

## Large scale earthquake disaster drill in Western Japan (2018/8/4)

Topic: Disaster medical response assuming South Trough Earthquake

Venue: Tokushima Prefectural Office, Yoshinogawa Medical Center (Tokushima, Japan)

On Aug. 4, 2018 (Sat.), Prof. Shinichi Egawa in Disaster Medical Science Division and Prof. Shunichi Koshimura and Post-Doc Researcher Luis Moya in Hazard and Risk Evaluation Research Division observed the nation-wide disaster drill in Prefectural Office and Yoshinogawa Medical Center in Tokushima Prefecture.

This disaster drill is aiming at the expertizing medical response assuming the South Trough Earthquake that is a real threat in Western Japan. Co-organizers are Cabine Office, Police Office, Fire Department, Ministry of Health, Labour and Welfare including Japan Disaster Medical Assistance Team (DMAT) Office, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan Aerospace Exploration Agency (JAXA), Japan Highway Corporations, Prefectures of Hokkaido, Iwate, Tokushima, Kagawa, Kochi, Kumamoto, Oita, Miyazaki, Kansai Wide-area Union, Japan Trucking Association and others. Assumed affected areas are Tokushima, Kagawa, Kochi, Oita and Miyazaki. Other prefectures in Japan are dispatching tens of relief teams making this drill really a nation-wide training. Main purposes are managing the headquarters, gathering points, Staging Care Unit (SCU), DMAT activities and intra-area and wide area transportation.

IRIDeS team joined the area training in January in Tokushima and this opportunity became second time to observe larger scale of training. The onset was on Aug. 3<sup>rd</sup> and the prefectural headquarter is already set up. The delegates started to gather from 7 a.m. and got orientation of the training. The drill started at 8 a.m. in hot Summer weather in an airconditioned predesignated room. A DMAT leader in Tokushima Pref. conducted general operation. Various stakeholders and liaisons including Tokushima Pref. Gov., Disaster Medical Coordinator, Japan Red Cross, Japan Medical Association, Disaster Psychiatric Assistance Team (DPAT), Japan Rehabilitation Assistance Team (JRAT), Hemodialysis Doctors Association, Pediatric and Perinatal Liaison and Pharmacists. Japan Coastal Guards, Self Defense Force Marine, Fire Department conformed the air-craft management team. The big room was full of delegates. Logistic team from Japanese Association of Disaster Medicine supported the control of drill in parallel with logistic drills. Pediatric and Perinatal Liaison joined this drill for the first time.

DMAT core member and each stakeholder shared the information, took actions and recorded various movements in the chronology sheets in each table island. They decided actions according to the actual information and cooperate with appropriate stakeholders just as actual disaster situation. The DMAT chief stressed the importance of team building between various stake holders and changing information into intelligence to take an action. There were predesignated three medical control areas in Tokushima Pref. i.e. East, West and South Areas. Each area has individual medical HQ that will decide the medical control of the patients, dispatch DMAT teams and communicates with Pref. HQ.

At 11a.m., Governor has arrived as the General Commander of the HQ. He got the briefing from prefectural officers and medical directors and expressed sincere appreciation for the delegates to make an effort for effective response. He added the possible risk of South Trough Earthquake and the importance of collaboration of various stakeholders for immediate search & rescue to save the lives of affected people. The sincere attitude and understanding of disaster risk reduction of Governor encouraged the delegates very much. Governor also suggested the utilization of National Governors Association to promote efficient support from outside of prefecture.

Reported by Shinichi Egawa (Disaster Medical Science Division)  
Shunichi Koshimura and Luis Moya (Hazard and Risk Evaluation Research Division)  
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We visited the Yoshinogawa Medical Center in the afternoon to observe the actual actions in the local disaster base hospital that belongs to the East medical area. Supervising DMAT members were controlling the drill and the mission was to stabilize, treat or transport the mass casualty patients. The delegates from the Medical Center and three DMAT teams from outside were discussing how to deal with the situation under limited human and medical resources. The concept of wide area transportation is to spend minimal resource to stabilize the severely sick patients and transport to the outside of affected area using the aircrafts. However, the Yoshinogawa Medical Center is far away from SCU and has seismic proof structure as a newly built tertiary hospital. Under such condition, it is difficult to decide which is better to transport of patient to the SCU, or ask an additional human/medical resource to treat on site. HQ teams have to take a flexible action considering various conditions. Yoshinogawa Medical Center also became a HQ for evacuation centers by public health nurses from Awa City, Yoshinogawa City and Yoshinogawa Health Office. There were a lot of evacuees in each evacuation center who have various physical and mental health conditions. Rapid surveillance and assessment of the evacuation centers are critically important. The issues about pets, nutrition and health conditions were key factors in management.

We returned to the prefectural office. There was an aftershock with maximum shake of 6- at 12 a.m. The prefectural HQ kept operating after confirmation of the safety of themselves and all responding teams using EMIS. The HQ assigned special mission team to deal with a relatively big issues like huge amount of water supply request for hemodialysis, or hospital evacuation as projects. It was unable to use the Tokushima Airport because of tsunami and the Kagawa Airport was used as an SCU. But the request exceeded the capacity of Kagawa Airport SCU and the HQ decided to use Hyogo Disaster Medical Center in Hyogo Prefecture as an SCU to further transport patients to remote area in collaboration with Kansai Wide-area Union.

At 16 p.m., the HQ held the last meeting for the information sharing and newly emerged hospital evacuation project. They came to the end of the drill at this moment.

Although the delegates are very tired, they made the debriefing of the drill. The good practices were team building and the specialized mission teams for the projects. The frequency of HQ meeting was once in two hours, but Chief stressed importance of sharing information and taking an appropriate action. Chief also mentioned about what cannot be done. The safety confirmation of small hospitals and clinics in EMIS was not sufficient. Some actions had a delay. They decided to ask additional DMAT teams to the National DMAT HQ, but its reason should be more practical. Looking back of whole nation-wide drill will be held in other day. All liaison teams appreciated the collaboration experience and the new findings by joining such large-scale drill.

Tokushima Prefecture was truly serious in the drill because of the rising possibility of South Trough Earthquake. This large-scale drill is assuming four prefectures got affected and the whole Western Japan was responding including national government. Assistant Professor Hiroyuki Sasaki in IRIDeS is assisting Oita Prefecture in Kyushu as a member of Miyagi DMAT. In Miyazaki and Oita Prefectures, the health responders are implementing Japan-Surveillance in Post Extreme Emergencies and Disasters (J-SPEED) system for the immediate surveillance of the health conditions of affected people. The Sharing Information Platform for Disasters (SIP4D) project is also implementing the actual usage of simulated shake distribution, tsunami inundation area, building damage and available road information. Emergency Medical Information System (EMIS) is the platform of information sharing within the health responders. The national DMAT HQ tried to implement drone application in this drill, but the land owners and the related authority were not able to permit by the day. We have to improve the social understanding and legal management system as well as the development of technology.

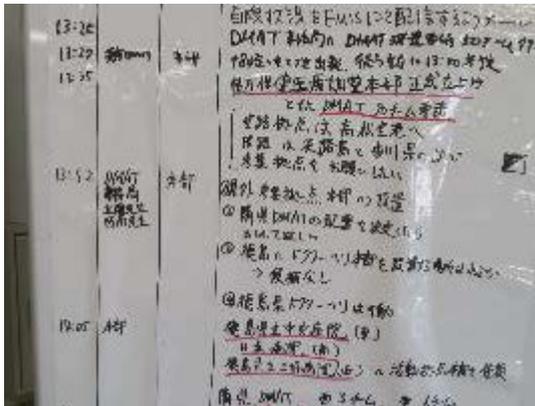
Participation in this large-scale drill gave us the deeper insight of health response system and how IRIDeS can contribute to the improvement of the system and establishment of practical disaster science as an inter-disciplinary research institute.



Tokushima DMAT Chief medical doctor of HQ and advisory Hyogo DMAT



Disaster Medical Coordinator in Tokushima Prefecture coordinating various Liaisons and Stakeholders



Chronology describing the onset and setting up of HQ in yesterday.



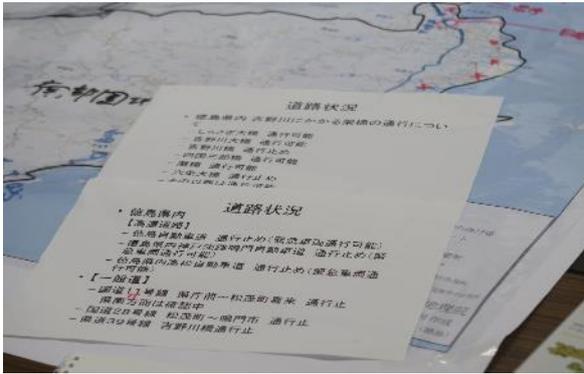
There were islands of tables for Liaisons and Stakeholders.



Logistic teams from national DMAT are controlling and supporting the drill in HQ



There were HQ meetings in every two hours to share the latest information and to adjust the operations.



Map of Tokushima Prefecture and the road availability information on the desk



Judging the situation by surrounding the map. Representatives of Police and Fire Department joined the discussion and share the policy.



Simulated information of severely ill patients (Red Tagged) in Yoshinogawa Medical Center. Local and assisting DMATs are discussing the plan.



The public health nurses in Awa City, Yoshinogawa City and Yoshinogawa Health Office are discussing how to manage the health issues in evacuation centers.



Assisting DMATs bring in the standardized medical materials for Green, Yellow and Red triage areas.



EMIS top page indicating the current situation of prefectures. Red areas are actual Western Japan heavy rain disaster. Yellow areas are in alert. Fukushima prefecture is still in alert after Great East Japan Earthquake. Purple areas are participating this drill.