Disaster Control at Juntendo University Nerima Hospital

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Our hospital is the only hospital in Nerima where emergency doctors are available to provide medical care 24 hours a day, and is in the position to accept patients in the event of disaster as a disaster base hospital. Even though Nerima-ward is a commuter town in Tokyo with a population of 700,000, the number of beds per capita is the lowest among the 23 wards. That being said, we have been working to build a regional collaboration among local hospitals, medical associations, and administrative bodies since our establishment as our contribution toward disaster control. For our in-hospital measures, we provide triage training and BCP (Business Continuity Plan) simulations, and have upgraded our facilities and increased our on-hand supplies for potential disasters. Moreover, we managed to send 13 staff to the site of the Great East Japan Earthquake in March 2011 for medical support. Other measures include our participation in and management of MIMMS (Major Incident Medical Management and Support), which is a course for disaster simulation training and DMAT (Disaster Medical Assistance Team) activity.

Key words: disaster, BCP (Business Continuity Planning), DMAT (Disaster Medical Assistance Team), MIMMS (Major Incident Medical Management and Support), The Great East Japan Earthquake

Background

A disaster is not defined as a state in which many victims suffer from injury and/or sickness, but rather defined as an imbalance of medical supply and demand resulting from conditions in which the supply of medical care cannot meet the need.

Nerima-ward, where our hospital resides, holds 700,000 people, and is located adjacent to other populated wards and cities, such as Suginami (550,000ppl), Itabashi (530,000ppl), Nakano (300,000ppl), Toshima (290,000ppl), and Nishitokyo (200,000ppl). However, none of these wards except Itabashi have an emergency center with the ability to accept patients in serious condition, and Nerima itself has the lowest number of hospital beds per capita among all 23 wards. The balance of medical demand and supply could easily be destroyed if a major disaster were to strike. Our hospital plays an important role as a disaster base hospital where 24-hour emergency care would be provided to patients even in the event of disaster.

Construction of regional collaboration

Until recently, Nerima-wards held frequent disaster control conferences with local medical associations and hospitals so as to establish an outline plan pertaining to medical partnership (Figure-1). The involvement of the Tokyo Metropolitan government in the administration of Itabashi-ward, Toshima-ward, Kita-ward, and Nerima-ward in 2012 resulted in the development of a north-western regional medical approach to disaster control. Our hospital is designated a disaster base hospital by Nerima-ward in care of the most
severe injuries and illness, and offers medical care at the site of disasters in cooperation with 21 supportive facilities and 12 first-aid stations in Nerima. Future topics of discussion include how we can improve our information sharing system and method of transportation, and how to ensure adequate medical resources.

**Measures for dealing with disasters**

Our actions in the event of disasters are described as follows:

- Send medical staff to the site
  - Participate in DMAT *¹*
  - Take MIMMS *²* courses
- Admit patients, secure the transportation route and destination, provide active practice drills
- Develop a disaster control plan in partnership with government
- Triage training
- Take MIMMS courses
- Implement comprehensive disaster drills, including installation of the emergency operations center
- Maintenance of hospital function
- Come up with a BCP (Business Continuity Plan)

**Comprehensive disaster drill**

A comprehensive disaster drill was held on February 19th, 2013 under the scenario of an earthquake (M7.3) with an epicenter in Tokyo (Figure–4). The simulation in the comprehensive

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*¹ DMAT (Disaster Medical Assistance Team)
DMAT is a medical team professionally trained for disaster relief, which has mobility to respond in the acute stage of disasters (within 48 hours of an event). Five staff from our hospital completed the training by Japan DMAT and were certified in 2013 (Figure–2, 3).

*² MIMMS (Major Incident Medical Management and Support)
MIMMS is a training course developed in England that aims to train people to be a medical responder in the event of disasters. The number of our staff who have taken this course currently stands at seven. Of only 30 MIMMS-Japan Instructors in Japan, two are doctors from our hospital.
disaster drill covered a wide range of medical responses, including triage, ensuring a transportation route and practice space, various paperwork, as well as installation of the emergency operations center, damage assessment, making sure of staff availability, equipment operation, lifeline, confirmation of evacuation routes, selection of victims who can return home and capacity of aid stations, and aggregation of all information from each department to the emergency center to determine our actions. It made us aware of the necessity to ensure an emergency contact line, create action-cards, and unify the format of reports, and we have made adjustments accordingly.

Education and dissemination of plans

To achieve wider awareness of disaster activities, we offer study sessions within our hospital, and LAN environment to allow easy access to all the manuals pertaining to disasters (Figure-5).

Ensure the stockpile

In terms of our facility preparedness, our buildings are seismically isolated, and we are equipped with decontamination equipment for chemical disasters, PPE (Personal Protective Equipment) for infectious disasters, and satellite phones, and we maintain a stock of emergency food and water (1280 ppl × 5 days), and medical equipments for first aid (Figure-6).

Business Continuity Planning: BCP

Mere simulation for patient admission is not sufficient to achieve ideal disaster control. The supply of personnel and other resources necessary to maintain the hospital function may be disrupted when a disaster strikes. Requirements for disaster
control includes prior confirmation of the number of staff who would be able to commute, simulation of the impact such as strike may have not only on the availability of pharmaceutical resources and equipment, but also on food and linen supply and hygiene, and advanced planning on supply management and its distribution. BCP refers to a prior determination of measures against the aforementioned problems foreseen as a result of prior simulations.

**BCP manual**

In April 2013, we proposed our BCP manual for disasters. In the event of disaster, designated staff will follow the manual to check the status of the given criteria and make reports to the emergency operations center. The center will make necessary adjustments based on the overview of hospital function in order to operate at the best of its ability as a disaster base hospital. Cancellation of appointments with outpatients for minor symptoms is also incorporated in our BCP.

In order to ensure the lifeline of water and food, in addition to our emergency stocks, we take advantage of the lifeline vendor service of Otsuka Beverage and have made agreements ("Agreement on the Stable Supply of Commodities") with supermarkets in the neighborhood so that we would be supplied with necessary goods preferentially.

**Rescue & Medical support dispatch**

Past events in which we managed to send medical staff to the local site

- JDR (Japan Disaster Relief team) for Indonesia Earthquake: Dr. Manabu Sugita (Figure-8)
- JICA (Japan International Cooperation Agency) : Dr. Manabu Sugita
- Medical support in the Great East Japan Earthquake (Figure-9)
  - Group 1: 2011.3.18 to 3.22 (Five staff including Dr. Manabu Sugita)
  - Group 2: 2011.3.25 to 3.30 (Four staff including Dr. Tomohisa Nomura)
  - Group 3: 2011.3.29 to 4.3 (Four staff including Dr. Hajime Sekii)

**Conclusion**

As a disaster base hospital, we must prepare ourselves to meet the medical needs of communities as much as possible while maintaining full hospital function even during disasters. To achieve that, we need to periodically run disaster simulations, update manuals as needed, and implement drills and awareness campaigns so that staff can train themselves for smooth actions during disasters by repeat training.

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*3 Lifeline vendor

Vending machines constitute one form of stock management, since they would be available to people at the disaster site. One vending machine can stock a maximum of 540 bottles of water and 77 packs of food. There are a total of five vending machines in the hospital (Figure-7).

*4 The Great East Japan Earthquake

On March 11th, 2011 at 14:46, the earthquake occurred. The outpatient lobby on the 2nd floor was opened as a refuge area, and around 20 stranded commuters were provided with food and blankets. On three occasions a team of doctors, pharmacists, and medical assistants was sent to the site as medical support staff. A total of 557 people received our treatment (Figure-10).
References


Figure 8  JDR for the Indonesia Earthquake
Figure 9  Medical Support Team for The Great East Japan Earthquake
Figure 10  Patients who received our treatment in the Great East Japan Earthquake