

International Medical Support in Major Disasters: From the perspective of the Japan Medical Association

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International Medical Support in Major Disasters: From the perspective of the Japan Medical Association

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The Japan Medical Association (JMA)

- The JMA is the **Japan's largest Non-Government Professional Organization (NGO)** supporting the Medical and Health Activities of Physicians.
- **The JMA is the only Medical Association in Japan which the great majority of physicians nationwide belong to.**

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As representatives of all physicians in Japan, the JMA and Local Medical Associations independently and jointly propose national and community health policies based on **Professional Autonomy**.

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The World Medical Association (WMA)

- Established in 1947
- 100 Member Medical Associations (as of Aug. 2012)
- Adopted approximately 180 statements and declarations including the Declaration of Geneva and Declaration of Helsinki.
- As a fundamental text for medical ethics, **"The WMA Medical Ethics Manual"** was published in over 15 languages including Japanese.
- The significance of the WMA as a forum for considering various problems and issues related to health areas is expected to continue to increase in the future.

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WMA Declaration of Montevideo on Disaster Preparedness and Medical Response (Excerpt)

- The WMA, representing the doctors of the world, calls upon its members to advocate for the following:
 - To promote a standard competency set to ensure consistency among disaster training programs for physicians across all specialties. These NMAs can share this knowledge and advocate for the integration of some standardized level of training for all physicians, regardless of specialty or nationality.
 - To work with national and local governments to establish or update regional databases and geographic mapping of information on health system assets, capacities, capabilities, and logistics to assist medical response efforts, domestically and worldwide, when needed. In addition, systems for communicating directly with physicians and other front line health care providers should be identified and strengthened.
 - To work with national and local governments to ensure the developing and testing of disaster management plans for clinical care and public health including the ethical basis for delivering such plans.
 - The WMA could serve as a channel of communication for NMAs during such times of crisis, enabling them to coordinate activities and work together.

Adopted by the 62nd WMA General Assembly, Montevideo, Uruguay, October 2011

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Support from Overseas Medical Associations

- National medical associations (NMAs) differ greatly in terms of their structural organization, functions, and relationship with their country's government.
- There are few NMAs providing direct medical support to Japan in the form of medical team dispatch.
- Disaster medical coordination by the WMA comprises mutual sharing of information among regions and use of this in the formulation of countermeasures

Conversely

- ✓ As a main member of the WMA, the JMA is required to summarize lessons learned from large-scale disasters, communicate post-disaster countermeasures, and share these with the world.
- ✓ Through disaster medicine training programs, NMAs aim to improve the response capabilities of physicians and work with national governments to implement countermeasures

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JMA's Major Responses to the Great East Japan Earthquake

- **Dispatch of JMAT**
 - 1,398 teams sent from around the country to 4 afflicted prefectures
- **Cooperation in Postmortem Examinations**
- **Transport of Drugs**
 - Conducted with the help of US Military (as the first response of Operation Tomodachi), Japan Self-Defense Forces, Police, and the Japan Pharmaceutical Association
- **Disaster Victims Health Support Liaison Council**
 - JMA, the Japan Dental Association and other related organizations coordinate with concerned ministries (Cabinet Office, Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications, Ministry of Education, Culture, Sports, Science & Technology, Reconstruction Agency)
 - Information sharing and response to medical needs in the afflicted areas
- **Disaster Medicine Training**
 - Disaster medicine training was held on March 10, 2012 with the cooperation of the Harvard Humanitarian Initiatives. Additional training was also implemented on July 26, 2012.

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Japan Medical Association Team (JMAT)

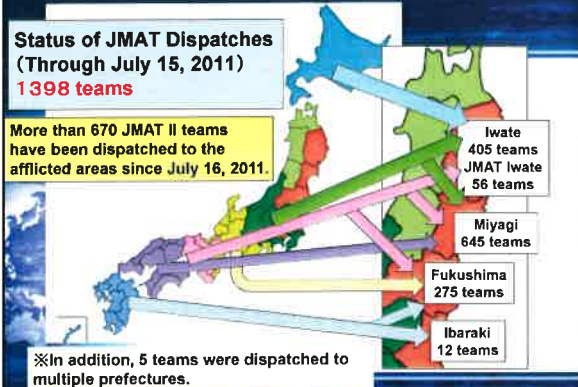
- **Purpose**
 - To provide medical treatment at evacuation sites & first-aid centers
 - To provide medical assistance at hospitals and clinics in the disaster-affected areas
- **Team Composition (example)**
 - One physician, two nurses and a coordination staff (driver)
- **Dispatching Duration of the Team**
 - Approximately three to seven days
 - A standard JMAT training curriculum will be developed for participants.

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Status of JMAT Dispatches (Through July 15, 2011) 1398 teams

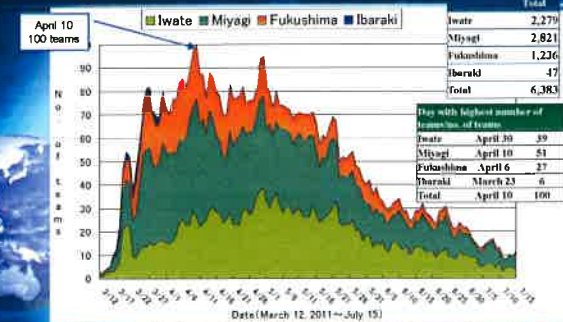
More than 670 JMAT II teams have been dispatched to the afflicted areas since July 16, 2011.



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Status of JMAT Dispatches (Through July 15, 2011)



The period of dispatch is from the date teams leave until the date they return, as reported to the JMA. It is not the period of actual operations in the disaster-affected area.

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Number of Persons Registered in JMAT by Occupation (~July 15, 2011)

1,398 JMAT Teams.

The overall activities are now under evaluation to prepare for the anticipated major earthquakes in the future (Tokai, Tonankai, and Nankai).

Occupation	Total
Physician (JMA members account for almost 60%)	2,145
Nurse, Assistant nurse	1,775
Pharmacist	461
Coordination staff	1,139
Other	534
Total	6,054

*The Other category includes physical therapists, occupational therapists, clinical laboratory technicians, clinical radiologists, social workers, psychiatric social workers, clinical psychologists, care managers, and nutritionists, etc.

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JMAT II

(after JMAT withdrawal)

- **Team Composition:** Physicians or including a Physician
- **Mobilization:** When Medical Assistance is deemed necessary to address Public Health Issues, etc.
- **Teams provide Medical Assistance, Mental Care, Home Care, Health Checkups, Vaccination, and Making Rounds.**
- **Teams should be reported about Issues discovered by Local Physicians and Health Nurses.**
- **Team Members are covered by Injury Insurance (the same as JMAT).**
- **Expenses for the Dispatch:** Reimbursed under the Disaster Relief Act, or decided by Relevant Local Parties.
- **Major Goal:** to prevent Death in Remote Areas (Prolonged Life in Evacuation Centers, Solitary Death in Temporary Housing, and the Necessity of Mental Care).

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Transport of Drugs

March 16 Amid a serious shortage of drugs in the affected areas, JMA asked the Japan Pharmaceutical Manufacturers Association (JPMA) to provide necessary drugs.

March 17 Through the JPMA 8.5-ton truckloads of drugs were donated which were immediately sent to the JMA office. Due to the urgency of the situation and a gasoline shortage, the JMA decided to ask for cooperation of the **US military** to transport the drugs from Tokyo to Miyagi and Iwate, not by truck.

March 18 The US Embassy contacted Yokota Air Base and asked for cooperation. Hours after the JMA submitted a request, an official approval was given and "Operation Tomodachi", one of the first trial of its kind started.



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Transport of Drugs

March 19 The drugs were transferred from Yokota to Hanamaki (Iwate) and Sendai (Miyagi) by transport aircraft. In a parallel operation, transport about 800 kilograms of drugs procured by the Aichi Medical Association from Komaki Airport to Fukushima Airport by two jet aircrafts was carried out.



With the help of Dr. Takashi Nagata, (Research Fellow, Harvard School of Public Health), Dr. Stephanie R. Kayden (Harvard Humanitarian Initiatives) and Dr. Maya Arai (HSPH), the JMA gained the cooperation of US military through the US Embassy in Tokyo.

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JMAT Training Course on Disaster Medicine

(March 10, 2012) Cooperation: Harvard Humanitarian Initiatives (HHI)

Overview of JMAT (Masami Ishii, Executive Board Member, JMA)	40min.
Humanitarian response: International guidelines and ethics (Stephanie Kayden, HHI)	40min.
International standards for public health activities (Pooja Agrawal, HHI)	30min.
Rapid assessment in disasters (Maya Arai, HHI)	35min.
Sharing roles between DMAT and JMAT (Kunio Kobayashi, Chairman of JMA's Committee Emergency and Disaster Medicine)	40min.
Radiation emergency medicine (Kazuaki Koriyama, Director of Nuclear Safety Research Association)	40min.
Post-mortem examination in times of disaster (Minoru Oki, Executive Director of Fukuoka Prefecture Medical Association, member of JMA's Committee Emergency and Disaster Medicine)	40min.
Special Disasters and Civil Protection Law (Yukio Hakoza, Self-Defense Forces, Director of First Division of Central Hospital)	40min.
Pandemic Countermeasures (Taro Yamamoto, Professor of Institute of Tropical Medicine Nagasaki University)	40min.
Discussion and Summary	45min.

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JMA Symposium on Health Policy "Disaster Medicine and Medical Associations" (March 11, 2012)

12:30~13:20	The Great East Japan Disaster and JMAT activities (Masami Ishii, Executive Board Member, JMA)
13:20~13:30	The Great East Japan Disaster — Research & actions of Japan Medical Association Research Institute (Takashi Hatanaka, Chief Senior Researcher of JMAR)
13:30~13:50	Role of Medical Associations in Times of Disaster (José Gomes do Amaral, President of WMA; Immediate Past President of Brazilian MA)
13:50~14:10	International Standards for Humanitarian Response (Stephanie Kayden, HHI)
14:10~14:30	A Public Health Perspective on Reconstructing Post-Disaster Tohoku: One Year Later (Michael R. Reich, Taro Takemi, Professor of International Health Policy, Harvard School of Public Health)
14:30~14:50	The Role of National Medical Associations in Disaster Response (James J. James, Center for Public Health Preparedness and Disaster Response, American MA)
15:00~15:20	Medical care as a peacetime struggle for national security through human security (Kazuhisa Ogawa, President of Strategic Research Institute of International Change)
15:20~15:40	Fukushima Daiichi Nuclear Accident and Radiation Exposure (Makoto Akaishi, Executive Director of National Institute of Radiological Sciences)
15:40~16:00	Missions of Acute Medicine for Disaster (Tatsuya Sakamoto, Professor & Chair of Teikyo University School of Medicine; Head of Emergency & Critical Care Centre, Teikyo University Hospital)
16:10~17:00	PANEL DISCUSSION "Disaster Medicine and Medical Associations"

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Demonstrations of Information-sharing Via the Internet: Satellite and Cloud Computing

July 26, 2012 (Thurs.) 13:00-16:00

- Cooperation with the Japan Aerospace Exploration Agency (JAXA)
- Information-sharing via cloud computing

Scenario 1

- A disaster occurs in Sapporo city, Hokkaido, disrupting information transmission and the Internet.
- The Hokkaido Medical Association, Saitama Medical Association, and JMA conduct teleconferences via the JAXA "Kizuna" satellite. Dispatch of JMAT is decided.
- Patient charts and evacuation center information is shared via cloud computing.

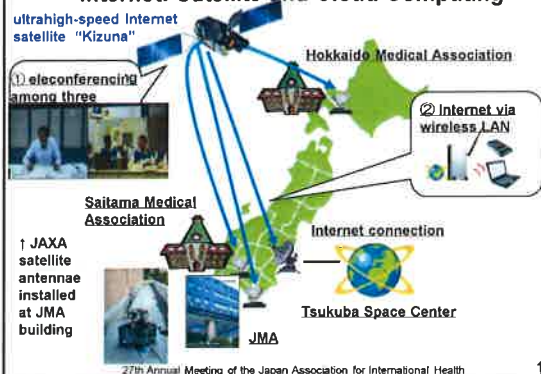
Scenario 2

- A disaster occurs in Tokyo; JMA building is also damaged and ceases functioning.
- The Hokkaido Medical Association, Saitama Medical Association, and JMA conduct teleconferences.
- Based on agreements among the three associations, control of the JMA's information liaison and functioning are transferred to the Hokkaido Medical Association and Saitama Medical Association.

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Demonstrations of Information-sharing Via the Internet: Satellite and Cloud Computing



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Great East Japan Earthquake

• Features:

- Giant Tsunami hit an area stretching 500 km (310 mile) on the Pacific coast.
- More than 90% of deaths were caused by drowning.
- The number of evacuees in the region were about 400,000 at its peak.
- Serious accident occurred in reactors 1 to 4 at Fukushima Daiichi Nuclear Power Plant.
- Afflicted areas experienced shortages in the supply of basic goods and food (due to fear of radiation, bad weather, severed roads and bridges, poor communication tools....)

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Great Hanshin-Awaji Earthquake; Great East Japan Earthquake

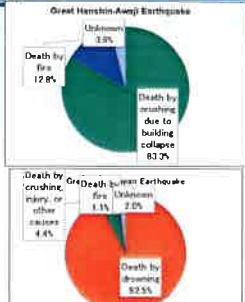
- The Great Hanshin-Awaji Earthquake (1995) struck a **relatively narrow area centered on the major city of Kobe city and neighboring cities**. Damage was caused by the earthquake and subsequent fires.
- The Great East Japan Earthquake (2011) was a **complex disaster** comprising an earthquake, tsunami, and nuclear power plant disaster. Damage was widespread and included **major cities (Sendai) and many regions to which access was difficult from land (the Sanriku region)**.

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Casualties in the Great Hanshin-Awaji Earthquake and Great East Japan Earthquake

- **Great Hanshin-Awaji Earthquake (1995)**
 - The number of deaths was approx. 6,400, the majority of which were caused by crushing due to buildings collapsing; 12.8% of deaths were due to fire.
 - The number of injured people was 43,800, seven times the number of deaths.
- **Great East Japan Earthquake (2011)**
 - The number of deaths was approx. 15,900, the overwhelming majority of which were caused by drowning due to the tsunami.
 - The number of injured people was approx. 6,100, which was less than the number of deaths.

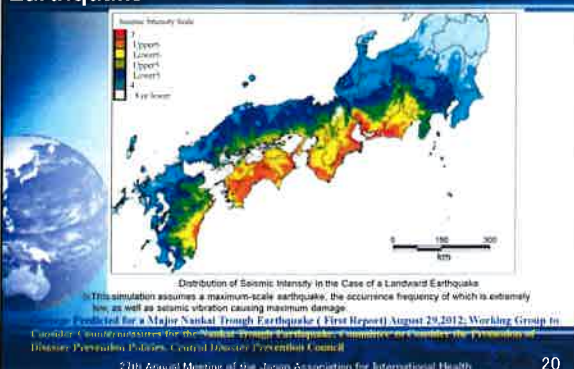


Source: Ministry of Health, Labour and Welfare, Nationalities, Percentages of causes of death, as of July 7, 2011

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Damage Predicted for the Nankai Trough Earthquake



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Damage Predicted for the Nankai Trough Earthquake Case in which the Tokai Region Sustains Major Damage

	Earthquake strikes in winter/late all night
Building collapse	Approx. 82,000
Tsunami (low rate of early evacuation)	Approx. 230,000
Landslides in steep slope areas	Approx. 600
Seismic fires (wind speed of 8m/s)	Approx. 10,000
Topping of brick walls/vending machines; falling objects outdoors	Approx. 30
Number of people injured	Approx. 321,000
Number of people requiring rescuing from buildings damages by seismic vibrations	Approx. 623,000
Number of people requiring rescuing due to the tsunami	Approx. 29,000

Damage Predicted for a Major Nankai Trough Earthquake (First Report) August 29, 2012; Working Group to Consider Countermeasures for the Nankai Trough Earthquake, Committee to Consider the Promotion of Disaster Prevention Policies, Central Disaster Prevention Council

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Damage Predicted for the Nankai Trough Earthquake

Predictions for damage caused by the Nankai Trough Earthquake can be regarded as having the characteristics of both the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake.

collapsing, a maximum of 230,000 deaths due to the consequent tsunami and a maximum of 10,000 deaths due to earthquake fire are anticipated in the Nankai Trough Earthquake.

- The area expected to sustain damage is extensive and includes numerous large cities and regions, isolated islands and industrial areas to which traffic access is expected to be difficult. Moreover, there are nuclear power stations located along coastal areas.

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Issues for Disaster Medicine Support Activities in the case of the Nankai Trough Earthquake

From damage caused by previous disaster and damage predictions for the Nankai Trough Earthquake

- | | |
|---------------------------------|---|
| Indirect and logistical support | <ol style="list-style-type: none"> 1) Swift rescue from rubble and tsunami 2) Dispatch of medical teams to difficult-to-access areas 3) Securing and transportation of scarce medical supplies 4) Nuclear disaster countermeasures 5) Earthquake and/or tsunami damage to key hospitals and the establishment of temporary clinics |
| Direct medical support | <ol style="list-style-type: none"> 6) Confined Space Medicine; TTT (triage, treatment, transport) for patients with crush injuries or burns and other severely ill or injured patients 7) Postmortems of drowning or burn victims 8) Health and hygiene measures at evacuation centers from a relatively early stage 9) Psychological care |

Moreover, these issues arise virtually simultaneously

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Issues for Disaster Medicine Support Activities in the Case of the Nankai Trough Earthquake

• Direct medical activities are carried out by domestic physicians and medical teams

- TTT (triage, treatment, transport) for patients with crush injuries or burns and other severely ill or injured patients
 - Strengthening of DMAT organization and review of operational system
 - Promotion of a coordination system between DMAT and JMAT
- Health and hygiene measures at evacuation centers from a relatively early stage
 - Promotion of the JMAT system; implementation of disaster medicine training
- Postmortems of drowning or burn victims
 - Deepening of collaboration between the JMA and the Police Surgeon Association Japan

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Form of Overseas Support in the Case of the Nankai Trough Earthquake

- Countermeasures for the Nankai Trough Earthquake should be based on lessons learned from large-scale disasters in the past.
- From this perspective, direct assistance from NMAs and overseas governments in the form of dispatching international medical teams is not necessary.

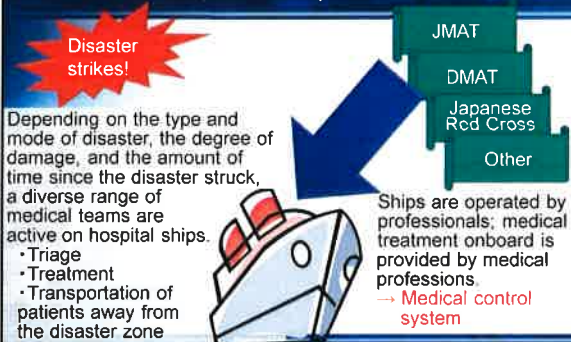
In terms of logistics, when damage is extremely great, support from overseas may play an important role.

- ◆ Provision and transportation of scarce medical supplies
- ◆ Transportation of medical teams via land, sea, and/or air (including hospital ships equipped with treatment facilities)
- ◆ Establishment of fully-equipped temporary clinics
- ◆ Dispatch of specialists in nuclear disaster countermeasure (risk management, decontamination)

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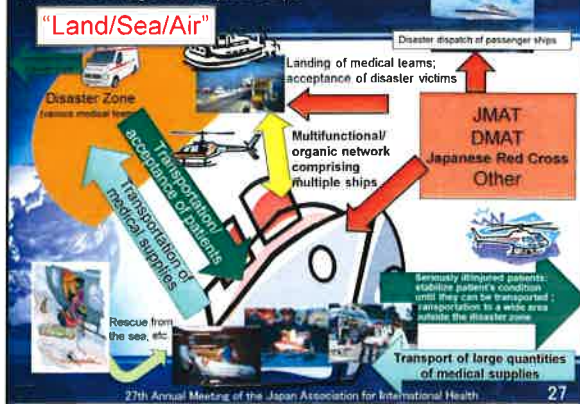
The JMA's Image of Hospital Ships



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The JMA's Image of Hospital Ships



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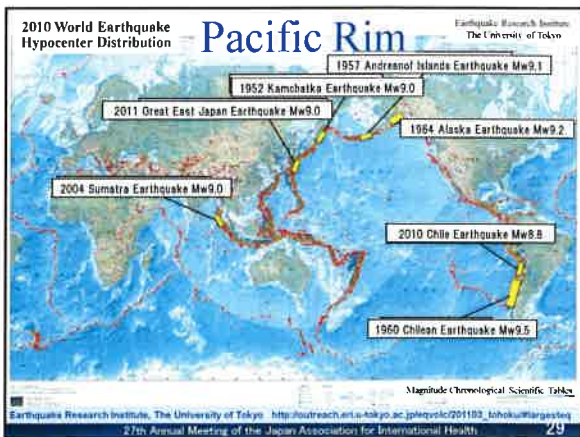
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International Support Activities in the Case of the Occurrence of Major Disasters in the Future

- With regard to reciprocal support activities anticipated for the Asia region, there is a need to consider such issues as collaboration between medical associations and medical resources within the region and the operation of hospital ships.
- Japan is a country that is at risk to many natural disasters, such as earthquake, volcanic eruption, and tsunami. In particular, the Pacific Rim—that is, the regions bordering the Pacific Ocean, namely East Asia, Southeast Asia, Oceania, and the American West Coast—share risks for disasters. Lessons learned from disasters in Japan are also useful for these Pacific Rim countries and regions.
- We will endeavor to strengthen cooperation among NMAs focusing on the Asia region.

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