Evaluation of Handicap International’s disaster preparedness efforts as tested by the 2015 Nepal Earthquake

Operations and Technical Resources Division
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The opinions expressed herein, however, are those of the authors alone.

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Earthquake Preparedness Project funded by Echo
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<th>Description</th>
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<tbody>
<tr>
<td>AIN</td>
<td>Association of International NGOs</td>
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<tr>
<td>BCPR</td>
<td>Bureau of Crisis Prevention and Recovery</td>
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<tr>
<td>DBM</td>
<td>Dead Body Management</td>
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<tr>
<td>DAD</td>
<td>Directorate for Development Activities</td>
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<tr>
<td>DAH</td>
<td>Directorate for Humanitarian Activities</td>
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<tr>
<td>DDRC</td>
<td>Central Disaster Relief Committee</td>
</tr>
<tr>
<td>DPHO</td>
<td>District Public Health Office</td>
</tr>
<tr>
<td>DHO</td>
<td>District Health Office</td>
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<tr>
<td>DIPECHO</td>
<td>Disaster Preparedness of DG ECHO</td>
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<tr>
<td>DFID</td>
<td>UK Department for International Development</td>
</tr>
<tr>
<td>DOHS</td>
<td>Department of Health Services</td>
</tr>
<tr>
<td>DRR</td>
<td>Disaster Risk Reduction</td>
</tr>
<tr>
<td>ECHO</td>
<td>European Commission's Humanitarian Aid and Civil Protection Office</td>
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<tr>
<td>EDCD</td>
<td>Epidemiology and Disease Control Division</td>
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<tr>
<td>EDP</td>
<td>Early Deployment Plan</td>
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<tr>
<td>EPP</td>
<td>Emergency Preparedness Project</td>
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<tr>
<td>FMT</td>
<td>Foreign Medical Team</td>
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<tr>
<td>GSM</td>
<td>Global System for Mobile Communication</td>
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<tr>
<td>GON</td>
<td>Government of Nepal</td>
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<td>HCT</td>
<td>Health Cluster Team</td>
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<td>HEOC</td>
<td>Health Emergency Operations Center</td>
</tr>
<tr>
<td>HQ</td>
<td>Head Quarter</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education, and Communication</td>
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<tr>
<td>INGO</td>
<td>International Non-Governmental Organization</td>
</tr>
<tr>
<td>KVERMP</td>
<td>Kathmandu Valley Earthquake Risk Management Project</td>
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<tr>
<td>MCI</td>
<td>Mass Casualty Incident</td>
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<td>MCM</td>
<td>Mass Casualty Management</td>
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<tr>
<td>MOHA</td>
<td>Ministry of Home Affairs</td>
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<tr>
<td>MOFALD</td>
<td>Ministry of Federal Affairs and Local Development</td>
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<tr>
<td>MOHP</td>
<td>Ministry of Health and Population</td>
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<tr>
<td>MOIC</td>
<td>Ministry of Information and Communication</td>
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<tr>
<td>MOPPW</td>
<td>Ministry of Physical Planning &amp; Works</td>
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<tr>
<td>NDF</td>
<td>Nepal Disability Fund</td>
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<tr>
<td>NEOC</td>
<td>National Emergency Operation Centre</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>NRCC</td>
<td>Nepal Risk Reduction Consortium</td>
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<td>NRCS</td>
<td>Nepal Red Cross Society</td>
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<tr>
<td>NSET</td>
<td>National Society for Earthquake Technology</td>
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<tr>
<td>OFDA</td>
<td>Oeign Disaster Assistance</td>
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<tr>
<td>PPICD</td>
<td>Policy Planning and International Coordination Division</td>
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<tr>
<td>SC</td>
<td>Save the Children</td>
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<tr>
<td>TUTH</td>
<td>Tribhuvan University Teaching Hospital</td>
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<tr>
<td>TOR</td>
<td>Term of Reference</td>
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<tr>
<td>UK-Med</td>
<td>United Kingdom Medical Emergency Team</td>
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<tr>
<td>UNOCHA</td>
<td>United Nations Office for the Coordination of Humanitarian Affairs</td>
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<td>USAR</td>
<td>Urban Search and Rescue</td>
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Executive summary

The present independent evaluation looked at Handicap International’s contribution to the Earthquake Preparedness Project and how this contributed to the response to the 2015 earthquake in Nepal. The Earthquake Preparedness Project (EPP) is funded by DIPECHO (the European Commission Humanitarian Aid Office’s Disaster Preparedness Program), as well as the Ministry of Foreign Affairs of Luxemburg and the French Centre de Crise and has been implemented since 2011 in connection with a consortium led by the World Health Organization (WHO), and involving Save the Children and Oxfam. The evaluation was commissioned by Handicap International (HI) in September 2015, and was conducted by an independent team of consultants (Francois Grunewald and Dr. Lakshmi Narayn Thakur) and funded by the Ministry of Foreign Affairs of Luxembourg.

The EPP, in which HI took part, aimed to strengthen the health sector response capacity in the event of a high intensity earthquake in the Kathmandu Valley. The evaluation had to respond to a series of questions relating specifically to HI activities and their impact during the health sector response to the 2015 earthquake. In particular, it aimed to:

- identify/document lessons learned and make recommendations that HI in Nepal might use to improve the design and implementation of future projects. The results will contribute to better informed decision-making, foster an environment of learning and promote greater accountability for performance, both for HI and for other organizations working in earthquake preparedness.
- establish how HI Nepal contingency planning, including the coordination and articulation between development (DAD) and humanitarian (DAH) teams, contributed to the response with the aim of making recommendations for the amendment of this plan.

Key findings on the HI’s involvement in disaster preparedness in the health sector

- The earthquakes touched part of Kathmandu Valley and two rural areas. While the seismic shocks that affected Nepal in April and May 2015 were not fully in line with the “most feared scenario” (very destructive earthquake affecting the Kathmandu Valley), most of the activities carried by HI during the different phases of the EPP made a lot of sense and contributed to a better and more effective response in the health and rehabilitation sectors.
- The fact that HI worked under the umbrella of a WHO-led consortium (EPP) and in close collaboration with the Ministry of Health and Population (MOHP) prior to the earthquake turned out to be very useful as this set-up significantly contributed to enhanced coordination of the response, according to many actors interviewed.
The training activities of Nepalese health professionals prior to the earthquake and the efforts to introduce a “multidisciplinary approach to case management”, including by having a physiotherapist in the operating theatre, contributed significantly to improving the performance of the system during triage, in operating theatres and in post-trauma management teams. Several health practitioners who were interviewed argued that this and the trauma protocol guidelines developed during the preparedness phase directly contributed to limiting the number of amputations. Mass Casualty Management (MCM) preparedness can save lives, but well prepared individual case management effectively saved limbs.

However, despite efforts in the HI preparedness activities, the inclusion of physiotherapy and rehabilitation as part of the emergency case management was still in its infancy could not be put into operation in the hospitals as effectively as expected. Specific weaknesses were observed in the recording of information during the first days and in the referral system for case follow up and continuity of care.

Furthermore, the role of psychosocial workers was not sufficiently anticipated or emphasised in the pre-earthquake preparedness activities, despite the importance of this sector of activity in disaster response contexts.

Most of the training manuals and protocols were actually ready prior to the earthquake and in use for training of health personnel and by health staff in the facilities. The links that were established with the MOHP before the earthquake made it much easier for the health cluster to rapidly reprint these documents in the days just after the earthquake and to ensure that they were distributed to all incoming Foreign Medical Teams (FMT) registered at the Health Emergency Operations Centre (HEOC). This contributed to a much better and more coherent health response. The existing information, education, and communication (IEC) materials were very useful, but extra subjects, such as fracture management and assistive devices, would have been of great help. Furthermore, it was quite challenging to find the prepositioned IEC stock and the focal person in charge of distributing it within each structure.

Data management and the recording of case information were very haphazard during the first days, leading to difficulties for follow-up after discharge. The relatively rapid establishment of Vulnerability Focal Points (VFP), which was made possible by HI’s high level of visibility before the earthquake, aimed to facilitate the identification of focal reference persons in the wards, outside the hospitals and within the community. This turned out to be extremely useful and, at the same time, was not used enough as the system was not sufficiently established and the staff to man these VFP were not prepared to respond. The earthquake took place at a time when the capacity building for these VFP members had not yet been fully implemented within the EPP. Resources of this kind and the role they can play in responses should be emphasized in the future (important role in terms of identification, awareness raising and with regard to the referral pathway; also a great source of information regarding access to services and local initiatives).
• Significant effort was made to work with Nepalese health professionals and their different umbrella organizations, including for the design of the manuals and protocols. This helped with the recruitment process and ensured the rapid deployment of their members immediately after the earthquake. However, the network was still being developed, with no Identification Document (ID) ready at the time of the earthquake. In addition, the competences of physiotherapists were still to be tested and the network of specialized staff for the management of stress and psychosocial issues was still under development.

• The setting-up of the Injury and Rehab Sub-cluster was part of the Ministry of Health and Population's contingency plan, developed during the preparedness project but lacked operational planning as to who would do it and how it would be done. It was actually initiated by the WHO Foreign Medical Team Coordination Cell with a strong support from the UK Emergency Medical Team (UKEMT), in which HI-UK is an operational partner.

• Wound management was a critical part of HI's own contingency plan and as such was able to re-supply hospitals within 72 hours after the earthquake. In addition, the training of rehabilitation professionals in using assistive devices (e.g. emergency wheelchairs) demonstrated its usefulness during the earthquake response. However, the amount of prepositioned stock turned out to be insufficient, running out after only a few days.

• Disconnected care, especially discharge and follow up, was found to be challenging by health staff and hospital managers. It was made even more challenging due to the lack of proper record keeping in the early days of the earthquake response due to chaos and lack of preparedness.

• Mass Casualty Management and Injury management must be comprehensive to ensure appropriate continuity of care, from appropriate first aid, rescue, triage, and surgery to wound care, early rehab, and follow up in different kinds of environments (hospitals, communities, and rehabilitation centres). The first steps of mass casualty management were put in place very quickly thanks to the response capacity developed through the EPP project. More comprehensive mapping of all the structures and possible actors would have been useful but was not HI's responsibility in the EPP consortium.

• Due to the prepositioning of drugs and equipment (drugs and surgical equipment by WHO, mobility and rehabilitation devices by HI), the project helped to rapidly supply operational wards and areas where patients were waiting. This made surgery and rapid discharge easier. However, hospitals ran out of stock rapidly and were not resupplied as quickly as expected. In addition, equipment required for specific case treatments was not present in the stocks. On the basis of discussions with Nepali health professionals managing the response at the hospital level, HI became aware that the delays in drug resupply due to WHO’s own procurement procedures represented a risk for its own operations (risks linked to inappropriately implemented surgical interventions) and thus procured the needed items as an exceptional measure, as made possible by its own contingency plan (see para on health, p. 53).
Many of the sources interviewed indicated that triage was relatively well organised with red, yellow and green zones rapidly established. As well as the earthquake victims, the hospital staff also had to deal with all the patients who had been evacuated and were afraid of aftershocks. The hundreds of volunteers who came to help and the large number of patients who refused to go back to their wards due to the aftershocks made the situation chaotic. HI help desks were set up rapidly and played an important role in the first days by providing patients with information. Coordination between desks was essential but not sufficiently effective. Lack of preparedness and skills (the staff that we had available for the help desks were not sufficiently oriented on their role at discharge) in this area resulted in the loss of information, insufficient data collection and mapping and the possible duplication of efforts.

Discharge and follow-up activities for people once they get out of hospital are also essential. The discharge process often created difficulties with the medical team (as has been the case in many different contexts), as very few doctors notified the HI team before discharging patients, when they were working in the same hospital. Afterwards, this led to a difficult process of tracing unrecorded discharged patients to ensure proper continuity of care.

Immediately after the earthquake, HI supported trauma management as per the protocols developed prior to the earthquake. With some delay, HI also started to set up mechanisms for discharge and follow up supported by the help desks, the volunteers and later on the VFP. This mechanism (the vulnerability focal points) was initially planned to be put into operation within DIPECHO 8, but was not yet ready at the time of the earthquake.

HI was not responsible for community-based disaster preparedness (including the training of “light Search and rescue teams”). Several witnesses indicated that these activities did not fully take into account some key points about how to move wounded people properly (to and from hospitals) while this would normally be part of normal search and rescue training. The HI team were not sufficiently involved in these activities (carried out by another member of the consortium), thus leaving a significant gap in the design and content of the mock drills and CBDRR activities with Kathmandu city dwellers.

The project underlined the contrast in terms of means and capacities between Kathmandu health infrastructures and those of the periphery. For example, within the Kathmandu valley, Bhaktapur hospital, which is considered to be sufficiently equipped and staffed to be designated a “hub hospital”, had no orthopaedic surgeon available in the immediate aftermath of the earthquake. The further one travels from Kathmandu, the greater the gap in terms of means and capacity.

Either spontaneously or through HEOC’s initiative, most of the emergency cases were transferred to Kathmandu during the first 6 days. While this was not always ideal, it was a wise decision as it allowed better case management, due to the poor conditions in many health structures in the districts. While some facilities were underused, others struggled to provide quality care to patients and had to discharge some who were still in need of care. The lack of a clear referral system was the main reason for underutilization/overloading.
A lot of the activities that were developed under this programme are increasingly seen by Nepalese health professionals as having a much wider scope than just “earthquake preparedness”. They have also significantly influenced the ability to respond to the growing number of road accidents or other serious accidents, where the number of wounded people is significantly higher than on a normal day.

Other critical gaps, based on lessons learned within the rehab sub cluster:

- There was limited evidence of an integrated plan across local/national/international rehab partners, meaning organisations were only referring internally rather than sharing based on capability.

- As part of preparedness there is a need to map local rehab capacity (technical, human resource, equipment, beds, e.g. for prosthetics, SCI care, etc.) in advance, as well as specialist surgical capacity (e.g. micro-surgery). This became the role of the rehab sub cluster.

- Secondary to the above, no nationally agreed referral pathways for complex cases such as SCI, brain injury and amputation were in place, meaning cases were lost to follow up.

- There was a need for a nationally agreed injury reporting system to allow the rapid identification of patient numbers and locations. For example, if trauma centres and arriving international teams were required to report all new SCI and amputations to a central point, a clear idea of case numbers could have been developed much earlier.

- There is a need to consider planning and locations for overflow from hospitals in more detail – especially for medically stable patients with rehab needs – so called “step-down,” as this was ad-hoc rather than coordinated in the early stages. This maybe best done in coordination with tertiary centres, with plans to formally establish over-flow/step down facilities in the grounds of existing facilities.

Findings on the HI response

- The HI response was partly designed using the HI Contingency Plan. This was initiated in 2013 under DIPECHO 6 and support from the French Crisis Centre of French Foreign Minister, and contributed to the production of a 2014 Contingency Plan and its Action Plan, first tested with the 2014 floods. While the 2015 Action Plan was still in the process of being developed when the earthquake occurred, several interviewees indicated that, despite being incomplete (identification of possible suppliers, etc.), it greatly facilitated the identification of operational priorities in the response.

- The limited awareness/ownership of this plan by the emergency team that further led to limited understanding of the health preparedness and rehabilitation work carried out in country.
Key Recommendations for the EPP project and for health preparedness

The 2015 Nepal earthquake was not the mega-earthquake that was expected in the country. Nepal sits on a dangerous fault line that is still on the verge of releasing pressure with the intensity of Richter 8.5 or above. Preparedness therefore continues to be essential, and the following recommendations are made with this in mind:

- Efforts to ensure the early presence of physiotherapists and rehabilitation specialists as part of inclusive “emergency medical teams” should continue and should be an essential part of “routine” work in hospitals. “Health preparedness activities” including physiotherapy and psychosocial support should be integrated into the government’s regular programme of work and the health sector’s Sector Wide Approach (SWAp).

- HI or Nepalese rehabilitation professionals trained under the HI programme should take part in mock drills in health structures more systematically. This should also be regular practice in terms of health facilities preparedness.

- Early rehabilitation, discharge and follow up must be included in preparedness both for physical and mental trauma. This means that they should be much more clearly included in all contingency plans (rehabilitation prescription protocols, discharge protocols and psychosocial first aid). A plan regarding both transportation and accommodation for injured people in need of medical care and rehab is required.

- It is recommended that guidelines for crowd and volunteer management and protocols for pre-disaster in-patient management and referral to physio and psychosocial support be developed. Coordination should start at the help desk in order to define clear objectives in terms of mapping, information and data collection. This could be dealt with and included in a wider approach with “Vulnerabily Focal Points”. Although these were not initially meant to be in hospitals, they served during the recent earthquake as “orientation hubs”. During the first days after the earthquake, these multi-task “orientation hubs” were less effective when they were outside hospitals. They should therefore be prepared in advance so that they can be put into operation when an earthquake or other disaster takes place. This set up could also solve one of the difficulties encountered during the first days, which is that patients are not registered, thus causing problems for case follow-up and continuity of care.

- The achievements of the project should be replicated in other parts of the country and in more facilities in the valley, both in the public and private sectors. The relevant health authorities have been part of the process from the beginning of the project and this has contributed significantly to their sense of ownership. This will be critically important for localised disasters in different areas of the country, and for similar or bigger earthquakes in the Kathmandu Valley.

- The capacity of health facilities and key staff to conduct a quick assessment of needs and capacities after the earthquake and to properly report on the results of these assessments is essential and could be further developed.
• Partial and sometimes insufficient non-structural mitigation measures (such as fixing heavy equipment and beds\textsuperscript{1} to walls in order to prevent dangerous movements of items when a tremor takes place) were observed in the hospitals visited, especially in physiotherapy/rehabilitation services. Further action is needed to ensure that these services are made fully earthquake prepared if HI wants to promote an image of excellence in disaster preparedness.

• Increase awareness about disability and the benefits of early rehabilitation in first aid training and capacity development at community level, and develop skills to improve the referral of people in need of rehab care and psychosocial support. Protocols for managing common injuries in order to prevent primary and secondary disabilities should be part of this community level training. The presence of information systems and services for people with new and pre-existing disabilities could be further developed in communities in order to improve outcomes and reduce vulnerability. This could be part of a wider urban DRR project with a bigger community preparedness component.

Recommendations for HI

• For HI internally, the efforts on contingency planning should continue, with a higher diversity of scenarios (depending on the type, location and scale of hazards) to be fully developed and prepared for. The existence of a more versatile contingency plan at country level and the very process of contingency plan development should serve as a basis for agile interventions, in a way that articulates development and emergency better. This will further ensure:

  - the proper combination of knowledge of the context and stakeholders, technical expertise in health and rehabilitation in disasters, presence on the ground and operational capacity provided by the country team (as developed under the contingency plan),

  - with the added value of a surge team of emergency experts (increase deployment for logistics, assessments, fundraising, human resources) proposed in the Contingency Plan.

• As this type of programme proves very useful, it would be important for HI to explore how to expend it further in Nepal and duplicate it, with the required adaptation, to other contexts with similar risks. The table below lists the key elements required for proper scaling up and duplication.

\textsuperscript{1} The system to fix beds should be simple and easily “unlockable” as they need to be moved quickly and can be moved to other safe wards.
Key messages for scaling up and duplication

- **Mass Casualty Management procedures are essential** and require the proper assessment and proactive allocation of existing space, the prioritization of the movement of patients, dead bodies and medical staff, specific equipment for triage, medical equipment and discharge procedures.

- **Proactive structural and non-structural retrofitting of health structures is essential for post-earthquake responses:** this will ensure that a basic capacity for treating earthquake victims remains in place. This should be seen as a core priority for any Health Emergency Preparedness effort.

- **Ensure that basic redundancy** in energy provision and in telecommunication systems is in place: a blind, deaf and dumb health system is idle and ineffective during an emergency.

- **Proactive integration of rehabilitation needs and risks of disability within case management**, including in the operating theatre is critical to reduce the number of amputations and to ensure that there is proper surgical and post-surgery care.

- Proactive integration of rehabilitation needs and risks of disability in the training and procedures of light search and rescue teams and first aid teams is critical to reduce the occurrence of inappropriate movement of victims leading to the risk of new disabilities.

- Ensure that mechanisms for timely case recording are in place in order to facilitate case management and continuity of care, as well as psychosocial support and humanitarian assistance to discharged medical cases.

- **Improve the prepositioning of key items**, including mobility devices, in a way that will be cost effective for the national budget and effective for the first 2-3 days of the response. This implies increased discussion between aid agencies and procurement staff in hospitals and with the Ministry of Health’s financial department.

- Ensure that **protocols for better articulation between case management protocols and rehabilitation guidelines** are in place and available to FMT prior to deployment.

- **Ensure that multiple risk analysis is conducive to multi-scenario planning by basing the definition of scenarios less on “severe, medium and low” gravity and more on a combined analysis of frequency and gravity.** This will allow for a more agile attitude to scenario and response.
1. Background

The key objective of disaster response, especially for the health sector, is to minimize morbidity and mortality. Every year, disasters are a significant cause of death and disability around the world and also have tremendous social, economic, and political effects on society. Improving response to natural and manmade disasters is a core component of any resilient and sustainable community. In order to be able to respond to emergencies caused by hazards, communities must prepare to do so by decreasing community vulnerability, developing response plans, and providing training and emergency equipment prior to the onset of a hazardous event. This group of procedures is collectively referred to as preparedness, which is defined as the “set of measures that ensure the organized mobilization of personnel, funds, equipment, and supplies within a safe environment for effective relief.”

1.1. Nepal risk profile and the specific case of the Kathmandu Valley

Nepal

Nepal is a small landlocked country, between India and China. Nepal’s population is about 26.6 million with an annual rate of growth of 1.59 percent (findings of Census, 2011). It is one of the poorest countries in the world (currently ranked 145 on the Human Development Index with a per capita income of US$730). Administratively, the country was divided into seven states with the promulgation of a new constitution on 20th September 2015.

Nepal is one of the 20 most disaster-prone countries in the world. It has gone through many crises over the last 20 years, including a bloody civil war rooted in the cold war confrontation, and regular disasters of different kinds (floods, landslides, earthquakes, windstorms, hailstorms, fires, glacial lake outburst floods (GLOFs) and avalanches). Out of 200 countries in the world, Nepal ranks 11th and 30th, respectively, with regard to relative vulnerability to earthquakes and floods (UNDP/BCPR, 2004).

Nepal is considered a high seismic-risk country. The seismic record suggests that the risk of an earthquake of Modified Mercalli Intensity Scale (MMI X6) is high. The main source of seismic activity in Nepal is subduction of the Indian plate under the Tibetan plate (the Himalayas). The physical vulnerability of Nepal is very high, with most buildings and infrastructure constructed without reference to hazard-resistant technology.

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The Kathmandu Valley

Kathmandu is the most populated district in Nepal. According to the preliminary findings of the Population Census of 2011, the Kathmandu district recorded the highest population growth rate in a decade with 60.93 percent and a population density of 4408/sq km. The population of Kathmandu district currently stands at 1.74 million, the population of Kathmandu valley (consisting of three districts; Kathmandu, Lalitpur and Bhaktapur) having been 1.6 million 10 years ago. Kathmandu is one of the fastest growing cities in South Asia, with a population of around 2.5 million people. It is situated on a major fault line, placing it at significant risk of an intense earthquake.

Out of 21 cities worldwide that lie in similar seismic zones, Kathmandu is at the highest risk in terms of impact on people. Moreover, rapid, haphazard urban development, including non-compliance with the building code, failure to use qualified engineers or trained masons, encroachment of buildings on open space and depletion of the water table, is increasing vulnerability at a significant rate. Kathmandu’s critical infrastructure and essential services are also extremely vulnerable.

According to the Global Earthquake Safety Initiative, Kathmandu is exposed to the greatest earthquake risk per capita among 21 megacities around the world, largely due to building collapse and insufficient preparedness and medical care. The older neighbourhoods which form the historical core of Nepal’s cities are particularly vulnerable to earthquake tremors. Poor quality construction of buildings and infrastructure is the main cause of structural vulnerability. The prevalence of non-engineered construction of over 90% of existing structures, poor quality control of materials and construction practices, make the built environment, especially lifeline facilities, problematic.

1.2. The importance of DRR in the Nepal context

Due to its position on the slopes of the Himalaya ranges, Nepal has been a focus of the disaster risk reduction community, with several donors (ECHO, DFID, OFDA, etc.) investing massive amounts of resources in the development of risk reduction and management capacities, including through a flagship programme the Nepal Risk Reduction Consortium (NRRC) that includes UN agencies and other DRR stakeholders (for more details see annex and documents produced on Kathmandu Valley3. Specific activities have been directed to make health systems resilient to shocks and able to remain operational to deliver health services of all kinds after high impact disasters. Handicap International has been part of a wider group of agencies committed to DRR in Nepal for years with funding from ECHO through the DIPECHO instrument and other funding sources not represented in Nepal. It works on health risk reduction and disaster preparedness through a consortium with the WHO, the Nepalese Red Cross Society (NRCS) and a number of other stakeholders, including the UN system, the IFRC and other members of the Red Cross and Red Crescent Movement, many NGOs and, above all, Nepalese Government bodies and non-State institutions (NGO, private actors).

3 GRUNEWALD F. et CARPENTER S.; 2014; Urban Disaster preparedness in Katmandu, Nepal; British Red Cross and Groupe URD.
There have been a number of DIPECHO programmes in Nepal and HI has been involved in several of them, including for rural CBDRR and for a specific programme aiming at ensuring that health services would be in a position to function even in the case of a high impact earthquake in the Kathmandu Valley. (For more on DRR in Nepal, see annex N°5).

1.3. Description of the project

A high magnitude disaster, especially when it affects urban contexts, always leads to complex situations (see diagram below), where a certain number of activities are systematically put in place. The results of search and rescue, and medical responses depend on the scale of the disaster and the level of preparedness. It is also well-known that persons with disabilities and other vulnerable persons are less mobile, more at risk, and often less able to benefit from emergency health services established during the crisis than others.

The Earthquake Preparedness Project is run by a consortium led by WHO and is funded by DG ECHO via DIPECHO (DIPECHO VI and VII), MOFA Luxembourg and MOFA France. HI joined the project on the strength of its experience in Haiti, Pakistan, Iran and Indonesia working on early physical rehabilitation and implementing strategies to reduce the vulnerability of people with disabilities in emergencies. Before HI became involved, two phases of the project had already taken place through USAID/OFDA and its project HOPE. The objective of the EPP was to increase the readiness and response capacity of health authorities, health institutions and communities in the event of an earthquake in the Kathmandu Valley. The project also aimed to achieve activities identified in Nepal’s National Disaster Risk Reduction (NDRR) strategy, which was developed based on the National Disaster Management plan, and was fully endorsed by the Government of Nepal.

The EPP brought together the WHO (consortium lead), OXFAM, Save the Children (previously MERLIN), Handicap International, a number of national partners (Nepal Red Cross, NSET, etc.) and the relevant line ministries and national health institutions. The project focused on 3 areas of preparedness for the immediate response, including rehabilitation needs:

- Ensuring that adequate information and coordination mechanisms, policies and strategies are in place in the health sector;
- Strengthening the response capacity of public and private health institutions;
- Building the capacity of civil society to act as first responder.

Taking into account the high population density of Kathmandu Valley, the project implemented several activities:

- Preparedness of critical infrastructure (non-structural as most of the structural retrofitting work was done under other projects, especially those funded by DFID)
- Ensuring that mechanisms are in place for the response, including supporting the creation of a Health Emergency Operation Centre (HEOC), connected with the National Emergency Operation Centre (NEOC) which operates under the Ministry of Home Affairs. The HEOC is the main Incident Command system in

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the health sector and can activate different mechanisms, including the Hub system, the deployment of health professionals, etc.

- Establishing a referral network around a certain number of Hub hospitals servicing lower level health structures including a roster of Nepalese Health professionals available for early deployment;
- Preparedness for the functioning of health systems: MCM, medical guidelines, treatment guidelines and standardized training packages.

The EPP was one of the main components of the NRCC flagship programme. HI contributed to several activities as a member of the consortium:

- supporting the development of the Health Emergency Operation Centre (HEOC);
- strengthening the capacity of health and rehabilitation professionals;
- contributing to the development of MCM strategies;
- non-structural retrofitting in hospital departments that deal with disabled and rehabilitation work;
- the development of a rapid deployment capacity based on the establishment of a “hospital hubs/satellite” system and a roster of health professional that can man it; and
- awareness-raising activities.

1.4. The post-earthquake context

Nepal was struck by a 7.8 Magnitude earthquake on 25 April 2015, the epicentre located 81 km northwest of the capital city Kathmandu at a depth of 15km. This was followed by a series of aftershocks (hundreds of aftershocks have been reported since, including one of 6.7 magnitude on 2 May 2015, and another of 5.0 magnitude near Pokhara), another significant aftershock affected another area west of Kathmandu on 12 May 2015. With a magnitude of 7.2, this intensified fear and anxiety about threats to life and property. Aftershocks have continued and it is estimated that around eight million people have been affected.

Three key factors have shaped the situation. First of all, neither the April nor the May earthquakes were as powerful as had been feared. Secondly, although they affected part of the Kathmandu Valley, their main impact was in low-density rural areas, even though certain small towns were also affected. Thirdly, the first tremor occurred on a Saturday at around mid-day, when most people were not working. If it had taken place on a working day, when people were in their offices and children in schools, the situation would have been even more devastating.

This earthquake was the first test for the health system since the launch of the EPP, but also for all activities upstream (search and rescue, first aid mass case management including triage) and downstream (post operation management, wounded care and maintenance). The Nepalese government made a request to the UN Resident Coordinator for international humanitarian assistance on 26 April 2015. The Government has identified 14 out of the 75 districts in Nepal as being severely impacted and requiring humanitarian aid including rehabilitation, psychosocial assistance, and the restoration of health care delivery.

As of 3 June 2015, the Government reported that a total of 505,745 houses had been destroyed and 279,330 had been damaged by the 7.8 magnitude earthquake on 25
April 2015 and the 7.3 quake on 12 May 2015. The earthquakes killed 8,702 people and injured thousands of people. Reaching the 864,000 people in hard to reach areas who had lost their homes, living below the poverty line, remained a priority, with the monsoon rains further isolating remote villages and the harsh Nepalese winter on the horizon.

As in many earthquake scenarios, many casualties were caused by buildings and infrastructure that collapsed, and the capacity of the health system to care for the wounded was crucial. Strengthening the resilience of the health system at all levels became a specific area of engagement for both development and emergency donors. This took in particular the form of important efforts in structural retrofitting of hospital buildings in key hospitals in the Kathmandu valley. Although the intensity of the earthquake was not as high as had been expected in preparedness projects, the fact that most foreign medical teams from outside only arrived 3-4 days after the earthquake due to issues at the airport, meant that the Nepal health system carried out most of the life and limb saving without much support from outside. As a result, this provided an opportunity to assess the effect of preparedness measures. Although the scope of the preparedness project was limited to the Kathmandu Valley, and the casualties were mainly from outside the valley, it should be noted that within 5 days, most seriously injured people had been transferred (or had made their way) to Kathmandu hospitals.
2. Methodology used during the mission

2.1. Objectives and scope of the evaluation

This evaluation of HI DRR efforts in Nepal aimed to assess:

- The quality and impact of HI DRR engagement in the Health system in relation to its capacity to respond adequately to a significant disaster following the series of shocks and aftershocks that hit Nepal in April and May 2015.
- HI contingency planning mechanisms, and the extent to which the combination of internal and project preparedness has contributed to a quality response.

The conclusions of the evaluation will help HI to position itself in the DRR sector in Nepal and will look at how DRR can be mainstreamed more strategically in HI’s activities.

Specifically, the evaluation looked at:

- The impact of project activities (collaborative development of a series of guidelines – MCM, specific surgical and medical guidelines, capacity strengthening, non-structural retrofitting, the establishment of a roster and related deployment guidelines, and awareness raising activities about the 2015 earthquake response in the health sector.
- The fact that preparedness efforts had targeted the Kathmandu Valley, but the earthquake affected a much broader area, including remote districts. The contribution by HI and the Consortium to the global response will be important in terms of assessing the relevance, the effectiveness and the efficiency of the programme.

In addition, the evaluation team had to identify/document lessons learned and make recommendations for partners and stakeholders in Nepal as well as outside Nepal. It also had to pay attention to how HI’s own contingency planning, including the coordination and articulation of implementation methods between HI’s Development Aid Division (DAD) and its Humanitarian Aid Division (DAH) was relevant for the response and how to improve HI’s disaster preparedness activities in general (beyond Nepal).

2.2. The proposed “theory of change”

As mentioned in the response to the TOR, below is the “theory of change that will be used during the evaluation. It is based on a well-known “upstream-downstream” model developed in public health. It links actions that should take place after an event with preparedness/preventive actions that are carried out before the event. (see next page).

2.3. Identification of the key informants

On the basis of the documents received and initial discussions with the HI Country Director and their team, the evaluation team identified a series of key informants to be interviewed either individually or in a “focus group” format for the review of the
programme itself. Despite the specific difficulties of the evaluation period (political tensions and a blockade on fuel which caused a certain amount of paralysis of public and private transport), the evaluation team was able to meet and interview key partners:

- **Coordination**: Ministry of Home Affairs / Nepal Emergency Operation Centre (NEOC), UN OCHA/ RC-HC; Health cluster, CDO, DHO, NRRC (DRR coordination)
- **Health**: MoHP, HEOC, Nepalese Army, NRCS, Hospitals
- **Beneficiaries**: Ordinary Nepalese people who received hospital treatment at the time of the earthquake.

A series of key informants were interviewed to review the HI mobilization, some before and others after the field visit:

- **HQ level**: Development and Humanitarian Directions, DRR technical advisor, Rehabilitation technical advisor;
- **Field level**: in relation to the operations and the Contingency Plan in place at the time of the earthquake: Country Director, Development team in particular the team involved in the DIPECHO projects, Emergency team.

### 2.4. Constraints during the evaluation

The political situation in Nepal and the fuel blockade made it difficult to get around the city to meet the different stakeholders and to visit health structures. The evaluation team nevertheless managed to overcome these obstacles and, in the end, was able to meet most of the Nepalese and international informants, as planned (although the planned meeting with ECHO could not take place due to the situation). Another difficulty was linked to the multiplication of preparedness activities carried out by different stakeholders both within and outside the EPP (the USAID funded HOPE project, the DFID structural retrofitting project, etc.).

As is often the case in such consortium-based projects, interaction between the different members is important and requires a high level of coordination. In order to be able to assess the impact of stock prepositioning, it is necessary to first decide who is in charge of establishing the list of items to be prepositioned, who is responsible for actually organizing the prepositioning, and who is in charge of resupplying stocks before they are exhausted.

The fact that none of the members of the first deployment of the DAH was in Kathmandu at the time of the evaluation made it complicated to take their views about this first period into consideration, although several interviews could be conducted after the field mission. The fact that the DAH team worked through DAD staff during the first month also helped to fill in this information gap.
THE UPSTREAM - DOWNSTREAM PUBLIC HEALTH MODEL APPLIED TO HEALTH DRR

- Risk mapping and capacity assessment
- Rehabilitation and disability management guidelines
- Hospital retrofitting
- E-WASH preparedness
- Medical kit pre-storing
- Surgical protocols
- Surgery training
- Key staff identification
- Health Roster in place
- MCM protocols in place
- Psychosocial guidelines & training
- MCM training (space management, triage capacity)
- Logistic plans developed
- Heavy USAR coordination
- Light USAR capacity dev.
- First aid training capacity

EVENT

- Search and rescue
- First aid to victims
- Referral to health structures
- Triage
- Dead Body management
- Heavy wound management
- Light wound management
- Surgery
- Post op care
- Rapid First psychological support
- Inclusive Rehabilitation
- Long term psychosocial support
3. Findings

3.1. Key achievements of the EPP prior to the earthquakes

**Health Emergency Operation Centres**

The concept of Health Emergency Operation Centres (HEOC) emerged as the result of HI work on early deployment as there was a need for a structure within the MoHP that would be responsible for keeping the roster up to date and coordinating deployments. This then developed into a full-blown Incident Control System (ICS) when WHO underlined that in a high intensity disaster, high level coordination capacity is essential. The EPP, in particular WHO, thus invested in the concept of the HEOC quite early on and supported its creation, in coordination with Flagship 2 of the Nepal Risk Reduction Consortium (NRRC). HEOC is the main emergency health coordination mechanism and organizes weekly meetings of the health sector. Its role is to ensure the flow of information both up and down (from HQ to the field and vice versa), and to coordinate the overall health response to ensure health practices are coherent, gaps are covered and duplication is avoided. It became operational for the first time during the response to the 2014 floods in Western Nepal, a few months before the 2015 earthquake. UN agencies are co-leaders and regularly discuss preparedness and response.

**An Early deployment based on a Roster of health professionals and awareness raising regarding mobilization mechanisms was establishment**

In the design of the EPP, an important factor taken into account was the need to properly staff health institutions in the chaotic situation that would result from a high magnitude earthquake. A list of people was gradually established, with their contact information, and the allocation of responsibilities in the case of a deployment (how to report availability, where to go, what to do, etc.). HI organised a series of consultative workshops to finalise, endorse and disseminate the roster and early human resource deployment mechanism. 223 health and rehabilitation professionals were directly involved in cross-sector workshops including policy makers from MOHP, professionals from government-run, private, and non-governmental health institutions, including various professional associations. Once the deployment plan was developed, health professionals who were available for deployment were identified and added to a roster.

**The inter-hospital “hub system” was put in place**

What emerged in the process was the need to establish a system that could function even when there was limited mobility (with roads full of debris) and telecommunications were frequently down. A system of relatively autonomous hub hospitals with their peripheral arms and a predetermined referral system was thus established and tested with some mock drills.
Manuals, protocols and other rehabilitation IEC materials were prepared, validated and produced

From many accounts, the project was successful in ensuring the engagement and leadership of NHEICC / MOHP (the authorised national body for producing all IEC materials) to produce the IEC materials thereby ensuring the ownership, accountability and sustainability of the activity. Based on three trauma protocols, IEC materials were developed and produced on five topics: Stump Management, Bowel and Bladder Management, Deep Vein Thrombosis, Wound Care and Pressure Ulcers. These materials were produced in Nepali mainly for use by the injured and their care givers. They were produced following NHEICC’s standard procedures, involving a participatory approach and a series of field tests, with feedback and consultation from the client/user groups. The materials were widely disseminated to all the key hospitals and rehabilitation centres in and outside Kathmandu via the NHEICC/ MOHP distribution mechanism. The NHEICC / MOHP has now taken over ownership of these materials which will be reproduced at their own cost in the future.

Trauma protocol on surgical, medical and rehabilitation management of Spinal Cord Injuries, Amputation and Complex fractures were elaborated and widely shared

Three trauma protocols on medical, surgical and rehabilitation management of expected injuries: Amputation, Spinal Cord Injuries and Complex Fractures were developed based on international standards and in consultation with orthopaedics and rehabilitation professionals in Nepal, and through wider consultation with the Ministry of Health and Population, WHO, Merlin, Professional Associations, and Health and Rehabilitation professionals from the state, private and NGO sectors. 86 participants contributed to the development of the trauma protocols. The MOHP was involved throughout the development process and endorsed and approved the final results. Training was provided to surgeons, nurses and rehabilitation professionals in order to ensure that they were all capable of providing the same quality care. The protocols for these injuries are also relevant in non-emergency situations. A referral protocol was established to provide medical services to initially managed/operated patients thus ensuring that discharged patients got rehabilitation services. The results of these collective efforts were validated by the MoHP two days before the earthquake.

Training of surgeons, physiotherapists and selected nurses in the management of amputations, complex fractures, and spinal cord injuries took place based on the protocols that had been developed

HI experts conducted trainings organised by ARC on managing amputations, complex fractures and spinal cord injuries to ensure that surgeons, nurses and rehabilitation professionals applied a common and comprehensive approach. 10 health and rehabilitation professionals were trained as “master trainers” and, in turn, they trained the surgeons, physiotherapists and selected nurses, in many hospitals of Nepal (beyond the Kathmandu Valley) based on the trauma protocols that had been developed.

Non-structural retrofitting was implemented

Non-structural retrofitting basically means ensuring that all the necessary measures are taken to ensure that non-structural elements of health facilities do not become a source of harm in the event of an earthquake (fixing heavy equipment, storage units...
and beds to walls or to the floor in order to prevent them from falling or moving, ensuring that bottles and small dangerous utensils are not projected into the air when buildings start shaking, etc.). While these activities were not HI’s responsibility, they were critically important for their work because if they had not been carried out, it could have caused a lot of harm and problems for HI’s target population (people with disabilities).

**Prepositioning of stocks**

In order to ensure that hospitals are rapidly operational after an earthquake, a certain number of items need to be immediately available. In order to constitute stocks, it is necessary to take into account the rate of consumption and how long it will take to re-establish proper supply lines, but also the cost of stock maintenance, the comprehensiveness of the list of items to be prepositioned, the related procurement costs and the space available for storage. Prepositioning was included in the EPP consortium project from DIPECHO 6 onwards. Pre-positioning took place in Kathmandu, Lalitpur and Bhaktapur districts including 4 hospitals – TUTH, Civil Service hospital, Patan Hospital and Bhaktapur hospital. The pre-positioned materials included:

- what was needed for everyday survival (drinking water supply materials like water tanks, jugs, buckets, pipes, sockets, etc., sanitation materials, toilet pans, tarpaulins, ropes, handles, shovels, soap, etc., sanitary kits (soap, sanitary pads, toothpaste, toothbrushes, combs, sanitizers, mosquito nets, etc.), storage containers with tool kits for fixing wash facilities, and other materials (generators, fire extinguishers, diesel, cables, etc.);

- what was needed to provide wounded people with basic medical treatment, including tents that could be transformed into operation wards, medical kits including international standard surgical kits, and other equipment such as crutches, splints, and fixators

- what was needed to ensure that HI could fulfil its main mandate vis-à-vis the injured (assistive devices including emergency wheelchairs, all stored at National Disabled Fund.

One of the activities of HI prior to the earthquake was to establish basic stocks of key mobility and rehabilitation devices in the different “hub hospitals” so that there was the capacity to respond during the first few days when large areas of Kathmandu city would be on their own after a significant earthquake. These stocks were in place at the time of the earthquake, but in insufficient quantities.

**Psychosocial and Dead Body Management (DBM)**

Dead Body Management (DBM) is a key task in Mass Casualty Management (MCM). The fact that ICRC, NRCS and MoPH have developed proper DBM means that this very specific activity is already well included in Standard Operational Procedures in hospitals at the central level. Dead bodies where positionned at the main entrance of hospitals to ease identification without ice in one hospitals ; the number of bodies was not significant and by Day 4 the bodies had been removed but in case of a bigger volume this would have been problematic. This may not be the case in many rural areas. DBM does nevertheless require specific attention in view of its importance in relation to Post Traumatic Stress Syndrome (PTSS) and psychosocial work. This was an area still under development at the time of the earthquake.
3.2. Internal Handicap International’s contingency planning and level of preparedness

As part of HI’s overall commitment to its staff and the people it aims to serve, each HI office develops a Contingency Plan. The contingency plan identifies what HI will do in the event of a disaster with several sub-components:

- Safety and security of HI staff and premises;
- Scenario planning;
- Preparedness measures (and in our case this was phase - year 1 measures to respond to a small emergency, year 2 measures to respond to a medium size emergency, year 3, measures to respond to a large scale emergency);
- Action plan - every year review of measures to achieve contingency plan;
- Implementation of the DRR measures;
- Additional relief activities that can be done by HI (basic needs, enhanced post-disaster rehabilitation work).

A plan was prepared in 2013-2014, and approved by the emergency and development departments of HI in mid-2014. It was put to the test after the 2014 floods and has been revised since, with particular effort to make it compatible with the collective efforts on contingency planning carried out in Nepal by the HCT and by a group of 10 INGOs (the Country Director Contingency Group of AIN). In order to be ready to implement this plan, there were a number of things that the HI Nepal Office needed to do and therefore Action Plans were developed for 2014 and 2015. The 2015 Action Plan was not finalized at the time of the earthquake.

This included:
- improvements in the logistics sector;
- more training for HI staff;
- the development of an enhanced capacity to raise emergency funds;
- a methodology for deployment outside the Kathmandu Valley (as done for the 2014 flood very close to an area where HI had other DRR activities).

The role and responsibilities of key HI DAD staff members were not sufficiently well defined in the preparedness efforts and contingency planning, with no event specific responsibility which somewhat impacted their operational capacity.

3.3. What happened from Saturday 25th April onwards

At the time of the earthquake at 11.56 AM, 25th April 2015, most of the HI team was present in a single place. Rapidly, after checking the whereabouts of family members, the team went to the office, reviewed the emergency protocols as per the Contingency Plan and started its response to the crisis. The HI Country Director immediately contacted the organisation’s HQ. As part of her role in the Humanitarian Country Team (representing INGOs), she was immediately in contact with the RC/HC and the National Emergency Operation Centre. The first NEOC meeting took place on the 25th and the first HCT on the 26th.
As the new office building, recently retrofitted, resisted the shocks well, it was decided that it should become the base for all those in need of a safe shelter close to the office.

At 3 pm, a rapid assessment was carried out of one of the largest hospitals, the TUTH, as well as of the surrounding neighbourhoods and health facilities, and at 4 pm HI accessed the assistive device stock from the EPP project and other sources and provided the TUTH with devices at 5 pm and from 9 pm rehabilitation services were provided. That afternoon, the networks of rehabilitation professionals were activated, and available staff were pre-positioned. In the evening, the HI staff met for a debriefing.

The team also rapidly contacted the HEOC. The HEOC delegated high level officials to coordinate the health response to the earthquake by MoHP under the National Emergency Operational Centre (coordinating the national and international response). It provided a key link between the NEOC (central coordination, under MoHA) and the health sector, and played a central role in ensuring that there was a certain level of coordination between all the different health organisations (in particular the Foreign Medical teams, or FMT) who arrived in Nepal in large numbers in the following days. Based on UNDAC’s V-OSOC model, the HEOC was given a key role in the Incident Control System (ICS), managing the mechanism for the reception and dispatch of incoming Foreign Medical Teams (FMT), and promoting good practices and the use of treatment manuals and guidelines prepared in country (largely by the EPP project). The first HEOC meeting took place on the morning of the 26th.

On Saturday evening, HI’s Director of Operations pronounced the “operational differentiation”, an internal mechanism allocating specific responsibilities to the Development and Humanitarian Directions in a given response. In this specific context, the responsibility of the earthquake response was allocated to the DAH. The DAH team arrived on Monday and was in charge of implementing the emergency intervention to address the basic and specific needs of affected persons.

On the 2nd day, at 7.30 am, a strategic team meeting at HI was conducted at the HI Kathmandu office in order to allocate tasks and responsibilities among the staff (who should link with which level in the government (NEOC, HEOC, etc.); who should attend which interagency meeting –clusters, etc.; who should go to which targeted hospital, which department, etc.) taking into account the situation and the Contingency Plan. This continued for the following 8 days. Regular meetings were held with the Emergency Incident Command System at the TUTH, health cluster meetings were attended and the response was extended to 3 other major hospitals as of day 2. HI positioned physiotherapists in the triage areas, in the surgical wards and established “Help desks” in hospitals as information point, but not identification mechanisms. The pre-identified Vulnerability Focal Points in the communities are supposed to have that role of identification but were unfortunately not operational at time of the earthquake. These Help Desks within hospitals to advise injured people and relatives about what to do.

By the morning of day 2, hospitals had run out of medicine for wound management, drills, fixators and assistive devices. HI’s logistics team immediately placed orders for rapid supplies. At the end of day 2, a joint assessment team of IMC and HI were sent to Gorkha.

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At the community level, one speaks about “vulnerability focal points”.
In anticipation of NFI distributions, the logistics team also started preparing orders for NFI kits as per the items distributed during the floods in 2014. HI mobilized and deployed a team from the EPP and HAD in IDP camps to support the most vulnerable people the first few days after the earthquake. The camps that were visited included those in Tundhikhel, National stadium, Jawalakhel, Kirtipur, Maharajgunj and Bhaktapur. The support in the initial days included a set of activities that were part of HI Nepal’s contingency plan:

- Assessment of the camp situation to identify gaps and needs
- Coordination with other agencies (e.g. World Vision, Save the Children and Oxfam) to get information on their proposed response in the camps
- Collecting information about responding agencies and sharing this with the displaced people in camps
- Sharing information about the shelter needs of injured people and their families with other agencies (e.g. Maiti Nepal).
- Sharing information about missing people (information obtained from the hospitals’ help desks set up by HI).

The emergency team supported with tools and methodology as this was lacking in the contingency plan.

Most of the people interviewed were not in their hospitals/ work places at the time of the earthquake, but immediately made their way to these to start working. Initially, there was chaos, but thanks to early trainings the hospitals rapidly established a triage system outside the hospitals in the first 2-3 hours with support from the volunteers and started surgery after 2-3 hours. The physiotherapists and nurses helped to stabilise the patients who were waiting for surgery. Dead bodies were placed immediately at the entrance of the hospital for rapid identification by relatives. Conservation of bodies was slightly problematic.

The first members of the HI Humanitarian Aid Direction team arrived on a commercial flight on Monday evening. The whole DAD team was put at the service of DAH for the first month. The rest of the team arrived gradually. Upon arrival of the DAH team, the main activities were:

- Supporting hospital teams in prioritizing patients;
- Providing tools (assessment forms, database);
- Launching PT and SW recruitment for hospitals and mobile teams;
- Enhancing the links with medical staff;
- Supporting data management (the help desks were only useful for the first 2-3 days, as there were too many collecting the same type of information without consolidation);
- Assessing other health facilities;
- Updating mapping of rehabilitation facilities and transport services;
- Assessment of the health status and needs of discharged patients started on 30/04 in the “step down facilities” (discharged mechanisms);
- Conducting assessments in Nuwakot district 03/05 and in Sindhulpachowk District 12/05.

In parallel, the inclusion technical unit (ITU) was gradually set up but not as rapidly as it should have.

The response to basic needs was implemented, with distributions of NFIs and emergency shelters to 11000 people from 11/05 (until early July).
Most of the Foreign Medical Teams (FMT) started arriving on day 3 or 4 and many of them started working in close collaboration and coordination with the existing hospitals/medical staff to treat the earthquake victims. The vast majority of FMTs came without any rehabilitation team members with the notable exception of UK-Med that included an HI physiotherapists.

The Nepalese medical fraternity did an excellent job in treating the injured in a very short span of time (about a week). Although a few FMTs remained in the country for about a month, most left after 1-2 weeks. The FMTs used the national protocols on injury management developed through this project in providing patients with treatment. However, the FMT coordinator rapidly requested tools for discharge and rehabilitation referral, as well as support for early rehabilitation. Although pre-registration and coordination was in place, but a few teams did not register or engage in this and it was difficult to manage them properly. When they left, they handed over a great deal of essential equipment and supplies to the hospitals they had worked with.
4. Analysis

4.1. Analysis related to the EPP

4.1.1. Relevance

Tested by the earthquake, the preparedness activities initiated by HI in the health sector under the Consortium led by WHO were highly relevant.

The decision to work on early deployment mechanisms, the development of protocols and guidelines (injury management, burns, etc.) and the subsequent provision of training to different types of health workers in an integrated manner with the other components of the Consortium, proved to be of high value when tested in the earthquake. The development of the Early Deployment Plan based on the Hub hospital system and its peripheral network of health institutions proved extremely useful. This plan immediately responded to the victims of the earthquake.

HI was ready to intervene within a few hours of the earthquake thanks to their contacts with health institutions, their prepositioned stocks and their contingency plan.

It is critically important to anticipate the types of wounds and injuries that will take place in a given event in order for modules and protocols to have optimal added value. The management of complex fractures is one such issue and could be further developed, in view of the post-earthquake experience.

IEC material on the proper management of multiple fractures and on spinal cord injuries would have been useful in the localized response before referring cases to hospitals.

As this earthquake did not produce large fires, and the importance given to the protocols on burn management, based on other earthquake experiences, did not proved as useful as expected.

Logistics is essential in disaster response in a country like Nepal. This means that enhancing human resources and logistics capacity should be given a high priority in emergency preparedness. The project could have done more to address the logistical challenges of responding outside of the valley, both by developing systems to bring patients to well-equipped Kathmandu hospitals or by deploying staff outside of the valley.

4.1.2. Impact

A lot of the preparedness activities implemented by the different members of the consortium helped the health structures to deliver a response as there was synergy between all the different contributions by the Consortium. This created an environment which helped to increase the impact of HI’s own contributions. Non-structural retrofitting, Mass Casualty Management, triage, etc. created an enabling environment where trained personnel with proper protocols, who were assigned to the right place, were able to make a significant impact on the mortality, morbidity and wellbeing of the earthquake victims. Several people who had to take relatives to hospital after the earthquake who were interviewed by the evaluation team explained...
that rather than total chaos, the situation in the hospitals was messy but not out of control. Red, yellow and green zones were in place, and the medical staff seemed more or less to know what to do. Even though it was far from perfect, especially as there were frequent aftershocks and people regularly reacted in panic, the side management protocols established as part of the preparedness programmes were in place and functioned to a large extent.

According to several Nepalese surgeons interviewed, the efforts to ensure that physiotherapy and rehabilitation were included early on in the patient care chain allowed the medical teams to work in an integrated manner relatively rapidly. The advice given by the physiotherapists, their regular involvement in decision-making and their presence in the surgical wards and post-op wards where patients stay after surgery proved essential and had a major impact on the quality of the treatments. The pre-disaster Case Management training involved not only surgeons, doctors and nurses but also physiotherapists and rehabilitation specialists. This led to greater demand for rehabilitation staff that HI had to facilitate. According to some medical staff interviewed in hospitals, this raising of awareness amongst surgical teams about issues related to physiotherapy combined with pre-disaster training and early advice on case management led to the identification of alternatives to amputations and resulted in a low amputation rate (in relation to the number of serious member fractures rather than the total number of wounded people6). One point that did not seem to have been addressed was the protocols for rehabilitation follow-up after discharge; very low number of patients returned to OPD physiotherapist to get rehabilitation, which is really surprising for trauma cases.

The fact that there was little information on the first day of activities coupled with a largely uncontrolled early discharge of patients so that there continued to be room for incoming cases created an information gap and a possible risk of disruption of the continuity of care. Thus, post-surgery care (including case follow-up and rehabilitation) remained a major challenge. The Vulnerability Focal Points and the rapidly established hot spots tried to cope with this risk, but this was done very much on an ad-hoc basis as this area of intervention was still under development in the Contingency Plan.

As medical protocols were approved 2 days before the earthquake, they could be distributed to all the Nepalese health institutions and to the incoming Foreign Medical Teams (FMT). This had a big impact on the coherence and quality of the health response. However there was no exit strategy for the FMTs in the protocols. IEC materials that had been developed since 2010 were also systematically distributed in hospitals, step-down facilities and at community level through the HI emergency response, which allowed for proper management of care. It turned out to be difficult to find the IEC materials, and the focal person inside each structure was not immediately available.

6 Though the earthquake destroyed a lot of houses in the countryside, this led to limited numbers of wounded as many of these houses were traditional one floor houses. Most of the wounded came from more recent and badly constructed houses; often in small urban centers. The international search and rescue teams who arrived in the country late and even later in the sites outside the Kathmandu valley only had a limited impact (see table in annex N°6).
4.1.3. Effectiveness

Many of the activities in DIPECHO VI and VII were implemented by HI under the leadership of the Ministry of Health. This was done in full coordination and consultation with Government institutions, which meant that this was relatively smooth and timely, and enabled national ownership of outputs and quality. The effectiveness of the HI component of the EPP consortium is also due to the coordination mechanisms that were set up with the other DIPECHO partners through participation in monthly coordination meetings. This resulted in the exchange of information, joint field implementation and common representation vis-à-vis the authorities.

The fact that HI had a regularly up-dated contingency plan and is involved in contingency planning with other NGOs and with the HCT meant that they were able to react and be effective quickly. The contingency plan was not totally in place at the time of the earthquake and key areas still needed to be further developed and implemented, such as for logistics, first aid training for staff and the procurement of emergency communication equipment. The fact that there was an action plan for the implementation of the contingency plan, even if it was still to be finalized and validated, was very important for the timing and effectiveness of the response, once again demonstrating that what really matters is not necessarily the document but people’s state of mind and level of alertness.

Facilitating continuity of care was seen as essential, but was complicated and probably not anticipated enough by the Nepal HI team in place at the time of the earthquake. This was partially done through inclusion activities during the emergency response, with awareness sessions at community level, bilateral inclusion support of other organizations and advocacy at the cluster level. Stronger “step down” capabilities, for instance would have been very useful in the grounds of hospitals. Inclusion activities were further developed after the peak of the emergency to ensure access to services for vulnerable persons, not especially rehab and medical care but also shelter, wash activities for example.

4.1.4. Efficiency

During the first few days, the heavy reliance of the HI component of the EPP on highly competent Nepali capacities (including of those trained by other programmes such as STRIDE, HOPE, etc.), especially in physiotherapy, contributed to its efficiency during the first phase of the response. This applies to the overall HI staff profile, where the presence of expatriates during preparedness and as frontline responders (physiotherapists and social workers) was reduced to the minimum required for proper steering and accountability.

Links with the MoHP improved ownership and enhanced the capacity and expertise of local doctors and paramedics ensuring sufficient technical experience and capability in the country. Links with institutions such as The National Association of Service Providers (NASPIR), an umbrella organization where most of these rehabilitation centres are affiliated, proved also very useful. NASPIR advocates, empowers and unites service providers and other stakeholders in physical rehabilitation for sustainable, accessible and quality physical rehabilitation services to positively influence the standard of living of persons with physical disability.

Prepositioning of stocks before the earthquake was critical, but the levels of “in country” medical and assisting device stocks were very limited. By Day 3, all support
to injured and disabled people was coming from the NDF stock, the only sizeable “in country” stock for mobility devices around Kathmandu. By 6 May, there was almost no stock left, and HI had difficulty providing assisting devices (AD) to the hospitals. Finding the right articulation with the private sector and its capacity to supply large quantities and replenish stocks at the right costs requires additional studies. Some of these elements, including the links with the private sector and the exploration of additional supply lines were in the Action Plan for 2015 but not yet implemented at the time of the earthquake.

4.1.5. Coordination

HI’s work in Nepal is fully integrated into different coordination mechanisms:

- **As part of the EPP International Consortium mechanisms under WHO** (with OXFAM, Save – previously Merlin) and the national implementing partners (NRCS, NSET, NDF, etc.), with monthly meetings, etc. Merlin, HI and Oxfam all have a General Agreement with the national Social Welfare Council (national body in charge of I/NGO registration and project approval). Contact was established with EPP Consortium members in the first few hours after the earthquake and there was regular dialogue over the following days. The response however underlined some disconnects between the activities undertaken by the different partners, for instance the links between CBDRR, first aid and disabilities;

- **With National institutions involved in Health policy (MoHP), training (NHTC), IEC/BCC (NHEICC) and operational coordination (NEOC, HEOC).** Handicap International has established coordination and relations with the Nepal Risk Reduction Consortium Secretariat (NRRC), Flagship Coordinator 1, 2, 4 and 5, the Ministry of Health and Population, the Ministry of Local Development, the Ministry of Home Affairs and the Ministry of Women, Children and Social Welfare, ensuring that the needs of persons with disabilities and other vulnerable groups are taken into consideration as part of emergency health and rehabilitation care. The organisation has established itself as a key player in disaster risk management and has regularly been invited to policy review and development workshops organised by Flagships, Ministries, and in Civil Military Exercises. The health emergency activities were coordinated by WHO/MOHP via the specific FMT coordination cell.

- **With the Humanitarian Country Team under the Resident Coordinator Office (RCO) and with the relevant clusters** Handicap International is part of the Health Cluster and contributed to the development of the health sector matrix, takes part in sub clusters and working groups and also represents INGOs, alongside World Vision International, in the HCT. Yet, there was only little attention paid to disability within the cluster system, until a specific group was established with the support of UKEMT,

- **With other INGOs:** HI is vice-chair of the Association of International NGOs (AIN). It coordinates with other health and disability actors in the field through its participation in AIN health working group, AIN disaster management task group and AIN disability working group. HI and World Vision also initiated a Joint Contingency Task Force of 10 major INGOs in Nepal to establish joint response mechanisms in the event of an earthquake. The minutes of the meetings
organized in this area were reviewed and showed a high level of engagement by HI in inter-NGO coordination.

- **Coordination on DRR:** As part of the Disaster Health Working Group (DHWG), Ministry of Health and Population’s coordination mechanism for emergencies, HI was very involved in DRR coordination. The DHWG includes partners from key areas of the health sector, including different government line ministries, public and private hospital associations, health academies, nursing and medical councils, as well as international and national agencies working in this area. By coordinating closely with the DHWG, HI ensured that all work conducted under this project will be in line with the key stakeholders in this area. HI is also an active member of the Nepal Risk Reduction consortium’s Flagship 1 (hospital safety), Flagship 2 (response) and Flagship 4 (CBDRM, including urban DRR). The evaluation team observed the launch of DIPECHO 8 and witnessed that HI is highly regarded by the other organizations involved in collective DRR efforts.

- **Strategic coherence:** Eighty percent of HI Nepal’s work concerns disaster response and preparedness (health as well as flood preparedness) and health and rehabilitation (another large-scale programme to strengthen the rehabilitation services in Nepal has been running since 2005). With its response to the 2014 flood and its regular engagement in drills and discussions about DRR, the country team felt they had a solid understanding of what and how to respond, as preparedness and response were seen as part and parcel of the same type of strategic approach developed in the EPP. However, they did not expect HI to be part of certain operations, such as the creation of a logistical base to support WFP stock storage. The possibility of working on the logs platform was discussed between the DAH desk officer and the DAD country director; considering the significant logistics/transportation challenges in the affected areas, the added value and relevance of doing logs was fully endorsed by DAD and DAH.

- **Coordination with DG ECHO:** Handicap International is in regular contact with the DG ECHO Nepal office (as well as the India and Bangkok offices) through DIPECHO partners’ coordination meetings where DG ECHO representatives take part. Coordination mechanisms are also set up through the DG ECHO field monitoring missions and consultative meetings are organised by DG ECHO field office.

### 4.1.6. Linking to development/sustainability

The level of sustainability of the HI component of the EPP was found to be high, as it has involved the MoHP and its relevant institutions, key concerned hospitals and national health professionals from the start, thus generating interest and ownership. Many policies, guidelines and protocols are now in place and have been “reality tested”. Many of the stakeholders interviewed in the course of the mission are clearly committed to continuing in this direction. The trauma protocols have been developed through a series of participatory consultations involving the MOHP, national health professionals from the public, private and NGO sectors, health professional associations and universities, thus creating ownership of the final document.
In addition the MoHP has taken part in the technical reviews and plans to endorse the trauma protocols.

Furthermore, the Ministry of Health and Population has been a co-facilitator on the roster and early deployment plans, designing the mapping of health professional formats and assigning personnel from the ministry to carry out the health human resource and facilities mapping which will contribute to the development of the roster and early deployment plan. It has also been agreed that the trauma protocols and the roster and deployment plan will become part of the MCM strategy, thus becoming key reference documents in Mass casualty management.

The project has ensured that national resource persons are fully dedicated to the development of training materials and providing training to fellow health professionals, thus creating a sense of ownership of the activities. The health professionals who have been trained in trauma protocols will become part of the “trained healthcare human resources”. They will do their jobs according to the guidelines and will train others in turn within their health structures.

The activities implemented by the national partners are in line with the National Disaster Risk Management Strategy. Due to the involvement of the Ministry of Health and Population and the National Emergency Operation Centre, there is a good chance that the project activities will be sustainable. In addition, coordination networks have been established with professional health associations, the ICRC, public, private and NGO hospitals and rehabilitation centres and institutions which are vital for the continuity of the activities.

The activities implemented under this 3-year plan will be sustained through the involvement and transfer of knowledge and skills to existing health professional associations, national health sector counterparts and through synergy with other sectors including the National Emergency Operating Centre (EOC).

As many NGO, HI is affected by the funding strategies of donors (duration, type of activities eligible, etc. Short duration of the project, for instance, induce a certain level of uncertainty for activity planning, implementation and staff retention. Frequent changes of staff in the consortium were detrimental to continuity. As a result, the consortium lead, WHO, and each of the EPP partners, had to spend a lot of time providing new staff with guidance, thus reducing the effectiveness of the programme.
4.2. Specific issues related to Handicap International internal mechanisms

4.2.1. Contingency plans

The safety of HI staff and their families was rightly seen as a strategic concern, particularly for the Country Director. Indeed, if staff and their families had been affected or if there had been a perception that the organisation was not looking after them, their mobilization would not have been as overwhelming.

The fact that a new office was rented and properly retrofitted months prior to the earthquake ensured that there was a safe and fully equipped base to work from, and to sleep in when necessary.

The contingency plan had identified different stages of capacity development in order to be ready to respond to different types of disasters. HI experienced a small scale disaster in 2014 and a medium scale one in 2015, which is what the contingency plan had anticipated the team would be ready to do under the development division's leadership. However, it should be noted that the 2015 action plan to build the team's logistics and first aid skills had not been fully finalised.

4.2.2. Internal coordination

Internal coordination was important. During the first few days, as everybody was working and sleeping in the office (chosen for its ability to host large teams and retrofitted to be earthquake resistant), there was permanent coordination, with an early morning tasks assignment meeting and an end of day debrief. The situation became a bit more complicated when the staff from the DAH reached Nepal and functioned as a relatively independent team, with its own Head of Mission. Organisations working in disaster prone countries have frequently difficulties to move beyond the dual mandate to consider a full spectrum of competences; this implies educating both the emergency and development teams to the full spectrum of issues/needs/context of such countries.

The technical coordination between project staffs and technical referents at HQ level has been reported as positive and fruitful.
5. Conclusions and recommendations

DRR efforts in Nepal have regularly been tested against a number of disasters. But the 25 April 2015 earthquake and following aftershocks was a particularly important “reality check”. The response that took place could provide real lessons in relation to:

- The national disaster management mechanisms (NEOC/MoHA, uniformed services, the NRCS, line ministries and administrations, in particular in the Health sector, with its Health Emergency Operation Centre and the different hospitals in the Kathmandu Valley and beyond);
- Members of the Nepal Risk Reduction Consortium (NRRC);
- The UN system with OCHA, (deployment of a UNDAC team to coordinate the civil protection teams sent by several countries) and WHO for the health aspects of the response, including the Foreign Medical Team deployment mechanisms;
- International and local NGOs, especially all those that were involved in DRR in Nepal prior to the earthquake;
- Donors, and particularly DG ECHO which has been key to DRR in Nepal with its DIPECHO programmes, but also DFID, with its strong support to hospital safety, and USAID with its HOPE programme.

This report and following recommendations however focus mainly on the realm of activities that relate to the involvement of HI as part of the EPP consortium.

5.1. For Nepal

In view of the content of the policies elaborated by MOFALD and presented by the Joint secretary at the launch of DIPECHO, the Nepalese authorities clearly see DRR as part of the “hard component” of the post-earthquake reconstruction. The challenge will be to ensure that the “soft components” are equally considered, even though they are not the areas which bring in the most funding. Therefore, the continuous engagement of the Ministry of Health and Population needs to be maintained and nurtured. There is little point in having earthquake resistant retrofitted hospitals if the equipment is destroyed in district health institutions due to a lack of non-structural preventive measures and personnel do not know what to do due to a lack of guidelines and training.

The strategic development of institutional “agility” to facilitate the deployment of staff to affected areas depends on significant effort in advance to ensure that insurance, and administrative and financial procedures are in place and can be activated when needed. This was not yet in place and hampered deployment. There is still a lot that needs to be done by the Nepalese administration.

The EPP has contributed to new working habits such as “multidisciplinary case management”, etc. If these are not introduced in a systematic way in practices and organizational charts, they might fade away. The MoHP and hospital top management have to revisit the way their structures function and ensure that the proper systems are in place to ensure that this significant achievement of the programme can be sustained.
As government has ownership of many activities and policies, the preparedness sector will require government commitment in the long run, including inclusion of health preparedness in the coming Disaster Act and in annual budgets. It is essential to mainstream preparedness throughout the national health programme.

The International Community should continue to provide financial and technical support to the different aspects of programming that will make the Nepalese health system “fit for purpose” in the event of any new large-scale disasters in the years to come.

It is important to underline that 3 rounds of EPP have cost less than 3 million Euros and therefore an efficient modality (compared to the cost of a response without preparedness)

The early deployment plan should be revisited and updated taking into account the fact that FMTs are likely to take part and need to be properly integrated into health structures.

The coverage of the project was limited to the Kathmandu Valley. Many activities need to be carried out on a wider scale to cover the whole country. Special adaptation of the guidelines and protocols for remote areas might have to be considered.

Two gaps were identified that affected the response in general and HI activities in particular:

- The logistical capacity of the health system is limited and hindered the possibility of deploying the health equipment required for the optimal utilization of the guidelines and the protocols as well as the rehabilitation/mobility devices. Further exploration of the logistical capacities of the health partners is necessary. This issue should be brought to the attention of the Consortium.

- The radio system. While the GSM networks did not collapse totally and the satellite system continued to function, a redundant HV/VHF system needs to be put in place to link Hub hospitals, peripheral hospitals and HEOC so that it is possible to communicate about needs, and problems can be solved more easily (need for more equipment, etc.) in the event of a disaster where all other communication systems are down.

The events triggered a generous but unmanaged response with many volunteers coming to help. Simplified guidelines and protocols should be developed, in coherence with the specialized ones, in order to ensure that these volunteers do no harm (“do and don’t” approach).

- A particular area that may benefit from quality control and improved coordination is that of the deployment of foreign medical teams (FMT). The next disaster may require a substantial and rapid mobilization of senior managers and thematic experts, with significant logistical support, which is very problematic in the first few days when needed most. If WHO and its regional offices possible sought partnerships with bilateral and other institutions to develop a roster of experts and considerably increase their surge capacity to coordinate the incoming flow of medical responders. HI could contribute positively to this exercise by developing additional manuals and protocols. As far as rehab is concerned, work is underway to develop Minimum Standards for early rehab with the FMT and this should be integrated into the future plan as well. The exit strategy for FMTs is not documented in the protocols /guidelines and requires some attention.
• CBDRM and LDRLP should be linked, including work with Vulnerability Focal Points to ensure that disability is included in the response both in a preventive manner (further facilitating people with disability’s access to care; avoiding harmful gestures and behaviour) and in post-disaster contexts (ensuring the inclusiveness of DRR measures, including mock drills) and to support inclusive reconstruction efforts.
• Strengthen the District Emergency Operating Centre (DEOC), institutionalize the leadership/role/functions at the District level for proper ICS during disaster response and clarify the roles of the different response players for effective information, communication and coordination to support the HEOC and the deployment of a coherent and inclusive health response.

5.2. For other at risk countries

The WHO team coordinating the deployment of FMTs for HQ should have a list of all Health disaster preparedness measures developed in “at risk countries” and ensure that departing FMTs are fully briefed on national disaster health policies, treatment guidelines and protocols prior to departure and upon arrival. A regularly up-dated page should be included on the WHO web site and on the OCHA/UNDAC V-OSOC web site and this should be accessible to teams who are due to be deployed.

5.3. For Handicap International

5.3.1. For the continuation of the EPP

• Given the importance of creating enabling environments for earthquake preparedness, greater emphasis should be placed on strengthening institutional coherence and capacity at every level of the health system. Until now, HI efforts have largely centred on the national level and bigger hospitals in the Kathmandu valley (e.g., awareness-raising, training, strengthening national coordination processes, multi-stakeholder engagement, and so on).
• Outreach to public hospitals, Primary Health Centres and district health administrations (District Health Officers and below) has so far been overlooked, particularly regarding the benefits of early rehabilitation and continuity of care (identification of persons in need of care; referral pathway; but also awareness on barriers experienced by the most vulnerable persons and how to overcome those barriers) in the emergency response. Without comparable efforts to harmonize institutional capacities across the health delivery system, it is likely that implementing HI preparedness efforts will remain a challenge.
• More connection of these structures with CBDRRR efforts would have been useful but in the context of the EPP, they were under the responsibility of other stakeholders in the EPP consortium. HI should however be very vigilant on the fact that these efforts be systematically and properly undertaken as their absence or limited occurrence has a strong impact on HI’s work.
• Review and scale up capacity building and quality control mechanisms for simplified and purposeful planning with a focus on Early Warning, response quality and assessment quality.

• Ensure that risk, vulnerability and capacity assessments are conducted with bottom up approaches both before and after the disaster strikes to have appropriate and effective plans and encourage coordination between communities and government through simulation exercises.

• Psychosocial support/counselling needs to be further developed for injured people and the general population. In addition PFA should be standard training for all staff.

• Strengthening other stakeholders of the emergency health response such as search and rescue teams, ambulances, first aid teams, etc. is essential. Ensuring that they are properly equipped with mobility devices should be a central subject of advocacy by HI.

• A system should be properly put in in hospital to have a centralized reporting mechanism in place for injuries that will result in impairment such as complex fractures, brain injury, SCI, amputation...

5.3.2. For Handicap International internally

• Continue to improve the current Contingency plan with a higher number of scenarios to be revisited in the light of the successes and limits underlined by the earthquake response and continue to. This should involve:
  - Training on holistic disaster management
  - Specific training on emergency logistics;
  - More focus being allocate to the “beyond the hospital” phase and to continuity of care (including improvement of the so much needed data essential for case follow up)

• Safety measures through retrofitting are essential but need to be regularly monitored.

• For HI internally, the efforts on contingency planning should continue, with a higher diversity of scenarios (depending on the type, location and scale of hazards) to be fully developed and prepared for. The existence of a more versatile contingency plan at country level and the very process of contingency plan development should serve as a basis for agile interventions, in a way that articulates development and emergency better. This will further ensure:
  - An strong adaptation of the response to the field. Revisiting the plan regularly as part of a continuous Contingency Planning involving the Country office and the main stakeholders at HQ level should become a routine and would ensure shared analysis of situations,
  - The proper combination of knowledge of the context and stakeholders, technical expertise in health and rehabilitation in disasters, presence on the ground and operational capacity provided by the country team (as developed under the contingency plan),

• Deploying a surge team of emergency experts (increase deployment for logistics, assessments, fundraising, human resources) could become exceptional if proper capacity transfer is occurring more systematically to HI in country teams. More
capacity strengthening should be proposed in the Contingency Plan. This will increase the appropriateness and added value of the deployment of surge capacities.

- In view of the complexity of the different allocated responsibilities between the development branch and the humanitarian one within, a strong recommendations for HI could be to frame much strongly inclusive disaster management as an unifying principle with the organization.

- As this type of programme proves very useful, it would be important for HI to explore how to expend it further in Nepal and duplicate it, with the required adaptation, to other contexts with similar risks. The table below lists the key elements required for proper scaling up and duplication:

  - Mass Casualty Management procedures are essential and require proper assessment and proactive allocation of existing space, prioritization of movements of patients, dead body and medical staff and specific equipment for triage, medical equipment and discharge procedures
  - Proactive structural and non-structural retrofitting of health structures is essential for post seism response: This will ensure that basic capacity for treatment of earthquake victims remains in place. This should be seen as a core priority for any Health Emergency Preparedness efforts.
  - Ensure that basic redundancy in energy provision and in telecommunication systems is in place: a blind, mute and deaf health system is idle and ineffective during emergency.
  - Proactive integration of rehabilitation needs and risks of disability within case management, including at the operation theatre is critical to reduce the need of amputation ad to ensure proper surgical ad post-surgery care
  - Proactive integration of rehabilitation needs and risks of disability in the training and procedures of light search and rescue teams and first aid team is critical to reduce the occurrence of inappropriate victim movements leading to the risk of new disability;
  - Ensure that mechanisms for timely case recording are in place in order to facilitate case management and continuity of care, as well as psychosocial support and humanitarian assistance to discharged medical cases;
  - Improve the process of prepositioning of key items, including mobility devices, I a way that will be cost effective for the national budget and effective for the first 2-3 days of the response. This will imply enhanced discussion between aid agencies and procurement staff in hospitals and with the department of finance of the Ministry of Health.
  - Ensure that protocols for better articulation between case management protocols and rehabilitation guidelines are in place and available to FMT priori to deployment.
  - Ensure that multiple risk analysis is conducive to a multi-scenario planning with the identification of a more diversified scenario definition less based on “severe, medium and low” gravity and more on a combined analysis of frequency and gravity. This will allow for a more agile attitude to scenario and response.
Annexes

Annex n°1 - Terms of reference
Annex n°2 - List of people interviewed
Annex n°3 - Mission calendar
Annex n°4 - Guidelines for interviews
Annex n°5 - Documents consulted
Annex n°6 - DRR in Nepal
Annex n°7 - Activities of International Search and Rescue teams
Terms of Reference for the evaluation of the health sector preparedness work towards an effective 2015 earthquake response in Nepal

1. Background

Handicap International (HI) is an independent and impartial international aid organization working in situations of poverty and exclusion, conflict and disaster. We work alongside people with disabilities and vulnerable populations, taking action and bearing witness in order to respond to their essential needs, improve their living conditions and promote respect for their dignity and fundamental rights. Present in Nepal since 2000, HI works towards improving the living conditions and participation of children, women and men living with disabilities. HI Nepal's Country Programme Framework (2011-2015) guides us our work in the following three key sectors:

- **a)** Access to physical rehabilitation services: Provision and accessibility of rehabilitation services, sustainability of rehabilitation services, and improvements in rehabilitation pathways
- **b)** Access to services: Inclusive local development, improved access to education, improved access to livelihoods and comprehensive disaster risk management focusing on disability, gender, elderly, children and other vulnerable groups
- **c)** Prevention of disability: Earthquake preparedness in Kathmandu valley and improvements in road safety

As required by the Government of Nepal (GoN), HI works with local partners including Non-Governmental Organizations (NGOs) and government/semi-governmental institutions. HI Nepal work is focused in ensuring that our actions on the ground impact resource allocation, policy making and financing required for the institutionalization of the good practices and models we demonstrate in the sectors of our work and to do this, we also collaborate with other development and humanitarian organizations.

2. Project description

With the financial support from the Disaster Preparedness Program of European Commission's Humanitarian Aid Office (DIPECHO), HI, as part of the consortium of World Health Organization (WHO), Save the Children and Oxfam has been implementing a project since 2011 aiming at strengthening the health sector response capacity in the event of a high intensity earthquake in the Kathmandu Valley. The key information of the projects in the previous two phases is given below in the table:
<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
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</thead>
<tbody>
<tr>
<td><strong>Project Title</strong></td>
<td>Enhancing the health sector crisis preparedness in the event of a high intensity earthquake in Kathmandu Valley, Nepal</td>
</tr>
<tr>
<td><strong>Project period</strong></td>
<td>1 March 2013-31 August 2014</td>
</tr>
<tr>
<td><strong>Specific objectives</strong></td>
<td>To enhance the capacities of Ministry of Health and Population (MOHP), health facilities and catchment communities around the targeted health facilities to respond effectively to a major disaster (Earthquake).</td>
</tr>
<tr>
<td><strong>Project partners</strong></td>
<td>Consortium: HI, Oxfam, Merlin, WHO Implementing partners: National Society for Earthquake Technology, Nepal Red Cross Society, Airahiti Rehabilitation Center</td>
</tr>
<tr>
<td><strong>Key activities</strong></td>
<td>- Development of national Mass Casualty Management (MCM) Strategy; Development of MCM plans in 3 hospitals and 2 rehab centers</td>
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<tr>
<td></td>
<td>- Supply of surgical and rehab equipment and water for hospitals</td>
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<td></td>
<td>- Development of guidelines for disaster - resilient hospitals and health facilities including assessment of hospitals and rehab centers and non-structural retrofitting of hospitals</td>
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<td></td>
<td>- Development of roster of health professionals; training of health and rehab professionals on MCM</td>
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<td>- Strengthening of operational capacities of Health Emergency Operation Center (HEOC) to support MOHP in managing emergencies / disasters.</td>
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<td>- Support MOHP to roll out National MCM strategies.</td>
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<td>- Develop Emergency Trauma Guidelines on management of head and burn injuries expected during earthquake.</td>
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<tr>
<td></td>
<td>- Develop MCM plan inclusive of emergency Water, Sanitation and Hygiene (WASH) in health facilities.</td>
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<tr>
<td></td>
<td>- Train health and rehabilitation professionals in management of head and burn injuries based on emergency trauma guidelines.</td>
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- Protocol development for trainings on trauma and rehabilitation issues and for referral to rehab services
- Testing of district health contingency plan
- First aid, search and rescue training for first responders
- Public awareness and communication on disaster

- Conduct Non-structural retrofitting including WASH components in selected hospitals.
- Health and WASH Risk assessment and management plan for villages and municipality
- Awareness raising activities around the catchment communities of health facilities
- Support District Public Health Office (DPHO) to develop municipal level health sector contingency plan linked with Local Disaster Risk Management Plan.

**Beneficiaries**

- Health and rehabilitation professionals, community members, hospitals and rehab centers
- Direct beneficiary number: 108,200

- Authorities from Ministry of Health and Population, Ministry of Home Affairs, Health and Rehabilitation professionals from hospitals and rehabilitation centers
- Direct beneficiary number: 34,221

The third phase of this project is also approved by ECHO and it will start from August 2015. The new phase has a focus on consolidation and institutionalization of the preparedness work already initiated from the previous two phases.

The previous interventions principally aimed at contributing towards prevention of avoidable loss of life and disabling consequences through effective mass casualty management systems. Specifically, the project intended at enhancing the capacities of Ministry of Health and Population (MoHP), health facilities and catchment communities around targeted health facilities to respond effectively to a major earthquake.

The project is part of the wider efforts of the Nepal Risk Reduction Consortium, and especially Flagship 1 on Hospital and School safety to build the disaster management capacity of Nepal's institutions and people. The project also connects to other projects of HI Nepal in community based disaster risk management through which the organization was instrumental in contributing to the national framework on disaster management. The HI Nepal “Strengthening Rehabilitation in District Environs” project also brings the work on building and sustaining skills and institutions to provide quality rehabilitation services across the country.

Finally HI Nepal, through this health preparedness project developed an Emergency Contingency Plan as well as consequent Annual contingency plan. These plans supported HI Nepal's team readiness to respond to disaster such as the 2014 Mid-Western floods and 2015 earthquake.

**3. Purpose of the evaluation**

On 25th April 2015, a 7.8 magnitude earthquake hit Nepal, which together with a series of bigger and medium sized aftershocks affected millions of families, killing more than 8,700 people and injuring over 22,000 people. Right after the disaster, thousands of injured people rushed to the hospitals in Kathmandu. In the
subsequent hours and days, injured people from neighboring districts in the Valley were brought to the hospitals in Kathmandu. Most of the hospitals where there were higher number of injured people were the ones with whom the project had been working, preparing them for a similar situation. Given this context, HI wishes to assess the impact and effectiveness of the earthquake preparedness initiatives undertaken in the health sector, and review the performance of the hospitals and rehabilitation centers and their professionals as part of the health sector disaster response, in regards to the six building blocks of a health system: Leadership & governance / Health care financing / Health workforce / Service delivery / Information & research / medical products - technologies. Specifically, the evaluation will look at:
- the impact of project activities such as capacity building initiatives for HEOC, health and rehabilitation professionals, development of MCM strategies, non-structural retrofitting, and awareness raising activities into the 2015 earthquake response in the health sector.
- identify/document lessons learned and make recommendations that project partners and stakeholders in Nepal might use to improve the design and implementation of future projects. The results will contribute to better informed decision-making, foster an environment of learning and promote greater accountability for performance, both for HI and for other organizations working in earthquake preparedness.
- how HI’s own contingency planning, including the coordination and articulation of implementation methods between development (DAD) and emergency (DAU) teams together with the contingency plan and national guidelines, was relevant for the response and whether and how foreseen scenarios were implemented and will make recommendations for the amendment of this plan.

The evaluation findings will be shared both at the national level and at the international level. Sharing at the national level will assist HI and other organizations working in health sector disaster preparedness to advocate for operational improvements required towards the preparedness and response capacity of the health system, including rehabilitation. Sharing at the international level will contribute in highlighting the significance of preparedness in the health sector to address mass casualty incidents like earthquake and also sensitize all concerned including the donors and development actors in investing for health sector preparedness.

4. Criteria and the scope of the evaluation
In general, the evaluation will review the preparedness work of the health sector and of HI Nepal, its relevance, effectiveness, impact and sustainability in relation with 2015 earthquake response.

The following criteria and guiding questions/issues will be used for the evaluation:

**Relevance:** *The extent to which the objectives of the project are consistent with beneficiaries’ requirements, country needs and the priorities of implementing organizations.*
- Did the project initiatives respond to the needs of the target population during 2015 earthquake response?
- Was the project design appropriate to the specific/overall humanitarian/disaster context of Nepal and Kathmandu Valley, relevance to national strategies and to beneficiaries?
What are the current gaps in health sector preparedness for earthquake response (refer to the 6 blocks mentioned above)?
Was the contingency plan for HI's response relevant and whether & how foreseen scenarios were implemented including assessment on staff capacity, contingency stocks, etc.?

Effectiveness: *The extent to which the project results are attained and the specific objectives achieved, or are expected to be achieved*
- Were the project initiatives effective towards prevention of avoidable loss of life and disabling consequences during 2015 earthquake?
- How quick and timely were the capacities developed and used by MoHP, health (including rehabilitation) facilities and catchment communities in responding to the earthquake?
- How much did international actors coordination, including HI own internal mechanisms (operational differentiation) contribute to an effective response and transition to “build back better”

Efficiency: *How well the various activities transformed the available resources into the intended results in terms of quantity, quality and timeliness. Comparison should be made against what was planned.*
- How far project funding, personnel, regulatory, administrative, other resources and procedures contributed to or hindered the achievement of results?

Impact: *The extent to which the objectives of the project have been achieved as intended, in particular, the project planned overall objective*
- Evaluate the leadership role taken by MoHP and guidance it provided to health care providers in timely response
- Track how preparedness at community level reduced the damage from the earthquake
- Identify which of the trainings provided as part of the preparedness worked well and which did not with justifications

Sustainability: *An assessment of whether the positive outcomes of the project and the flow of benefits are likely to continue after external funding and/or non-funding support interventions, structured according to the six building blocks of a health system. Some key areas for sustainability assessment include:*
- Sustainability of mobilization of health and rehabilitation professionals identified in the roster database
- Involvement of HEOC to support MoHP in managing emergencies in the long run
- Ability and willingness of MOHP to roll out MCM strategies
- Sustainability of mobilization of trained health and rehabilitation professionals for a mass casualty event such as earthquake in Kathmandu Valley

The evaluation will also explore the current gaps in health sector preparedness for earthquake response and make recommendations in the health sector earthquake preparedness. The consultants will be required to develop the detail questionnaire in which the feedback will be provided by HI for the type of information to be collected.
5. Deliverables

- Set of tools including questionnaire for the evaluation
- Draft report of the evaluation
- A two-pager document with the key findings from the evaluation to be published and shared with the workshop participants
- Organization of a workshop in Nepal aiming at sharing the findings
- Organization of a workshop in Brussels aiming at sharing the findings at international level
- Final evaluation report

The final output of the evaluation will be the evaluation report in English. The structure and content of the report should:

- Contain an executive summary
- Be analytical in nature (both quantitative and qualitative)
- Be structured around issues and related findings/lessons learnt
- Include conclusions
- Include recommendations based on good practices and areas of improvement for improving future interventions

6. Methodologies

The methods could include, but would not necessarily be limited to, the following:

- Desk review of key documents, including project documents, prior evaluation and lesson learnt reports, monitoring reports and other documents judged relevant.
- Exchanges with HI Desk and Technical Resources
- Literature search and review of materials on the environment in which the project operates, and recent developments after the 2015 earthquake that impacts project's work
- Interviews with key project/program staff.
- Interviews/focus group discussions with representatives of the project/program stakeholders
- Physical inspection of ongoing response work

7. Timeframe

The consultancy is expected to start by 24th August 2015. Other anticipated dates for the assignment include data collection and analysis by 21st September after which the national sharing workshop will be held. The international sharing workshop will be organized between October and November. The overall consultancy including the international sharing workshop should be completed no later than November 2015.

8. Evaluation team, expertise required and number of days for involvement

A team of an international and a national or regional consultant will carry out the evaluation. The international consultant will be the Lead Evaluator and responsible for ensuring all deliverables are provided timely and according to the standards set in the ToR. This person will also ensure all communication with HI Nepal office and will be the sole responsible for managing the organization of the evaluation.

It is anticipated that the following skills and experience will be required for both the evaluators:

- Demonstrated experience in leading evaluations of Disaster Risk Reduction/Management/programs
- Demonstrated experience in conducting evaluation of health sector disaster preparedness projects preferred
• Experience in health sector strengthening and disability in low and middle income countries and in complex settings (for co-evaluator)
• Demonstrated experience in quantitative and qualitative data collection and analysis
• Candidate with experience on evaluating projects with inclusion components preferred
• Professional work experience in Nepal/South Asia preferred
• Fluency in English and excellent writing and presentation skills required
• Understanding of Nepal’s health system is desirable (for co-evaluator)
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<th>Designation/ Profession</th>
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<td>Prakash Lal Das</td>
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<tr>
<td>Krishna Karki</td>
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<td>Project Officer</td>
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<td>Tulsi Dahal</td>
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<td>CHIARA Retis</td>
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<td>Rehab Technical Coordinator</td>
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<td>Bal Krishna Sedai</td>
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<td>Project Coordinator</td>
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## Annex n°3 - Mission calendar

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**Notes:**
- Tools development:
  - Work on the tools and preparation of the inception report
- Intervists in HI:
  - Brig Bachu B aneshwar
- TUTH:
  - Save 11h30
- Moira NRCC:
  - Cadre training session
- OXFAM CARE:
  - Visit Dulikhel Health District officer
- Hi:
  - Finalize inception report
- ASF CUF Manaslu:
  - Meeting with HI CD
- Meetings in HI HQ with DAD and DAH staff
Annex n°4 - Guidelines for interviews

The following interview guide has been drafted by the evaluation team. It will be tested and improved in the course of the evaluation.

Interview Guidelines for HI DIPECHO programme evaluation

Introducing the context of the interview: The evaluation of HI EPP, who are the consultants

1. To start, tell me a bit about you and your involvement of the project before the NEQ. (in focus group, “tour de table”).

2. What was your experience in disaster management or emergency health before the earthquake?

3. According to you, what were the most significant changes that have happened as a result of this project prior to the earthquake? (i.e. since the project began, which individuals, groups or organizations have most benefited from the EPP? How did they change? What are they doing differently?)

4. What happened to you at the time of the earthquake? (Where were you? what were you doing?)

5. What happened then?

6. What were the most significant impacts of the project in the response, according to you? How did the project impact your practices?

7. What were the key challenges in the response? What can you recommend to overcome these challenges?

8. Now that you have the experience of the earthquake, in what areas could this project be improved?

9. In your opinion, what are the key factors in order for these real time tested practices to be sustained?

10. Who needs to be involved in the next phase? How should they be involved?

11. If another group wanted to replicate this project in another region or country, what advice would you give them? What would you want them to know before they begin?

12. Was there anything that you did not get a chance to or want to discuss in this interview that might be helpful for the current evaluation?
Additional Guidelines for interviews with HI staff on the Contingency Plan

Introducing the context of the interview: The evaluation of HI EPP, who are the consultants,

  a) To start, tell me a bit about you and your involvement of the project before the NEQ. (in focus group, “tour de table”).

  b) What was your experience in disaster management or emergency health before the earthquake? Assessment of the timeliness, type and quality of response within the first 72 hours

  c) Assessment of the quality of contingency planning and how the lessons learnt from the 2014 floods were incorporated

  d) Ability of the emergency team and headquarters to refer to the contingency plan

  e) Comparative capacity of HI to respond and relevance of the contingency plan to this respect, including roles of development and emergency team
The evaluation started to analyse the documents received so far and will ensure that it has access to all relevant pieces, including:

- All documents related to the functioning of the Consortium and the DIPECHO projects
- HI Contingency Plans
- Guidelines Emergency
- Trauma Guidelines on Medical, Surgical, Nursing and Rehabilitation Management of Burns Injuries Expected in the Event of Mass Casualty Incident Scenario
- Emergency Trauma Guidelines on Medical, Surgical, Nursing and Rehabilitation Management of Head Injuries Expected in the Event of Mass Casualty Incident Scenario
- Trainer's Manuals Emergency Trauma Manual on Medical, Surgical, Nursing and Rehabilitation Management of Burns Injury Expected in the Event of Mass Casualty Incident Scenario (Earthquake Scenario)
- Emergency Trauma Manual on Medical, Surgical, Nursing and Rehabilitation Management of Head Injury Expected in the Event of Mass Casualty Incident Scenario (Earthquake Scenario)
- Introduction to Roster Mechanism and Early Deployment System of Health Resources in the Event of Mega Disaster (High Intensity Earthquake Scenrio)
- Participants manuals Emergency Trauma Manual on Medical, Surgical, Nursing and Rehabilitation Management of Burns Injury Expected in the Event of Mass Casualty Incident Scenario (Earthquake Scenario)
- Emergency Trauma Manual on Medical, Surgical, Nursing and Rehabilitation Management of Head Injury Expected in the Event of Mass Casualty Incident Scenario (Earthquake Scenario)
- Introduction to Roster Mechanism and Early Deployment System of Health Resources in the Event of Mega Disaster (High Intensity Earthquake Scenrio)
With a backdrop of high disaster exposure, Nepal is considered to be one of the first countries in South Asia to have created a policy and legal environment for disaster risk management. The formulation of policy and legislative procedures on disaster issue in Nepal dates back in early 1980s with the 1982 Natural Calamity (Relief) Act. This document formalizes disaster response as a responsibility of the government to provide relief to the victims of the disaster-events, and it designated authorities at the centre and district levels to coordinate the rescue and relief efforts of various response agencies.

However, the experience of the past three decades evidenced that this structure is capable to coordinate only small to medium level disasters. The institutional mechanisms created were not adequate to manage emergency response for above medium level disasters such as the Udayapur earthquake of 1988 or the flood disaster in south-central Nepal in 1993.


The Building Code developed was unique in itself; it incorporated provisions for making buildings earthquake-resistant, it addressed the problems not only of the engineered buildings but also those houses in rural, semi-urban and urban areas which are mostly constructed without the input from qualified building/structural engineers. It has four levels of code documents:

- Buildings designed with International State-of-the-art provisions
- Provisions for Professionally Engineered Buildings
- Mandatory Rules of Thumb for mostly available urban and semi-urban residential buildings
- Guidelines for rural construction

Although the building code was unique in its nature to address the problems of Nepal, it was not enforced immediately. It took several years to be formally enforced by the Government of Nepal. In 2003 only, the Government of Nepal decided to make the building code compliance mandatory in all government buildings and encouraged to implement it in all municipal areas. It is commonly recognised that it is not yet enforced by the municipalities who do not have the capacity to do this. To cope more broadly, proactively and practically with disaster risks, Nepal elaborated its National Strategy for Disaster Risk Management (NSDRM) based on the Hyogo Framework for Action 2005-2015 (HFA) in consultation with the relevant stakeholders across all levels. It has tried to capture the opportunities of Disaster Risk Management (DRM) in Nepal in line with the current international understanding, scientific progress and regional initiatives. The strategy is expected to provide the road map for all sectors to prepare sector specific programs for DRM and formulate the necessary policy.

Reference to HFA was made not only because it recommends what every country should do for disaster reduction, but also because Government of Nepal had taken part in developing this framework and has made commitments to implement it.
decisions for facilitating mainstreaming DRM into the development process. The National Council for Disaster Risk Management (NCDM) is the highest level institution involved in DRM under chairmanship of Prime Minister. Home Minister is the Deputy Chair and Council Members include ministers, Chief of the Army Staff, Chief of the police departments and representatives of the civil society.

The NCDM is responsible for:

- Endorsement of national policies on DRM,
- Approving the national-level & sector wise DRM plans (including the existing 49 sectoral response plans being currently put into place),
- Guide and oversee management of fund generation and mobilization on Risk Reduction, Mitigation, Preparedness, Response, Recovery, Rehabilitation and Reconstruction; and
- Provide policy guidance for bilateral, sub-regional, regional and international cooperation in the area of DRM.

The proposed Disaster Management Bill, 2009 is towards enhancing effective management of risk reduction throughout the disaster management cycle - preparedness, mitigation, rescue and relief, rehabilitation and recovery. The proposed Disaster Management Bill, 2009 calls for replacement of the existing Natural Calamity (Relief) Act, 1982. The salient features of the proposed DM Bill are:

- Disasters are defined distinctly as natural and human induced
- Provision for National Council for Disaster Management (NCDM) to be chaired by Prime Minister of Nepal with clear mandate and functions, duties, responsibilities and authority of the Council.
- Proposal to set up National Disaster Management Authority (NDMA) under the NCDM, to act as the focal point for disaster management functions in Nepal from formulation of appropriate strategies and plans to implementation and supervision of disaster management activities
- Clarifies the role, responsibility and functions of security forces including Nepal Army, Nepal Police and Armed Police Force; institutions, industrial sector and private organizations. These institutions they will be the key responder in the first 48 hours – military is most competent of all trained forces (being trained by US engineer corps and US PACOM)

At this stage, there is still no formal NDMA in Nepal. To work as the Secretariat of NCDM, the creation of this indispensable institution has been envisaged. The NDMA will be the National focal point for the implementation, facilitation, coordination and monitoring of the strategies of Disaster Risk Management. During and after a national level disaster, the NDMA should have responsibility to work on emergency response, recovery, reconstruction and rehabilitation. To be able to discharge this responsibility, the NDMA will develop necessary strategies, standards and guidelines, and design plans and programmes for capacity building and emergency response. The institutional structure also envisages the constitution of a Regional, District and local level Disaster Management Committees DMC). It is very urgent to pass out the Disaster Management Bill to support the implementation of National Strategy for Disaster Risk Management (including the creation of the NDMA) in order to help the country to be ready for the challenges to come.

The objective this of this evolution is dual:

- to reinforce the inter-ministerial coordination for the overall disaster management (to go beyond Ministry of Home Affairs and have a stronger engagement of Ministries of Defense, Interior, Health Foreign Affairs, Urban construction, Land Management, etc.)
• to streamline the operational procedures by having a strong NDMA with the capacity to function under Executive order from the highest level of the State.

In addition to these preparedness efforts, processes are being put in place for the case of a mega disaster requiring international assistance. In that type of situation, as led out in the National Disaster Response Framework (NDRF), the Government of Nepal may call from for help the UN system through the humanitarian Coordinator, regional organizations (ICIMOD, the organization of South Asia, neighbors (India, China), bilateral donors, the Red Cross Movement, National and international NGOs. Until a NDMA is finally set up, the Ministry of Home Affairs, in accordance with the Guidelines for Accepting International Assistance and Early Registration to be prepared in consultation with the Ministry of Finance, shall facilitate and coordinate the overall management of International Humanitarian Communities.

The central command and control piece of the national set up is the National Emergency Operations Centre (NEOC) under the Planning and Special Services Division of Minister of Home Affairs (MoHA). The objective of the NEOC is to work as a coordination and communication point for disaster information across the country, including government agencies and other response and recovery stakeholders. The NEOC is a standalone pre fabricated building situated at the Ministry of Home Affairs premises in Singha Durbar. The building has been built to earthquake standards and is completely self-contained, including multiple back up power supplies.

With its Operation room, its capacity to keep staff present 24 hours a day and 7 days a week, and its communication equipment (still relatively rudimentary set up), the NEOC's working time is round the clock during the disaster period and never sleeps to get information. It has been running by a nine-member personnel team under the leadership of Under-Secretary. Many of the staff would welcome addition training in large scale disaster management, coordination set up (including with UNDAC and international military who might be deployed in case of event). It is proposed to conduct the first national simulation in early 2014.

In large scale urban disaster, the key element is the speed to get people out of the rubble. What is needed is:

• a highly trained formal Urban Search and Rescue (USAR) capable to undertake collapse structure intervention for high buildings and risky situations;
• a presence of medium level capacity through an adequate network of equipped fire brigades with a stand by capacity;
• a largely decentralized light and very light search and rescue capacity able to operate rapidly in all areas even if communication and transportation lines are cut.

At this stage, there is in Nepal only mid level USAR teams and a limited dog search capacity. Most of these capacities lies with the Army, the Police and the Armed Police. The network of fire brigades is insufficiently developed. There are some efforts to move towards more INSARAG compliant capabilities for collapsed structure USAR and develop a group of INSARAG-light trained instructors who can enhance the capacities of the Army, the Policy and the Fire brigades.

Several ONG through DIPECHO funded projects, the NRCS under the CADRE project and NSET - Nepal have trained a large number of people and have disseminated some equipment. The kits of equipment distributed by the CADRE project to wards and sub-wards is largely insufficient in content quantities (2 kits by CDMC) to have much of an impact if something serious really takes place. But at least, it will give a sense of “there are people who are equipped are trying to do something” and appease the anxiety and tension.
For the time being and probably until a new collaboration takes place after the Disaster Management Bill, 2009 is finally passed, Nepal will have to rely on rapidly dispatch USAR teams, probably under regional (India, China), international (USA, UNDAC). The critical factor will be then the status of the airport and of the road and bridge network to India as well as from neighboring Nepali provinces (to bring heavy equipment, as there are very few bulldozers and heavy duty equipment in the whole Valley).

It should also be mentioned that the Nepali Army has been given two field hospitals to be deployed in case of disaster as a complement to its USAR capacity;

For over a decade, the international community witnessed the conflict and froze most of most development aid and kept is presence largely focused on humanitarian aid. With the end of the internal conflict and the emergency of a more peaceful context, the aid community re-engaged vigorously in Nepal in order to stabilize the peace and deliver peace dividends. Disaster Preparedness attracted a lot of interest in this country frequently affected by disasters. DIPECHO programmes have been very important. DIPECHO programmes have significantly contributed to enhance the capacities and resilience of local authorities and communities vulnerable to natural hazards through effective linkages, strengthening DRR systems and structures and replication of DRR initiatives across project areas.

Due to the years of conflict and the frequency of disasters, the humanitarian and DRR communities are quite dynamic in Nepal, with a fully developed Humanitarian Country Team, a complete set of clusters is in place inherited from the conflict period, many national and international agencies working on disaster management and a strong commitment of Donors towards DRR and resilience building. Yet, if DRR has been for long time and still largely focussed on rural issues, it is not anymore the case and the urban contexts are more and more taken into account.

The originality of Nepal nowadays is the existence of the Nepal Risk Reduction Consortium (NRRC), an initiative arising from the commitment of the Government to the Hyogo Framework for Action (HFA) and supported by the National Strategy for Disaster Risk Management NSDRM.

The NRRC (NRRC 2012a, ) brings together aid agencies (IFRC, UNOCHA, UNDP, NGOs) and main donors (World Bank, Asian Development Bank, DFID, USAID). The Nepal Risk Reduction Consortium (NRRC) was conceived in 2009 and formally launched in 2011. Driven by key motivated individuals within the government and in key agencies, especially the RC/HC and donors (DFID, USAID), the NRRC is probably to date the most integrative project to support resilience in a significant manner in a high risk prone context. The NRRC seeks to mitigate the many risks identified in Nepal, but with a focus on two main ones: the risk of “big one” in the Kathmandu Valley and the frequent devastating floods of the Koshi River (NRRC, 2012-b).

The political context (reconciliation, preparation and agreement of a new constitution and uncertainty about what this will mean for local government structures in the context of coming local elections) made it very challenging, but also created a very useful platform for dialogue (Taylor, G. & al, 2013).

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The NRRC has three objectives:

- Support the national efforts in DRM
- Develop multi-stakeholder collaboration and coordination
- Deliver key practical outputs through five Flagship areas (see below).

A set of specific programmes derived both from the commitment of the NRRC and the lessons learnt from the Haiti earthquake, for instance the identification and preparation of open spaces to host affected population in and around Kathmandu. There is now an “Open Space Act, a legislative reference for the identification and the protection of 83 sites that can host around 900,000 people. OXFAM is currently mapping them and pre-stocking arrangements are being made for water and sanitation equipment for these sites. Several key projects were launched both for global preparedness and for specific sectoral aspects, ranging from by the earthquake risk assessment and scenario development in 1997 by Kathmandu Valley Earthquake Risk Management Project (KVERMP) implemented by the National Society for Earthquake Technology - Nepal (NSET) to specific activities to enhance school and hospital “resilience” to earthquake, so they can continue to perform and be key centers of activity even in the case of global chaos. UNDP is conducting a more detailed hospital assessment, in three phases, beginning with 60 hospitals and ending with the selection of 10 hospitals to go to a 2014 donor conference for retrofitting.

### 5 Flagship areas

#### Flagship Area 1: School and Hospital Safety
- Coordinator: ADB/MeE/WHO/MOPH
- Focuses on reducing mass casualties and damage in hospital and schools through retrofitting, training and raising awareness

#### Flagship Area 2: Emergency Preparedness and Response
- Coordinator: OCHA/MOHA
- This flagship seeks to enhance the government of Nepal’s response capacities at the national, regional and district level in a coordinated manner with all in-country resources including the armed forces, as well as integrating incoming international humanitarian and military assistance

#### Flagship Area 3: Flood Management in the Koshi river basin
- Coordinator: World bank/Mol
- This flagship is designed to address the risk of floods in Nepal. Managing water-induced disasters, focusing on the Koshi basin, is a priority for the government. Short-term goals focus on enhancing institutional capabilities in flood management, while the long-term goals focus on implementing effective flood mitigation

#### Flagship Area 4: Community-based Disaster Risk Management
- Coordinator: IFRC/MOLD
- This flagship seeks to capitalise on Community-Based Disaster Risk Management (CBDRM) at VDC level by developing a set of minimum characteristics for disaster-resilient communities and adopting a minimum package of common elements to be included in all CBDRM projects. One thousand VDCs will be identified and consulted

#### Flagship Area 5: Policy/Institutional Support for Disaster Risk Management (DRM)
- Coordinator: UNDP/MOHA
- This flagship recognises that institutional, legislative and policy frameworks are essential for DRM system building and embedding DRM into Nepal's development efforts. This flagship will work to ensure new risk is minimised
The Kathmandu Valley Earthquake Risk Management Project (KVERMP)

The KVERMP was implemented from between 1997 and 1999 by the National Society for Earthquake Technology - Nepal (NSET) in technical collaboration with GeoHazards International (GHI), the Asian Urban Disaster Mitigation Program (AUDMP) of the Asian Disaster Preparedness Center (ADPC), with core funding by the Office of Foreign Disaster Assistance (OFDA) of USAID.

Objectives
1) To evaluate Kathmandu Valley’s earthquake risk and prescribe an action plan for managing that risk
2) To reduce the public schools’ earthquake vulnerability
3) To raise awareness among the public, government officials, the international community and international organizations about Kathmandu Valley’s earthquake risk and
4) To build local institutions that can sustain the work launched in this project.

Activities
KVERMP included a wide variety of activities aimed at beginning a self-sustaining earthquake risk management program for Kathmandu Valley. Project components included the following.
1) Development of an earthquake scenario and an action plan for earthquake risk management
2) A school earthquake safety program · A survey was conducted of all of the public school buildings in Kathmandu Valley. Studies were conducted to determine the most vulnerable types of school building construction prevalent in Kathmandu Valley and to determine methods for retrofitting these structures.

Making the health sector able to withstand shocks and still remain operation has been seen as key to the resilience of the city (Merlin, 2012). Indeed there are many public and private hospitals in the Kathmandu Valley, but how many will remain operational after a large scale earthquake is an open question. The structural safety for private hospitals and schools is under consideration.

Hospital Safety: Ensuring hospitals remain intact to save lives and treat the injured

NRRC Flagship 1: School and Hospital Safety
According to a 2001 assessment, a major earthquake in the Kathmandu Valley would result in only 10% functionality of hospitals, which will threaten the response to immediate needs, sustainable recovery efforts and health driven development. Led by the Ministry of Health and Population and the World Health Organization, the NRRC Flagship 1 will ensure that hospitals in the Kathmandu Valley will structurally survive a major earthquake and have the capacity to operate after a disaster to save lives, treat the injured and support recovery.
**Strategy**

- Structural and non-structural vulnerability assessments to determine which hospitals are in most critical need of attention.
- Phased physical retrofitting/strengthening of hospitals of prioritized hospitals.
- Training of health practitioners and engineers in earthquake resiliency and the development of national training materials to guide hospital safety.

**Objectives**

- To complete non-structural safety work in 3 hospitals in Kathmandu Valley by the end of 2012.
- To undertake a seismic vulnerability survey of major hospitals in 2012. This will identify priority hospitals for structural surveys and retrofitting design. A donor conference will be held in mid-2013 to identify funding for major structural retrofitting programmes in 10 hospitals. This will ensure that key hospitals are structurally resilient to a natural disaster and remain fully functional for post-disaster needs and recovery.

**Major accomplishments to date**

- A phased comprehensive structural survey is been conducted through 2012-2013 to provide detailed plans for 10 hospitals.
- A Technical Advisory Group has determined how to prioritize hospitals for the comprehensive structural survey. This will include the 7 priority hospitals identified during a government workshop held in 2010.
- The Government of Nepal has allocated funds for retrofitting Patan Hospital.
- Non-structural assessments have been completed in 2 hospitals in Kathmandu Valley with non-structural retrofitting (including water systems) currently ongoing in TU Teaching Hospital.

This project complements quite well another intervention of a group of partners (World Health Organization, Handicap International, Merlin and Oxfam) functioning with DG ECHO specific DIPECHO funding.

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**Enhance the capacities of MOHP (Ministry of Health and Population), health facilities and catchment communities around the targeted health facilities to respond effectively to a major disaster (Earthquake)**

**Objectives:** The project aims at contributing towards enhancement of capacities of MOHP, health facilities and surrounding communities to respond effectively to earthquake in Kathmandu Valley. The project builds upon the DIPECHO VI cycle activities, during which the project has developed the national mass casualty management strategy for health sector, trauma guidelines, national emergency referral guidelines and key documents to document best practices on health sector emergency preparedness. It aims to replicate lessons learnt and best practices from DIPECHO VI cycle and where needed scale up to other facilities and surrounding communities to increase their preparedness and response capacity to manage mass casualty incidents during major disasters.
**Strategy:** The project adapts a multi-pronged strategy; at first level the project seeks to strengthen the capacities of MOHP to carry forward the implementation of comprehensive mass casualty management systems and replication in other areas; at second level, building the capacities of health facilities including personnel’s skills to respond to mass casualty incidents and at third level to strengthen the capacities of targeted catchment communities of health facilities to be better prepared and respond to disasters.

In addition to the development of these emergency health capacities, a specific set of activities have taken place for dead body management. In Nepal this issue has important legal, religious, cultural and symbolic connotations. Places in morgues and mortuaries are limited and with the heat during part of the year, dead body management should be expedited relatively swiftly. Bodies should be burned, which means that after the cremation, no more analysis and confirmation can be done. This place extra pressure on ensuring early body identification, information to families, prevention of misconducts and rituals implementation, as well as to any other forensic procedures as required. ICRC has developed training modules on dead body management which are extremely well suited for Nepal.
# Annex n°7 - Activities of International Search and Rescue teams

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<th>Canine team</th>
<th>arrival date</th>
<th>dead body</th>
<th>Person rescued</th>
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<th>MNMCC OSOCc / Group</th>
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Evaluation of Handicap International’s disaster preparedness efforts as tested by the 2015 Nepal Earthquake

The present independent evaluation looked at Handicap International’s contribution to the Earthquake Preparedness Project (EPP) and how this contributed to the response to the 2015 earthquake in Nepal. The EPP aimed to strengthen the health sector response capacity in the event of a high intensity earthquake in the Kathmandu Valley. The evaluation had to respond to a series of questions relating specifically to Handicap International activities and their impact during the health sector response to the 2015 earthquake. In particular, it aimed to:

• Identify / document lessons learned and make recommendations that Handicap International in Nepal might use to improve the design and implementation of future projects. The results will contribute to better informed decision-making, foster an environment of learning and promote greater accountability for performance, both for Handicap International and for other organizations working in earthquake preparedness.
• Establish how Handicap International Nepal’s contingency planning, including the coordination and articulation between development (DAD) and humanitarian (DAH) teams, contributed to the response, and make recommendations about how this could be improved.
• Contribute to Handicap International’s strategy for scaling up and replicating similar programmes in other contexts.

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