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Hospital Preparedness for Emergencies

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Hospitals Safe from Disasters



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- Hospitals should remain functional after disasters
- Often, hospital leaders in Asia adopt an **evacuation policy** aftermath an earthquake



Hospitals Safe from Disasters



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Hospitals are not like schools, office buildings, hotels.

Hospitals must function after an earthquake.





Background



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Structural Engineers and Doctors with vast disaster experiences in Asian health systems developed a training module for hospitals in disasters

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To discuss a regional course called *HOSPITAL PREPAREDNESS FOR EMERGENCIES (HOPE)* to train hospital staff on rapid assessment tools for structural damages, the functional collapse of hospitals and emergency response therein.



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Asia - natural & human generated disasters

- lack of advanced Major Emergency Management.
- burden on hospitals to cope w/ mass casualties

1998 HOPE Course developed for Asian countries:

Philippines

India

Indonesia

Nepal

Bangladesh (2003)

Pakistan (2007)



All 6 countries - RISK for earthquakes



What is HOPE?



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- Intensive 32 hours; 4 days
- enhance hospital preparedness and emergency response
- structural, non-structural, and functional concerns



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- *Overview of Disasters and Health*
- *Disaster Risk Management*
- *Seismology Concepts*
- *Structural and Non structural Assessments of Hospitals*
- *Operational and Functional Components*
- *Emergency Department Concepts*
- *Mass Casualty management*
- *Triage*
- *Resuscitation & Disaster Medical Care*
- *HEICS*
- *Hospital Disaster Planning*
- *Mgt of Dead bodies*
- *Psychosocial issues*
- *Mgt of Resources*
- *Return to Normal Operations*
- *7 Exercises/Table top Simulations/Role play*



Purpose of HOPE Course



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- To enhance hospital based preparedness and response in Asia.
- To coordinate engineers, clinical & administrative leaders in hospital based disaster risk management together:
 - Principles of disaster risk management
 - Working together to make steps toward preparing each hospital to respond to disasters and MCI's



HOPE Course Objectives



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Performance Objectives:

By the end of the course, depending on the Disaster scenario, the participant will be able to:

- Conduct a vulnerability assessment of the hospital
- Develop a hospital preparedness and response plan
- Conduct a disaster response



Program for Enhancement of Emergency Response-PEER



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Principal Courses

- MFR
- CSSR
- HOPE

Instructor Workshops

- TFI
- MFRIW
- CSSRIW
- HOPEIW

Subsidiary Course

- Canine SAR

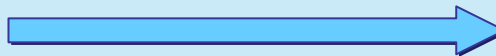


Relationship of PEER Courses

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Disaster



CSSR
Extraction



HOPE Hospital



MFR Medical first responder



HOPE Development

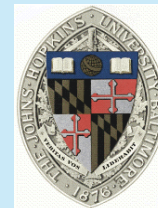


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- Funding - USAID OFDA
- ADPC
- curriculum by Asians for Asians
- NSET
- JHU (CIEDRS) - course review



adpc



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1. Agreements w/
national authorities
2. Cooperation and
support given to
identified institutions
3. Delivery of Regional,
Sub-regional, and
National Courses



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1. HOPE TFI IW
2. OFDA supports in the national implementation of HOPE through grants, materials and expert guidance
3. Monitoring /Evaluation (Standardized)
4. Network of HOPE Experts across Asia



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- MOH & NIPSOM
- Sub-regional HOPE course in July 2004
- National HOPE course in Dhaka, March 2005



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- MOH & National Medical, Hospital and Surgeons' Associations
- >15 national courses
- Disseminated by region
- Financial Sustainability





HOPE Indonesia



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- *>20 HOPE grads deployed to Aceh tsunami*
- *1st functional hospital w/in initial 24 hrs*
- *2nd Bali Bomb blast utilized HOPE grads*
- *Translated to Bahasa Indonesia*





HOPE Philippines



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- Department of Health (DOH)
- Office of Civil Defence (OCD)
- Region VI
- Most HOPE Instructors
- Assists in HOPE courses internationally
- 2004 landslides, ULTRA stampede, Leyte landslide, Mercury poisoning, typhoon Frank



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- National Adaptation by DOH-HEMS (Health Emergency Management Staff)
- Output is an updated hospital emergency and response plan for hospitals



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- HOPE program
EMR, MOH
- 3 HOPE-TFI Courses
(Delhi, Pondicherry,
Calcutta)
- Local
government and
WHO funding





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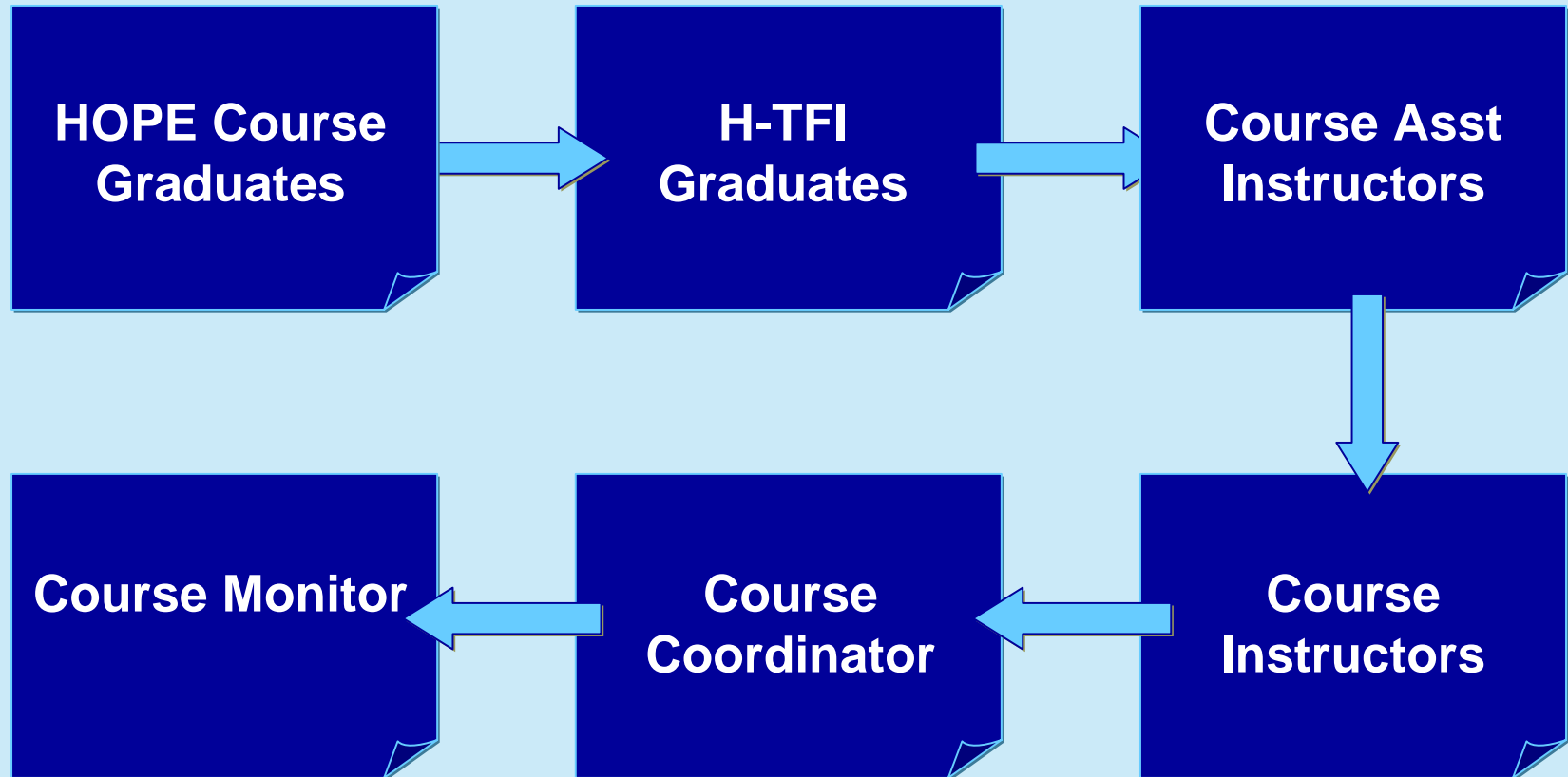




PEER Instructor Development Process



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Hospital Emergency Preparedness and Response



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- Asian Disaster Preparedness Center (ADPC)
- Conducted annually for non-PEER member countries
- Graduates from non-PEER countries: South Africa, Malaysia, Hongkong, Thailand, Fiji, Maldives etc.



HOPE 2nd ed.



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- February 2008
- Update and include other hazards
- First course was earthquake oriented
- Updated with a multi hazard approach

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Earthquake

Fire

Flood

Strong winds



Table 2. Structural Damage Assessment Tool



Level of Damage to Structural Elements (for Each Floor)

Building ID:

Floor No:



Vertical Elements

Element Description	PEER	N L M H UNK NA
Racking of Main Walls		
Racking of Cripple Walls		
Buckling, Crippling, Tearing of Steel Beams, Columns or Braces		
Spalling or Cracking of Concrete Columns or Beams		
Column Crushing Due to Overturning or Discontinuous Lateral Resisting Elements		
Diagonal Cracks in Columns		
Cracks in Shear Walls		
Percentage of Shear Walls With Cracks %		
Rocking of Shear Walls		
Damage to Shear Wall Coupling Beams		
Infill Walls Damaged or Fallen Out		

Horizontal Elements

Element Description	N L M H UNK NA
Roof Collapse % of Diaphragm	
Floor Collapse % of Diaphragm	
Loss of Vertical Roof Support % of Roof Area Affected	
Tearing of Diaphragms at Other Points of High Stress % of Diaphragm	
Damage at Re-entrant Corners	
Damage to Collectors at Walls	

Connections for Steel Structures

Element Description	N L M H UNK NA
Beam-Column Connection Damage (Including Panel Zones)	
Column Splice Damage	
Damage to Brace Connections	
Damage to Column-to-Foundation Connections	
Damage to Connections of Precast Elements Structural Elements	

Overall Vulnerability Rating of Floor:

H M L N

Operational and Functional Components Assessment Tool

Table 1: Level of Risk for Non-equipment OFC Elements

Priority	OFC elements	Location	Quantity or area	Level of Risk				Engineer Required	Observations
				Risk to Life	Loss of Property	Loss of Function	Loss of		
	Air conditioning	Ceiling windows	/						
	False ceilings	Everywhere							
	Water heater	Service room							
	Shelving	Storage areas							
	Medium height partitions	Workstations							
	Hanging/ suspended fluorescent lights	Office, lobby and corridors							
	Interiors	Everywhere							
	Facades	Building exterior							
	Comices	Building exterior							
	Chimneys	Building roof							
	Glass	Doors and windows							
	Antennas	Building roof							
	Other (specify)								

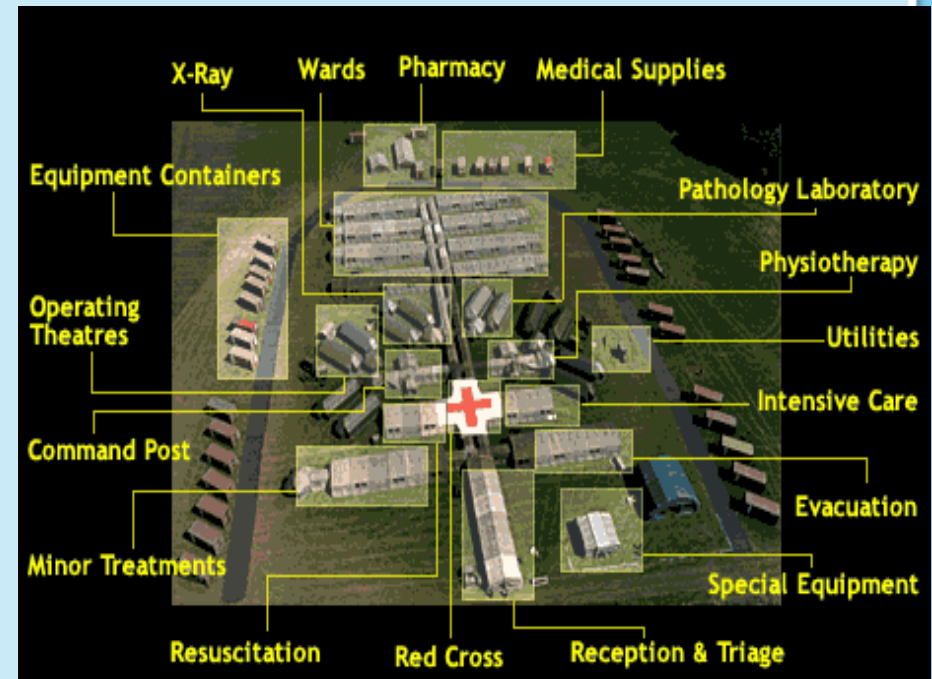
Note:

Level of risk is in terms of H (High), M (Moderate), and L (Low).

Observations column should describe general condition of the element.

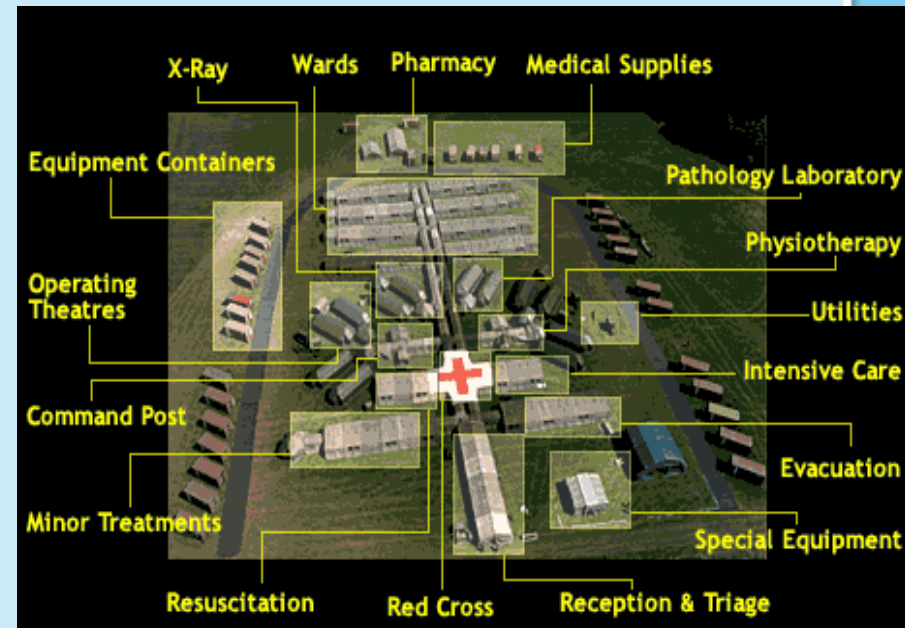
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- Assessment of structural and non-structural hospital components
- Assessment & recommendations are carried out



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- Continuous national training
- *HOPE-trained decision makers in Hospitals*
- *Hospital emergency plans updated*





HOPE approach & Hospitals Safe from Disasters



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Stay and defend concept – maintain hospital's vital functions

Partial evacuation maybe better than total evacuation of partially damaged hospitals.

Avoiding tent hospitals and using parts of a hospital w/o structural damage.



Summary



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A training module for hospital emergency managers.

Hospital preparedness applied in resource-limited health systems



Summary



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HOPE Assessment Tools are significant paradigm shifts in a hospital's response after earthquakes and other hazards -- many lessons in the management of such disasters in Asian health care delivery systems.

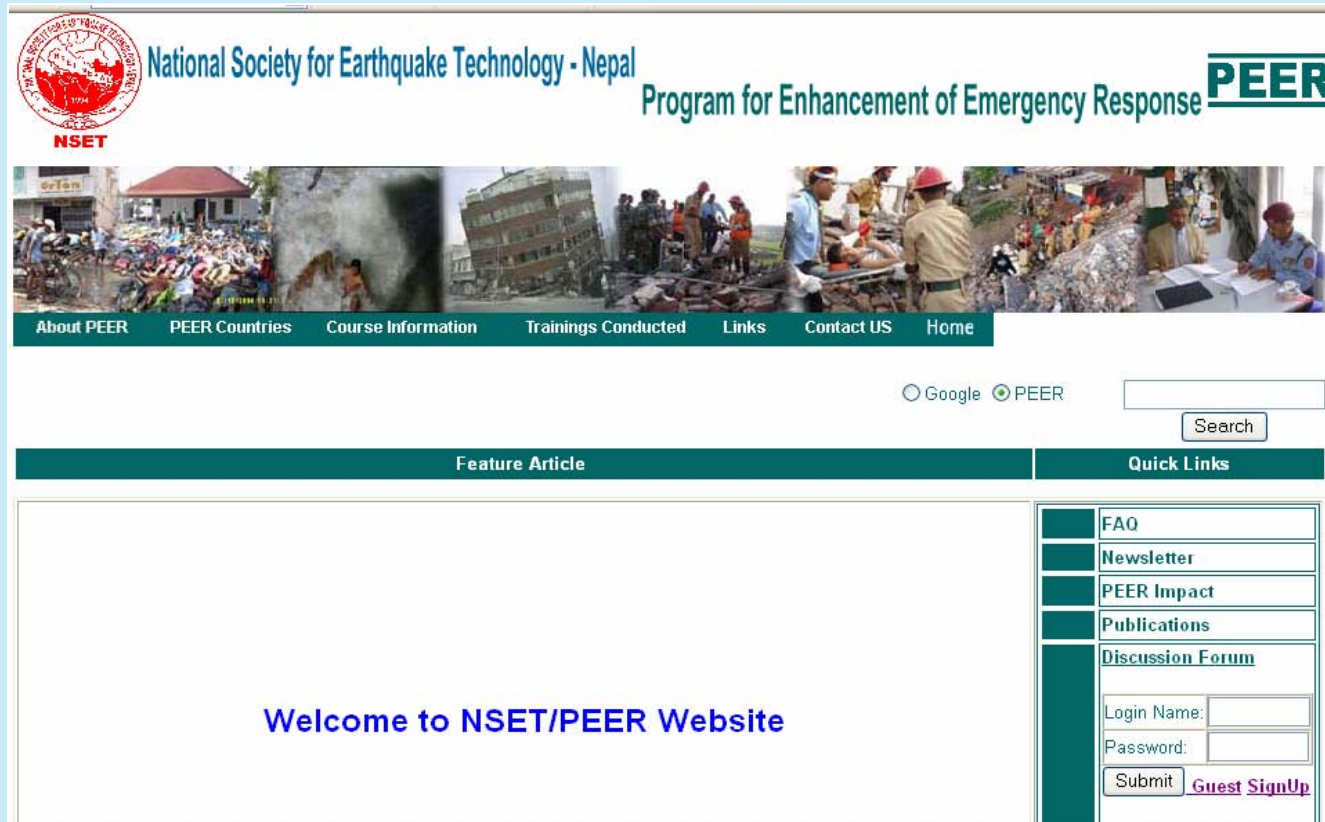


PEER Website



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The screenshot shows the homepage of the PEER website. At the top left is the NSET logo. The main header contains the text "National Society for Earthquake Technology - Nepal" and "Program for Enhancement of Emergency Response" followed by the "PEER" logo. Below the header is a banner image showing various scenes of disaster relief and emergency response. A navigation menu includes "About PEER", "PEER Countries", "Course Information", "Trainings Conducted", "Links", "Contact US", and "Home". A search bar is located on the right side of the page, with radio buttons for "Google" and "PEER". Below the search bar are two columns: "Feature Article" and "Quick Links". The "Feature Article" section contains the text "Welcome to NSET/PEER Website". The "Quick Links" section includes links for "FAQ", "Newsletter", "PEER Impact", "Publications", and "Discussion Forum". At the bottom of the "Quick Links" section is a login form with fields for "Login Name:" and "Password:", a "Submit" button, and a "Guest SignUp" link.

<http://www.nset.org.np/peer>