

# Post Earthquake Status Report of Different HealthCare Facilities of Kathmandu

---

**Prepared By**

HealthCare Waste Management Program

HealthCare Foundation Nepal

## **1 Introduction to 2015 Nepal Earthquake**

The 2015 Nepal earthquake (also known as the Gorkha earthquake), which killed more than 7,000 people and injured more than twice as many occurred at 11:56 NST on 25 April, 2015 measuring 7.8 in the richter scale. Its epicenter was the village of Barpak, Gorkha district, and its hypocenter was at a depth of approximately 15 km (9.3 mi)

It was the most powerful disaster to strike Nepal since the 1934 Nepal-Bihar earthquake. Some casualties were also reported in the adjoining areas of India, China, and Bangladesh.

The earthquake triggered an avalanche on Mount Everest, killing at least 19 making it the deadliest day on the mountain in history. It triggered another huge avalanche in Langtang valley, where 250 were reported missing.

The earthquake has claimed over 7365 lives and 14355 injured across Nepal. Villages near the epicenter of the earthquakes were devastated; many houses have been reduced to rubbles with many living in temporary tents. To date the reported houses destroyed fully and partially are 191058 and 175162 respectively. Earthquake have severely restricted communication, landslides have further worsened the road access to the many districts and places.

Hundreds of thousands of people were made homeless with entire villages flattened, across many districts of the country. Centuries-old buildings were destroyed at UNESCO World Heritage sites in the Kathmandu Valley, including some at the Kathmandu Durbar Square, the Patan Durbar Square and the Bhaktapur Durbar Square. Geophysicists and other experts had warned for decades that Nepal was vulnerable to a deadly earthquake, particularly because of its geology, urbanization, and architecture.

Continued aftershocks occurred throughout Nepal within 15-20 minute intervals, with one shock reaching a magnitude of 6.7 on 26 April at 12:54:08 NST. The country also had a continued risk of landslides.

In the time of earthquake HECAF conducted the assessment of post earthquake status related to waste management in different healthcare setting.

## **2 Post Earthquake Status of Different Hospitals**

### **2.1 Norvic International Hospital**

The earthquake after the 25<sup>th</sup> April, 2015 has caused no significant damages to the lives and infrastructure but in some of the areas of the hospital, cracks are visible and engineer team has marked the cracks with the codes. The seven storeyed building structure of the hospital was in vulnerable condition. The patients from ICU were shifted from the ward to emergency floor The patients from the other wards were shifted to the parking area with the tents. Some of the cracks have been noticed in the treatment center as well.



Figure 1: Cracks found in treatment center



Figure 2: Damages seen in wards

Regarding the waste management system implemented in the hospital on the day of the first quake, the waste was transported and treated in the normal manner since the earthquake was experienced in mid day and the work of transportation was completed till the time. After that day some of waste bins were misplaced. So the wastes were collected but no data regarding the waste generation was recorded.



Figure 3: Misplaced bucket from ward



Figure 4: Misplaced bucket from ward

Similarly, although almost all the staff in waste management center are available in the meantime, the staff were utilized in other emergency management and the waste management center was occupied by the patient. The autoclaving process was halted and securely stored. Also

after the day of the earthquake the quantity of the waste was also reduced and only after four days of the earthquake the autoclave was operated. The power cut off in the hospital did not affect the hospital daily operation since the power was

supplemented by the generator. Also the supplies and logistics for the waste management were not the problem for the hospital. But the waste segregation is very poor and everything was mixed. After some days only the waste segregation was found better.

Also due to the quake the waste was stored in the center and the storage area was not sufficient. Also the lack of access to vendor caused overflow of waste from the storage compartment. So they are storing the recyclables in the autoclaved waste separation room as temporary storage.



Figure 5: Recyclable waste stored in autoclaving waste processing area

## **2.2 Paropakar Maternity and Women's Hospital**

After the shock of earthquake the hospital experienced the destruction of inpatient wards and having the problem with the management of patients and visitors. They are managing the problem by shifting the patients in the ground floor in the corridors. Now they shifting the inpatient wards in the newly constructed OPD block and after that they are planning to shift the wards in administration block.

Regarding the waste management, the hospital is managing its waste in a normal manner and municipality was continuously collecting the waste in regular basis.

## **2.3 Bir Hospital**

After the earthquake on 25th April, 2015 the buildings of the hospital were damaged and was advised not to use the area. Patients and hospital settings were shifted to the new hospital premises adjacent to the hospital i.e. Trauma Center.



Figure 6. Cracks on Building with New ICU



Figure 7. Cracks on building adjacent to Treatment Center



Figure 8. New ICU building marked unsafe



Figure 9. Old Building marked safe

Engineers had visited to assess the condition of buildings of Bir Hospital and have marked the building with New ICU as a risk one and asked not to stay or occupy space there. Only few of the emergency cases (not related to earthquakes) are being treated at Emergency at Bir.

All the emergency cases around the nation are being brought to the emergency at Trauma Center and being treated there. Even the OT, Post OP, ICU and two wards are running there. The nursing staff, support staff of Bir are stationed there including support staff of Trauma Center and lots and lots of volunteers from various background.



Figure 10. Waste segregation system set at Trauma Center



Figure 11. Waste segregation system set at Trauma Center

Along with the wards, waste segregation buckets were also transferred there but the medication trolleys were not brought. The rooms/ wards are very huge, they are twice as big as of Bir. But waste staging area is only one which is resulting in very poor segregation practice. People keep on moving buckets from one place to other and labels being used are not proper and people working there are very ignorant about the segregation system.

The volunteers working on cleanliness and sanitation of the hospital were requested to help in segregating waste in the wards and also orient the visitors about the system.

Waste transportation is being carried out at least twice a day and when ever needed. Treatment of risk waste resumed from 30th April, 2015 due to lack of autoclave technicians. Regular test was conducted on Autoclave No. 2 where strip indicators and SCBI were pass.



Figure 12. Risk waste preparation for treatment



Figure 13. Loading risk waste in the autoclave

After consultation with autoclave engineer in India (Mr. Peter), the Autoclave No. 1 was repaired with spare pressure valve and maintenance of washer. The autoclave started working from 1st

May, 2015 and the autoclave also passed the regular test conducted with strip indicators and SCBI.

Waste Sale has not been conducted because local scrap dealers are not available at in the valley. All the recyclables are stored in the treatment center.

#### **2.4 National Kidney Center**

Even after the devastating earthquake the Kidney Center remained open. Infrastructures were not damaged but damage was seen in elevator and water treatment was damaged. Electricity was cut off so the facility was running on generator. Due to lack of autoclave technician the risk waste were not treated, treatment of the waste started from **6th May 10**, 2015. Waste Sale has not been conducted because local scrap dealers are not available at in the valley. All the recyclables are stored in the treatment center.

#### **2.5 Sukraraj Tropical and Infectious Disease Hospital**

After the earthquake, the hospital resumed it's work from 26th April, 2015. Most of the buildings are marked safe. Only a three storied building consisting of store and quarter has been marked unsafe. All the staff of the hospital are unharmed and uninjured. Even though the in-patient block is safe for use all the patients are being treated in a single ward (Gastro Ward) current occupancy is 18 patients. The patient flow in the OPD and Laboratory has been reduced.



Figure 14. Building marked unsafe at Teku Hospital



Figure 15. Building marked unsafe



Figure 16. Laboratory building marked safe



Figure 17. OPD building marked safe



Figure 18. In-patient block marked safe



Figure 19. ART building marked safe

## 2.6 Tilganga Institute of Ophthalmology:

On 25<sup>th</sup> April 2015, the day of earthquake, training on safe health care waste management was ongoing to the staff of TIO. Due to the quake the training was obstructed in between and everybody left for their home. Since this day the hospital's service remained closed though the hospital opened for the volunteering of earthquake relief victims. The staff of treatment center



was also present for volunteering. Everyone present in the hospital was safe and sound though some walls of the hospital were observed with crack lines. The service reopened from 5<sup>th</sup> May 2015 and the work in the treatment center was carried out normally.

## 2.7 Kathmandu Medical College and Teaching Hospital (KMCTH)

KMCTH was planning to dismantle the incinerator after its annual day but due to the quake the annual day and dismantling of the incinerator is postponed. The hospital opened its 24 hour service during the disaster too. The occupancy was high because of the emergency and disaster case. There is no proper waste management system so segregation was poor and all the waste needed to be treated prior to disposal.

The incinerator was not made in use before the disaster but due to the overload of waste generation in disaster situation, the wastes in KMCTH were autoclaved and incinerated too. The autoclaved waste was dumped in municipal waste and the waste from OT and pathological waste were incinerated. There was only one staff assigned to autoclave and incinerate the waste. The staff was found working without the proper PPE. The autoclave is run 6 to 7 times per day and the incineration is run only once in the evening. The waste for autoclaving is about 10 to 15 (size 80 L) bags per day. The autoclaved and incinerated waste's recording system is not developed till now.

All the members and staff of the hospital are safe. The building of the hospital is also secure. None of the staff is homeless or injured



Figure 20 Staff without standard PPE



Figure 21 Waste piled up after treatment



Figure 22: Staff transporting waste for final disposal



Figure 23 Final disposal

## 2.8 Kantipur Diagnostic Center

The clinic was kept closed since the earthquake and reopened from 4th May, 2015. The treatment center was occupied by one of the staff of the clinic for his living as the place where he was staying was not secure. According to the staff the infectious waste were autoclaved. The staff and the structure of clinic were all unharmed.



Figure 24 Treatment center used for kitchen

## 2.9 Kathmandu Model Hospital

On the day of the quake, the whole patients of Surgical ward were shifted to ground floor as some crack lines were observed. Due to this emergency situation and rush the waste of surgical was not segregated, it was directly dumped to municipal waste. The waste amount was reduced

because of the shifting of surgical ward and the waste load was not much. The waste of other units were collected and treated normally but the waste record was not kept from 25<sup>th</sup> to 30<sup>th</sup> April. The surgical patients were then shifted on 1<sup>st</sup> May after the team of engineer confirmed it secured and waste collection and treatment was normal as before.

Two staffs were assigned to work but one staff was sent to Kirtipur Hospital because of the overflow of patients in the hospital and over work load in the treatment center. Mr. Anjaan Shrestha, staff at treatment center lost his home at Nuwakot though none of the family members were injured.

## 2.10 Kirtipur Hospital

After the quake, the vulnerable houses of Kirtipur city were subsided. Therefore Kirtipur hospital was occupied with maximum disaster patients. New wards were also opened immediately due to the high occupancy.

The segregation practice was very inferior due to the rush of staff of the hospital. It was hard for the hospital staff to monitor the waste management. Due to the overload of work, staffs from Model hospital were also assigned to work for the treatment center as well as the whole hospital.

The waste amount was more in the disaster situation. Infectious waste was piled up for treatment. The present autoclave was not enough so another autoclave of 50L was brought from CSSD. Both the autoclaves were run 5 to 6 times a day. The power supply normal. Waste was collected from 25th April to 26th April but only treated from 27th April. Three staff including one from Model Hospital were assigned to work in the treatment center. They were performing their work with proper PPE.

Ms Rukmani Maharjan, staff of treatment center lost her village home in the quake without any injury in the family members. The hospital got some crack lines in the walls and floor due to the quake but is in the secure condition.



Figure 25 Infectious waste piled up for treatment



Figure 26 Autoclaves for treating infectious



Figure 27 Staff busy segregating



Figure 28 Poor segregation