

portions of the sidewalks. Therefore, pedestrians walk on the road instead. Because of the recent growth in the numbers of vehicles, road traffic has increased. The people are less aware of the road safety issues and often violate the Motor Vehicle Act while driving on the road or walking on the sidewalk. The Indian Railway is the second largest railway in the world, and is the highest employment generating industry in the world. Several railway safety measures are violated by the passengers, staff, and others regularly. The level crossings in one area contribute the highest number of railway accidents. In addition, fire safety measures sometimes are ignored. The infrastructure facilities and the repair and maintenance of existing infrastructures are lacking. Air crashes are a serious concern in India and requires urgent attention from the authorities. Capsizing boats are another problem, which must be studied.

Conclusion: There is a need for the development of a comprehensive action plan to combat the road, rail, and air crashes. People worldwide must take this problem seriously and take appropriate action.

Year	Number of registered vehicles	Road crashes	Persons killed	Persons injured
1970	1,401	114.1	14.5	70.1
1975	2,472	116.8	16.9	77.0
1980	4,521	153.2	24.6	109.1
1985	9,170	207.0	39.2	163.4
1990	19,152	282.6	54.1	244.1
1995	30,287	348.9	70.6	323.2
2000	48,857	391.4	78.9	399.3
2001	54,991	394.8	80.0	382.7

Table 1—Road traffic crashes in India (in thousands; This does not include data from Bihar and 14 districts of UP, due to unavailability; Source: Road Safety Cell, Ministry of Road Transport and Highways; This is the registered figure, but a large number of crashes are not included because both the deaths and the accidents were not registered with the Police Authority; Road infrastructure currently is developing very rapidly in India. Several Highways are being developed, and a large number of new cars and other vehicle populations are coming into the market, which increases the road accident vulnerability; Train accidents, boats capsizing, and air crashes are not included.)

Keywords: accidents; air; evaluation; India; road; safety; traffic; trains; vehicles

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Getting Beyond the Physician-Centered Response to Biological Warfare and Infectious Disease: Physicians Are Not the Only “First Responders”

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The majority of systems, training, and preparedness for biowarfare and epidemic in the United States today are

focused on the idea that the physician will not only be the principal, but the first and almost sole responder, to any major medical crisis. This is simply not the case. Based on past experience (ranging from various outbreaks of emerging disease to anthrax), it was found that medical professionals, non-medical professionals, and volunteers provided a far greater proportion of response than physicians. Indeed, once past the earliest stage of detection and diagnosis, the role of the physician as “first responder” is reduced significantly. Consider the classic example of smallpox. After the first diagnosis, the entire medical system will shift drastically so that response is no longer dependent on the physician as a primary medical advisor. Instead, the focus will shift towards population treatment with physicians acting as managers and troubleshooters, no longer first responders or diagnosticians.

Health care has evolved and developed over thousands of years to create an aura around the concept of “physician centrism,” in which doctors are considered the key arbiter of life and death and provider of medical aid. In today’s world of complex disasters, physician-centered response to medical events is no longer practical, possible, or even desirable. Also, the technological advancement of hospitals and hospital-trained physicians make it less likely that all physicians will be ready and adaptable to provide treatment in an uncontrolled and basic disaster environment.

As a whole, modern societies have an increased understanding of medicine and access to medical references. Also, the advent and wide availability of medical technologies, such as automated external defibrillators (AEDs) and blood pressure cuffs to monitor glucose levels have increased the population’s capacity to care for and monitor themselves. But more importantly, modern healthcare systems have diversified to where medical service is provided by a variety of professionals other than physicians.

This presentation will address some of these issues and present a different approach to preparedness, namely one that relies more heavily on the diverse array of assets expected to be available rather than focusing preparedness on the very skilled, but low availability, asset of the physician.

Keywords: disaster; emergency; first responder; hospital; physician; professional; society; technology

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Survey of the Medical Needs and Living Conditions in the 2003 Iran Earthquake

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Objectives: To identify serious cases and to determine the sanitation conditions following the earthquake in Bam, Iran from the acute to the sub-acute phase.

Methods: The Japan Disaster Relief (JDR) medical team surveyed 15 refugee households (75 persons total). The medical team asked questions regarding the health, water, and sanitation conditions.

Results: The main problems were respiratory disease (6 cases) and trauma (4 cases), but not serious injuries. There was one case of psychological stress. Public health conditions were fairly well maintained, with bottled water avail-

able. However, sanitation was a problem, with a shortage of toilets and latrines. Because bottled water was distributed, water-borne diseases were not an issue. Some people complained that food and other relief goods were not distributed in a balanced way.

Conclusions: Respiratory disease needs to be a primary concern, followed by psychological problems. More latrines should be made available. Recovery from the acute to the sub-acute phase was fairly good, with the exception of psychological stress. The probability of spreading infectious disease was low.

Keywords: acute phase; earthquake; Iran; Japan Disaster Relief; refugee; respiratory disease; stress; sub-acute phase; survey

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Casualty and Damage Estimation—Accuracy and What Affects It

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At the onset of a disaster, whether it is natural or human-made, the general public and research professionals first learn details from the news media. In this age of CNN, the Internet, and e-mail, mass distribution of information through news wires is the staple source of information, good or bad, accurate or inaccurate. Casualty estimates are useful pieces of data because they provide an indicator of the magnitude of the disaster, and include the number dead-on-scene (DOS), critically wounded, number admitted to local hospitals, number of injured/exposed, and the total number dead, including those who have died-in-hospital (DIH). Casualty estimates also can include the number of children and elderly who have been injured or killed, or the casualties for other subsets of the population such as emergency workers. These estimates are vital for assessing the extent of a disaster, and ultimately, the level of resources that need to be applied.

This presentation examines the accuracy of reports versus final accepted results. Not only does this study try to examine how long it takes to arrive at a confirmed number of dead and injured/exposed, but also the deviation of numbers and their related causes. For example, in the original reports of those killed in the 11 September 2001 attacks, a reported 30,000 persons were killed in both World Trade Center towers combined. A year and a half later, the true estimate was closer to 3,000, an estimate one-tenth of what was previously predicted. This same type of disparity is common throughout many disasters, both human-made and natural.

This study also will serve to explain and discuss why casualty figures deviate and what might influence their ultimate reporting to the public, such as the number of missing individuals, chaos of the scene, lack of centralized reporting authorities, wide region of land affected making victims untraceable, political pressure, and unknown census/population figure estimates. Conclusions then will be drawn and methods will be provided that may be used to assess damage at the onset of an incident more accurately.

Keywords: assessments; casualties; data; disaster; estimates; figures; human-made; natural

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Linking Disaster Preparedness and Sustainable Development

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Introduction: Emergency planning is radically different from planning under normal circumstances. It must be quick and fit for the situation. Planning can be results-oriented, cost-effective, economic, timely, people-oriented, and rapid, if preparedness initiatives are taken earlier. The Indian sub-continent is vulnerable to droughts, floods, cyclones, sea surges, earthquakes, avalanches, forest fires, and man-made events, like traffic crashes, fires, chemical accidents, and violence. The West Bengal Voluntary Health Association (WBVHA) has been working in the state of West Bengal, India for >30 years in the health and development field with active cooperation and involvement of non-governmental organizations (NGOs), community-based organizations (CBOs), Panchayati Raj Institutions (PRIs), government, and professional national and international agencies.

Disasters commonly inhibit the development of the community and the country as a whole. There are not any alternatives by which one can avoid potential “hazards”, but one can avoid “disasters” by implementing effective means of “preparedness”. The WBVHA is one of the primary players in the state of West Bengal, promoting community-based, disaster preparedness for sustainable development, and believe it is necessary to link “disaster preparedness” with “sustainable development”.

Through disaster preparedness, several initiatives, such as vulnerability assessment coordination, cooperation, planning, mitigation, institutional framework, information systems, resource base, warning systems, response mechanisms, and education. All these exercises help people to be united, task-oriented, and alert. This is the correct time to link the preparedness initiatives into sustainable development by means of linking development into vulnerability reductions, making room for agriculture, small-scale industries, and housing loss reductions. Also, efforts to assist people becoming organized and action-oriented will minimize the damages. Making people organized to face disasters, will reduce the loss of life and property. Well thought-out initiatives will help overcome the losses of agriculture and crop failure. All development activities, especially the buildings and other infrastructures must be earthquake and hazard resistant. Education at all levels must be complete so that every person can take appropriate measures at the time of an emergency without becoming dependent. The rescue and other services should be strong enough to manage the situation within very little loss. Rehabilitation and other planning must incorporate so that the suffering and economic loss can be reduced.

Conclusion: Well-organized disaster preparedness initiatives can bring a successful, result-oriented, sustained development by which the people will be the ultimate beneficiaries. The community must be involved in the planning and decision-making processes to incorporate Disaster Preparedness initiatives into sustainable development.

Keywords: disaster preparedness; emergency planning; India; West Bengal Voluntary Health Association (WBVHA)

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