

Haiti: Lessons Learnt

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On Tuesday January 12, 2010, an earthquake measuring seven on the Richter scale struck Port-au-Prince, Haiti, resulting in extensive loss of lives and destruction of the city's infrastructure. The initial estimated death toll was 150 000. This disaster drew world attention for three reasons: the high death toll, the relative lack of established systems within Haiti and the poor state of the economy to cushion the impact of such a disaster. There was an urgent need for international help to mitigate the effects of the disaster. Countries responded by sending emergency disaster teams which included search and rescue. Healthcare professionals were also among the groups of first responders. Larger countries established their own field hospitals which they fully equipped and staffed by their own nationals while others used existing facilities that were safe to establish their base. In this latter group, there was more integration between the surviving local Healthcare professionals and international staff.

The Government of Jamaica through the Ministry of Health's Emergency Disaster Management Unit had its personnel assess the situation and dispatched a team to Haiti. The initial team comprised general and orthopaedic surgeons, anaesthetists, public health officers (doctor, nurse and inspector), midwives, staff nurses, emergency medical technicians, a health education officer and a plaster technician. In preparation for departure all healthcare workers had to be fully immunized and started on malarial prophylaxis.

Jamaica's primary hospital base was at the Bernard Mevs Hospital which was structurally sound. This was a privately run facility which offered day case surgeries prior to the earthquake. Other members of the team were involved in outreach clinics doing well needed primary healthcare while yet another group assisted at a hospital in Freres which had an international contingent.

The team at Bernard Mevs Hospital was able to establish triage, out-patient and operating facilities. Soon a coordinated system evolved out of the chaos. In-patients were housed in tents, or simply on the floor or grounds of the

hospital compound. The majority of surgeries performed were fasciotomies for crush injuries, debridement for gangrene and limb ablation. Those with closed fractures had plaster casts or skin traction applied. With so many patients undergoing surgery for sepsis, most wounds had to be left open and had delayed primary closure. Medical supplies and drugs were obtained from several sources: the locally available hospital supplies, Ministry of Health, Jamaica, Food for the Poor, other international donors and the United Nations.

The team was able to do limited physical therapy and rehabilitation, confined primarily to crutch walking. Most were unable to be mobilized as they had lost for example, two limbs or were too weak due to the metabolic effects of sepsis. There will be a great need for prostheses and rehabilitation specialists on a protracted basis due to the number of amputees.

In the midst of the overwhelming trauma, there were the other medical problems that had to be dealt with; diabetics, hypertensives with stroke, malaria, pneumonias, paediatric and obstetric cases to mention but a few. Those patients who were paralysed from spinal injuries who survived were particularly affected due to the inadequate nursing staff.

Once patients were deemed medically fit for discharge, they were sent home. Unfortunately many had nowhere to go as they had lost their homes or family support. This led to severe congestion as the hospital had to function as an acute care facility, a convalescent centre and a home. This was not peculiar to the Jamaican experience.

An area that up to this point has not been addressed is the need for extensive psychological counselling. Simply surviving an earthquake which left such devastation is a major traumatic event for the affected persons. This was often compounded by the loss of limbs, family members and home. This trauma was relived with the frequent aftershocks where staff and patients (those who could) would flee from the buildings screaming.

There was a huge language barrier despite the presence of translators. Nonetheless, we had to ensure that patients' autonomy was not breached.

A major problem encountered was in the limited ability to transfer patients who needed care that was not available at our facility and also identifying a facility willing to accept transfers. This was due not only to the lack of transportation and an established communication chain, but also to the fact

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that all facilities were simply overwhelmed with the sheer number of trauma cases.

There were no barriers to the arrival in Haiti, neither immigration nor customs. Similarly, there was no process that vetted the thousands of volunteers, all well intended no doubt, who poured into Haiti. This meant that there was variation in the skills and practical approach to problem-solving of those who offered their services. Experienced individuals with a common sense approach to problem-solving are needed in a disaster such as occurred. This was certainly not the place for novices. Internal fixation of fractures under less than ideal circumstances should not be considered superior to long term traction as in the long run chronic osteomyelitis is worse than a limb length discrepancy or indeed a rotational deformity, both of which can be corrected at leisure.

Jamaica has not had a mass casualty situation for decades. Perhaps the closest one to most peoples' memory was the Kendal train crash of 1957. By definition, a mass casualty event is one in which a natural or man made disaster overwhelms local resources and damages the physical and economic infrastructure of the region. To cope with this disaster, outside help (resources and personnel) has to be sought. Of the natural disasters, we have been most attuned to hurricane preparedness after hurricane Gilbert in September 1988. All medical practitioners in Jamaica need to become increasingly aware of the requirements for an organized response to mass casualty and disaster situations. Trauma surgeons are uniquely suited to play a leadership role in the planning and coordination of disaster care because of their involvement in trauma centres (1). The ability to respond in an educated, organized and prepracticed manner is needed. In a mass casualty situation, limited resources must be allocated for the "greatest good for the greatest number" of victims rather than the individual. This means that basic medical care can be provided in an austere and sometimes chaotic situation. The response to a mass casualty event involves more than just medical treatment. It involves, triage at the scene, field resuscitation, evacuation, logistics and an incident command hierarchical structure. As true mass casualty events are rare, there is little opportunity for real-time training and experience (2). Therefore, simulated disaster training has to be undertaken. This training has to be at the local (community) and regional levels. There needs to be teams comprised of volunteer medical personnel and support staff who are certified by the government. This team should include registered physicians, nurses, paramedics, pharmacists and public health personnel among others. As one cannot be sure what the next disaster may be, an all hazard approach should be adopted for disaster preparedness (2).

Different volunteers are required for different phases of a disaster. Not all volunteers can handle the initial wide scale trauma of a catastrophic event and so in training, volunteers

will have to determine the phase of the disaster for which they are best suited. In such an approach, flexibility has to be a key feature built into the disaster training response.

At the end of this disaster, the experience gained by all volunteers who went to Haiti should be harnessed and used in the formulation of such a mass casualty response team. Their ability to work and cope under austere conditions would truly have been tested.

As outside help will be needed in a mass casualty, it is important that non-governmental organizations and all volunteers be aware of local cultural issues and practices and be sensitive to them (3). Failure to acquaint themselves with local practices along with poor communication with local personnel may affect adversely their effectiveness as was seen in the Bam earthquake in Iran in 2003. Volunteers must also be flexible and be capable of working with others from different countries for the common good of those in need.

The hope by us all is that a mass event will not occur but we have to come to the realization that these events may not be preventable and the aim should be to prepare and help mitigate such events. Preparedness is often confused with the presence of a disaster plan. Rather, preparedness should be considered a process involving coordination, planning, and training and logistic elements which are constantly being reviewed. Similarly, there is a difference between preparedness and disaster prevention/mitigation which aims to reduce the health impact.

The need for such disaster preparedness has been acknowledged for sometime in the region as countries in Latin America and the Caribbean are known to be prone to natural disasters (4). Recognizing the importance of prevention/mitigation, the Pan American Health Organization (PAHO) and the World Health Organization (WHO) emphasized the need for collaboration of engineers, architects, planners and economists in reducing the physical vulnerability of hospitals of the region to earthquakes and hurricanes (4). Notwithstanding, the energy of a magnitude seven earthquake, this lack of collaboration was very evident in the buildings that collapsed in Port-au-Prince. An area of weakness sited then in the 1986 report was that of preparedness for technological disasters and inter-country preventive approach to common disasters across borders. Since then, the Caribbean Disaster Emergency Response Agency (CEDERA) was established in September 1991. Recognizing the need for preparedness and the importance of disaster management, there has been a name change to the Caribbean Disaster Emergency Management Agency (CDEMA) which is the coordinating body for disasters in the region. In recent times, Hurricane Ivan which badly affected Grenada and Jamaica to a lesser extent and the earthquake in Haiti saw this cross border agency in action. In addition, each country within the region has its own National Disaster Organization (NDO) *eg* the Office of Disaster Preparedness and Emergency Management), ODPEM in Jamaica.

We cannot afford to be complacent in disaster preparedness. This should be an integral part of curriculum at every level of education if we are to mitigate the effects of Mother Nature.

We should ask ourselves whether our country, our health system and ourselves are prepared for a disaster such as the one that struck Haiti. If our answer to each of these questions is no, we need to begin the process of preparedness post haste.

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