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I am thankful to the UNISDR for providing me this opportunity to speak in this august assembly on the International Day of Disaster Risk Reduction dedicated to the cause of hospital safety.

Most of us are probably aware, India's geo-climatic conditions make it vulnerable to natural disasters like earthquake, cyclones, floods, drought etc leading to a sizable number of human casualties. In addition, various man-made disasters and peripheral emergencies also account for large number of mortalities and morbidities. India witnessed some of the worst natural catastrophes of the recent years, such as the Orissa Super Cyclone of 1999, the Gujarat earthquake of 2001, the Indian Ocean Tsunami of 2004, and most recently the Bihar floods from which we are still recovering.

As one of the key persons coordinating the response efforts from the Government of India to the earthquake of Gujarat, I would like to recall the horrendous experience we had on the fateful day of 26th January 2001, when the country was celebrating its Republic Day, a 6.9 magnitude earthquake hit the Kutch region of Gujarat. It shook 5 towns and 9000 villages. It affected more than 38 million people, leaving 13,811 dead, 166,081 injured, 17000 of them grievously. The health facilities that were expected to treat the injured were completely ravaged. The only referral hospital in the district headquarter town of Bhuj was totally destroyed and all 166 doctors, nurses and other para medical staff on duty were buried under the debris. 1812 other health facilities, sub-district hospitals, Primary Health Centres, dispensaries and sub-Centres were completely destroyed and another 3812 health institutions were rendered inoperative when their services were needed the most. Many health professionals who did survive were traumatized by the death or injuries of their family members, relatives or friends. Breakdown of roads and bridges made it difficult to transport doctors, equipments and other supplies from outside.

Thanks to the coordinated efforts of the local, provincial, national and international agencies we could respond to this massive humanitarian crisis and provide relief and rehabilitation to the people to help them bounce back to their normal lives within a short time. But the real challenge we faced was to ensure that similar disasters do not come back in future and for ever.

In this context I want to share with you some of the lessons we learnt and plans of action we implemented that may be useful for the global communities to adopt and adapt according to their local conditions. I would like to call them Ten Commandments of Hospital Safety.

First of all, we conducted comprehensive seismic survey and vulnerability and impact analysis of all the health facilities in the State;

Second, we developed earthquake resistant building plans and designs for various types of buildings through a group of reputed planners and engineers;

Third, we trained engineers, architects and masons on the use of these designs and technologies;

Fourth, we reconstructed, as per the new technology, all those hospitals and health centres that were damaged beyond repair. The district hospital of Bhuj was reconstructed with state-of-art base isolation technology which insulated the superstructure from the shaking of earth. This would ensure that the hospital would function uninterrupted even if an earthquake of highest magnitude strikes the foundation of the building;

Fifth, we retrofitted all the existing health facilities of the district, irrespective of whether these were damaged by the earthquake;

Sixth, we developed detailed guidelines on non-structural safety of hospital buildings, which included laying of electrical circuits, telecommunication cables, gas pipes, water supply storage and installation of medical and non-medical equipments, furniture etc;

Seventh, we encouraged each hospital to prepare its own contingency plan on emergency preparedness which was rehearsed through simulated exercises;

Eighth, we developed a pre-hospital medical care system, which would enable mobile emergency medical teams to rush to the disaster sites, conduct triage of the injured, provide first aid care at the sites and transport critically injured to the hospitals;

Ninth, we trained doctors, nurses and para medical staff on disaster health preparedness; and

Finally, we trained local communities with the first-aid and other basic emergency response techniques which can be applied to save lives, till professional medical help are available.

The experience we gained and the lessons we learnt in Gujarat were useful to us to respond, in a similar manner, when the Indian Ocean Tsunami hit the coasts of Tamil Nadu, Pondicherry and Andaman & Nicobar Islands on 26th December 2004 and subsequently the Muzaffrabad earthquake of 8th October 2005 affected three districts of Jammu & Kashmir State.

The earthquake and Tsunami reconstruction and recovery programme provided us the mandate as also the resources to build back better for the future. Much more daunting and challenging task is to replicate this process in other parts of the country that had not faced similar disasters.

Excellencies, Ladies and Gentlemen,

In this context I would like to make a mention of some of the interesting initiatives taken by the government in the recent months to enhance the effectiveness of our hospitals to respond to health care needs during emergencies. One of these is the National Highway Trauma Care Project which would upgrade trauma care facilities of 200 hospitals located in high disaster vulnerability zones and provide them with advanced pre-hospital care ambulances services and mobile hospitals with facilities for operation theatres, pathology labs, imaging units and other support functions. These mobile units can even be airlifted to the disaster site at very short notice. Similarly heli-ambulance facilities are being provided to some of the referral hospitals in metropolitan cities.

An Integrated Disease Surveillance Programme has been launched throughout the country which relies on satellite and terrestrial information technology system for collection, collation, analysis and monitoring of health related data. This will serve as an effective Early Warning System for impending disasters like epidemics and pandemics. This along with

National Rural health Mission would improve the efficacy of our health care system to prevent major health related disasters.

An ambitious programme of training of medical doctors, specialists, paramedics on different aspects of management of mass casualties have been taken up. The National Institute of Disaster Management where I work has developed curriculum and training modules on disaster health care for different types of health functionaries. We have developed a template for the preparation for Hospital Emergency Preparedness Plan and this will be circulated to the health institutions all over the country for developing their respective plans and rehearsing them at regular intervals.

The private health care institutions of the country have been involved with disaster health care system with designated roles and responsibilities on a Public-Private-Participation mode and the response so far has been extremely encouraging.

The National Disaster Management Authority created under the Disaster Management Act of 2005 has issued comprehensive guidelines on Earthquake Risk Management and Medical Preparedness and Mass Casualty Management. Both these guidelines have prescribed retrofitting of all life line structures. Hospitals figure on top of this list. The Planning Commission has earmarked an allocation of INR 100 billion equivalent to US\$ 2.5 billion for implementation of these guidelines during the Eleventh Five Year Plan period starting from 2007.

Excellencies, Ladies and Gentlemen,

All these initiatives shall be expected to make our hospitals more safe from disasters than these are at present and further enhance their capabilities to provide better health care service after disasters.

Thank you all for giving me a patient hearing.