

Report on the Regional Consultation
of SEA Region Member Countries on
Keeping Health Facilities Safe
from Disasters

WHO/SEARO, New Delhi, 15–17 April 2008



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1. Executive summary

In the background of recent disaster experiences affecting the Member countries, a regional consultation was held on “Safe Hospital Initiatives” to discuss how to keep the health facilities functional in the aftermath of a disaster, considering the existing situation in which damaged/destroyed health facilities are made unserviceable at the time when they are most needed. Consultation with the representatives from 9 out of 11 SEA Member countries (the Democratic People’s Republic of Korea and Timor-Leste could not participate) was held from 15 to 17 April 2008 at the WHO Regional Office for South-East Asia (SEARO), New Delhi (India), with the following objectives in mind:

- Increase awareness and understanding of the issues surrounding “hospitals safe from disasters”, (WHO/SEARO Benchmark 11).
- Identify opportunities to strengthen disaster risk reduction and preparedness in health facilities during and beyond the two-year global awareness campaign launched by the UN International Strategy for Disaster Reduction (UNISDR) and WHO.
- Develop a national and regional framework plan of action, including mechanisms to capture progress.

The participants were acquainted with the following concepts in order to work out the future plan of action:

- The Hospital Safety Index is a reliable and low-cost diagnostic tool to measure a health facility’s level of safety during disaster situations. The health facility is ranked as high, average or low in terms of safety, enabling hospital and health decision-makers to prioritize actions.
- Achieving Benchmark 11 is a tool to increase performance in emergency preparedness and response in the SEA Member countries. The SEARO Benchmarks Framework consists of 12 benchmarks, developed through a participatory process among Member countries in order to evaluate and measure performance in relation to the best practices of their sector.

To successfully implement a “safe hospitals” strategy, SEA Member countries listed the following challenges that must be overcome:

- A lack of awareness of the issue among decision-makers, other stakeholders and the general public about what must and *can* be accomplished.
- Many professionals still do not know that information on disaster risks and risk management though such information is widely available.
- Disaster risk reduction is often disconnected from the development process at the national level.
- Risk reduction planning is not always carried through to the implementation phase when health facilities are built.
- Carrying out vulnerability assessments and identifying resources to implement the recommendations is still seen as a daunting task.
- Competing development priorities: making health facilities safe from disasters must be among a country’s top priorities.
- Capacity building, particularly enhancing technical capacity. A well-trained workforce is critical to making health facilities safer from disasters.

It was realized that is important to understand the process of ensuring the health facilities are safe from frequently occurring disasters and able to function in the aftermath. However, turning this goal into a concrete reality is too big a job for the health sector alone. It may be necessary to involve the decision-makers responsible for health system planning, health facilities construction, health system financing and health system managers to look into the existing practice of the establishment of health facilities.

Making health facilities safer from disasters would require a top-down approach, where decision-makers pass and enforce legislation that mandates how and where these facilities are built. At the same time, building safer hospitals would require a bottom-up approach, where peripherally located authorities and the local communities participate in the process of identifying risk and calling for action to ensure they will not be left without access to health services during a disaster situation.

In light of the above, the recommendations made are grouped under two headings:

- (1) **Action by Member countries:** Highlights of the national-level action by the Member countries are as follows;
 - The participants felt the need for developing an outline of a national plan of action.
 - Establishment of “Safe Hospital Committees” consisting of health system planners, engineers and architects, health system financers and health system managers.
 - Identification of new health facilities that are at planning and implementation stage in order to insulate them against disaster impact.
 - Developing contingency planning for those health facilities that are already functioning to make them safe against disaster situations.
 - Providing capacity-building tools and training to the health system managers.
 - Orientation to the funding agencies with the magnitude of problems.
 - Mobilizing necessary administrative support and political commitment.

- (2) **Regional level actions to be taken by WHO/SEARO:**
 - Include this topic on the agenda of the subregional committee of The Association of Southeast Asian Nations (ASEAN) Secretariat.
 - Link to the regional platform for disaster risk reduction for Asia/Pacific (already created) to ensure agenda visibility at the December 2008 Ministerial Meeting in Malaysia.
 - Review immediate steps outlined during the meeting with national counterparts.
 - Go beyond the national level to provide support to the Regional Framework of Action by:

- Supporting the creation of a Regional Task Force on Hospitals Safe from Disasters
- Collecting information collection and dissemination activities
- Advocacy activities such as the World Disaster Reduction Day
- Incorporate the issue of safe health facilities in current activities in national workplans and existing initiatives.

2. Opening session

The Regional Consultation of SEA Region Member Countries on Keeping Health Facilities Safe from Disasters was convened in New Delhi, India on 15-17 April 2008.

Opening the Regional Consultation the Deputy Regional Director, Dr Poonam Khetrpal Singh, presented a picture of how vulnerable health facilities were to disasters in countries of the SEA Region with a few illustrative examples. The Deputy Regional Director added that being an important public health issue in the context of disaster management, the question of keeping health facilities safe was included in the 12 SEA Region Benchmarks for Emergency Preparedness developed in a lessons-learned workshop after the tsunami of December 2004. Within this framework, country representatives from various sectors and experts put together a set of health sector and non-health sector indicators to ensure progress. She concluded by saying that health concerns are the primary motivation/incentive behind any action taken to reduce disaster risks and stressed the need for all actors represented in the consultation to jointly develop a framework for action for an integrated common community approach to disaster risk reduction instead of the many sector-specific approaches that prevail.

The chair of the opening session, Dr Poonam Khetrpal Singh, confirmed the appointments of Mr Gyanendra Kumar Shrestha of the National Planning Commission of Nepal as the chair, Dr Sarath Chandarasiri Vithana of Sri Lanka as co-chair, and Dr Pornpet Panjapiyakul of Thailand as rapporteur.

WHO called this Regional Consultation with the following objectives in mind:

- Increase awareness and understanding of the issues surrounding “hospitals safe from disasters,” to which SEARO Benchmark 11 refers.
- Identify opportunities to strengthen disaster risk reduction and preparedness in health facilities during and beyond the two-year International Strategy for Disaster Reduction (ISDR)/WHO global awareness campaign.
- Develop a national and regional framework plan of action, including mechanisms to capture progress.

Participants were charged with developing recommendations on steps that countries can take to improve the disaster resilience of their health facilities, crafting the outline and components of a national safe hospitals initiative and consolidating strategies that support the ISDR/WHO (South-East Asia and Western Pacific Regions) Framework of Action for Safe Hospitals.

2.1 Background on the issue of hospitals safe from disasters

The 11 Member Countries of the World Health Organization’s South-East Asia (SEA) Region have seen hospitals and health facilities either destroyed by natural disasters or, at the very least, left unable to function at a time when they are most needed. Some of the most recent devastating events are illustrative:

- *2001, Gujarat (India) earthquake:* 3 812 health facilities were destroyed during the earthquake. There was a total collapse of the health infrastructure in the Kutch district, which was the worst affected. The cost of reconstruction for the health sector alone was estimated at US\$ 60 million.
- *2004, earthquakes and tsunami:*
 - Aceh province (Indonesia): 30 of 240 health clinics were destroyed. Another 77 were damaged seriously; 40 suffered minor damage. As many as 700 health workers (of an

- estimated 9 800 in the province) died or were reported missing.
- Maldives: One regular hospital, two atoll hospitals, and 20 health centres were destroyed. As many as 5 000 people had to be evacuated from 13 islands.
 - Sri Lanka: 92 health facilities were destroyed, including 35 hospitals.
 - India: 7 district hospitals, 13 primary health centers and 80 sub-centres were damaged in the southern Indian states of Tamil Nadu, Andhra Pradesh, Kerala, the Union Territory of Pondicherry and the Andaman and Nicobar Islands
- 2005, Jammu and Kashmir (India) earthquake: 52 health facilities in the Kashmir region sustained damage and the Uri Hospital in the Baramulla district was totally destroyed.

2.2 Introduction to the global risk reduction initiatives and regional (SEARO) action in the health sector

The SEA Member countries now recognize that protecting hospitals and health facilities is a development issue as much as it is a disaster management issue, and their pursuit of this goal has taken place within the framework of a number of high-level initiatives:

- The **Hyogo Framework for Action** (HFA), endorsed by 168 countries at the World Conference on Disaster Reduction in Kobe, Japan in 2005, provides a global blueprint for disaster risk reduction and calls on nations to “ . . . promote the goal of ‘hospitals safe from disasters’ 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.
- In November 2005, less than a year after the tsunami, SEA countries developed benchmarks for disaster preparedness and risk reduction.

- The next step was taken in mid-2006, to begin the process of setting indicators against which to measure progress.
- Subsequently, the indicators were finalized at a meeting in New Delhi in 2007—notably for the indicators relating to hospitals safe from disasters (see annex for Benchmark 11 and indicators).
- The Thimphu Declaration, issued by the health ministers of SEA countries in September 2007, called for developing, implementing and reviewing national emergency plans.

Today, with the launch of the **World Disaster Reduction Campaign 2008-2009**, a unique opportunity is at hand to gain momentum and support for this benchmark. The secretariat of the UN International Strategy for Disaster Reduction (UNISDR) and WHO together with the World Bank are partnering with governments, international and regional organizations, nongovernmental organizations and individuals worldwide to raise awareness about how and why we must redouble efforts to protect health facilities and ensure they can function during and in the aftermath of disasters. The theme of the World Disaster Reduction Campaign 2008-09 is **“hospitals safe from disasters: reduce risk, protect health facilities, save lives”**. Global focus on this issue offers an important opportunity to bring about meaningful change. It was also the focus of the 2008 Regional Consultation to further discuss solutions related to these challenges.

- (1) Background on the issue of hospitals safe from disasters
- (2) Disaster Hyogo Framework for Action (HFA) meeting 2005
- (3) Briefing on SEARO Benchmarks for Preparedness and Risk Reduction
- (4) Introduction to Thimphu Declaration on importance of safe health facilities

3. Description of health facilities safe from disasters

3.1 Why a “Safe Hospitals” initiative?

The increasing number of hazards, risks and vulnerabilities in SEA Member countries and community expectations that the health sector will meet all emergency needs has increased over time. Recent large-scale disasters have

also shown that, along with other infrastructure, disasters destroy health facilities (see earlier examples). It is clear that:

- Health facilities must remain functional if they are to meet the health needs of populations in times of crisis.
- The loss of essential services in the aftermath of an emergency leaves the population feeling insecure and abandoned.
- The health sector's effectiveness during a crisis is a reflection of the national coping and management capacity.

The 28-day period following the Gujarat earthquake makes a compelling case for protecting health facilities. The 250-bed district hospital in Bhuj completely collapsed, leading to the deaths of hundred of patients and medical staff. Emergency medical services were provided by:

- The local Indian Army hospital at Bhuj (district capital town), which was also destroyed hospital but functions here continued under tents.
- Unaffected hospitals in neighboring areas (but transferring patients was a major problem).
- A national, highly specialized medical team which arrived without administrative and logistic support, making it impossible to render the required services.
- Foreign hospitals, which only became operational 3-15 days after arrival—whereas most patients requiring medical care had already received it or had been evacuated outside the earthquake-affected areas.

In the case of Gujarat, lifesaving health services were provided by those surviving health facilities located within the disaster-affected areas, thereby underscoring the need for functioning health facilities. The chances of this becoming the norm is increased if countries assess risk and vulnerability in health facilities with regard to their resilience to hazards and other common emergencies such as fire, as well as bomb hazards; by planning for the safe evacuation of patients under the hospital emergency plan; and by creating awareness and building the capacity of hospital workers, managers and planners.

Countries can and should launch a “Safe Hospitals” initiative, including:

- Establishment of a “Safe Hospitals” Committee with the participation of different levels of the health delivery system—hospital planners and managers, architects and engineers, disaster experts, etc.
- Identification of new health facilities that are at the planning or design stage in which to introduce or strengthen structural, nonstructural and capacity-building aspects and the identification of existing hospitals, to prepare contingency plans and conduct training.
- Involving funding agencies such as development banks, donors and lending agencies that finance the construction, reconstruction or retrofitting of health facilities.
- Obtain commitment from senior administrators and politicians at local and national levels to ensure the population has safe hospitals and health facilities.

3.2 Structural, nonstructural and functional aspects of disaster risk reduction

Unlike other types of buildings, for which the standard of performance is the safety of the occupants, performance standards for critical infrastructure such health facilities also require that they can continue providing services. Whether or not a health facility can continue providing services after a disaster will depend on the performance of the structure (building), the nonstructural elements such as windows, generators, lifelines, etc. and a trained workforce.

Structural assessments of health facilities in the Kathmandu Valley of Nepal beginning in 2001 revealed certain inadequacies that forecast potential building failures in large-scale events. Solutions were proposed for retrofitting the most vulnerable existing structures.

Nonstructural assessments of lifelines in health facilities (for example, electric and water systems) revealed that most rely on city lifeline systems.

Alternatives do exist in each hospital: mitigation for moderate earthquakes is generally low-cost and easy to implement, however, protection against severe earthquakes is costly and difficult.

Lessons learnt from the seismic assessments include:

- In terms of vulnerability assessment, earthquakes represent the worst-case scenario
- The knowledge exists to reduce this risk – experience is important
- Focus on building local capacity
- Appropriate methodologies are needed; no generic assessment can be applied

The following action was recommended to correct these vulnerabilities: apply mitigation measures to vulnerable equipment and contents; strengthen the most critical systems and provide some redundancy; and train health personnel. Despite the cost of these measures, which have risen since initial assessments were performed, studies of expected performance after implementing the recommendations show a marked improvement. These experiences have been consolidated into guidelines, which are available at www.searo.who.int/EHA.

3.3 An overview of the current status of health disaster risk reduction in SEA Region countries ***(Health facilities safe from disasters: where are we today?)***

The disaster risk facing the Region's hospitals and health facilities is well known and well documented, yet turning this information into action still remains a challenge. Many countries have made significant progress in preparing their health facilities to respond, but few have begun the process of assessing and reducing the actual risk.

In this session, country delegations were asked to prepare a short overview of where their country stands in terms of preparedness and mitigation in health facilities, the challenges they face, whether or not a recent disaster has impacted health facilities and if risk reduction measures are in place to make these critical facilities safer.

Bangladesh With its population of 145 million, Bangladesh has made a significant investment in its health infrastructure. There are 71 tertiary level facilities, 61 secondary level facilities and 411 at the primary level. The country's population has access to 51 684 hospital beds. Although most facilities do not have a written disaster plan, health staff appear to know their roles, thanks to periodic drills. Cyclone Sidr in 2007 seriously damaged health infrastructure, interrupting health services and water and sanitation.

Bhutan The country has one national and two regional referral hospitals and approximately 700 smaller units and outreach clinics; each of these smaller facilities covers between 2 500 and 500 people. Despite having escaped the impact of a serious disaster in recent years, Bhutan has a disaster management system and is promoting awareness of earthquake vulnerability and the need to improve construction standards and enforce building codes.

India An estimated 70% of India's health services are delivered by the private sector (primarily at the secondary and tertiary level). India's Disaster Management Act of 2005 has provisions for states to integrate disaster mitigation and prevention measures into development projects, and the National Disaster Management Authority is chaired by the Prime Minister. Many initiatives are underway to improve hospital safety, including the review of building codes and laws and the preparation of guidelines on seismic safety of nonstructural elements in hospitals. These are scheduled to be incorporated into a national disaster plan, which should be adopted in the near future.

Indonesia Indonesia experiences a wide variety of natural hazards, many of which have had a severe impact on the country's 1 268 public and private hospitals. Smaller health facilities in Aceh Province, perhaps the hardest hit by the 2004 tsunami, were crippled. Indonesia has building codes, and provisions governing the construction of hospitals adhere to higher standards. However, their application varies and greater monitoring and evaluation is required. The findings from assessments and mapping of hazards, vulnerability and capacity must now be followed up and made known to central and local authorities and the private sector to gain support for necessary interventions.

Maldives This archipelago has 19 health posts, 116 centres, 13 atoll hospitals and 6 regional or referral hospitals. It is clearly difficult to prepare

a common plan for all health facilities. The 2004 tsunami seriously affected three of the hospitals and virtually all health posts, raising the profile of disaster risk reduction in health facilities. The main hospital in the capital has a mass casualty management plan, based on the assumption that most disaster victims would be brought to this facility, and a multisectoral emergency drill is held annually, but there is little coordination between the health sector and other actions in disaster risk reduction. Despite having written building codes, no hospital vulnerability assessments have been conducted.

Myanmar This country has a substantial number of health facilities: 45 tertiary level, 479 secondary level and 325 primary. The state of preparedness varies from facility to facility. Most have disaster plans although not all health staff are aware of the plan; some staff have received specialized training; some hospitals test plans regularly and most have disaster committees. By and large, vulnerability has been assessed only at the functional level.

Nepal The country has 84 hospitals, 187 primary health centres and more than 3 800 health and sub-health posts. Five major hospitals have a disaster plan and another 18 are developing one; few hospitals test their plan regularly. However, Nepal has taken some important steps in risk reduction in health facilities, including structural vulnerability assessments in 14 hospitals and 6 blood banks. The assessment pointed out that even in well-built hospitals, nonstructural elements are vulnerable. Nepal has also prepared several publications on structural and nonstructural vulnerability reduction in health facilities (available at www.searo.who.int/Safe-Hospitals).

Sri Lanka Following the tsunami, Sri Lanka finalized a legal framework and established the Disaster Management Centre (DMC). The Ministry of Health Care & Nutrition (MOHN) is responsible for formulating national health sector policy, planning and supporting the DMC in activities relating to health sector emergency preparedness and response. The emergency health sector plan for the national hospital in the capital, Colombo, is primarily meant to handle mass casualty situations such as bomb blasts and to provide medical care to large number of injured. Plans at provincial, district and institutional level are yet to be developed. Linkages with other health government health establishments (dispensaries, rural and other hospitals) and the private sector hospitals are also yet to be clearly defined.

Thailand There are almost 1 300 hospitals in Thailand, distributed between the public and private sector. These facilities are vulnerable to a variety of hazards, including tropical storms, floods, landslides and of course tsunamis. Health response and recovery plans are in place, and for health facilities, they call for assessing damage, developing a budget plan to replace equipment and supplies and supporting the rotation of health workers. As part of the hospital accreditation programme, all Thai hospitals assess their risk. Training and drills are a regular part of keeping hospitals and their staff ready to provide medical services in disaster situations.

Common challenges can lead to common solutions

To successfully implement a “safe hospitals” strategy, SEA Region Member countries listed the following challenges that must be overcome:

- Competing development priorities: making health facilities safe from disasters must be among a country’s top priorities.
- A lack of awareness of the issue among decision-makers, other stakeholders and the general public about what must and *can* be accomplished.
- Capacity building, particularly enhancing technical capacity. A well-trained workforce is critical to the success of this initiative.
- Risk reduction planning is not always carried through to the implementation phase.
- Carrying out vulnerability assessments and identifying resources to implement the recommendations is still seen as a daunting task.
- It is important to dispel the myth that retrofitting existing structures is prohibitively expensive and therefore not achievable.
- Many professionals still do not know that information on disaster risks and risk management is widely available. We must improve awareness of where to obtain information and transform this into knowledge.
- Disaster risk reduction is often disconnected from the development process at the national level.
- National policies do not exist in all countries, and where they do, or where building codes exist, they are not always enforced.

4. Regional issues and challenges

4.1 Is this a realistic goal (case study of the Gujarat earthquake)?

Following the 2001 earthquake in the Indian state of Gujarat, only one of the two major hospitals was functional. The destruction of the core district health facilities led to a near-total interruption in the provision of health services in existing facilities.

Poor building quality was responsible for much of the destruction following the earthquake. A subsequent vulnerability analysis prioritized the structures needing repair and/or replacement. Activities aimed at the early restoration of health services focused on repair, retrofitting and reconstruction, following revised earthquake safety norms. In terms of planning for the rebuilding and retrofitting of health facilities:

- Guidelines were revised for all buildings, according to earthquake seismic zones.
- Consultants were employed for supervision and monitoring and a Quality Control Unit was established.
- A similar unit was established at district and sub-district levels, where workshops were conducted on issues related to project execution and matters of quality and standards.

The Gujarat earthquake raised the awareness of decision-makers regarding the need to set in motion safety measures designed to prevent this scenario from recurring. Other lessons learned included:

- Public health is jeopardized in disaster-vulnerable communities when health facilities are damaged, equipment destroyed and staff killed, injured or otherwise affected.
- Disease prevention programmes are interrupted when most, if not all, resources are reallocated to disaster victims.
- Hospital safety includes addressing needs of accessibility, approachability, reliability and also sustainability in situations of calamity which might recur in future.
- Routine cosmetic repairs are less important than the quality, safety, sanitary and hygiene aspects of health and other institutions. This must be the new touchstone for rehabilitation.

4.2 Hospital Safety Index—a tool for measuring a health facility’s level of safety

Hospitals represent an enormous investment for any country and their destruction or loss of functionality pose major social, medical and economic burdens on a disaster-stricken country. Yet many countries still have not taken steps to determine if a hospital or health facility is safe from disasters, nor are they sure exactly what constitutes “safe”. And if a hospital is not safe, what can be done?

This is a daunting task for many countries to face, and the job of developing indicators, providing baseline data and measuring progress has also proven difficult, given the diversity in size, location, staff, operating budget and vulnerability to natural hazards and crises. Not all hospitals face the same risks, nor are they built using the same methods; a wide range of elements needs to be taken into consideration to help give a snapshot of where the facility stands. One tool that can help to do this is the Hospital Safety Index.

The Hospital Safety Index is a reliable and low-cost diagnostic tool to measure a health facility’s level of safety. The key component of the Hospital Safety Index is a checklist, which is easy to apply by a trained team of engineers, architects and health professionals, and is used to assess variables or areas in one of four categories: location, structural (load bearing walls, foundations, columns, etc.), non-structural (architectural elements such as laboratory equipment, furnishings, ventilation or electrical systems) and functional aspects. Each variable and category is weighted and a program automates and standardizes the assessment, thus reducing bias and lessening the chance of mathematical error. Finally, the health facility is ranked as high, average or low in terms of safety, enabling hospital and health decision-makers to prioritize actions.

This approach to verifying the safety of health facilities will rely on a cadre of trained multidisciplinary assessment teams that includes engineers, architects, health staff, hospital directors and others. A health facility can be evaluated in just a few hours and the cost is low. This makes it possible to assess a large number of health facilities in a short time. While the Hospital Safety Index does not replace detailed vulnerability studies, it does allow preliminary information to be quickly gathered to identify which facilities require immediate or near-term interventions.

- The health sector has excellent examples of and substantial accumulated experience contributing to safe health facilities.
- Well-built or retrofitted hospitals **have** remained functioning following disasters.
- The knowledge exists to assess vulnerability and reduce risk in health facilities.

4.3 Capacity building for the hospital preparedness (case study of AIIMS)

The All India Institute of Medical Sciences (AIIMS) located in New Delhi, India is one of the biggest tertiary referral hospital and teaching institution in India. Being the premier institution, they have invariably been involved in dealing with mass-casualty situations occurring in the city. Additionally, AIIMS is one of the institutions that is to be kept in readiness to deal with potential mass-casualty situations.

Based on their experience and institutional capabilities, they have established a round-the-clock system with passage of time to deal with mass-casualty situation which is functional on 24-hour, 7 day basis. Salient features of the hospital preparedness in AIIMS are:

- AIIMS is part of the city emergency management network consisting of police, fire brigade, city administration, private hospitals, other government hospitals, Armed Forces medical facilities, Red Cross and other partners identified by the city administration.
- They have undertaken an in-depth institutional situation, hazard and capability analysis including its strength and weaknesses.
- The police control room is functioning round the clock in the AIIMS campus to maintain contact with the external alert system. Simultaneously, a separate hospital control room is functioning adjacent to the police control room to alert and monitor emergency situations such as fires or gas leaks within the hospital.

- The faculty members are on a paging system besides other mode of contact (mobile and land-line telephones). In a given situation, they are available in the campus immediately (2 to 15 minutes).
- The institution has developed a written emergency plan with close consultation with the faculty members, which includes details of action to be undertaken as soon as they receive the alert-signal including expanding response surge capacity, casualty and emergency operation facilities, blood bank and laboratory/investigative services etc.
- Duties and responsibilities of the networked personnel, agencies and health-care institutions have been clearly delineated through institutional SOP (standard operating procedure).
- Regular training and rehearsals are an integral part of the hospital preparedness plan at AIIMS. Annually, joint rehearsals with police and fire services are conducted at the intervals of once every two months with full recording of proceedings by police as well as hospital authorities. Additionally, at least two rehearsals (before Independence and Republic days) are mandatory annually. Experience has clearly shown that the response time is gradually getting better every year.
- As part of the hospital preparedness plan, the AIIMS campus is cordoned by the police during any mass casualty situations or rehearsals for smooth emergency hospital operation.

Conclusion

- Hospital preparedness needs a systems approach based on situation, hazard and capability analysis and must be undertaken long ahead through operational planning and networking.
- In a developing country like India networking of hospitals in disaster management will enhance capabilities, optimize output and increase effectiveness.
- Networking will be a significant contributing factor in achievement of the disaster planning aim of "Saving as many lives as possible by provision of best possible health care".

4.4 A national plan of action for hospitals safe from disasters

No one disputes the importance of health facilities that are safe from disasters and able to function in the aftermath. However, turning this goal into a concrete reality is too big a job for the health sector alone. Changing the way people view the issue, and more importantly, changing policy, require advocacy and outreach with many sectors and constituencies. It requires a top-down approach, where decision-makers pass and enforce legislation that mandates how and where these facilities are built. It also requires a bottom-up approach, where communities participate in the process of identifying risk and calling for national action to ensure they will not be left without access to health services.

As a step in this direction, participants drafted the outline of a national plan of action:

- **Preparatory work:** Risk assessment, vulnerability analysis, stakeholder analysis, policies and legislation and an institutional and legal framework.
- **Objectives of the plan:** To safeguard the structural integrity of a health facility from the impact of disasters; to be able to provide health services to disaster victims during and following disasters.
- **Activities** relating to a national plan for hospitals safe from disasters:

For health facilities in the planning or design stage

- Vulnerability/safety assessment
- Guidelines
- Multisectoral committee
- Bylaws/Codes/Zoning
- Monitoring/Agency certification etc.

For existing health facilities

- Risk mapping
- Vulnerability and hazard assessment and identification of tools to carry these out

- Identify and fill critical gaps in structural and nonstructural mitigation measures
- Establish criteria for prioritization

For both new and existing facilities

- Training
- Awareness and advocacy
- Accreditation
- Hospital emergency plans and exercises
- Establishing linkages with the national disaster management plan or the plan of other health agencies and civil society
- Monitoring/Evaluation and indicators
- Conduct research/creating an evidence base/document good practices as well as failures
- **Funding:** Prepare a budget and seek funding both at national level and from other sources.
- **Phasing in and timeline:** Prepare a realistic timeline for multiple phases of achievement, including targets.

Establishing a national plan for keeping health facilities safe in disaster situations is a multisectoral process and a wide variety of actors must participate in the process including:

- Ministry of Health, and in particular, the department responsible for hospital design, construction and/or maintenance
- National disaster management organization
- Ministries of interior, finance, planning and other related institutions
- Ministry of department of construction/development/public works
- Technical/academic/research institutions and agencies

- Professional (Associations of engineers, architects, etc.)
- Local-level government ministry and/or representatives of federal states
- Hospital associations
- National body in charge of hospital accreditation
- Representatives of civil society
- Media
- International agencies

4.5 Country priorities for moving the agenda forward

- Start with building awareness and consensus around the issue of health facilities safe from disasters among all stakeholders and in particular, with decision-makers, political representatives and the Ministry of Health.
- Conduct a national consultation on safe hospitals with various stakeholders and create a national task force as a way of bringing stakeholders together.
- Conduct vulnerability assessments in the most hazard-prone areas or apply tools such as the Hospital Safety Index in health facilities at highest risk, gradually phasing in all hospitals and health facilities.
- Prioritize the recommendations of all the previous assessments for implementation
- Finalize a comprehensive health sector plan for disaster risk reduction and preparedness in the health sector.
- Build capacity in technical and managerial areas of risk reduction and preparedness. Develop training modules on this issue to be incorporated in existing training workshops that can be piloted in key provinces
- Explore potential partnerships to carry out pilot projects in one or more health facilities in a high risk or vulnerable area.

- Through existing initiatives such as “safe communities”, introduce the concept of “hospitals safe from disasters” and introduce the variable into ongoing data collection checklists, etc.
- Embark on a mapping exercise of safe health facilities, ensuring that all hospitals have a disaster plan.
- Stimulate research.

4.6 Next steps

Pending the formulation and approval of a Safe Hospital Plan, a few concrete steps can be undertaken immediately at country level:

- Enquire whether there are special building codes and norms for critical facilities such as hospitals.
- Become an advocate for the topic through official channels and face to face meetings.
- Encourage the Ministry of Health to hold a “Safe Hospitals” workshop, involving all institutions and pertinent sectors.
- Make contact with the ISDR National Platform in your country, or where no Platform exists, with the Hyogo Framework for Action Focal Point to raise the level of awareness of health risk reduction.
- Review and/or develop a safety index (vulnerability indicators) at national level and apply it starting in the most vulnerable areas.
- Assign the task and responsibility of monitoring safety in health facilities to the hospital disaster management committee.
- Plan a celebration to mark World Disaster Reduction Day (8 October 2008).
- Approach authorities responsible for hospital accreditation and advocate safety as one of the criteria.

5. Strategic partnerships

During the panel discussion on “partnership for safe hospital initiatives”, it was noted that the regional activities as part of the World Campaign for Disaster Reduction has already been undertaken by WHO in close cooperation of ISDR;

- First meeting of the Regional Task Force on Safe Hospitals (RTF/SH) for the whole Asia and Pacific region was held on 25 January 2008 in Bangkok.
- Besides the ongoing regional Consultation for SEA Region, the Western Pacific Region is planning to initiate regional launching during March 2008.

The panel also recommended the following points relating to the “Safe Hospital Initiative”;

- Development of a **Regional Task Force on Safe Hospitals** under WHO and UN/ISDR’s leadership, with the involvement of key regional partners, for regular consultations and distribution of responsibilities to facilitate the development and implementation of a joint regional strategy on safe hospitals and related workplan.
- **Mapping out** of existing (and planned) activities and successful safe hospitals initiatives. Analyze information (gaps and synergies, cross-cutting issues and opportunities for collaboration) and establish linkages with/build the regional strategy on ongoing initiatives.
- **Selection of pilot countries** (to be defined according to WHO’s and ISDR’s “focus countries” on the occasion of the 25 January meeting in Bangkok) to organize **national consultations** with key national and in-country actors.
- Develop **joint awareness-raising and promotional materials** on the issue of Safe Hospitals, including articles for the press.
- Organize specific events, discussions and exhibition on the issue of safe hospitals as part of the agenda of the following **major regional policy events on health and disaster risk reduction:**

- (1) WHO Ministerial Conference (August 2008);
 - (2) Third Asian Ministerial Conference on Disaster Risk Reduction (Malaysia, 2008) — explore link with PPP; and
 - (3) Global Platform on Disaster Risk Reduction (June 2009)
 - (4) G8 Summit (7-9 July 2008, Hokkaido, Japan)
- **Collection of good practices** on safe hospitals throughout the Asia and Pacific region
 - **Contribute to WHO-SEARO monthly publication *Focus*, other WHO publications and UN/ISDR biannual newsletters**
 - **Link websites** between WHO Regional Offices, UN/ISDR Asia and Pacific and key regional partners to give visibility to joint regional activities on safe hospitals

6. Recommendations and framework for actions

6.1 Action by the Member countries

- (1) Adopt the outline of a national plan of action for safe hospitals; adopt the proposed changes to the indicators for Benchmark 11 on safe health facilities, dealing primarily with:
 - advocacy
 - the national hospital accreditation/certification process
 - contingency planning and drills for existing health facilities
- (2) Establishment of “Safe Hospital Committees” consisting of health system planners, engineers & architects, health system financiers and health system managers.
- (3) Identification of new health facilities which are at planning and implementation stage in order to insulate them against disaster impact.
- (4) Developing a contingency planning for those health facilities which are already functioning to make them safe against disaster situations.
- (5) Providing capacity building tools and training to the health system managers.

- (6) Orientation to the funding agencies with the magnitude of problems.
- (7) Mobilizing necessary administrative support and political Commitment.

6.2 Regional level action

- (1) Request WHO as the Regional health body to place the issue on the agenda of the next Regional Committee meeting of Ministers of Health.
- (2) Include this topic on the agenda of the sub-regional committee of the ASEAN Secretariat.
- (3) Link to the Regional Platform for disaster risk reduction for Asia/Pacific (already created) to ensure agenda visibility at the December 2008 Ministerial Meeting in Maylasia.
- (4) Review immediate steps outlined during the meeting with national counterparts.
- (5) Go beyond the national level to provide support to the Regional Framework of Action by:
 - (a) Supporting the creation of a Regional Task Force on Hospitals Safe from Disasters
 - (b) Information collection and dissemination activities
 - (c) Advocacy activities such as the World Disaster Reduction Day
- (6) Incorporating the issue of safe health facilities in current activities in national workplans and existing initiatives.

7. Concluding session

The meeting was formally adjourned on Thursday, 17 April by Dr. Poonam Khetrupal Singh, Deputy Regional Director of WHO/Regional Office for South-East Asia with the commitment to participants to take this issue forward to WHO's Regional Committee meeting in September 2008.

Annex 1

Benchmark indicators of “hospitals safe from disasters”

In recognition of the vulnerability of this Region to disasters, the 11 SEA Region Member countries formulated 12 benchmarks on emergency preparedness and response. The benchmarks integrate multisectoral concerns at community, sub-national and national levels. One benchmark, number 11, deals specifically with the topic of this Regional Consultation. It states that: **health facilities will be built or modified to withstand the forces of expected events.**

Two years ago, indicators were developed to help countries measure progress and to standardize the collection of information around this benchmark, thereby facilitating reporting at regional and global level. The indicators were grouped around **new** and **existing** health facilities.

At this regional consultation, countries were asked to consider the current list of indicators and, based on experiences over the last several years, include other indicators as appropriate.

The chart below presents the original indicators adopted in 2006 (regular typeface) and the additional indicators proposed for inclusion (**bold** typeface). The first chart deals with proposed indicators for **planned or future** health facilities. The second presents additional indicators proposed for **existing** facilities.

Benchmark Standards	Health Indicators	Non-health indicators
Planned/future health facilities are going to be built to withstand expected risks and will be able to continue to provide the required medical care at all times.	<ul style="list-style-type: none"> – Guidelines for building new health facilities are available at national level and strictly followed at local level – Risks and threats to lifeline infrastructure is considered in the design of new health facilities and internal back-up facilities are in place (e.g. generators, water tanks/wells with manual pumps) 	<ul style="list-style-type: none"> – A national building code with adequate standards for existing hazards is passed, enforced and reviewed periodically for health facilities – Safety of health facilities is included in awareness and education campaigns for decision makers and the public

Benchmark Standards	Health Indicators	Non-health indicators
<p>Existing health facilities have undergone risk mitigation and reduction to improve their security and ensure functionality during emergencies</p>	<ul style="list-style-type: none"> - Risks and threats from existing and potential hazards (natural and environmental including BCR, climate change) are assessed in all key health facilities (e.g. hospitals, blood banks, laboratories, health posts) using a national standardized safety index or methodology - Assessed risks in health facilities are prioritized and essential problems are mitigated and reduced - Health facility maintenance staff is trained in mitigating the non-structural risks of the facility and regular resources are available for risk mitigation - Hospital emergency plan in place, which outlines emergency management, mass casualty - Regular mock drills conducted (frequency determined by national/sub-national levels) - Monitoring inputs for implementing the codes/bylaws followed by structural/non-structural accreditation / certification by competent authorities - Damage to health facilities from natural disasters and subsequent reconstruction is documented and shared, contributing to a knowledge base - Multisectoral national committees exist, from local up to central level, that have adopted “hospitals safe from disasters” as a priority 	<ul style="list-style-type: none"> - Risks from existing hazards are assessed for all essential life-lines and infrastructure (e.g. water supply systems, electricity, access roads and bridges, sanitation and waste management, communication and Networking) - Assessed risks to life-line systems and infrastructure are prioritized and essential problems are mitigated and reduced - Safety of health facilities is included in awareness and education campaigns for decision makers and the public - Regional progress towards increasing safety of health facilities will be included in the UN/ISDR Global Assessment Report that is currently being prepared for the 2009 Global Platform Meeting

Achieving Benchmark 11 is a long-term process and the safety of health facilities in disaster situations must also be viewed as a long-term goal. However, the ISDR/WHO World Disaster Reduction Campaign can be used to further the short-term goal of raising awareness and building consensus among many stakeholders, particularly at the decision making and political levels. Sustainability of this initiative will depend on developing partnerships with the greatest number of actors possible.

Countries must prioritize interventions, based on specific hazard scenarios, their degree of vulnerability and existing capacity in the country.

In the coming years, the gradual achievement of the SEA benchmarks at various levels will serve to build capacity, secure intersectoral linkages, improve planning and legislation and ultimately reduce the vulnerability of communities and systems.

Annex 2

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Annex 3

Agenda

- Opening Session and Launch of the Hospitals Safe from Disasters Campaign
- Introduction to the Global risk reduction initiatives and regional (SEARO) action in the Health Sector;
 - Disaster Hyogo Framework for Action (HFA) meeting 2005
 - Briefing on SEARO Benchmarks for Preparedness and Risk Reduction
- Introduction to Thimphu Declaration on importance of safe health facilities
- Description of Health Facilities Safe from Disasters
- Regional issues, challenges and solutions on structural, non-structural and capacity building issues for safe health facilities
- Strategic partnerships for safe hospitals
- Recommendations and Frameworks for National and Regional Actions
- Concluding session

The Hyogo Framework for Action (HFA), endorsed by 168 countries at the World Conference on Disaster Reduction in Kobe, Japan (2005), provides a global blueprint for disaster risk reduction and calls on nations to “promote the goal of “hospitals safe from disasters” by ensuring that all new hospitals are built with a level of resilience that strengthens their capacity to remain functional in disaster situations, and to implement mitigation measures to reinforce existing health facilities, particularly those providing primary health care. The HFA suggested that this initiative be adopted as one of the priority actions to be implemented by 2015.

The secretariat of the UN International Strategy for Disaster Reduction (UN/ISDR) and the World Health Organization (WHO) together with the World Bank are partnering with governments, international and regional organizations, nongovernmental organizations and individuals worldwide to raise awareness about how and why we must redouble efforts to protect health facilities and ensure they can function during and in the aftermath of disasters. The theme of the World Disaster Reduction Campaign 2008-09 is “hospitals safe from disasters: reduce risk, protect health facilities, save lives”.

The regional and the global focus on this issue offer an important opportunity to bring about meaningful change. In light of the above, a regional consultation on keeping health facilities safe from disasters was organized at the WHO Regional Office for South-East Asia to discuss the issue with Member countries to consider solutions to the challenges related to this topic.



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