Damages and Response to Great East Japan Earthquake
• Disaster Base Hospital
• JAPAN Disaster Medical Assistance Team (DMAT)
• Emergency Medical Information System (EMIS)
• JAPAN DMAT activities in the Great East Japan Disaster (3.11)
Disaster Medical System

Devastated area

On-site Hospital

Triage Treatment Transportation

Rescue

Disaster on-site

Disaster Base Hospital

Admission and treatment

Dispatch DMAT

Wide-area transportation

Non-devastated area

Disaster Base Hospital

Provide drugs Accept patients
Disaster Base Hospital
Disaster Base Hospital

- 695 Disaster Base Hospitals (as of April, 2015)
- 61 Core Disaster Base Hospitals
  Generally, one core hospital in each prefecture
- 634 Regional Disaster Base Hospitals
  One regional hospital in each secondary medical service area
Requirements for Disaster Base Hospital

• Respond within 24 hours in emergency, accept and transport injured people from disaster area

• Heliport on the hospital premises

• Dispatch medical team (DMAT) to disaster area

• To have sufficient rooms and folding beds to respond and accommodate emergency patients (expected to receive double of inpatients and five times of outpatients during an emergency)

• Supply lifelines such as water and electric power (prepare water tanks and private power generators)

• Store food and drinking water

etc.
JAPAN Disaster Medical Assistance Team (DMAT)
Basic concept of Japan DMAT

DMATs

NEEDs for life-saving medical care for casualties

Death

Traditional Medical teams from Red Cross Hospitals Medical Association

24 hr 48 hr 72 hr
Main Roles of DMAT

- Give medical support to Disaster Base Hospitals
- 3Ts (Triage, Treatment, Transport) in devastated area including wide-area medical air transportation
- Give medical support to Staging Care Unit (SCU)*

*SCU: a medical strong point for evacuation to non-devastated area, usually located in military and commercial airports
# Structures and Activities in JAPAN DMAT

<table>
<thead>
<tr>
<th>Respond to</th>
<th>Natural and man-made disasters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control by</td>
<td>Prefectures and Ministry of Health, Labour and Welfare (MHLW)</td>
</tr>
<tr>
<td>Under Law/Act</td>
<td>Disaster Countermeasures Basic Act</td>
</tr>
<tr>
<td>Number of teams</td>
<td>1,426 teams (as of April 2015)</td>
</tr>
<tr>
<td>Number of personnel in each team</td>
<td>4 personnel, hospital-based* (typically composed of 1 physicians, 2 nurses, 1 logisticians)</td>
</tr>
<tr>
<td>Deployment</td>
<td>within 48 hours</td>
</tr>
</tbody>
</table>

*Hospitals which have DMAT receive medical incentive fees*
Medical Team Deployment System

1. Disaster on-site

2. Request DMAT deployment

3. Pay expenses

4. Dispatch DMAT

5. Report expenses

6. DMAT belonging hospitals

7. Demand expenses

8. Pay expenses

Disaster Countermeasures Basic Act

Disaster Relief Act

Devastated Prefecture

Non-devastated Prefecture

On-site rescue activities

Support hospitals

Prefectural Office
Medical Headquarter

11
JAPAN DMAT Secretariat (established in 2010)

Disaster Medical Assistance Team, Health Policy Bureau
Coordinate with prefectures during disaster occurrence

DMAT Secretariat
- National Hospital Organization Disaster Medical Center (Tachikawa city, Tokyo)
- National Hospital Organization Osaka Medical Center

Peace time
- Administer Japan DMAT Exploratory Committee
- Run training courses
- Register new personnel
- Update roster of personnel

Disaster
- Coordinate with devastated Prefecture (Commander DMAT) and Disaster Base Hospitals
- Provide information to DMAT personnel
- Collect information (hospital damage, patient number) from Emergency Medical Information System (EMIS)
- Support DMAT activities
Emergency Medical Information System (EMIS)
Characteristic EMIS

• Information Sharing Tool

• Information
  – Needs:
    • Hospital damage
    • Patients number in hospital
  – Resource
    • Capacity of hospital: Check in normal time
    • DMAT Activity

• Information List
  – For sharing
  – For Hospital Management
1. Emergency input items (information just after occurrence)

Please tick items applicable to your medical institution.

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>There <strong>is collapse</strong> or danger of collapse of the buildings or the medical facilities.</td>
<td></td>
</tr>
<tr>
<td>The <strong>number of accepted patients</strong> exceeds the capacity.</td>
<td></td>
</tr>
<tr>
<td>It is impossible to use <strong>lifeline</strong>. (Impossible to have medical activities)</td>
<td></td>
</tr>
<tr>
<td>Others/remarks</td>
<td></td>
</tr>
<tr>
<td>Put reasons except the above why accepting patients is difficult.</td>
<td></td>
</tr>
</tbody>
</table>

Medical institutions with **no check marks** in the above items means it is possible to accept patients.

* Please click entry button even if there are no check marks.
2. Input items of detail information

Detail input (medical institution information)

Input the present information of the medical institution.

- **Function of the medical institution**
  Last renewal date 2005/10/12: 20:01
  Please check applicable items.
  - Impossible to accept patients who need operations
  - Impossible to accept patients who need dialysis

- **The number of accepted patients with serious/medium illnesses**
  Input the number of patients who are accepted at present. (Not accumulation)
  Number of serious cases (Red tag)
  Number of medium cases (Yellow tag)

- **Patient transferring information**
  Number of serious cases which need to be transferred
  Of the above, number of cases which need extended transferring
  (Cases which meet the standard for extended transferring)

- **Situation of lifeline**
  Please check applicable items.
  - Impossible to use electricity
  - Impossible to use water
  - Impossible to use medical gas

- **Others**
  Please put comments such as access conditions, if any.
Monitoring Picture

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Monitoring</th>
<th>Available</th>
<th>Non Available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Detail information</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Representative input</strong></td>
<td></td>
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</table>
Disaster Notification; Alert for Stand-by

Disaster Affected Prefectural Office
Turn on “DISASTER MODE”

Ministry of health

Emergency Medical Information System

Prefectural office
DMAT Hospitals
DMAT members’ Mobile phone

E-Mail
JAPAN DMAT activities in Great East Japan Disaster
M9.0 earthquake occurred in the offshore of Sanriku coast at 14:46, 11-Mar 2011. Enormous damages were brought to Tohoku region due to the earthquake and tsunami.

This is the largest earthquake ever recorded in Japan, 4th largest earthquake in the world after 1900.

### Casualty

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<tr>
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<tbody>
<tr>
<td>Death</td>
<td>15,844</td>
</tr>
<tr>
<td>Missing</td>
<td>3,450</td>
</tr>
<tr>
<td>Injured</td>
<td>5,891</td>
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</table>

### Damages of buildings

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<tbody>
<tr>
<td>Collapsed</td>
<td>127,213</td>
</tr>
<tr>
<td>Partially collapsed</td>
<td>232,489</td>
</tr>
<tr>
<td>Partially damaged</td>
<td>658,123</td>
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(National Police Agency, as of 11-Jan 2012)

### Support for the affected people

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<tr>
<td>Evacuees (nation wide)</td>
<td>334,786</td>
</tr>
</tbody>
</table>

*Including those who sought shelter outside evacuation centres (houses of relatives, acquaintances, public housing, residents in temporary houses)

(Reconstruction Headquarters 10-Jan 2012)
Initial Responses by MHLW to Great East Japan Earthquake

- **Occurrence of the disaster**
- **Acute period**
  - Collection and Sharing of Information
  - Emergency medical care
  - Support in securing medical care systems in facilities
- **Sub-acute period**
- **Mid-long term**
  - Health control in medical relief centres
  - Recovery of the affected medical care facilities
Initial Responses by MHLW to Great East Japan Earthquake

**March**
- Sent over-the-counter medicine and ethical (prescription) medicine (12 Mar-)
- Distributed blankets and drinking waters from Japan Consumers’ Cooperative Union (13 Mar -)
  - Sent medicine through helicopters of US military (19 Mar)
  - Established supply system of medicine (established collection centres in each prefecture, and brought medicine)
- Sent over-the-counter medicine through patrol vassals of Japan Fisheries Association (20 Mar-)

**June**
- 44 tons of Ethical Medicine
- 4680 boxes, 150,000 bottles, 180,000 sheets of over the counter medicine
Initial Response by MHLW to Great East Japan Earthquake

March

DMAT (11Mar -22Mar)
* Max 193 teams were active (13 Mar)

Deployment of medical care teams from medical care related organization such as JMAT (15 Mar) * Max 156 teams with 706 persons were active

Deployment of mental/psychological care team (16 Mar-)

Health related activities by nurses and public health nurses (14 Mar)

Deployment of pharmacists (17 Mar-)
* Max 133 persons were active (10 Apr)

Deployment of dietitians (3/20)
* Checked food in all shelters in Miyagi twice
* Checked food in shelters in Iwate(10 May-) and Fukushima (20 Apr-)

April

The Coordination Council for Health Support for the Affected People (22 Apr-)

Total of 12,280 persons (2,662 teams) were deployed

Total of 3,390 persons (57 teams) were deployed

Total of 11,255 persons were deployed (excluding direct deployment)

1915 persons

May

June

Total of 600 dietitians were deployed

MHLW
Summary of Japan DMAT activity

Number of DMATs: 380 teams，1800 personnel

Active period: 3/11～3/22 (12 days)

Dispatched to:
Iwate 94 teams, Miyagi 108 teams
Fukushima 44 teams, Ibaragi 27 teams

Activities:
- Support for hospitals
- Inpatients evacuation
- Regional evacuation
- Wide-area air evacuation
  Transferred 19 pts with 5 airplanes of Self Defence Force.

Dispatched by Air
DMAT 82 teams 407 personnel
DMAT Activities

Support Hospitals inside the affected area

Red area

Yellow area  (electrical power down)
Hanamaki Airport Staging Care Unit

Received 136 pts

- Air evacuated 16 pts
- Transported to Morioka city 120 pts
In the C-1 jet plane to Haneda AP

Receive patients from coastal area

Carry in the patients to the craft
THE DMAT SUPERVISORS WERE ALLOCATED IN EACH OF
THE PREFECTURAL GOVERNMENTS’ OFFICE

Miyagi Prefectural Office

Iwate Prefectural Office

Fukushima Prefectural Office
Because of the enormous damages by tsunami, measures to chronic diseases are needed, though trauma care had been expected.

Lack of supplies and materials due the activities lasting more than 48 hours.

Some teams had difficulty in communications, while others had no access to the Internet to encode Emergency Medical Information System (EMIS).

DMAT office and DMAT coordination office in the prefectural level had the burden of increased administrative works because there were many DMATs active in the affected area.

Difficulty in understanding medical needs in community level

Collaboration among the related agencies for transfer of patients took time because there had been no existing plans.

DMATs which flied to join the activity had difficulty in bringing supplies and materials sustaining themselves.
**Response after the Great East Japan Earthquake**

**DMAT Activity Plan**

**【Pre-Eq: as of 31-Mar 2010】**

- **Activity**
  - Based on JATEC (DMAT training program)

- **Duration**
  - Within 48 hours after the disaster

- **Communication**
  - Between the hospital of origin and the DMAT

**【Post-Eq: as of 30 Mar 2012】**

- **Activity**
  - In addition to JATEC, DMATS needs to respond to chronic diseases

- **Duration**
  - 48 hours per team (excluding transportation time to the field)
  - Deployment of 2nd and 3rd batch shall be considered in accordance with size of the disaster

- **Communication**
  - Secure more than two communication systems (i.e. using satellite cell phones)
  - Secure internet accessibility

- **Instruction**
  - DMAT medical facilities shall actively deploy members to DMAT coordination offices in the prefectural level

- **Logistics**
  - Establishment of DMAT logistical support team and support for Registered DMAT Commanders.

- **Participation through air**
  - Prefectures shall provide supplies and materials required for DMAT which fled to participate the activity
THE NEXT STEPS

- Enhance the command and control function
- Upgrade the telecommunication equipment
  - Available to connect to internet during a heavy congestion
- Brush-up the wide-area medical evacuation strategy
- Reinforce the logistic support function
  - Procurement of fuel, vehicles... in the affected area
  - Communication system