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**Medical Rehabilitation after natural disasters: Why, When and How?**

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Running title: Medical rehabilitation after disasters

Key Words: Disasters, Rehabilitation, disability, functional outcome, disaster response, Physical therapy, Occupational therapy

## Abstract

Natural disasters can cause significant numbers of severe, disabling injuries, resulting in a public health emergency and requiring foreign assistance. However, since medical rehabilitation services are often poorly developed in disaster-affected regions and not highly prioritized by responding teams, Physical Medicine and Rehabilitation (PRM) has historically been underemphasized in global disaster planning and response. Recent development of the specialties of 'disaster medicine' and 'disaster rehabilitation' has raised awareness of the critical importance of rehabilitation intervention during the immediate, post-disaster emergency response.

The WHO Liaison Sub-committee on Rehabilitation Disaster Relief (CRDR) of the International Society of Physical and Rehabilitation Medicine (ISPRM) has authored this discussion paper to assess the role of emergency rehabilitation intervention following natural disasters based on current scientific evidence and subject matter expert accounts. Major disabling injury types are identified and spinal cord injury, limb amputation, and traumatic brain injury are used as case studies to exemplify the challenges to effective management of disabling injuries following disasters. Evidence on the effectiveness of disaster rehabilitation interventions is presented.

The authors then summarize the current state of disaster-related research as well as lessons learned from PRM emergency rehabilitation response in recent disasters. Resulting recommendations for greater integration of PRM services into the immediate emergency disaster response are provided. This discussion paper aims to stimulate development of research and practice in the emerging discipline of 'disaster

rehabilitation' within organizations that provide medical rehabilitation services during the post-disaster emergency response.

Key Words: Disasters, Rehabilitation, disability, functional outcome, disaster response

List of Abbreviations

CRDR: Committee on Rehabilitation Disaster Relief

ISPRM: International Society of Physical and Rehabilitation Medicine

NGOs: Non-governmental organizations

SCI: spinal cord injury

TBI: traumatic brain injury

WHO: World Health Organization

## Background

The International Society of Physical and Rehabilitation Medicine (ISPRM) is an international professional rehabilitation society which has defined evaluating and expanding the role of medical rehabilitation in disaster management as a priority agenda item.<sup>1</sup> At its 5<sup>th</sup> World Congress (Istanbul, Turkey, 2009) the ISPRM Board of Governors commissioned a discussion paper on the role of emergency rehabilitation intervention following natural disasters. The WHO Liaison Sub-committee on Rehabilitation Disaster Relief (CRDR) was also officially formed at this meeting. Committee members have prepared this discussion paper which summarizes the role and experience of Physical & Rehabilitation Medicine (PRM) and the ISPRM CRDR in the emergency humanitarian medical response to large-scale natural disasters. The desired outcome is increased integration of PRM perspective into the immediate, emergency disaster response. While this is an internal planning document, it is hoped that other rehabilitation organizations and the greater PRM and disaster medicine communities will find it informative and useful for their respective purposes.

Specifically, this discussion paper aims:

- to overview PRM conditions in natural disasters;
- to outline challenges in the management of disabling conditions during the immediate emergency disaster response using the examples of spinal cord injuries (SCI), limb amputations, and traumatic brain injury (TBI);

- to summarize the current state of disaster-related research;
- to summarize lessons learned from the PRM emergency rehabilitation response experience based on the medical literature and subject matter expert accounts, and;
- to provide recommendations for the role of PRM during the emergency response to future large-scale natural disasters.

Manmade disasters, disabling injury types beyond those addressed herein, and medical needs of persons with pre-existing disabilities other than acute exacerbation of their conditions and new onset disabling injuries are beyond the scope of this discussion paper and require further attention in future documents. In addition Technological disasters and complex humanitarian emergencies have associated rehabilitation needs but the added complexity of these disaster types requires separate investigation. Also, the role and experience of allied rehabilitation providers and other professional rehabilitation organizations are not emphasized.

Large-scale disasters often become public health emergencies which result in significant loss of life, limb, and property. General classification of disasters subsumes ‘natural disasters’ (biological, geological, or climatic); ‘technological disasters’ such as nuclear accidents, or; ‘complex humanitarian emergencies’ including civil wars. A *natural disaster* is defined by the World Health Organization (WHO) as a “sudden ecological disruption or threat that exceeds adjustment capacity of the affected community and requires external assistance”<sup>2,3</sup>. Common types of natural disasters include earthquakes, floods, hurricanes, tsunamis, volcanic eruptions and fires.

The sudden onset and great magnitude of large-scale natural disasters, especially earthquakes, often results in significant numbers of victims with severe disabling injuries including long bone fractures, limb amputations, spinal cord injuries (SCI), traumatic brain injuries (TBI), crush injuries, burns, and peripheral nerve injuries.<sup>5,6,7</sup> The severely disrupted local medical infrastructure including supporting communication and transportation networks is immediately overwhelmed, compromising medical response and management of the severely injured.

Injury patterns, mortality profiles, and economic impact of natural disasters have been well researched and documented<sup>4,5,6,7,8</sup>. Lessons learned and collective experience have been integrated into comprehensive disaster management plans designed to minimize the loss of human lives and reduce survivor morbidity<sup>9,10,11</sup>. Medical community perspective



in the health care response is increasingly reflected in disaster planning.<sup>12</sup> Regrettably, however, response plans and acute care protocols do not typically include rehabilitation interventions, resulting in neglected acute rehabilitative need. Medical complications of disabling injuries, long-term disability, and other significant, negative consequences for the individual and society are the result.<sup>13</sup> Although physiatrist involvement during the immediate emergency disaster response would result in more optimal management of new onset traumatic disabling injuries, recognition of the physiatrist's role and participation in international disaster response is not widespread. Moreover, natural disasters mostly occur in low-resource regions of the world where rehabilitation services are either underdeveloped or do not exist<sup>14,15</sup>.

## Methods

Current best evidence on disaster rehabilitation was obtained from an electronic and manual search of the scientific literature supplemented by subject matter expert commentary including CRDR member accounts. The electronic search (1950-2011; English language only) was performed using the Medline, Science Direct, OVID, Springerlink, Google Scholar, Scopus, and CINAHL databases. Keywords were "disasters", "rehabilitation", "disability", "functional outcome", "disaster response", "disaster management", "epidemiology", "persons with disability (PWD)", "spinal cord injury", "traumatic brain injury", "fractures", "peripheral nerve injuries", "complications", "physical therapy", "occupational therapy", "orthotics", "prosthetics", "earthquake", "tsunami", "hurricane", "floods", and "low resource countries". Many CRDR members are physiatrists who have themselves provided medical rehabilitation services in disasters including the Sidr Cyclone in Bangladesh and Hurricane Katrina in the United States as well as earthquakes in Turkey, Iran, Pakistan, China and Haiti.

## Results

### Magnitude of the problem: PRM conditions and pre-existing disabilities in disasters

Natural disasters result in injuries requiring rehabilitation which vary based on the type of disaster and its magnitude, the geography of the affected area, the dynamics of the impacted population, and the situation of the individual victim. Documented major impairments include long bone fractures, limb amputations, spinal cord injuries (SCI), traumatic brain injuries (TBI) and peripheral nerve injuries<sup>6,15,16,17,18,19,20,21,22,23</sup>. Minor impairments include conditions such as swollen feet and legs, leg pain, muscle pulls and cramps, tendonitis/fasciitis, and musculoskeletal pain.<sup>24,25</sup>

Persons with pre-existing disabilities can incur acute exacerbation of chronic disabling conditions as well as new onset disabling injuries and are at increased risk of injury and death in a disaster.<sup>26</sup> They face increased barriers to accessible emergency information (especially those with sensory deficits), are often unable to evacuate from the disaster zone by available means due to lack of accessible transportation or other requisite assistance and have difficulty accessing shelter services, including medical care. Local evacuation plans generally fail to meet transportation needs of Person with disabilities (PWD) because planners are mostly unaware of their presence in community and fail to realize that PWD have special evacuation needs. This places this vulnerable population at an increased risk of developing additional disabilities, worsening of the pre-existing

disability and increased risk of mortality if their needs are not addressed in a timely fashion.

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Management challenges for disabling conditions in the immediate disaster response: case studies of SCI, limb amputation, and TBI

SCI is considered the prototype disabling condition due to its complex medical management and need requirements; yet, SCI victims are "the most neglected of all patients injured in an earthquake".<sup>27</sup> Newly acquired SCI require early, coordinated evacuation from the disaster zone via specialized transfer and transport protocols to minimize worsening of injury and mortality.<sup>28</sup> Responders, including family members and neighbors, paramedical health professionals, and physicians without SCI expertise, attempt to care for these victims despite lacking the required training and skills.<sup>29,30</sup> Consequently, although lives may be saved, medical complications are increased and functional improvements as well as long-term survival often compromised.<sup>28,31</sup> Since proper management in local health care facilities is not feasible, onward transfer to tertiary centers for definitive management (conservative vs surgical) and specialized care (including skin, bowel, and bladder protocols) by rehabilitation professionals is indicated. SCI management without physiatrist involvement may result in inaccurate initial assessment, unsafe evacuation, prolonged hospital admission, and unrealistic counseling for long-term prognosis. Additional negative consequences can include insufficient patient and caregiver education, inadequate pain management, inappropriate prescription of mobility aids, and even death from untreated complications such as urinary tract infections and pressure ulcers following discharge.<sup>28,30,31</sup> **Error! Bookmark not defined.**

Limb amputation is another disabling condition resulting from catastrophic natural disasters that warrants early physiatrist involvement. Hundreds to thousands of traumatic and surgical amputations may result,<sup>26,32</sup> requiring emergent wound management and rehabilitation of the residual limb. Effective management will facilitate timely hospital discharge, freeing urgently required hospital beds<sup>33</sup> and optimizing future prosthetic fitting. Physiatrists ideally become involved prior to amputation and educate the surgical team on prosthetic considerations.<sup>34</sup>

The physiatrist can offer the following pre-, peri, and post-operative services to an amputee during a disaster which can have severe adverse consequences if not addressed:

- pre-amputation planning and consultation to the surgical team (on adequate length, shape and soft tissue cover of the residual limb);
- wound management and application of compression bandaging;
- shaping of the residual limb;
- management of residual limb or phantom limb pain;
- prosthesis prescription compatible with patient mobility status, vocational expectation, and living environment, and;
- patient education and counseling.

TBI victims also benefit from physiatrist involvement following disaster. Patients are usually hemodynamically stable and therefore evacuated from the disaster zone to

definitive care after most fracture and amputation patients. Many are managed in temporary facilities while awaiting transfer and are at increased risk for secondary conditions including contractures, pressure ulcers, urinary tract infections, aspiration pneumonia, malnutrition, and rapid cognitive dysfunction. Physiatrists can prevent and effectively manage most of these conditions, preserving long-term functional outcomes. Early multidisciplinary rehabilitation is associated with better TBI outcomes<sup>35,36</sup> which are generally maintained at long-term follow up.<sup>37</sup>

Besides severe TBI and craniocerebral trauma victims, a significant number of persons sustain mild TBI in disasters. However, most are not diagnosed since they do not seek care and are not clinically recognized in the chaotic disaster environment. Most persons with mild TBI recover well with adequate follow up and patient counseling without requiring additional intervention.<sup>38</sup> Some, however, are completely disabled and require a comprehensive care plan to prevent complications and deterioration.

### Current state of disaster-related research

The lack of systematic and standardized data collection during disasters from the past leads to a major weakness of current disaster related research. For example it has been estimated that around 15 % of the world population has some form of disability (18% for the low income countries).<sup>39</sup> But the estimates for PWD residing in camps or temporary shelters after disasters are only 5-7 %. Current trends in medical decision making dictate that one should strive to obtain the highest level of scientific evidence while proposing new interventions and management plans. The obvious flaw in this logic is that it results in policies regarding what is easy to study, rather than policies that address the most important interventions.

Since gold standard randomized controlled trials are not feasible in the post-disaster setting, the best evidence available on the effectiveness of rehabilitation interventions following disasters are from quasi-experimental or observational studies using cross-sectional as well as prospective and retrospective designs (surveys). Recent studies of Sichuan earthquake fracture and SCI survivors showed effectiveness of post-disaster rehabilitation interventions as demonstrated by improved long-term functional outcomes and quality of life, for example. Hospital series and case reports provide descriptive epidemiological data on disabling injury diagnoses for which rehabilitation is indicated. Responding medical team mission reports, although commonly indexed in the grey literature, can provide useful information as well. And opinions of subject matter experts with firsthand experience in disaster rehabilitation are valuable, although not evidence-based.



Notwithstanding study design limitation, lack of systematic, standardized data collection during disasters has limited the range and quality of available disaster-related research.<sup>40,41</sup> Disasters by nature allow little time for research planning and frequently no supporting baseline demographic data is readily available in low-resource regions; on-site medical records are typically incomplete and of limited use.<sup>42</sup> Since the priority for medical response beyond initial triage and resuscitation is stabilization of traumatic disabling injuries, descriptive rehabilitation needs assessment(s) for service delivery planning is the immediate research priority. Although baseline patient functional assessment would also ideally occur, limitations of measurement tools and assessment team priorities in the chaotic, post-disaster environment may be prohibitive. Unfortunately, relatively unsophisticated population needs and individual functional status field-based assessment, though critical, has not been conducted historically.

Rehabilitation interventions after disasters: Experience around the Globe and lessons learned

Experience from the Pakistan, Sichuan (China), and Haiti earthquakes as well as Hurricane Katrina (US) has demonstrated the value of providing rehabilitation services as part of the immediate emergency medical response.<sup>15,28,43,45,50,51</sup> In Pakistan, a group of PRM faculty and residents supervised the management and rehabilitation of a large number of SCI victims with good results. Patients had reduced complications and hospital lengths of stay as well as better outcomes compared to centers with no physiatrist involvement.<sup>15,28</sup>

Following the Sichuan earthquake, a rapid, military-led national response resulted in efficient onward transfer of critically injured victims, including those with SCI, to hospitals across 20 provinces using special trains and chartered flights – the greatest long-distance peacetime transfer of patients in China.<sup>44</sup> The shortage of trained rehabilitation professionals was addressed by mobilizing professionals from other parts of the country, training of hospital staff in rehabilitation principles and practices by an international rehabilitation services NGO, and inviting foreign experts to provide additional training.<sup>43,45</sup> Follow up of SCI and fracture victims (at one year and twenty-seven months, respectively) from the Sichuan earthquake showed significant effectiveness of rehabilitation intervention.<sup>46,47</sup> Improved ADLs and other functional outcomes, reduced complications, and better health-related quality of life were demonstrated. Increased awareness of rehabilitation intervention was noted in the 2008 Sichuan earthquake compared to the Tangshan Earthquake of 1976.

Large numbers of disabilities were reported following the Indian Ocean tsunami in 2004 and the Sidr Cyclone (Bangladesh) in 2008. Rehabilitation teams engaged quickly and effectively managed patients with major and minor disabilities sustained in these cataclysmic tropical storms.<sup>48,49</sup> Rehabilitation teams comprised of physiatrists<sup>50</sup>, physical therapists<sup>51,52</sup> occupational therapists, orthotists, and prosthetists successfully provided rehabilitation services to amputees as well as SCI and TBI victims in the recent earthquake in Haiti, resulting in increased societal acceptance of medical rehabilitation and development of long-term rehabilitation infrastructure.

Significant lessons learned from the literature review and expert commentary on emergency PRM interventions following large-scale natural disasters are as follows:

- Large numbers of disabling injuries normally occur in natural disasters and require comprehensive medical management including rehabilitation interventions.
- Most disasters occur in low-resource world regions where rehabilitation services are poorly developed<sup>14,15</sup> and the burden of new onset traumatic disabling conditions quickly overwhelms and depletes available rehabilitation services.
- Medical rehabilitation is an urgent, essential emergency medical service in disasters and not restricted to the intermediate and long-term care settings. Early physiatrist involvement in complex orthopedic and neurological trauma has shown to be of benefit in non-disaster trauma. Immediate rehabilitation services post disaster are likely to reduce morbidity, improve functional outcomes, and improve survival.<sup>15,31,46,50</sup>

- Physiatrist participation in the immediate emergency disaster response has proved effective in managing disabling injuries including fractures, amputation, SCI, and TBI, among others. Physiatrists prevent and treat related medical complications, establish pain management protocols, and arrange for appropriate post-discharge follow up. Physiatrists also provide valuable pre-, peri-, and postoperative consultation.
- Physiatrists' understanding of patients' comprehensive medical needs including rehabilitation can compensate for the relative lack of rehabilitation expertise on a responding medical team.
- Post-disaster rehabilitation reduces hospital length of stay, freeing critical medical resources.
- Post-disaster rehabilitation results in faster medical recovery, fewer complications, and greater improvement of functional outcomes. Improved outcomes, in turn, contribute to greater social integration and community participation which help build post-disaster society (as opposed to expending limited health and social services).
- Emergency rehabilitation services should only be provided by trained, credentialed professionals to ensure practice accountability and proper standards of care. Non-qualified personnel, although well-intentioned, should provide care only in event of extreme emergency and under strict supervision.
- Effective coordination of organizations providing rehabilitation services following a disaster, including national and international NGOs, is required to efficiently

allocate human and material resources to provide optimal, comprehensive rehabilitative care to the impacted population.

- Selection and development of functional assessment tools appropriate to disaster-related research, especially during the emergency response, is needed.

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## Recommendations

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Recommendations based on our review and lessons learned are as follows:

1. Developing scientific evidence for medical rehabilitation in the emergency disaster response

High quality scientific evidence supporting medical rehabilitation as part of the immediate emergency medical response to natural disasters will convince the PRM and disaster medicine communities of the critical importance of rehabilitation intervention. Data collection should begin as early as possible and be repeated at intervals to assess therapeutic intervention over patients' continuum of care. Intervention costs must be documented to evaluate their cost-effectiveness and to monetarize rehabilitation programming as well as the overall burden of disability. Suggested elements of a disaster rehabilitation research strategy during the emergency response are as follows:

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- a. *Measurement of the burden of disability following disasters:* International disaster data sets similar to the SCI data sets<sup>53</sup> and ICF core sets<sup>54</sup> could be developed. These data sets would inform the systematic collection of data on patterns of injury, types of disabilities, and related functional deficits. Data sets should be sufficiently comprehensive and simple to administer.
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- b. *Documentation of functional outcomes:* Documentation of functional status in the newly injured would guide timely, appropriate rehabilitation therapy. Some traditional measures such as the Functional Independent Measure are not field-friendly, requiring well-trained staff and relatively long administration time. Simpler scales such as the Barthel Index<sup>55</sup> or Language Independent Functional Evaluation<sup>56</sup> should be used instead. Also, measure design constraints such as ceiling and floor effects must be considered in modeling rehabilitation effectiveness.<sup>57</sup> An ICF-based need assessment tool assessing level of functioning, corresponding rehabilitation need, and required rehabilitation expertise was successfully piloted in the Haiti earthquake.<sup>58</sup>
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## 2. Development and hosting of rehabilitation disaster relief expertise

The ISPRM and other rehabilitation professional societies should provide specialized training on rehabilitation disaster relief and facilitate member participation in related service opportunities. Suggested plan elements are as follows:

- a. *Development of a training program in rehabilitation disaster relief:* Training in the policy and practice of disaster rehabilitation will provide physiatrists with added qualification to guide their deployment participation. The ISPRM CRDR is currently developing an online curriculum (for its DART program; Table 1) which includes general humanitarian aid principles and rehabilitation-specific provider competencies to instruct physiatrists in

providing rehabilitative management of victims with disabling injuries during the immediate disaster response. This course incorporates the Sphere Minimum Standards in Humanitarian Response for injury care during disasters<sup>59</sup> and the Global Health Cluster Foreign Medical Team Health Services Checklist

- b. Establishment of a subject matter expert database:* Establishing an ISPRM member rehabilitation database will facilitate deployment of physiatrists and other rehabilitation professionals in support of international rehabilitation disaster relief efforts. The database will facilitate timely volunteer deployment due to pre-registration and verification of provider preferences and qualifications. Database access procedures would allow timely pairing of volunteers with requesting agencies including governments, NGOs, and UN agencies. As an example, the UK International Emergency Trauma Register was recently launched to help address international surgical emergency needs.<sup>60</sup> Related, the World Confederation of Physical Therapy has recently established a ‘database of experts’ designed to share member knowledge and expertise.<sup>61</sup> The ISPRM database could thus serve multiple purposes as a repository of disaster rehabilitation expertise. The ISPRM subject matter expert database is an activity on the current WHO/ISPRM collaborative work plan.

### 3. Development of an international rehabilitation emergency response capability



A field-deployable rehabilitation response capability in the form of a PRM team could insert physiatrists into a disaster area during the immediate emergency health response, providing psychiatric expertise during this critical period. Teams of varying composition could perform multiple missions, including:

- rehabilitation needs assessment and other research;
- direct patient management and consultation as part of a medical/surgical team;
- implementation of telerehabilitation capability;
- rehabilitation training of other providers; or
- Rehabilitation resource coordination for the disaster management structure.

Roles and responsibilities would change as the disaster response evolves (Figure 1). PRM team practice would subscribe to Global Health Cluster guidance for foreign medical teams.<sup>62</sup> Recognizing this critical need, the ISPRM is currently developing a Disability Acute Rehabilitation Team (DART). Table 1 outlines the proposed program curriculum during the emergent and post-emergent phases of response as well as advance planning considerations and responder survival measures.

International NGOs involved in medical rehabilitation after disasters should actively coordinate across all levels and phases of response with UN Inter-Agency Standing Committee / WHO Global Health Cluster planning and guidance. NGO participation in development of response guidance, strategy

review, and field coordination will help ensure an optimal disaster rehabilitation response.

4. Development of PRM disaster response capability in low-resource regions

Building PRM disaster response capability in low-resource regions is critical to improving global disaster rehabilitation response since most catastrophic natural disasters occur in these areas characterized by minimal rehabilitation medicine infrastructure and poor disaster planning. The ISPRM CRDR could coordinate with PRM national societies via ISPRM WHO regional representatives to establish national society disaster committees. Committees would partner with local and national disaster authorities to develop rehabilitation disaster response infrastructure which would strengthen local response capability and also facilitate the international response depending on the scale of disaster. Regardless, reduced morbidity and mortality due to rehabilitation provided for traumatic disabling conditions would predictably result. Online posting of country-specific, disaster-related policies, procedures, and training supplemented by related funded educational travel would be facilitative.

5. Development of telerehabilitation consultation process.

Major aid agencies should consider funding and developing a telerehabilitation consultation process. It is not possible for the members of a standard multidisciplinary team to cover all disaster affected areas. Development of telerehabilitation consultation processes involving distant experts (physicians and allied health professionals) where certain expertise is missing or in rural or isolated communities would be invaluable. It is important that local and international Telerehabilitation services and liaisons be established, so that the expertise can be shared on a wider scale.

In addition a mobile rehabilitation facility ( similar to a mobile surgical team) can be used to provide medical rehabilitation in disaster zones where there were no PM&R services or the centers have been damaged. A mobile orthopedic workshop successfully provided prosthesis in the Haiti earthquake.<sup>63</sup>

## Conclusion

Medical rehabilitation is an essential part of the immediate emergency health response in a large-scale natural disaster. This discussion paper proposes recommendations for advancing disaster rehabilitation in disaster which will be developed by the ISPRM CRDR into specific implementation strategies with supporting actions. Partner organizations which also provide global disaster rehabilitation services are also encouraged to develop and share their expertise in order to more effectively integrate PRM perspective into the global disaster rehabilitation response.

Physiatrists can help in the post acute disaster phase by offering their expertise in the prevention of pressure ulcers, positioning techniques, prevention of thromboembolism, management of SCI and TBI, preventing debilitating effects of prolonged immobility following major injuries, and pre-, peri-, and postoperative consulting. It is important that physiatrists should be consulted in disaster response plans and their expertise utilized earlier rather than late when preventable complications have already occurred.

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Table 1: Proposed Disability Acute Rehabilitation Program (DART) Curriculum

Planning ahead:

- Developing clinical flexibility and coverage
- Financing Travel
- Assembling a team of responders
- Equipment and supplies to bring

Acutely:

- Engaging the emergency response leaders
- Working with non-governmental agencies
- Basics of acute trauma medicine
- Rehab for rescuers-spinal cord evacuation, etc.
- Surveying and reporting the needs
- Acute rehab triage and management
- Discharge planning from day of admission

Subacute:

- Working with the local team
- Working with the emergency rehab team
- Measuring prevalence of disability
- Developing a sustainable program
- Dealing with the media
- Getting donors

Personal Survival:

- When not to go
- Licensure and visa
- Protection from the disaster
- Protection from rioting and crime
- Emotional protection/re-entry

1-2 Weeks

2-4 Weeks

4-12 Weeks

- Measure the burden of disability in the disaster area

Establish multidisciplinary screening/staffing process

Perform Rehabilitation triage to allocate resources and making decision on evacuations and transport

- Establish Rehabilitation Units/camps ( makeshift ?)

- Document baseline functional status and deficits

Provide acute rehabilitation interventions to target population

Establish Telerehabilitation network and consultations ( National & International)

- Decisions on evacuation to a specialised center in selected cases only

- Training of local staff and Rehabilitation Teams

Discharge planning  
Long term Rehab and  
Follow up plans