

The Significance of *iJMAT*: A New Framework for International Disaster Medicine Support

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About *iJMAT*

In light of the Great East Japan Earthquake in 2011, Japan must prepare for Tokyo Metropolitan earthquake, Tokai/Nankai earthquakes in the south-east and south oceans, and other unprecedented catastrophes. We need to realize the situation that we have no choice but to accept foreign medical relief efforts. Therefore, we are investigating the framework of medical assistance that utilizes our functions as a medical association.

The term *iJMAT* is an abbreviation of the international Japan Medical Association Team, which refers to international teams of disaster medicine organized by the Japan Medical Association (JMA). JMA has been involved in various humanitarian assistance for disasters abroad for a long time. Those activities of collecting and offering donations, and building medical facilities in the disaster affected areas have contributed to the reconstruction of disaster-stricken areas. *iJMAT* will enable JMA to respond to the needs of the time and the society, and become actively involved in disaster medical support across borders.

The key points of *iJMAT* are as follows.

- It provides a framework of foreign medical assistance in times of large-scale disaster for accepting or sending medical teams from or to foreign countries, respectively.
- The national medical associations will authenticate the dispatched medical teams, coordinate, and manage them.
- It complies with the Incident Command System (ICS), Sphere Standards, and the World Medical

Association (WMA) Declaration of Montevideo. *iJMAT* is drafted as follows.

Prerequisites for accepting foreign medical assistance in large-scale disasters

1. “A state of emergency due to disaster” (or similar situation) has been proclaimed based on the Disaster Countermeasures Basic Act.
2. Ministry of Foreign Affairs has processed the offers of medical assistance to the Japanese government from abroad.
3. The foreign medical assistance is accepted based on the following “mutual consent” items between the JMA and medical associations abroad that stipulate medical assistance in times of disaster.
 - (1) Approval of the dispatched physicians’ qualifications: Evaluation and approval of the qualifications and technical requirements of the dispatched physicians and medical staff.
 - (2) Presentation of identities of the dispatched foreign physicians and medical staff: The identities of the foreign dispatched physicians and medical staff should be guaranteed by the dispatching medical associations.
 - (3) Range of medical relief activities: During a large-scale disaster in Japan, the dispatched foreign physicians will carry out their medical relief activities as members of the Japan Medical Association Teams (JMATS), with compensation equivalent to JMATS in the event of a secondary disaster. The JMA will arrange their missions including the locations and hours to offer medical relief assistance, and the range of

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duties.

Systems for accepting medical assistance from abroad in large-scale disaster

1. Schemes of medical assistance team
It should be a self-contained regime (capable of providing the necessary medicines, medical equipment, food, water, fuel, etc. on their own).
2. Composition of medical assistance team
 - (1) Enough interpreters should be sent to meet the need.
 - (2) Japanese physicians with experience in international cooperation should also be sent.
3. Duration of medical assistance
The maximum duration per medical assistance team should be about 2 weeks.
4. Range of activities of the dispatched members
 - (1) Instruction on the locations and hours
The local disaster management headquarters of the recipient municipalities that requested assistance will manage the activities (just as in JMAT) and instruct members on the locations and hours to offer assistance.
 - (2) Coordination of activities
Municipal medical associations in charge of the recipient municipalities will coordinate medical relief activities.

Overview of the Great East Japan Earthquake and the Lessons Learned

The Great East Japan Earthquake that struck Japan at 14:26 on March 11, 2011, caused significant damage over extended areas due to giant quakes followed by the large-scale tsunami affecting the prefectures of Aomori, Iwate, Miyagi, Fukushima, Ibaraki, and Chiba. Moreover, the core meltdowns of the Numbers 1, 2, and 3 reactors of the TEPCO Fukushima Daiichi Nuclear Power Plant led to a series of explosions, and the subsequent breach of a large amount of radioactive materials was added to the disaster. In addition to the death of 18,000 people, roughly 400,000 people had to seek shelter in the 500km disaster zone. In light of this, the JMA decided to dispatch JMATs to the 4 prefectures that particularly suffered major damage—namely, Iwate, Miyagi, Fukushima, and

Ibaraki—and consulted and requested the prefectural medical associations across the nation about the geographical assignments for dispatch. After about a month, the Ibaraki Prefecture Medical Association notified the JMA that locally available medical support would suffice, so the JMATs dispatch focused on the remaining 3 prefectures. July 15, 2011 was marked as the end of the first phase of JMAT, and the activities up to this point were collectively named the JMAT, whereas the second phase is called JMAT II. In summary, a total of 1,398 JMATs consisting of about 6,000 medical professionals were sent when counting from Day 0. As many as 60 teams were in the field during the peak period from March 25 through May 22, with the maximum of 100 teams on April 10.

In addition to JMAT, the Japanese government dispatched 385 teams of the Disaster Medical Assistance Teams (DMATs) consisting of 1,871 medical professionals to the disaster-affected areas. The DMATs' main duty, which is to provide long-distance medical transport for those injured as a direct result of a natural disaster, handled 19 patients in March 12-15; as the result of the nuclear disaster, about 700 were also evacuated and transported in March 19-21 from the 6 hospitals in Soma City, Fukushima.

In the aftermath of the Great East Japan Earthquake, both the JMA and the Japanese government's DMATs had no capacity to accept foreign medical assistance. The medical assistance accepted from abroad by the Japanese government was as follows. Over 30 nations offered medical assistance to the Japanese government. The Ministry of Foreign Affairs presented the following "scheme for medical assistance from abroad" to the disaster-stricken municipal governments as the prerequisite for receiving assistance.

- (1) Should be a self-contained regime (capable of providing the necessary medicines, medical equipment, food, water, fuel, etc. on their own).
- (2) Enough interpreters should be sent to meet the need.
- (3) Japanese physicians with experience in international cooperation should be also sent.
- (4) The duration should be 2 to 4 weeks (but decided case-by-case).
- (5) A local disaster management headquarters should manage their activities.

(6) The government should cooperate on the smooth clearance of medicines and test equipment through the customs.

Consequently, disaster medicine teams from the following 4 nations were accepted. A brief overview of the assistance offered is summarized below.

- Israel: 53 members in total, including 14 physicians, 7 nurses, 32 technicians, and others → scheduled to work for about 2 weeks from March 29; worked with the physicians of Minami Sanriku City.
- Jordan: 4 members in total, including 2 physicians and 2 sonographers → scheduled to work for about 3 weeks from April 25th; worked with the physicians of Fukushima Medical University.
- Thailand: 2 members in total, including 1 physician and 1 nurse → scheduled to work for about 2 weeks from May 9; worked with the physicians of Fukushima Medical University.
- The Philippines: 3 physicians → scheduled to work for about 2 weeks from June 28; worked with Japanese physicians and clinical psychologists.

The one of the lessons learned from the Great East Japan Earthquake was that it was not easy to accept foreign medical assistance teams in a large-scale disaster. It is therefore important to establish such a framework in advance to prepare for the large-scale disasters that can strike Japan in the future.

Emergency Medical Teams (EMTs)

The Foreign Medical Teams (FMTs) or Emergency Medical Teams (EMTs), which the World Health Organization (WHO) played a main role in developing its guidelines, is an international humanitarian aid system to categorize and standardize functions and enable registration, coordination, and authorization.¹

The following problems were identified in the EMT activities at sites relating to the 2004 Sumatra earthquake, 2005 Pakistan earthquake, and 2010 Haiti earthquake.

- Timely assistance was not smoothly carried out.
- The ability of EMTs varied.
- A large gap existed between the medical needs in the disaster-stricken nations and the support available from EMTs. More specifically, there were no international standards, it was not clear who authorizes EMTs, and the quality of care

was not managed.

- In addition, the disaster-stricken countries were often not equipped with the ability to manage EMTs.

In consideration of these issues, WHO prepared the EMT guidelines with the 5 following goals.¹

- Provide prompt assistance by having in-advance coordination and registration.
- Dispatch EMTs that match the medical need of the affected countries.
- Guarantee a minimum quality of care (i.e., member management based on the capacity in disaster medicine, and accountability for medical practice).
- Establish and standardize a registration system to eliminate risky medical practice.
- Improve the coordination ability of the receiving countries.

The abilities desirable for EMT members include competencies in triage, capacity for humanitarian aid, safety management, understanding of different cultures and languages, logistics, communication, and faculty for teamwork. It should be noted that this EMT initiative is a one-sided model, which assumes that developed nations with high medical standards are providing humanitarian aid to underdeveloped nations that are experiencing sudden disaster. Furthermore, the specific authorities of the providing/receiving countries in charge of coordinating EMTs can vary, and the EMT guidelines do not clearly stipulate the involvement of national medical associations in the providing/receiving countries. The framework of *i*JMAT is therefore unique, and shows JMA's original approach to EMTs.

***i*JMAT Activities**

October 2014: Consultation with the U.S. Embassy

The JMA consulted with the U.S. Minister Counselor Steven S. Maloney and other staff of the U.S. Embassy to evaluate the *i*JMAT concept and also to investigate the ideal approach to medical assistance for the U.S. residents in Japan in the event of Tokyo Metropolitan earthquake, or the Nankai Trough earthquake that will directly affect the southwestern coastal area of Japan. The U.S. Embassy understood the *i*JMAT concept and mentioned that we needed to pre-

pare to care for the U.S. residents living in Japan in times of large-scale disaster. They also suggested flexible incorporation of U.S. Armed Forces medical teams with helicopters within the framework of *i*JMAT. JMA informed the U.S. Embassy that it is working to reach an agreement with the American Medical Association (AMA), and the Embassy expressed their willingness to cooperate.

February 2015: Consultation with Harvard University

JMA had received many suggestions from members of Harvard University when planning JMAT before the 2011 Great East Japan Earthquake. In order to confirm the validity of the *i*JMAT concept, we consulted with Dr. Stephanie Kayden, the director of the Harvard Humanitarian Initiative, and Professor Jerold Kayden, a professor of Urban Planning and Design at the Harvard University Graduate School of Design, who also has served as the law clerk to a U.S. Supreme Court justice. They shared their conclusion that *i*JMAT is valid in light of the principals of international humanitarian aid and law. They also implied that concluding an agreement with JMA will be difficult for AMA for various reasons.

May 2015: Planned dispatch of medical teams from the Okinawa Prefecture Medical Association in the Nepal earthquake

In Nepal, an earthquake of magnitude 7.8 hit near the capital Kathmandu on April 25, 2015. The strong earthquake collapsed buildings and caused avalanches and landslides, bringing serious damage to the nation. The earthquake also resulted in human suffering in the neighboring areas, including India, the Tibet autonomous region of China, and Bangladesh. Many countries swiftly moved to assist in the rescue, but their efforts were hindered by various factors such as aftershocks, shortages of heavy machinery, medical facilities, and physicians, the underdeveloped Tribhuvan International Airport, and poor accessibility to isolated villages and settlements in mountainous areas. On April 29, despite this situation, the Nepal government requested the international community not send any more search-and-rescue teams, claiming that they had sufficient human capacity for such missions.

JMA sent Professors Masamine Jimba and Taro Yamamoto, members of the JMA Global

Health Committee to Nepal; they carried out a field survey and reported on the status of damages in the affected mountainous areas. Dr. Shigeru Suganami, President of the Association of Medical Doctors of Asia (AMDA) Group, who is also a member of the JMA Global Health Committee, was also sent to Kathmandu. AMDA had been previously involved in medical assistance in Nepal, so it had already established the network with local liaisons. Moreover, Dr. Suganami could obtain detailed information on the damage status from vice-president of the Nepal Medical Association, who was also the AMDA Nepal Branch manager. Kathmandu and the neighboring settlements suffered serious damage, but there was no need for acute medical care because it was not possible to collect the injured in mountainous terrain. On the other hand, the reconstruction efforts by local communities were already in progress, and the need for chronic care assistance was deemed unnecessary.

The JMA had considered dispatching medical teams organized by the Okinawa Prefecture Medical Association with the help of the Nepalese, who are in Okinawa for a study abroad program, as the *i*JMAT members from early May. However, JMA ultimately decided to shelve the plan as no such need was anticipated.

July 2015: Explosion accident in Taiwan

At the water park Eight Immortals Paradise in New Taipei City, Taiwan, the colored powder that was used during an event caught fire and resulted in an explosion accident on June 27, 2015, shortly after 20:00. A total of 525 people were injured, of which 398 were hospitalized, including 213 intensive care patients (as of July 12). The Taiwanese government requested that the JMA offer medical assistance to the burn patients. JMA had already been discussing an exchange of medical teams as *i*JMAT with the Taiwan Foreign Ministry and the Taiwan Medical Association in preparation for a potential large-scale disaster, such as the Nankai Trough earthquake, so the requested dispatch was successfully coordinated with the shared understanding of both parties. Dr. Suganami, AMDA President, was immediately sent to Taiwan to investigate the situation and identify their medical needs. The Chinese government started to pressure Taiwan immediately after the accident, and insisted on its accepting medical teams consist-

ing of 300 members.

In respond to the Taiwanese government's request, the JMA selected 6 burn care specialists from the Japan Association for Acute Medicine, Japanese Society of Intensive Care Medicine, and Japanese Society for Burn Injuries for their help. With the cooperation from the Taiwan Medical Association, these 6 specialists were sent to Taiwan for 4 days (July 12-15) as the Taiwan Burn Care Assistance Team; they visited 5 main facilities managing the burn care cases and assisted the local medical professionals. The medical assistance was successfully provided by their offering opinions on certain cases that Taiwanese professionals found challenging. There was a discussion of long-distance medical transport to Japan for further treatment for some serious cases; however, the transport was passed up because of the accompanying risk. Clinical application of artificial skin was also undertaken.

The success of the burn care assistance for Taiwan demonstrates what JMA advocates through *i*JMAT: that the dispatch and operation of international medical assistance in times of disaster, based on mutual approval and coordination by both national medical associations involved, is practical and valid.

Direction of the Future *i*JMAT

Strengthen JMA functions and gain understanding of prefectural/municipal medical associations

In order for the *i*JMAT to develop and operate smoothly in the upcoming missions, it is essential to gain the understanding and cooperation of the JMA members as well as the prefectural and municipal medical associations across the nation. The JMA will have to advocate the basic philosophy of *i*JMAT to wide-ranging audiences, including its members and medical personnel, to gain their understanding and develop the human resources for the *i*JMAT through workshops and seminars.

Collaborate with national medical associations worldwide in times of peace to collect information and establish a network of working relationships

In both the incident of the Nepal earthquake in May 2015 and the explosion accident in Taiwan in July, the organization AMDA and Dr. Shigeru

Suganami were crucial to the JMA in conducting a field survey and establishing a network for operation before the actual dispatch of *i*JMAT began. In particular, their year-long experience and network that Dr. Suganami has created in the field of international humanitarian aid activities were indispensable. JMA will have to continue to maintain the appropriate balance of organizational power in the *i*JMAT and the human network supporting the *i*JMAT system.

At the 3rd meeting of the JMA Global Health Committee for FY2015 (July 9, 2015), Dr. Suganami described that he recalled the JMA's response to the Nepal earthquake. Ordinarily, disaster medicine teams sent from the developed countries to underdeveloped countries that have met disaster—Nepal, for example—will focus on providing advanced medical care such as surgery; it was a one-sided approach from a developed county to an underdeveloped one. In the Nepal earthquake, however, the Tribhuvan University Teaching Hospital in the capital Kathmandu declined the assistance of foreign medical teams for the trauma patients' surgery relating to the quake; the medical teams consisting of Nepalese successfully completed the task. Dr. Suganami also reported that many of those Nepalese staff received clinical training in Japan. Dr. Suganami referred to these circumstances as the "change of the phase." His report illustrates that the situation about the activities of international humanitarian aid is changing dramatically, and continued efforts will be required for successful aid.

Update the disaster-related technology (drones, smartphones, satellite communications, cloud technology, etc.)

The introduction of new technology, such as drones, smartphones, communication satellites, and the cloud technology, is greatly changing disaster management. The information gap between our everyday life at home and the disasters that occur inside and outside of Japan will only decrease. Considering the situation that the public look for this trend furthermore, disaster management should be provided as real-time responses. On the other hand, the information obtained from these technologies do not necessarily show the whole picture of a disaster. Thus, disaster relief needs to incorporate information obtained through "person-to-person," networks as the aforementioned examples demonstrate.

Understand and update the Incident Command System, Sphere Standards, and the WMA Declaration of Montevideo

The basic policy of *iJMAT* activities needs to comply with the 3 international guidelines and standards. The first one is the Incident Command System (ICS), a command system tool for crisis management that the U.S. Federal Emergency Management Agency endorses. It is essential that medical teams from abroad follow the coordinated lines of command based on the ICS principles when working at disaster sites.

The second one is the set of standards called the Sphere Standards, or The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response.² The Sphere Standards initially assumed a disaster that occurs in a remote area of an underdeveloped country. However, global warming has increased the frequency of disasters that affect urban areas in recent years. Unfortunately, the current Sphere Standards do not cover urban disasters. The new standards on urban disasters are expected to be added in the upcoming revisions of 2016.

The third is the WMA Declaration of Montevideo on Disaster Preparedness and Medical Response.³ The declaration stipulates the need to “promote a standard competency set to ensure consistency among disaster training programs for physicians.” The staff involved in *iJMAT* activities will need to understand and practice these 3 guidelines and standards. Timely updates on knowledge about the most recent revisions will also become important because these guidelines and standards are revised as needed.

Prepare for future crisis (eg., Tokyo Metropolitan earthquake, Nankai Trough earthquake, and potential refugee problems abroad)

In Japan, scientists anticipate an epicentral earthquake directly occurring at the capital or the Nankai Trough. The framework of the *iJMAT* can solve the problem of providing care for foreign residents who suffer from a disaster and accepting foreign medical teams for disaster relief. However, the impact of disasters-natural or human-made tends to reach beyond borders in recent years. The flow of Syrian refugees into European nations is quite alarming for Japan when we consider the possible fall of the North Korean government and a potential inflow of refugees in light of the current international affairs involving Japan. The refugees from North Korea may have serious malnutrition and a history of multi-drug resistant tuberculosis; they may be armed when entering Japan. International collaboration will be imperative to manage the situation. We can expect the *iJMAT* to function as a tool for medical response in helping to resolve such challenges.

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