National Tuberculosis Programme
Nepal

Post-Disaster Rapid Assessment of the National Tuberculosis Program: Preliminary Report

26th May, 2015

Government of Nepal
Ministry of Health & Population
Department of Health Services
National Tuberculosis Centre
Thimi, Bhaktapur
1. Introduction

Nepal was hit by a massive earthquake on 25 April (11:56 local time) of a magnitude of 7.9 on the Richter Scale, the epicenter in Barpak VDC in Gorkha district, 80 km northwest of Kathmandu. Continued aftershocks followed throughout Nepal with one reaching a magnitude of 6.7 on the Richter Scale the following day. Two weeks later, on 12 May (12:50 local time), a big aftershock measuring 7.4 Richter Scale struck, 176 km North East of Kathmandu in Dolakha District, creating further damaged to both new and previously affected areas. The aftershocks continue to be a daily occurrence and multiple in number. For a real-time updates and a pictorial representation of the seismic activity in Nepal please refer to the below link:

https://www.google.com/fusiontables/DataSource?docid=1rs_s8_CD7xVbhplVm2fkw15H_R9HNZIT9MTC8UPt#map:id=3

The last time Nepal experience devastation of this magnitude was in 1934 and despite the country’s preparedness plan, this disaster has left a huge challenge for us to rebuild our national heritage, our livelihoods and our healthcare system.

2. Impact of Disaster to the Nation

As reported in the World Health Organization (WHO) 3rd Health Cluster Bulletin, more than 5.6 million people have been affected by this disaster. On the 26th of May the Disaster Risk Reduction Portal, MoHA reported at least 8,673 deaths and more than 21,952 injures as a result of the 25th April earthquake and 12th May aftershock. This number is expected to continue to rise over the coming weeks as further rubble is cleared.

Nearly 76,9907 house have been damaged and 4,231 Government facilities completely destoryed. This earthquake has impacted the entire country however 14 districts were notably the hardest hit; Sindhuplachok, Kathamndu, Nuwakot, Dhading, Rasuwa, Gorkha, Kavre, Bhatapur, Lalitpur, Dolakha, Makwanpur, Ramechhap, Solukhumbu and Okhaldunga. Twelve of these districts are located in the central developmental region and almost all are either mountainous or hilly districts- a challenge for accessibility.

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1 http://www.who.int/hac/global_health_cluster/countries/HEALTH_CLUSTER_BULLETIN_num3_18May15.pdf?ua=1

2 http://drrportal.gov.np/

3 http://heoc.mohp.gov.np/health/
The International Organization for Migration (IOM) estimate 2.8 million individuals have been displaced across the 39 affected districts with 75,000 Internally Displaced Persons (IDPs) located within the Kathmandu Valley. Unofficial reporting indicates many IDPs have migrated from Sindhupalchok and Dolakha to Kathmandu Valley. Unofficial data indicates there are 21,601 people living in temporary camps in the Kathmandu Valley across 64 different sites. Outside of official communal camp sites there are a large number of people living under tarpaulins, temporary structures and open sky.

Emergency shelter and health assistance are vital in preparation for the impending monsoon season and have been highlighted as priority sectors for intervention. IOM are working in close coordination with the Government of Nepal and humanitarian partners to ensure that displaced populations have access to basic services. The earthquake has severely disrupted the health system and, combined with the public health risks of displacement, puts IDPs at far greater risk of morbidity and mortality, particularly communicable diseases inclusive of TB, practically living in cramped conditions.

Real-time updates and in depth details on the overall impact of the disaster is available from the link below:

http://drrportal.gov.np/

3. Impact of Disaster to the Health System:

A rapid assessment of health-care facilities by WHO and the Ministry of Health and Population in the earthquake-stricken areas has found that hospitals in 4 of the worst-affected districts are completely destroyed or too badly damaged to function. Five other major hospitals, providing important health care in the districts, were found to be functioning but urgently in need of further medical supplies. Preliminary findings from the assessment, found that while there was a shortage of supplies, sufficient health personnel were available to treat patients arriving in the functioning hospitals.

Further assessments from HEOC indicate 1,023 health facilities have sustained full and or partial damage, 7 of the districts hospital are running entirely from temporary hospital tents, with 10 tents spread throughout these 7 districts. To date 8 health workers have died, 63 have been injured and 2 are still missing. 10 Female community health volunteers are been reported dead.

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5 ibid
which has great significance in rural areas as these individuals are the ones closest to the community and normally the first point of contact for health related issues.  

The key challenges following the earthquake is outbreak surveillance and control of communicable diseases inclusive of Tuberculosis, the continuation of treatment for chronic conditions, re-establishment and continuation the general health services that have been destroyed or discontinued in addition to specific services such as maternal and child health and mental health amongst others.

Latest situation updates and further details of overall impact of disaster to the Nepali health system is available in the link below:

http://heoc.mohp.gov.np/health/

4. **Impact of Disaster to the Tuberculosis Control Program:**

**Rationale for rapid assessment and formation of rapid response committee**

The challenges Nepal’s recent earthquakes pose for the National Tuberculosis Program are significant. In Nepal, TB remains an ongoing public health burden, with health officials keen to ensure that advances in recent years are not threatened.

Historically when there is a disaster of high scale, focus is immediately directed towards the rescue and relief efforts and care and control of communicable diseases such as TB are rarely addressed during the acute phase. Literature arising from lesson learn post Haiti and Japan earthquakes indicate the benefit of starting surveillance for TB in the acute phase in TB endemic countries, as there is a high risk of TB silently spreading. This is of particular concern among IDPs where the risk of transmission is higher.

With this in mind, the Nepal’s National Tuberculosis Centre formed a Rapid Response Committee on the 20th May 2015 that has set about conducting a Post-Disaster Rapid Assessment of the National Tuberculosis Program for effective management of TB cases and continuation of its services to maintain the achievements of TB program till date.

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7 http://heoc.mohp.gov.np/health/

http://www.researchgate.net/publication/260716753_Tuberculosis_Control_in_Acute_Disaster_Settings_Case_Studies_from_the_2010_Haiti_Earthquake

The committee has conducted a rapid assessment of the structural damage to and functionality of DOTS and microscopy centers following the earthquake. Refer to Annex A for the district breakdown of the rapid assessment, please find a summary of the impact below, data updated as of 3pm on the 26th May:

### Structural impact on and functionality of DOTS centers in the 14 most affected districts:

- **Number of DOTS Centers:** 779
- **Number of DOTS centers fully damaged:** 281
- **Number of DOTS centers partially damaged:** 256

  *Data missing from Lalitpur and Solukhumbu*

- **Number of DOTS centers non-functioning:** 6

  *Data missing from Ramechhap, Lalitpur, Kavre and Dhading*

- **Number of DOTS centers functioning out of temporary tents:** 353

  *Data missing from Ghorka and Kavre*

- **Number of DOTS centres where Drugs completely damaged/unrecoverable:** 46

  *Data missing from Dhading, Rasuwa, Gorkha and Lalitpur*

- **Number of DOTS centre where immediate supply of anti-TB medicine was required:** 5

  *Data missing from Gorkha*

### Structural impact on and functionality of microscopy centers in the 14 most affected districts:

- **Number of microscopy centers:** 130
- **Number of microscopy centers non-functioning:** 27

  *Data missing from Solukhumbu*

  Please note 10 microscopy centers were not function prior to the earthquake due to human resource shortages.

- **Number of microscopy centre where immediate supply of chemicals was required:** 3

  *Data missing from Solukhumbu*

### 5. Impact of Disaster on TB patients:

With logistical support from WHO the NTC rapid response committee have started tracing TB patients in the 14 most affected districts, with a priority to reach those with Drug Resistant TB (DR TB). For a district
break down of information refer to Annex A and for a detailed DR TB patient tracing and assessment refer to Annex B.

**Impact on continuation of Anti-TB Treatment (ATT):**

Number of TB patients enrolled in ATT on 24\textsuperscript{th} April: 698

*Data missing from Kathmandu, Gorkha, Kavre, Bhaktapur, Lalipur, Dolakha, Makawanpur and Solukhumbu*

Number of TB patients continuing ATT after 25\textsuperscript{th} April: 517

*Data missing from Sindhupalchowk, Kathmandu, Gorkha, Kavre, Bhaktapur, Lalipur, Dolakha, Makawanpur and Solukhumbu*

Number of TB patients deceased: 6

*Data missing from Solukhumbu and Kathmandu*

Number of TB patients injured: 14 *Note: most injuries are minor and all injured TB patients are continuing with ATT*

*Data missing from Solukhumbu, Kathmandu and Sindhupalchowk*

Number of TB patients who have discontinued ATT: 1

*Data missing from Sindhupalchowk, Gorkha, Bhaktapur, Lalipur, Dolakha, Makawanpur and Solukhumbu*

Number of TB patients who status is unknown: 188

*Data missing from Sindhupalchowk, Bhaktapur, Lalipur, Makawanpur and Solukhumbu*

**Impact on TB patients living conditions:**

Number of TB patients who houses are completely damaged: 220

*Data missing from Sindhupalchowk, Nuwakot, Dhading, Rasuwa, Gorkha, Kavre, Lalipur, Dolakha, and Solukhumbu*

Number of TB patients who are living under temporary shelter (tents): 226

*Data missing from Sindhupalchowk, Nuwakot, Dhading, Rasuwa, Gorkha, Kavre, Lalipur, Dolakha, and Solukhumbu*

**Drug-Resistant TB (DR TB) patients:**

Number of DR TB patients enrolled in ATT on 24\textsuperscript{th} April: 151

Number of DR TB patients continuing ATT after 25\textsuperscript{th} April: 134

Number of DR TB patients deceased: 0

Number of DR TB patients injured: 0

Number of DR TB patients who have discontinued ATT: 0
Number of DR TB patients who status is unknown: 16
Number of DR TB patients on clinic-based DOTS: 102
Number of DR TB patients on community-based DOTS: 1
Number of DR TB patients taking ATT by other means: 31
Other means collecting ATT supply of one week or more to be taken at home
Number of DR TB patients living in home: 45
Number of DR TB patients living in hostel/hospital: 14
Number of DR TB patients who are living in community temporary shelters: 22
Number of DR TB patients who are living in temporary shelters with family or alone: 26

6. **Qualitative analysis of interview with TB health care workers and TB patients in Bhaktapur District:**

On 21 May, NTC and WHO staff met with District TB and Leprosy Officers in Bhaktapur to explore issues surrounding post-earthquake TB care and control in the district. The team also met with TB patients living in temporary camps in order to identify patients’ immediate needs and ensure their continued care and access to treatment.

All interview were recorded and consent obtained through verbal translation of informed consent form, which was signed by all participants.

**Interview with TB health care worker:**

A guided question interview (refer to annex B) was conducted with one TB health care worker, the District Tuberculosis and Leprosy Officer for Bhaktapur. The 15-minute interview was transcribed and key themes identified:

**Concern of transmission among internally displaced person in temporary camps**

“There are 109 Tuberculosis patients whose houses are completely damaged, they are living in camps...I have concern about the spread of TB in shelters if patients stay 6-8 months in shelter it can be really threatening, shelter for TB patients would be better”

**Difficulty in tracing patients**

“We are in charge of local residents and linked to Kavre and Sindhupalchowk districts, we know of 6 [TB patients] missing in Bhaktapur and 3 in Sindhupalchowk we are trying to track missing patients but mobilization of volunteers to visit their houses is difficult in this scenario”.
"We have planned to mobilize health facility management committee member to trace the missing patients"

Need for psychosocial counseling
"All of the patients are depressed and scared from the earthquake, they need psychosocial counseling to recover...Many of the TB health care providers are also depressed and they too need counseling"

Interview with TB Patients:
A guided question interview (refer to Annex C) was conducted with 2 MDR-TB patients living in temporary camps in Bhaktapur and 1 EPTB patient living a temporary structure alone. The 40-minutes of interviews were transcribed and key themes identified:

Patients recognize the importance of continuing ATT after earthquake
All patient reported continuing with their ATT. One patient had a six-day supply of anti-TB medicines from before the earthquake as he was attending the Deo Puja festival and did not want to be without his drugs in case clinics were closed for the festival. After the earthquake he continued taking his drugs in the temporary camp. He keeps them safe in a Bhujia (snack) packet as “it is waterproof and it protects them from the rain and sun”

Other patients who did not have a supply of ATT pro-actively sough their medication:
“The hospital doctor and health worker told me I have to have daily medicine. So I send my wife to go get after the earthquake”

One patient went to visit the house of a National Anti TB Association scout volunteer known to him:
“I found her, she had been trapped inside her demolished house. Once she got out, she went back inside the house to get me medicine for 5 days... it was important to both of us.”

Difficulty in adhering to daily DOTS
All patients commented on the difficulty in adhering to daily DOTS post-earthquake:
“My wife goes to get the drugs and I have one week of medication at a time – it’s difficult to go for daily DOTS, but weekly is easy.”

“We belong to a farming group. We do not have much at this time. If they provide medicine close by it will be easier. The 30 rupees I spend on travel could buy me two eggs to eat.”
Increased stigma in temporary camps

Patients have expressed experiencing high rates of stigma, especially when trying to secure temporary accommodation in communal temporary camps:

“The home we were renting collapsed in the earthquake so we tried to go to a shelter. My wife told them about my TB – that it was the non-contagious kind – but I face much discrimination in the shelter. I think people fear transmission. The people in the shelter shouted to get away and my wife and my two daughters cried a lot. We now stay separately from each other. My wife can only visit one or two times a week.”

Conclusions from analysis

NTC have identified the following key areas of action from the qualitative interview analysis; addressing living conditions of TB patients in temporary camps; increasing patient access to infection control measures and DOTS- through patient centered approaches; minimizing stigma and providing psychosocial support.
## Annex A: Post-Disaster Rapid Assessment of National TB Program by District

<table>
<thead>
<tr>
<th>Name of District</th>
<th>Functional assessment of DOTS centres</th>
<th>Non-functional assessment of DOTS centres</th>
<th>Treatment status of TB</th>
<th>Living conditions of TB patients</th>
<th>Status of DOTS centres coding in Epi information system</th>
</tr>
</thead>
</table>

### Kathmandu Valley

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.
  - Remarks: Not functioning

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 90
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 50
  - Patients living in schools:
    - 20

### Jhapa

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 100
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Khotang

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Palpa

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Salyan

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Sindhupalchok

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Taplejung

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

### Terai

- **Functional Assessment:**
  - Non-functioning
  - Remarks: Changed due to lack of staff and equipment.

- **Non-Functional Assessment:**
  - Remarks: Changed due to lack of staff and equipment.

- **Treatment Status:**
  - Patients receiving treatment:
    - 50
  - Patients with lost or damaged medicines:
    - 0

- **Living Conditions:**
  - Patients living in tents:
    - 100
  - Patients living in schools:
    - 0

**Note:** All districts except Nuwakot, Sindhupalchok, and Taplejung reported that the DOTS centres were either completely or temporarily closed due to the earthquake.
## Annex B: Post-Disaster DR TB Patient Tracing and Assessment

<table>
<thead>
<tr>
<th>No.</th>
<th>Death</th>
<th>Injured</th>
<th>Discontinued To</th>
<th>Status Unknown</th>
<th>Continuing To</th>
<th>Type of DOTS pre earthquake</th>
<th>Type of DOTS post earthquake</th>
<th>Treatment centre</th>
<th>Missing d. Record</th>
<th>In need of community care</th>
<th>In need with family/ alone</th>
<th>At Home/ Hospital</th>
<th>At Home</th>
<th>Other</th>
<th>Unknowns</th>
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*Note: The table contains data on post-disaster rapid assessment of the National Tuberculosis Program, specifically focusing on patient tracing and assessment. The columns detail the status of patients, type of DOTS, treatment centres, and other relevant information.*
<table>
<thead>
<tr>
<th>No.</th>
<th>First</th>
<th>Last</th>
<th>Gender</th>
<th>Age</th>
<th>Work/Accident</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Bed No.</th>
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Please note patient names have been removed to retain patient confidentiality.
Annex C: Guided Interview Questions

For TB patient:

1) How and from where are you obtaining your anti-TB medication?
2) Have you had any disruption to your treatment, if so, for how long?
3) What are your living conditions post earthquake?
4) How are you managing your nutrition after the earthquake?
5) Have you experienced any discrimination/stigma?
   e.g. do you have any difficulty in sharing a tent or meals with other people?
6) Do you have access to face masks and other infection control measures?
7) How to you think DOTS services should be provided post earthquake?
8) Have you been advised on your future treatment plan?
   i.e. where you will continue to get medicines etc.

For TB health care worker:

1) How soon after the earthquake did you go back to work?
2) Have you been able to work normal hours?
3) Has there been anything preventing you from working? If so please explain
   i.e. lack of medicines, no running water, no electricity, no patients, family issues
4) Do you have any missing patients?
5) Do you have any concern about how DOTS will run in the future? How do you think it
   should run?
6) What are you doing for suspected TB cases? How are you diagnosing patients?
   i.e. clinically, microscopy, GeneXpert etc.