Session 2

Disaster Medicine From International Health Perspective*1

—The Takemi Program as the origin of the Japan Medical Association Team—

JMAJ 57(1): 15-18, 2014

Takashi NAGATA[1]
(Takemi Fellow 2004-05, 2005-06)

Today I would like to talk about Japan's disaster medicine from a global health perspective. The term "disaster medicine" covers mass casualty incidents, in which many people are injured by a disaster or an accident, and triage and trauma care are of primary importance. Based on the experience of the Great East Japan Earthquake, three H's are believed to be important in disaster medicine, especially when considering large-scale disasters in Japan. The first H stands for public health, the second, for community health, and the third, for global health. I believe that these three H's will be important in understanding Japan's disaster medicine for the future.

First, I would like to talk about how I grew up and what I learned from the Takemi Program. I was born in 1970 and my father was sent as a company engineer to Nicaragua in the Central America from 1970 to 76. This is a photo of my early childhood spent in Nicaragua, and I became a disaster victim there. A large earthquake struck Nicaragua in 1972. My home was in Managua, the capital of the country, and the earthquake killed more than 6,000 people. At that time, there were only three Japanese families there: the ambassador's family, the third secretary's family, and my family. When a large disaster occurs in a poor country such as Nicaragua, public safety is not secured; order breaks down quickly and the situation becomes quite dangerous. Therefore, the ambassador decided to leave the country immediately. The three Japanese families were packed into two small taxis arranged by the ambassador and fled to the Nicaragua-Costa Rica border after a 20-hour journey, and thus I survived the disaster. This destined me for a career involving disasters. Later, I enjoyed the life of a normal medical student, but driven by a spirit of adventure in my late twenties, I joined the medical mission in Pakistan and Afghanistan four times with the support of Peshawar-kai, a renowned medical NGO located in Fukuoka Prefecture.

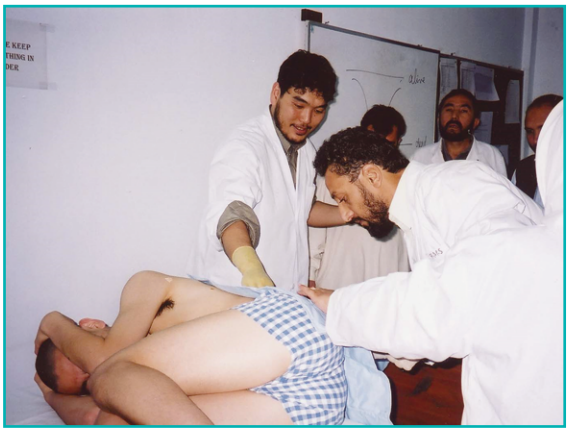
This photo from 2000 shows me instructing an Afghani doctor how to perform a lumbar puncture (**Slide 1**). Afghanistan was going through a severe drought at that time and the Taliban was in control, but luckily we managed to enter the country, only to find that drought had shattered the community.

The Taliban is an issue in Afghanistan. Tali-

*1 This article is a revised transcript of the presentation delivered by the author at the Takemi Program 30th Anniversary Symposium, which was held at the JMA Auditorium, Tokyo, on November 23, 2013.
Due to space limitations, not all of the slides shown in the original presentation appear in this article.

1 Assistant Professor, Department of Advanced Medical Initiatives, Faculty of Medical Sciences, Kyusyu University, Fukuoka, Japan (nagata.takashi@gmail.com). Member of the JMA Global Health Committee.

(Slide 1)



(Slide 2)

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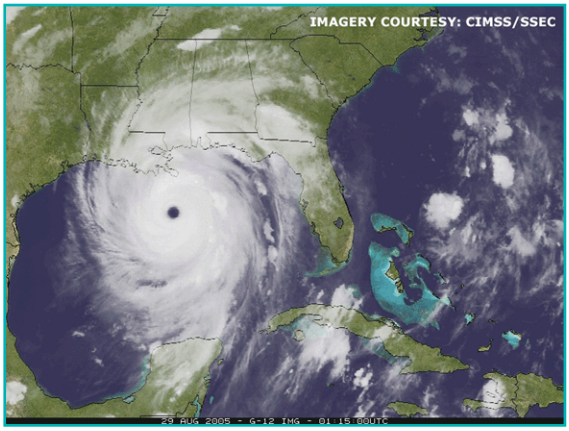

ban members wear black turbans and have a negative image for many people. What I actually saw was Taliban members engaged in public affairs like public servants. They were serving in a broad range of positions from military men to politicians, local government personnel, local elder council members, and religious leaders. I witnessed them working hard to restore the community based on old religious ways in a country devastated by war, inner conflict, and drought. In this extreme situation, the Taliban and local residents cooperated to dig wells and collaborated for irrigation works (**Slide 2**).

I witnessed irrigation works going well, wheat growing, and communities recovering. However, this reality was beyond me when I was in my early thirties. I lost confidence and eventually returned to normal life as a physician in Japan.

Later I had the opportunity to study on the Takemi Program at the recommendation of Dr. Hokuto Hoshi of Fukushima Prefecture, who is here today. I studied many things through the program. Additionally, I made wonderful friends.

This picture shows Stephanie Rosborough, now Stephanie Kayden, an emergency physician at Brigham and Women's Hospital in Boston (**Slide 3**). She has a connection with the Japan Medical Association and is the boss of Dr. Maya Arii (who is also here today), who undertook operations to deliver drugs during the Great East Japan Earthquake using a carrier plane provided by the US military. Dr. Kayden also offered help to Japan immediately after the earthquake. She has been a friend since my time in Boston, and I have felt that having a connection with her really could be of tremendous benefit for Japan.

Another important topic during my stay in the US was Hurricane Katrina in 2005 (**Slide 4**).

(Slide 5)

The hurricane itself was not that big, but the large city of New Orleans was submerged under water after the hurricane passed, resulting in the breakdown of city functions. This is similar to the disasters in Japan, isn't it? Here, people who could not stay in a nursing home were collected onto a military carrier plane for evacuation (**Slide 5**).

Some patients who came from healthcare facilities were stretchered out like this and transported in military planes like this. I heard that unfortunately some people died while waiting. After I came back to Japan, I showed these photos to some people engaged in emergency medicine in Japan and the leaders of Japan's disaster medical assistance team or DMAT. I wanted to share my shock at the fact that a highly developed country such as the United States could do no better than developing countries in responding to a disaster. However, Japan's DMAT related people showed no interest, and I was really disappointed. After this homecoming in 2006, I joined the Japan Medical Association Research Institute and became a member of JMA's Emergency and Disaster Medicine Management Committee, through which I was involved in planning the Japan Medical Association Team or JMAT. I was invited to the JMAT plan when it started in 2010. At that time, I applied what I had learned at Harvard and what I saw personally. In the JMAT planning, we collected various reports from local medical associations describing their medical responses to various disasters that had occurred in Japan. The biggest was the Great Hanshin Earthquake of 1995. We read the reports carefully, and found that local medical associations were the cores for a wide range of actions. We developed a concept of the JMAT activities based on the strong belief that local medical associations could be the cores for disaster response across the country. Now I would like to show a one-minute video about JMAT's actual operations in 2011.

(Video shown about JMAT operations in Fukushima Prefecture)

Narration: Because of social fear against radiation exposure after 3.11, drugs in addition to food, water, basic supplies, and gasoline were not delivered to the people of Iwaki City from outside. The doctors sent by prefecture medical associations from across Japan solved this critical situation. They visited evacuation shelters, examined and treated the survivors, and thereby helped communities get over the worst. At present (about one month after 3.11), as many as 80% of local medical institutions have resumed their medical services and are sustaining local healthcare while struggling with the difficulties of misconceptions and misinformation about radiation exposure.

This is the last slide. It shows the frequency of disasters over time. The blue line indicates disasters associated with climate change. The red line indicates economic loss. Compared to the 1980s, there were three times as many disasters related to global warming in the 2000s. The resultant economic effects are also increasing enormously. Now and in the future, disaster preparedness should become the core of medicine, and the idea of the three H's is the key component. We must understand disaster medicine based on the ideas of public health, community health, and global health.

As a practicing emergency physician and as a former Takemi Fellow, I want to do my best to stand at the frontline of medical care in Japan. Lastly, I would like to take this opportunity to express my appreciation for many people involved, including the Japan Medical Association, which readily sent me to the US, and Harvard University, which hospitably accepted me, as well as the members of the Japan Pharmaceutical Manufacturers Association. Thank you.

Comment

Sho HASHIMOTO[2]

I would like to say something related to Dr. Nagata's talk that is also related to the earthquake that struck two years and eight months ago.

First, I will show a video of the tsunami. I am sure that some of you have seen this, but I would like you to watch it again and remember the horror of the tsunami. Miyagi and Iwate Prefectures have still not recovered from this tsunami disaster. Miserable conditions are still ongoing, and reconstruction, including healthcare, needs to be hastened much faster from now on.

This is the city of Miyako in Iwate Prefecture. I often went to perform surgery at this hospital, and so this image gave me a real shock. This is the city of Kesennuma. At first, the water comes gradually, but then it rushes in, destroying the buildings in town as it goes. Whether we are talking about Kesennuma, Minamisanriku, or Ishinomaki, no place that was hit by the tsunami has been reconstructed yet. Healthcare has not been restored at all. Even if the physicians return, there are no residents to treat.

You can get a sense of the height of the tsunami from the photo on the right. The upper left photo shows the public hospital in the town of Minamisanriku, and you can see that it was submerged up to the fourth floor. This is a view of Minamisanriku from above. This situation has hardly changed at all until now. On the right is Sendai Airport in the city of Natori, Miyagi Prefecture. This airport was hit by the tsunami on March 11, but thanks to the cooperation of the US military and the Japan Self Defense Forces, the runways were usable again on the 14th or 15th. Dr. Arii, who was just mentioned, made all kinds of efforts, got the cooperation of the Harvard Humanitarian Initiative, and came in a US military aircraft loaded with medical supplies arranged by the Japan Medical Association. On the left is a US military C130 transport plane. On the right you can see Mr. Goto, a US military coordinator in the Ground Self-Defense Force and me. This person was an ophthalmologist. And there is President Kakazu (then-Vice President) of Miyagi Prefecture Medical Association. Led by then-President Ito, the drugs that came on this plane were delivered to pharmacies. Here is an evacuation shelter from that time. This is right after the disaster, and as the first few months went by, everyone continued to do their best with the intention of maintaining privacy as best they could in this way. There were 80,000 evacuees, and the total financial damage was said to be 17 trillion yen or about 170 billion US dollars.

In this situation, the JMAT turned out to be the most helpful. One after another JMAT teams would arrive at a location and stay for three or four days each. And since they always came from the same prefecture, they did a really important job in an efficient manner, looking after the community practically without the need for handover procedures each time the teams changed. As Dr. Nagata just mentioned in his talk, the JMAT was created out of the Takemi Program, and that has been extremely beneficial. I had no idea where the DMAT teams went and what they were doing, but the JMAT were very much disciplined and everything they did was on the dot. Thank you.

[2] Miyagi Medical Association, Miyagi, Japan. Member of the JMA Global Health Committee.