This region has felt both the direct and indirect impact of climate change and natural disasters, including hurricanes, floods, earthquakes and volcanic eruptions. Six of the 20 countries worldwide with the highest mortality risk from multiple hazards are in this region. Between 1991 and 2005, seven of the top 20 greatest losses to natural disasters worldwide were also in the Caribbean. It is also important to note that energy prices in the Caribbean are among the highest in the world.

The Hospital Safety Index and the wind hazard maps (tools produced by PAHO/WHO) will be an important part of the planning process as they provide critical information related to disaster mitigation and risk reduction. In the future, these two models of smart facilities are intended to stand as examples for other countries and facilities which are critical for the climate change mitigation and adaptation processes.

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What’s New at CRID

The Regional Disaster Information Center’s (CRID) mission is to promote the development of a culture of prevention in Latin American and Caribbean countries through the compilation and dissemination of disaster-related information and the promotion of cooperative efforts to improve risk management in the Region.

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The Safe Hospitals Initiative has become a cornerstone of the work of CRID, as has been reflected in the activities that it has undertaken with its strategic partners.

CRID has produced a series of information resources, such as websites and CDs, with publications and technical materials focused on mitigation, with special emphasis on measures needed to ensure that health facilities continue working during and immediately after a disaster.

These resources have been widely disseminated through e-bulletins regularly published by CRID, as well as in their partners and counterparts websites—including agencies that belong to the Latin American Network of Disaster Risk Management Information Centers (RELACIGER). They have also been promoted at gatherings, fora, conferences and other activities where CRID has participated.

CRID continues with its policy of providing free access to all of its products and services, and their continuous updating. To that end, a special section on safe hospitals has been created within the thematic portal on Public Health and Risk Management: http://saludydesastres.crid.or.cr.

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