Chapter II

Fukushima Medical University
Record of Activities

[Notes and Messages]

Faced with the large-scale disaster, the entire Fukushima Medical University united to overcome the crisis, with staff and students being pushed to their absolute limits.

Posted on the Fukushima Medical University Hospital homepage, March 21, 2011

Messages from Student Volunteers, Medical Interns, and Nursing School Students

Koji Otani, Associate Professor
Center for Medical Education and Career Development
Deputy Director, Department of Clinical Education and Research

Message from the Faculty

First, allow me to offer my sincere prayers for all those who perished in this disaster. Fukushima Prefecture has experienced a truly unprecedented disaster with a tsunami resulting from the earthquake, and radiation exposure caused by the damaged nuclear power plant. Immediately after the earthquake, FMU Hospital staff and the university as a whole rallied together to respond in any way we could—each person doing whatever was required. During this period, medical students and interns were also active participants. Here we would like to present certain records of their activities.

1. Activities of Medical Students

Immediately after the earthquake, a spontaneous volunteer group mainly consisting of fifth year internship students was organized. This group actively engaged in transporting supplies and patients and made signs urging everyone at the hospital to conserve water and electricity. On the busiest days, as many as 60 volunteers congregated in the hastily arranged volunteer room and offered their time and effort. After the earthquake, as radiation problems developed at the nuclear power plant, the student volunteer group was temporarily disbanded out of concern for their health. However, once it became clear that the radiation exposure level from the accident was not significant enough to present health risks, the group was reassembled owing to the ardent wishes of the students. The students introduced on the FMU Hospital homepage represent the members of this group. I believe that through their volunteer work, they learned that health care is something delivered through the collective efforts of not only doctors and nurses but also various people from different lines of work. In addition, I think the volunteer experience gave them a thorough insight into the nature of leadership, teamwork, and the difficulties and brilliance of the effort required by a group of people to work toward a single goal. I trust that the experience will be a valuable asset to them not only as physicians but also as human beings.

2. Activities of Medical Interns

The Primary Care Team, formed under the Emergency Medicine Department and specifically dedicated to emergency care, comprised a substantial number of medical interns rotating among various departments. These interns working under the aegis of emergency medicine physicians were instrumental in examining and administering primary care to patients who were brought to FMU Hospital. This assistance was important because many of the other emergency medicine physicians were extremely busy in handling the disaster response for the entire prefecture, administering primary care at the disaster site, helping transport and transfer patients from one facility to another, and handling administrative procedures. If it were not for the interns, there would surely have been major issues and difficulties with the FMU emergency medical response and with transporting patients from the disaster zones. More than a few other doctors, including myself, felt that the interns, whom we had never been reliant upon before, became much more valuable and much more like actual physicians. I am sure that each intern learned a lot from this disaster. We would also like to let others know about their experiences. We hope these messages reach not only other FMU medical school students but also students and interns across the country.

3. Message to All Medical Interns

Because of the accident at the nuclear power plant, FMU and Fukushima Prefecture have been the target of unfounded discrimination and defamation. Nevertheless, we continue our utmost efforts to deliver quality education and produce excellent doctors and researchers.

We also ardently hope to overcome this setback and push the university toward further growth so that it will be a gathering place for ambitious students and interns who yearn to rebuild the health care system of Fukushima.

Messages from Student Volunteers

Fumiya Anzai

Fourth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

Because of the nuclear radiation released from the Fukushima Daiichi nuclear power plant, the residents of Fukushima Prefecture have been subjected to meaningless discrimination. Despite the fact that the radiation is not of a level harmful to others, refugees have been turned away when traveling outside the prefecture and shipments of goods have been similarly treated. These are hurtful actions. Why do people exhibit such cold, uninformed reactions? I know of no instructions by the government asking people to act in this manner. I helped in transporting patients to FMU Hospital after they had been brought by helicopter from hospitals within the evacuation zone. Although it was not much, I think I was of some help to the prefecture residents. I would like to ask all the readers to cast aside whatever they have heard in the news or read in tabloids and do whatever they can to aid the people of Fukushima Prefecture.

Hironori Takagi

Fifth year medical school student; native of Fukushima Prefecture (Iwaki High School)

I am working as hard as I can to help those in the disaster area in whatever way possible. There are others who are doing what they can for the disaster area by working at the evacuee shelters. As all this takes place, fear of radiation has spread across the entire country. However, despite the measured radiation levels in Fukushima and other areas being extremely small—too small to pose any health risk—the incorrect opinions about radiation are actually delaying the recovery. I feel that this is the biggest problem we are facing. I think that better awareness of the conditions of the disaster area as well as rational judgment will help Japan work as one to bring about recovery.

Seiya Ogata

Fourth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

Although the disaster sites were chaotic, the medical staff allowed students to join the response teams. We offered our cooperation and support without regard to our social status or grade. Moreover, what was most rewarding was the ability to help patients, even if what we did was very little. My strong desire to become a full-fledged doctor was rekindled. This time, the disaster occurred in Fukushima, but wherever the next such event occurs, I would like to take the initiative to contribute whatever I can.

Tadahisa Takahashi

Fifth year medical school student; native of Ibaraki Prefecture (Hitachi Daiichi High School)

First, I would like to offer my prayers for all those who lost their lives in this disaster. A large number of people were affected by this catastrophe. Although Fukushima City was relatively less damaged, the daily scenery that I had taken for granted was reduced to ruins in just an instant. During the aftermath, I was able to witness the spirited efforts of our professors and nurses responding as quickly as possible to check on patients, fellow students gathering to try to do whatever they could, and other volunteers shown on TV trying to offer help. It left me with a positive impression of the strength everyone displayed. Whether for themselves or for others, those who did whatever they could to resolve this crisis were sensational, in my opinion.

I saw news reports saying that more than 10,000 people lost their lives in this earthquake. Each of them had families and those family members must be surely suffering for the loss. I pray that that the suffering does not increase anymore beyond this terrible point. I hope that Japan will be able to experience a very rapid recovery.

Kotaro Endo

Fourth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

What does everyone think medical care means? Most people probably think that it means "helping the sick," "working for those who are in need," or "imparting knowledge that allows people to live longer." Because of this recent disaster and my work as a student volunteer, I have had the opportunity to think more about the meaning of death and my own life from various perspectives. Particularly because of the fear of radiation exposure, I think that this event forced many Fukushima residents into the painful position of choosing between what to prioritize immediately and what to put off until later. The FMU staff chose to prioritize the lives of patients and work to the utmost extent of their abilities. FMU is doing its utmost to provide medical care that will help as many people as possible. In support of this effort, I have been allowed to shadow my professors and learn from their example.

Throughout history, people have always worked together to help each other during crises. I think that the people of Japan and those of the rest of the world are the ones who can aid Fukushima residents, for example by purchasing products related to Fukushima and supporting the very land of Fukushima itself. Please help our Fukushima. Thank you for whatever you can offer.

Norihito Kamo

Fourth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

I am working as a student volunteer because I want to offer any help I can to Fukushima Prefecture. It is my beloved birth place and I want to help save it from this unprecedented crisis. Although the persistent aftershocks and the nuclear power plant issues are a continuing concern, I am still continuing to work alongside my seniors and classmates.

Kazufumi Yanaginuma

Fifth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

First, I would like to offer my sincerest prayers for the peace of those souls that perished in the earthquake. As a student, I was unable to be on the frontlines and offer emergency care or attend to the patients who were brought to FMU Hospital. With that frustration ever present, I did whatever I could, as earnestly as possible, to offer help. There was a time when I just wanted to remain a student and enjoy my college days; now that has changed. I have never felt more strongly that I want to quickly gain the knowledge and skills that will let me attend to this disaster scene as a medical doctor. At present, disaster aid and personnel are being continually sent to the afflicted areas; however, the recovery itself is not progressing in Fukushima as hoped, owing to the nuclear power plant accident, compounded by the negative effects of rumors and speculation. I truly hope that the people of Japan and the world properly educate themselves about radiation and offer whatever help they can to support the recovery of the disaster areas.

Seiji Hoshi

Fourth year medical school student; native of Fukushima Prefecture (Shirakawa High School)

It is extremely heartrending that so many people lost their lives in this unprecedented calamity, and I pray for their souls. The event gave me a renewed sense of importance of life. As I wondered whether there was anything that I could do in this situation, I decided to participate in the volunteer effort. Since I am only a student, there is little that I have to offer in terms of support. But I am volunteering now because I want to do something, even if small, for those in need of help and those whose lives are in danger. Last, let me express my wishes for the fastest recovery possible from the earthquake.

Tomoki Saito

Fourth year medical school student; native of Miyagi Prefecture (Sendai Ikuei Gakuen High School)

I would like to express my heartfelt condolences to all those affected by the Great East Japan Earthquake. Immediately after the earthquake, I felt frustrated because there was nothing that I could do for the disaster victims. Soon afterward, the FMU professors allowed me to be a part of the medical staff team as a volunteer, even though I was a student.

With this team, I visited some of the evacuation shelters within the prefecture. In the shelters, the situation was even worse than what was broadcast on TV and described in newspaper reports. There were many people who looked so worn out and haggard that I was at a loss for words. There were just as many who looked so shell-shocked that it was painful for me to witness. As I watched the doctors and health care workers rushing about to administer care, I was greatly moved by their inspiring efforts and felt renewed amazement at the true kindness and strength of people. Being given the opportunity to participate in the process despite being a student gave me a strong desire to work as hard as I could alongside others. I would like to continue doing as much as I can to lend my assistance to the recovery efforts.

Hisataka Nozawa

Fourth year medical school student; native of Fukushima Prefecture (Fukushima Prefectural High School)

Along with offering my sincerest prayers for the peace of those who perished in the earthquake, I would like to express my heartfelt hopes for the well-being of all those affected by the disaster.

Volunteers, including myself, were allowed to help with interviewing evacuees at the evacuation shelters as part of the Radiation Awareness Survey. I am extremely grateful to the evacuees and the staff of the shelters who cooperated with us so kindly despite the very trying circumstances they were in.

One of the lessons that the survey experience taught me was the importance of communication. Those living at the shelters endured considerable stress and anxiety from the effects of the earthquake, the living circumstances at the shelters, and the uncertain future that they faced in their lives. The greatest problem, however, was their inability to vent and unburden themselves of their feelings on anyone around them. We medical students were unable to implement any of the direct recovery support projects that so many professionals around us are currently working on. However, we were able to at least offer a sympathetic ear. Whether the conversation topics are very small or filled with anger and dissatisfaction, patiently listening to another person is something that I realized is extraordinarily important. Having my eyes opened to the fundamental role that conversation itself plays, I hope that my efforts had some palliative effect, however small, on the people living in the shelters.

The coming months and years will be a serious test for the Tohoku region, including Fukushima. I hope that we can all cooperate and complement each other so that recovery comes sooner, even if by one day. Also, I would like to take the experience I have gained through this work and contribute it back to society in the future.

Akira Funakubo

Fourth year medical school student; native of Fukushima Prefecture (Aizu High School)

I would like to express my condolences to those who fell victim to this disaster and to lament the lives lost.

I was kindly offered the opportunity to volunteer in working with incoming patient radiation screenings and with the questionnaire surveys at the evacuation shelters. The experience gave me a very lasting impression of the fatigue involved with living at an evacuation shelter over an extended period, the debilitating fear that evacuees had concerning radiation, and their distrust of the media. I felt that there was a need for quickly disseminating accurate information about radiation so that the evacuees' anxiety could be assuaged in any way possible.

In addition, one of the evacuees made the statement, "I was wrong when I thought that young people today were only apathetic and uncaring. I was impressed when I saw that there were so many young people who joined the ranks of the volunteers and I thought that Japan was in good hands." I was impressed on hearing this comment. But I also felt much regret that I was still a medical student who could not do anything yet to help these people. I would like to continue contributing my meager efforts until the day arrives when Japan and Fukushima can overcome this tragedy.

Visiting the Evacuation Shelters

I would like to take this opportunity to voice my heartfelt sympathy for everyone affected by the Great East Japan Earthquake.

I was able to spend a week visiting evacuation shelters within the prefecture (mainly in Fukushima City) and working with people distributing questionnaires regarding radiation to the disaster victims. I was tasked with spending 20–30 min with each of the evacuees, giving an overview of the questionnaire and thoroughly discussing with them the kind of feedback that we were looking for. Overall, I spoke with about 100 survivors and noticed that a great many of them were furious and troubled by many things. Not surprisingly, the people in Hamadori were consumed with fear and fatigue from the

tsunami damage and the evacuation order owing to the nuclear accident. They had little room mentally or emotionally for any talk explaining Sievert units or the physical impacts of the radiation on people. Because many of the evacuees were elderly and knew no one else in the shelter, I spent much time just listening to them talk, which was something that they had not done for nearly three days.

In particular, possible further evacuation seems to have caused the most grief for families that had young elementary- or middle-school-aged children. The parents wanted to avoid evacuating too far away from their children's schools, but also faced the dilemma of knowing that radiation effects are especially serious for younger people (meaning that the further away they evacuated, the better). In addition, there were people who had sons working at the nuclear power plant. Hence, they obviously did not want to be evacuated far away. Then, there were those who wanted to move far away but simply had nowhere to go.

Many devoted people were working at the shelters to try and support these evacuees. The supporters were giving their service not because it was their job to do so but because they had a strong desire to offer help, and this was something that moved me greatly. The emotions evoked in me were not academic ones of benefit and loss but rather of pure admiration of the kindness and strength of people. I would like to continue to do as much as I can to lend my assistance to the recovery efforts.

Tomoki Saito, fourth year medical school student

Messages from Medical Interns

Yuki Kanno

First year intern; native of Fukushima Prefecture
(Asaka Reimei High School)

I first seriously became interested in becoming a doctor during the Great Hanshin-Awaji Earthquake. Now, as I have tried to offer what little help I can to the people of Fukushima, I am reminded of those early feelings. It is painful to witness the people living through each day with such terrible events surrounding them, but I sincerely wish that they do not give up hope. I pray that all residents of the prefecture will be able to recover quickly and lead lives free from stress and anxiety.

Yoichi Kaneuchi

First year intern; native of Fukushima Prefecture
(Iwaki High School)

I would like to extend my deepest condolences to the victims of the disaster in the Tohoku and Kanto regions. I am a native of Iwaki and have been very familiar with the nuclear power plant since I was just a child. I found it very difficult to believe that the nuclear accident had actually occurred, but then I was presented with its evidence every day in clinical exams.

Various rumors emerged and many of us were pained by the damage caused by the gossip and speculation. However, I was impressed by the strong commitment of the health care workers to aid patients in need, regardless of the circumstances. I was proud to count myself as one such worker and upheld this pride during my rounds. It is apparent that much more work lies ahead as we move toward recovery, but we health care professionals would like to offer all the energy we possess to be of assistance in the medical aspect of these efforts.

Akira Takama

First year intern; native of Fukushima Prefecture
(Fukushima Prefectural High School)

I would like to offer my deepest condolences to all disaster victims. This event has led me to experience various emotions both as a person and as a medical intern. It has taught me just how blessed my world had been up to the time of the disaster. The services and functions that I had taken for granted were changed in an instant by the earthquake and replaced by confusion on all fronts. However, as a medical intern, I was also amazed at the capacity of the university hospital. Fortunately, the hospital itself was not significantly damaged. It reaffirmed my admiration for the strength and resilience of the facilities and the doctors working in each department. I was absolutely overwhelmed by the strength of the physicians rushing to help the emergency care patients on the day of the disaster. The situation was chaotic and heated far beyond any normal circumstances. While receiving the impression that these personnel were holding up the very medical infrastructure of Fukushima Prefecture, I felt that I also wanted to offer whatever I could. Last, let me express my prayers for the earliest possible recovery of the afflicted area, for the health of the residents there, and for the speedy return of smiles to their faces.

Kei Nakayama

First year intern; native of Tokyo
(Hachioji Higashi High School)

After the earthquake, myself and other first year interns were given the responsibility of helping with the examination of incoming emergency care patients and with the transportation and transfer of patients from within the evacuation zone. There were shortages of gasoline and other supplies, and there was no running water at my home. The situation was one where I would have easily given up if left alone, but I was able to persevere as well as finish my daily work duties thanks to the support of my classmates. Although the assistance that we interns have to offer may be insignificant, we are doing our best and thinking positively because of the immense importance of the tasks at hand. The beneficiary is the health care system of Fukushima, which we must preserve. We continue today to soldier on because of our love for this land and the strength of unity. I hope for the swift recovery of the afflicted areas.

Ayako Ohori

First year intern; native of Fukushima Prefecture
(Soma High School)

From January to March 2011, I was studying in the Emergency Medicine Department. During the final month, I had no idea whatsoever that such an unbelievable earthquake would strike.

I saw news reports saying that more than 10,000 people lost their lives in this earthquake. Each of them had families and those family members must surely be suffering for the loss. I pray that this suffering does not increase anymore beyond this incredible point. I hope that Japan will be able to experience a very rapid recovery. The home where I grew up is also in the disaster area and was damaged by the tsunami, though my family and friends were unharmed. With so many others whose loved ones are missing or have passed away, I feel very fortunate to not have lost anyone.

At present, I am working shifts as an intern in the Emergency Medicine Department of FMU Hospital. I am responsible for attending to patients brought to us for emergency care. Since the day the earthquake struck, we have been receiving assistance from the members of DMAT and other medical staff who have come to FMU from across Japan. Because of the experiences I have had through this disaster, I have come to value wonderful things such as the friends, family, seniors, and juniors that I have as well as the place I have to live in and the lifestyle that I am able to lead without any hindrance. Now, I am in the process of learning numerous things from the medical staff, the disaster response team members, police officers, Self-Defense Force members, and others. I am impressed by their professionalism, which makes me all the more intent on trying to help the disaster victims.

Toshihiko Suzuki

First year intern; native of Fukushima Prefecture
(Fukushima Prefectual High School)

In the midst of the extensive damage caused by the Great East Japan Earthquake, my second year intern classmates and I were able to work in the Emergency Medicine Department. As a university hospital, we cared for patients from nearby locations as well as those brought in everyday from more distant areas such as the Minami Soma disaster area.

During this disaster, a large amount of incorrect information made its way through the tangled web of reports that emerged. In particular, there was much anxiety over radiation exposure because this was the first time such a nuclear power plant accident had befallen us. It is my sincere hope that everyone will attain accurate information and not be led astray by the incorrect reports, such as chain letters, that are out there.

Ryo Igarashi

First year intern; native of Fukushima Prefecture
(Aizu High School)

I would like to extend words of concern to all those who suffered in the Great East Japan Earthquake. As one of the victims, I would also like to express my gratitude for the many encouraging and sympathetic messages, phone calls, and other forms of support received from across the country. Every item of disaster aid that arrived was heartwarming

to receive. Thank you so very much.

FMU Hospital is a base for medical care in Fukushima Prefecture and a facility for tending to intensive care patients. We accepted and triaged patients from Fukushima City as well as those brought by helicopter from the Soso area. All medical interns were assigned to the Emergency Medicine Department and worked shifts as part of the 24-h clinical response. As of today, the tenth day after the earthquake, the hospital has recovered its basic functions and we are gradually handling this critical phase of the disaster. However, to be honest, it is uncertain when normal daily life will return because of the compound effects of this unprecedented earthquake, tsunami, and nuclear accident. Numerous people in Fukushima, including those who have evacuated, are in need right now and require continuous attention from health care professionals. Now more than ever, we have to aid one another and I would like to continue to do my utmost as part of my goal to become a doctor who is helpful and supportive of others.

Tomohiro Kikuchi

First year intern; native of Fukushima Prefecture
(Asaka High School)

First, I would like to express my heartfelt condolences to all people involved in this disaster. Ten days have now already passed since the earthquake itself. Immediately after the quake struck, all medical interns were assigned to the Emergency Medicine Department. We tended to the various patients who arrived after being injured by the tsunami, after working at the nuclear power plant, or after being sent from other hospitals along the coast where the evacuation order was in effect. Although FMU had a shortage of supplies, we tried to focus on each task at hand in order to continue examining and treating patients with our limited resources. At present, the hospital is regaining some of its utilities and we can now see the light at the end of the tunnel.

I had no idea that I would be right in the middle of the medical response to this major disaster. However, I believe that we were able to get through the ordeal with limited confusion owing to the amazing capacities of the FMU staff and the system that we have in place for regular patient care in the ER.

There is still unease over the nuclear accident, but I am not greatly troubled, having made an objective judgment based on the available data. This has been an opportunity for me to relearn some important aspects of radiation. The earthquake was an exceedingly heartrending event, but I would like to work as hard as I can as we move toward the future.

Reiko Okubo

First year intern; native of Akita Prefecture
(Odate Homei High School)

My deepest sympathies go out to all victims of the Great East Japan Earthquake.

My mother's hometown is along the Sanriku Coast in Iwate Prefecture. The seaside area of her town was obliterated by the tsunami. I heard that my grandmother barely escaped with her life and watched from high ground as our old family home was swept away. I shiver in fear as I think of the people who faced this disaster, their lives, their livelihoods, the destructive force of the tsunami, and the vast damage it caused.

In this case, Fukushima Prefecture was also thrust into the abnormal state of dealing with a nuclear accident on top of the disaster. In the medical response to all of this, a confused mass of information emerged. Each of us interns was given an individual choice regarding whether to stay or not. But on seeing my elders working on the front lines without rest or sleep, I was moved to try and offer what little assistance I could.

Amidst these extreme circumstances, I felt the strength of human will and kindness as the professors and staff looked after us interns. Moreover, I was encouraged by the strong bonds that I formed with the other interns as well.

I am also deeply grateful to those who delivered supplies to us as we struggled to keep lifelines to the hospital open. I was reminded of all the things that I had taken for granted. I was grateful to them and my attention was brought to the number of people whose support and labor go into making this hospital functional.

Now, the town is slowly starting to creep into action again. Everyone is going to great lengths to recover the normalcy that we once had. In addition to the effort required for Fukushima Prefecture to make recovery, we also have to fight the wave of rumors and anxiety surrounding the nuclear power plant and its uncertain future. Now, each of us is called upon, not just as medical professionals but also as individuals, to obtain accurate information and form correct judgments.

However, nothing has changed for us in our desire to be good doctors and help the patients who stand before us. I feel that we can overcome this unprecedented disaster and fulfill our role to accurately educate the world about it.

I will do all that I can to save the life of even one more person and bring an early return of peace that will spread throughout Fukushima and Japan.

Messages from the Nursing School Students

Participated as a Student Volunteer

Shion Takenaka

Fourth year nursing school student

Daily anxiety continues for Fukushima, which had up to now never experienced an earthquake, tsunami, or nuclear accident of this magnitude. I listen to news reports saying how many lives are being lost every day and feel a strong sense of guilt because I live in the very same Tohoku/Fukushima area, but I am not suffering in any of these ways. Wondering whether there was anything that I could contribute myself, I started participating as a volunteer, making rice balls for the doctors and the FMU staff. The college campus that I had become accustomed to over four years was now filled with so many patients that the hospital staff had to work without sleep or rest. Making rice balls was a very small contribution. However, although it was only a small gesture, I wanted to do everything I could in the belief that it would somehow aid the recovery of Tohoku and Fukushima.

The experience of this disaster made me even more aware of the importance of our health care system for saving and supporting the lives of people. I would like to use this experience as a valuable asset while I diligently work toward a brighter future that will surely come.

Participated in the Disaster Medical Response (General Emergency Triage)

Asako Miura

Cancer care nurse in the Nursing School and Nursing Department of FMU Hospital; native of Aomori Prefecture

During the disaster, I was tasked with accepting patients into triage in the hospital's general admittance area. Because we were accepting emergency intensive care patients as well as general emergency outpatients, there were two stages of triage at the hospital entrance. The first things we did were to ask incoming patients whether they lived in the nuclear power plant accident evacuation zone or in the areas designated as "stay-at-home" cautionary zones, and screen the patients for radiation. We also sorted them into categories such as those who needed examination, those who came to visit hospitalized patients, and those who came to escort discharged patients. Although it was very run of the mill, this sorting system was instrumental in making the disaster medical response as organized as possible.

I felt that the radiation screenings were of great help in alleviating the anxiety of patients, showing them that there was nothing abnormal and allowing us, the staff, to go about our work with peace of mind. I must bow my head in admiration of the victims who are so resolute despite the exhaustion that they face. I felt the true spirit of Fukushima Prefecture's residents and developed a feeling of camaraderie in the face of difficulty when I went about my work tasks that required cooperation and compromise from visitors to the hospital (for example, having to send our regular visitors to outside locations to have their prescriptions filled).

I have received training over many years from the Japanese Red Cross as a member of their disaster relief team; therefore, I was able to handle my triage assignment without much difficulty. In addition, we had conducted exercises in anticipation of a possible accident at the Rokkasho nuclear waste management facility; however, this was my first experience of having to put that training into practice. I think that FMU Hospital's efforts to respond to this extraordinary disaster and radiation accident will be a valuable experience for supplementing the region's medical infrastructure in the future. The process has taught us the critical importance of performing triage on patients being transported out of the disaster area, at a point mid-way between the hospitals; this was done with the help of DMATs from other prefectures. It is my belief that the knowledge behind FMU Hospital's calm, speedy, and measured response to this disaster is something that should be communicated and shared with the outside world.

Offered Nursing Care at a Hub Hospital During the Disaster

Kaori Watanabe
Nursing school student

This earthquake and nuclear accident created a situation beyond even the predictions of experts. Owing to the effects of the nuclear accident in Fukushima Prefecture, there have been daily news reports regarding concerns over radiation exposure. However, it has been scientifically proven that the current levels of radiation are not strong enough to cause any harm to one's health. Fukushima Prefecture is having to battle against discrimination over both the earthquake and the radiation levels.

As a graduate of FMU Nursing School, I trust the scientific data and am determined to go about my daily nursing duties in the prefecture's only university affiliated hospital in hopes that my efforts will contribute the on-going recovery in some small way.

Condition of Victims and Hospital Facilities on the Day of the Great East Japan Earthquake

Hospital Administration Department

(1) Friday, March 11, 2011

14:46: Occurrence of the Earthquake (Fukushima City: Magnitude 6)

15:00: University Hospital Director's Office establishes the Disaster Response Headquarters
Confirmation of status of admitted patients→ No human casualties
Outpatients assembled in entrance lobby→ No human casualties
(Confirmation of status of hospital facilities and equipment, performed status check on lifeline)

15:30:

• Emergency Medical Care Center
Allocation of doctor/nurse duties
Confirm triage measures/establish locations
Green: orthopedic outpatient care
Yellow: internal medicine outpatient care
Red: emergency medical care center outpatient care
Gathering all stretchers, hot-water bottles, and emergency carts (surgery) on each floor for emergency outpatient care
Gathering newly hired nurses of Yoshimi-So

• Operation Division
Determining whether to halt or continue with in-progress surgeries; relocating all patients to the ICU by 16:42.

• Nursing Division
In-transit heart catheter patients disrupted by the earthquake took refuge on a nearby floor off the elevator and were received by the 2nd floor north ward without returning to their original ward.
Confirmed empty beds and emergency lamps and provided notice of limits placed on outpatient status.

• Preparation of PTSD Care Ward
Established in Nutrition Management Unit with the cooperation of the Psychosomatic Division
(Psychiatric Health Care for Employees)

• Student Volunteers
Assisted with triage measures and shifting outpatients in consultation to the appropriate hospital wards while elevators were shut down immediately after the occurrence of the earthquake; aided hospital with movement of patients around wards during the staff shortage following the earthquake.

15:46: Hospital-wide broadcast of disaster and victim status "No human casualties, minimal structural damage to facilities"

21:30: Held the first University-wide meeting. The second meeting was held on March 12, 2011 at 0:00.
*Other meetings on March 12 and 13 were held at 9:00, 15:00, and 21:00. Later, meetings were held twice a day, and shortly after, once a day. In April, they were held once a week, and from June, once a month.

Posted on the Fukushima Medical University homepage: the Earthquake Special Report pages, on April 19, 2011

Our Message, "Laboring on the Frontlines of Disaster Medical Care"

Nobuo Sakamoto, Takao Tsuchiya, Toshihiko Fukushima, Shinya Takase, Yuusaku Abe, Naomi Takasawa, Maki Iizuka, Naomi Fukushima

During this natural disaster, the FMU faculty have joined together to face the disaster health care challenges head on.

These pages introduce messages from the young medical school and nursing school teachers and professors working on the frontlines of the disaster medical response.

*Some messages are also included from student volunteers, medical interns, and nursing school students. Please see these pages online at the FMU Hospital homepage, http://www.fmu.ac.jp/byoin/29saigai/message_0320.html.

FMU hastily organized the groups detailed below as part of our post-disaster medical support efforts. We did this in cooperation with organizations from local municipalities and other groups and have been continuing to visit areas within the prefecture since the earthquake.

FMU Support for Evacuation Shelters within Fukushima Prefecture	- Advanced Emergency Medical Support Team (Economy Class Syndrome Medical Team/Mental Health Care Team/Pediatrics & Infectious Diseases Team/Cardiovascular Disease Team) - Evacuation Shelter Health Care Team - Consultation Team
Specialized Medical Advisory Team	
Support for residents and in-home patients within the 20–30 km evacuation zone	(Community & Family Medicine Team and cooperating organizations) and others




Gratitude toward “Mentors in Life”

Nobuo Sakamoto
Assistant Professor, Department of Cardiology and Hematology

Along with offering my sincerest prayers for the peace of those perished in the Great East Japan Earthquake, I would like to express my heartfelt hopes for the well being of all those affected by the disaster.

After the earthquake, I had the chance to speak to many of the disaster victims at the evacuation shelters. Among them were families embracing each other—wracked by fear of the radiation exposure—and families depressed after witnessing their houses being carried away in the water. I shared a moment with them, stroking their wrinkled fingers. The elderly folks had the strongest impact on me. I felt that these senior citizens taught me the true meaning and importance of bedside manners, which is the real heart of medical care.

Moreover, having our regular visitors to the hospital—patients who struggle with the difficulties of chronic diseases—say to me, “Take care. You must be tired,” made me feel like it was them who were taking care of me. There were many times when I was moved to tears.

With much gratitude to these kind teachers of life’s lessons, I felt an ever stronger determination to do my work of helping preserve the health of disaster victims, even if of one.

Facing Tomorrow

Takao Tsuchiya
Lecturer, Department of Regenerative Surgery

Allow me to express my sincere prayers for all those who perished in this disaster.

When the earthquake struck, I was in the operating room for an emergency surgery. I was surprised by the length of time the quake lasted—longer than any other I had experienced. We immediately stopped the surgery, and then, I contacted the prefectural government office’s Disaster Response Headquarters through my role as a member of the disaster management assistance team (DMAT).

As the government office itself was damaged, there was considerable confusion. The scene was similar to that of a war zone because the inquiries for medical-related information kept coming all through the night.

Later, I also worked on the response to the nuclear accident and helped transport patients from within the evacuation zone, although the success of these efforts were very much owing to the close collaboration of the various divisions of the Self-Defense Forces, the fire department, police department, Coast Guard, government agencies, and other medical institutions. The breadth of the evacuation area was larger than anything previously experienced.

We were all able to display considerable teamwork. I hope Japan keeps this admirable strength when facing future disasters.

The “Fukushima Support Group”

Toshihiko Fukushima
Associate Professor, Department of Organ Regulatory Surgery

I extend my sincere condolences to all the victims who were affected by this earthquake.

After the disaster struck, we were dispatched to the Disaster Response Headquarters in the Fukushima prefectural government building. We are working to formulate and implement plans to move patients who were hospitalized within the evacuation zone as well as those who were at welfare facilities for the elderly. These patients need to be moved outside the area, and medical support also needs to be arranged for those living at the evacuation shelters.

Many readers have probably seen the images showed on TV; the prefecture’s Disaster Response Headquarters was chaotic. When I first set foot in the room, I was overwhelmed by the heated atmosphere of the place. All government officials and employees in the headquarters were hurriedly helping evacuate residents, confirming their safety, and obtaining supplies. In addition, Self-Defense Force members, fire department officers, police officers, and members of the Coast Guard who were gathered from across Japan were similarly working to help residents evacuate and to deliver recovery support. All of these dedicated individuals were literally working without sleep or rest.

Being in the Headquarters shows me once again that the medical services we offer are the product of the concerted labor of a diverse group of people. In addition, I was able to see firsthand that we, the people of Fukushima, have an amazing “Fukushima support group” sustaining us.

I am grateful to everyone who has kept us going!

We Won't Allow Any “Secondary Victims” of the Great East Japan Earthquake!

Shinya Takase
Lecturer, Department of Cardiovascular Surgery

- Protecting the evacuees from Economy Class Syndrome

The Great East Japan Earthquake was truly unprecedented. My deepest sympathy goes out to the families of those who perished. The entire FMU campus is wrestling with the aftermath of the earthquake and tsunami as well as the radiation problems from the nuclear power plant accident. In these trying circumstances, we have assembled an Advanced Medical Emergency Response Team in order to deliver more specialized care to the disaster area and the evacuees, in addition to the emergency medical care that is also being provided.

In particular, the incidence of thrombosis in veins of the lower extremities as well as accompanying pulmonary embolism is increasing in survivors of Japan’s earthquake. Also called “Economy Class Syndrome,” this ailment can be fatal. As part of the Advanced Medical Emergency Response Team, we in the Economy Class Syndrome Medical Team have obtained four portable ultrasound machines. We are able to screen a large number of disaster victims, mainly those in the evacuation shelters, and detect and treat at an early stage the deep vein thrombosis that can lead to pulmonary embolism. Our goal is to prevent any secondary victims in the aftermath of the earthquake.

At present, we have screened over 1,000 people. 10% of those screened showed signs of deep vein thrombosis. This figure is 3–5% higher than that seen after previous earthquakes. Being able to initiate early treatment for the larger blood clots discovered—those that can lead to pulmonary embolism—has been an extremely fortunate outcome.

Those living in the evacuation shelters will have to stay there for some more time. Moreover, the numbers of those in the shelters will actually increase as some evacuees return to the area from far afield. We would like to do all we can to continue our efforts to allow no secondary victims of the disaster and to lead prevention efforts and early detection for Economy Class Syndrome.

Preventing Economy Class Syndrome

Three Vital Precautions

1) Do not sleep in your car

Keeping your body in the same position for a long period of time promotes blood clots. Clots can develop in as little as four hours.

2) Walk around

Regularly exercise your ankles.

3) Stay hydrated

It can be difficult to reach a bathroom, but that should absolutely not dissuade people from drinking water. Women in particular should take caution.

(Team Leader of the Economy Class Syndrome Medical Team; part of the FMU Advanced Medical Emergency Response Team)

Activities after the Earthquake

Yuusaku Abe
Graduate Student, Department of Pediatrics

I would like to express my heartfelt condolences for everyone affected by this Earthquake.

After the earthquake, I worked under the guidance of Professor Hosoya to assess the situation, in terms of pediatric care, at each evacuation shelter. I helped to bring milk and diapers to the places that were low on supplies, and where needed, visited the shelters to examine children. I noticed that there were children playing happily at the evacuation shelters, despite the fact that it was just after a major earthquake disaster. However, there were also children who cried at night and whose character changed, making them much more dependent than before. The earthquake had a mental impact, leaving its mark on the children who lived through it.

For this reason, the pediatric response is currently shifting from medical care and delivery of supplies right after the quake to more mental health care for the children. Although my efforts are extremely meager, I would like to work as hard as I can to offer support.

The Power to Join Together

Naomi Takazawa
Assistant, Department of Community and Family Medicine

The department that I belong to, Regional and Family Medicine, visited local hospitals and clinics every day to deliver primary care. Myself and the members of my department, along with the local residents, were victims of the Great East Japan Earthquake. Immediately afterwards, we worked to aid in the recovery of operations at hospitals and clinics throughout the region. In addition, we worked to administer care at the evacuation shelters.

It goes without saying that we did not have the equipment at our disposal that we needed. However, with the strong support and teamwork of the hospitals and clinics we visited, we were able to continue administering examinations in these trying circumstances. As we move forward, I would like to do everything I can as one of the individuals responsible for Fukushima’s health care. We must respond to the psychological effects of the anxiety the public is facing and deliver care to the new communities that have sprung up in the evacuation shelters and temporary housing facilities.

Praying for the Day When Peace and Comfort Return

Maki Iitsuka
Lecturer, Department of Clinical Nursing

I would like to express my heartfelt condolences to all those who fell victim to the Great East Japan Earthquake.

In the early days after the earthquake, I was tasked with handling daytime and nighttime triage operations at FMU Hospital. Currently, I am visiting homes and evacuation shelters to administer welfare support and care.

In my conversations with patients while performing health checks, I heard their stories of suffering and became painfully aware of how much they went through because of the earthquake, tsunami, and nuclear power plant accident.

Just the other day, I went from home to home near the fishing harbor in Iwaki. This area was heavily damaged—the magnitude of the earthquake was 6.0 here—and many homes were lost. I could see that the residents were extremely fatigued from their worries over whether subsequent calamities would strike and whether their lifeline would be cut off again.

I pray that the people of Fukushima will be able to return to their peaceful existence even one day sooner and vow to continue my activities as a nurse.

Participating in Support Efforts for Disaster Victims at Their Homes in Soma

Naomi Fukushima
Assistant Professor, Department of Public Health and Home Care Nursing

I would like to express my sincere condolences to all victims of the Great East Japan Earthquake.

In the initial days of the disaster, I worked to help transport patients along the coast to new hospital facilities.

Starting with relief efforts in Soma on March 23, we initially made rounds to each evacuation shelter and checked on the health of the disaster victims. Soon we were joined by a good number of medical support teams from prefectures across Japan. From March 29, we started direct home visits in the vicinity of the heavily damaged Soma harbor to confirm the safety of residents and check on the condition of their health.

In this area, searches for missing persons are still being conducted by the police forces and by members of the Self-Defense Forces.

We are visiting every home in two-person teams. As we do this, we are using residence records and maps created from aerial photos that helped divide neighborhoods into categories where houses are destroyed, half-destroyed, or submerged.

During these visits, we learned that there were many residents with chronic illnesses who could not get access to their medicine, residents who had lost their children, and elderly residents living alone and unable to sleep owing to the fear of aftershocks. I feel very strongly that even in the future, these home visits must be continued in collaboration with various government divisions in order to provide support for these victims.

Despite being affected by the disaster themselves, the staff of the Soma Health Office worked very diligently at their jobs, and I bow my head to them.

Fukushima is struggling with the nuclear power plant accident and the rumors and speculation surrounding it, but I believe that we are steadfastly making progress toward recovery.

Recently, statements such as, “Don’t give up, Fukushima,” have been prevalent on TV. Although I am from the Kanto area myself, coincidentally my surname is Fukushima. Therefore, I feel a special affinity for the area and always notice the TV messages. I sincerely hope that everyone can find the strength of will to continue onward together toward full recovery.

Overview of Patient Admission/Transfer in Hospitals within Evacuation Zones

Hospital Administration Department

- **Friday, March 11, 2011–Monday, March 21, 2011**
  Because a large number of patients were brought to the hospital due to the earthquake, 33 beds were set up in the first floor reception hall.
- **Saturday, March 12, 2011–Monday, March 21, 2011**
  Makeshift beds were set up in the outpatient areas of the Internal Medicine 1, 2, 3 and Neurology wards to accommodate patients from the hospitals within the evacuation zones, at the request of the prefecture’s disaster response headquarters.
- **Primary patient arrivals and transfers**
  (1) Monday, March 14, 2011 (Evening)–Tuesday, March 15, 2011 (Morning)
  - Nishi hospital (Namie) accepted 74 patients
    →March 15 and 16: Patient transfer to hospitals in the Aizu area (in buses arranged by the Disaster Response Headquarters)
    Takeda General Hospital (23 patients), Aizu Central Hospital (17 patients), Yurin Hospital (10 patients)
    →March 16: Dialysis patients were transferred to hospitals in Tokyo (by buses arranged by the Disaster Response Headquarters)
    Tokyo University Hospital (eight patients), Teikyo University Hospital (seven patients)

  (2) Tuesday, March 15, 2011
  - Futaba Hospital (including geriatric care center) (Ookuma): 21 patients accepted
    (In refuge at Iwaki Koyo High School**)**
    →Wednesday, March 23, 2011: Patients transferred to Saiseikai Fukushima Hospital (two patients) and Masu Memorial Hospital (one patient)
    Friday, March 25, 2011: Takeda General Hospital (four patients)
    Friday, March 25–Saturday, March 26, 2011: Aizu Central Hospital (13 patients)

  (3) Saturday, March 19, 2011
  - Minamisoma City Odaka Hospital: Eight patients accepted
    →Sunday, March 20, 2011: Eight patients transferred to Niigata Prefecture (via Fire dept. helicopter and emergency support team ambulances)
  - Iwaki Kyoritsu General Hospital: 11 patients accepted
    →Sunday, March 20, 2011: Five patients transferred to Aizu Central Hospital

  (4) Sunday, March 20, 2011
  - Minamisoma General Hospital: 26 patients accepted
    →Sunday, March 20, 2011: 21 patients transferred to Niigata Prefecture (Niigata Shimin Hospital, etc., via emergency support team ambulances)
  - Omachi Hospital (Minamisoma): 13 patients accepted
    →Monday, March 21, 2011 (holiday): Patients transferred to Gunma Prefecture (via Self-Defense Force buses)

  (5) Other than the above, two patients were transferred to Futaba Kosei Hospital on March 12, 2011, two were transferred to Prefectural Ono Hospital on March 14, 2011, and inpatients were accepted from numerous other hospitals.

*As a large volume of patients were expected to arrive from medical institutions in the evacuation and indoor shelter areas, the University hospital enforced a limit on patient admissions, in addition to preparing beds in the hospital’s two wards for patient intake.
Closed Admission Period
6th floor East Ward: Monday, March 21–Sunday, March 27
9th floor East Ward: Saturday, March 26–Thursday, March 31

International Medical Support

Medical teams from Jordan and Thailand

Jordanian and FMU Teams Cooperate in Refugee Care

May 27, 2011, Fukushima City, Japan

Here, Dr. Shinya Takase reports and reflects on refugee care jointly provided by teams from FMU and the Hashemite Kingdom of Jordan. Dr. Takase leads FMU's Deep Venous Thrombosis (DVT) Prevention and Care Team, and is a lecturer in the Department of Cardiovascular Surgery.

Refugees and Shelters in Fukushima Prefecture as of May 11, 2011

There were 8,085 primary refugees living among 142 shelters, and 16,413 secondary refugees living in 491 locations. Most of the 24,498 total refugees are people displaced from cities, towns, and villages along the Pacific coast of Japan's Tohoku region.

Activities of the FMU DVT Prevention and Care Team

DVT prevention and care activities for refugees began on March 28, 2011. As of May 11, teams had contributed a total of 22 days of care at refugee centers.

Team members visited refugee shelters around the prefecture and screened refugees deemed to be at high risk. These include people with swollen feet, bedridden or immobilized patients, people with other injuries or cancer history, refugees who had lived in a car, pregnant or new mothers, recent surgical patients, and anyone with varicose veins, DVT, or DVT-like symptoms.

High-risk refugees were interviewed and screened with a portable ultrasound device. Thrombi are especially common in veins below the knee. When ultrasound revealed a large or fresh thrombus at risk for pulmonary embolism, the refugee was referred to a nearby core hospital for further examination and care. When no thrombus was detected, guidance on DVT prevention was offered. Refugees with larger-than-normal vein caliber were given support hose designed to compress external veins and minimize thrombosis formation.

As of May 11, the team examined 2238 patients (28% of the primary refugees). Of these, 219 tested positive for thrombosis, and eight were hospitalized immediately for urgent care. Overall, 9.8 percent of primary refugees were diagnosed with DVT, and 874 sets of support hose were distributed (a number corresponding to 39 percent of those who were examined).

Activities of Volunteers from the Hashemite Kingdom of Jordan

The Jordanian care team consisted of two vascular surgeons and two nurse/ultrasonographers (male and female). Dr. EL-ABDALLA Omar Nayel, Dr. RASHAIDEH Mohammed Ahmed, Mr. ALZU'BI Abdallah Hayel, and Ms. SHAQDIH Eman Hasan joined FMU's DVT Prevention and Care Team on April 25, 2011, and worked 8 long days from the start. Visiting 20 shelters and 4821 refugees, they screened 736 and detected thrombosis in 10.6% of cases. The Jordanian team distributed 327 sets of support hose.

Personal Reflections

We did not know in advance what level of skill and service to expect from our Jordanian colleagues. Upon their arrival, we got better acquainted conversing in English. Concerned about their ability to communicate with refugees, we hoped to find a translator fluent in Arabic and Japanese, but none were available on short notice.

Working closely with colleagues from another country, we encountered different eating habits, religious views, and such. But it was clear that they were highly motivated to visit Japan and help with the care of refugees. They arrived just three days after deciding to come, and brought portable ultrasound gear that seems to have been purchased new for their mission.

At our first meeting on April 25, we tried to anticipate their concerns about radiation exposure. We explained the current status of the Fukushima Daiichi nuclear power plant, and assured them that we would not enter the 20-kilometer evacuation radius. Then we detailed radiation levels in Fukushima City and the places we planned to visit.

In reply, our Jordanian colleagues offered to follow us wherever we went, regardless of radiation levels. We were deeply impressed and encouraged by their strong commitment to help Japan. Furthermore, their knowledge and skill exceeded our expectations, and we were able to begin working together from the same day as our initial meeting.

After the Jordanian team joined us, the detection rate of thrombi increased immediately and the number of support hose distributed also increased. It appears that our collaborative efforts improved refugee care because we could meet and advise many more refugees before DVT and/or pulmonary embolism might have occurred.

The Jordanians brought more than medical care. Despite a language barrier, refugees seemed to understand and appreciate their thoughtful behavior and concern. We frequently heard, "Thank you for coming all the way from the Hashemite Kingdom of Jordan. Inspired by you, we will hang on."

As a team leader, I know without our Jordanian colleagues, we surely would have missed many early intervention opportunities. We really appreciate their support. In Fukushima Prefecture, problems caused by the earthquake, tsunami, and nuclear power plant crisis have produced a lot of refugees. We worry that refugee life will continue for a long time, and, even after moving to temporary housing, many refugees will remain at risk for DVT and other ailments. We are keenly aware that ongoing medical and preventive care activities will be needed, and hope to provide long-term support to those whose interrupted livelihoods contributed so richly to our nation and to the world.

Fukushima Medical University welcomes delegates from the Hashemite Kingdom of Jordan: His Excellency the Ambassador Extraordinary and Plenipotentiary, and the Jordanian medical team from the Hashemite Kingdom of Jordan at our university.

The Jordanian and FMU medical teams confer prior to departure.

An elegant present made by students in the Hashemite Kingdom of Jordan
(The red Arabic characters mean "It's going to be all right, Japan!")

Medical Teams of the Kingdom of Thailand and FMU Cooperate in Refugee Care

A medical team from the Kingdom of Thailand came all the way to Fukushima to support medical care in the wake of the March 11 earthquake and subsequent tsunami. They comprised two groups: Dr. Naris Waranawat and Ms. Rungtiwa Aswinanonh (registered nurse) in the first group and Dr. Suthipong Pangkanon and Ms. Kim Sakulnoom (registered nurse) in the second.

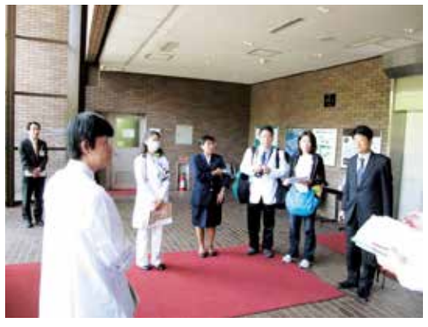
The teams made the rounds of refugee centers across Fukushima along with FMU pediatric specialists and infectious diseases specialists. Our Thai colleagues provided insightful consultation and advice regarding health management for infants and children.

The first group worked from May 9 until May 19, assisting at 15 refugee centers, and the second group from May 23 until June 2, assisting at 16.

A farewell ceremony was held on June 2, the last day of their four-week service, as a token of gratitude for their invaluable dedication to refugee care.

We sincerely appreciate medical support from the Kingdom of Thailand.

FMU welcomes Ms. Rungtiwa Aswinanonh (third from left) and Dr. Naris Waranawat (sixth from left), the first medical team members to arrive from the Kingdom of Thailand.



Joint briefing of the first Thai medical group and their FMU colleagues, before visiting refugees

Farewell ceremony on May 19, 2011, for Dr. Waranawat and Ms. Aswinanonh.

Joint briefing of the second Thai medical group and their FMU colleagues (Ms. Kim Sakulnoom, second from left: Dr. Suthipong Pangkanon, far right)

Farewell ceremony on June 2, 2011, for Dr. Pangkanon and Ms. Sakulnoom

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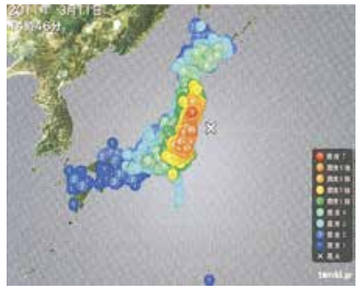
Experiencing the Great Disaster

Yasuhiro Tada, Department of Otolaryngology, Fukushima Medical University

At 2:46 pm on March 11, 2011, an undersea earthquake with a 9.0 magnitude rocked the seafloor off the Sanriku Coast, 24 kilometers beneath the surface of the ocean. The Nakadori and Hamadori areas of Fukushima measured a quake of more than six on the JMA scale, while the Aizu area measured just below six. At the time, I was seeing outpatients at Hanawakosei Hospital. I was examining a patient who required an ear procedure. When I first felt the tremors, I instinctively told the patient, “That’s an earthquake. Let’s put the examination on hold.” We immediately left the examination room together and went to the hospital entrance to see what was happening. Things soon calmed down, so we returned to the examination room. The instant I resumed the examination, a piercing sound I had never heard before came from my cell phone. Looking down at it, I saw an emergency earthquake alert flashing, “A strong earthquake has occurred off the coast of Iwate Prefecture. Beware of tsunamis.” Seconds after reading this, the earth shook with a far greater force than that of the previous tremors. Feeling that it was dangerous to be inside the building, an outpatient nurse and I led the patients awaiting their examinations outside of the hospital building. The tremor was enough to make us think, “This is horrible, we might die!” The tremor lasted for five or six minutes, but it felt like it lasted for more than ten minutes. Shortly after losing power, we led the patients to refuge in the first floor lobby of the hospital building, and verified their safety amid the aftershocks. Of course, outpatient examinations were discontinued. It was then that I got an email from Dr. Tani reporting that the medical school offices were a mess, but that all the patients in the building were unharmed. As a senior member of the medical staff, I made the decision to return to the university. It was around 4:30 pm.

The highway back to the university was blocked with traffic, so my only option was to take regular roads. Because Route 4 was also jammed, I had to maneuver through the backstreets instead. The road, however, was badly warped, cracked and uneven, with manholes protruding from the ground, and the walls of the surrounding houses had collapsed, as had many older houses. I learned from a TV on the street that there was a problem with the Fukushima nuclear power plant, but the information was unclear at the time, and I did not think it would be as bad as it eventually became. It was after 8:30 pm when I finally made it to the university. Most of the staff were still in the medical school offices, and I was able to breathe a small sigh of relief on hearing that some of the staff had been able to contact those who did not come to work that day. The offices were in such a shambles that you truly had nowhere to step, and the assistant lecturers’ room was a sorry sight. Surprisingly, Dr. Kogawa had already cleaned up the area by the



Inside the medical offices on the day of the disaster

Triage at the hospital entrance

window, and was facing his desk.

After the earthquake, an emergency disaster response headquarters was set up at the university. Professor Omori, the vice president of the hospital, was an active participant. We started triage and preparations to accept victims of the earthquake and nuclear disaster. At 8:00 am the next morning (March 12) in the hospital conference room, all the staff and faculty gathered and checked on the status of each other's families. From that day on, emergency all-staff meetings were held at the hospital three times a day at 9:00 am, 3:00 pm, and 9:00 pm. We discussed a variety of topics, including the state of triage and the disaster medical assistance team (DMAT), cuts in water supply and other lifelines, water conservation, and the release of hospitalized patients. At the request of the hospital, 2–3 physicians from the otorhinolaryngology department stayed in the hospital around the clock, accompanied by a member of security. We also made a "medical school mailing list" with email addresses of the medical staff's cell phones in hope that we could accurately share in real time, as much as possible, decisions from the all-staff meetings, reports on our whereabouts, and other information so that those at home could feel less worried. I must have spent 3–4 days (without sleep) after the earthquake either at meetings or in front of the office computer, sending information. Normal outpatient examinations were ceased, as were surgeries. A cut in the gasoline supply became a major problem, and people waited in queues for 5–6 hours for gas. About one week after the passing of the earthquake, the hospital regained its water supply, and outpatient appointments and surgeries were gradually restarted. Internal medicine outpatient examinations resumed on the 22nd, most of which were operational, and on the 24th outpatient surgeries were reinitiated. Triage and radiation survey work ended on the 25th, and on the 26th we stopped having physicians keep watch over the hospital. All staff meetings were now conducted on a weekly basis. The hospital fully resumed normal operations on Monday, April 4.

Widespread emergency medical support began at the end of March, with medical professionals visiting evacuation zones. The otorhinolaryngology department also participated, starting in the Iwaki area. When we began, there were many problems: insufficient medicines; hindered communication; some patients, who required care at some of the evacuation zones, were not traceable; and occasional overlapping of bookings of medical support crews, causing awkward situations. My visits to the evacuation site exposed me to the harsh reality of the enormity of the disaster, and led me to believe that further support was imperative. Thereafter, medical support teams from Thailand accompanied the otorhinolaryngology department. As of now, the end of June 2012, the support program has ended.

Honestly, after being caught up in this disaster, I have come to the realization of just how important a calm, everyday life is. I am truly proud that even in the face of such an unimaginable situation, our staff stayed closely united and grew stronger to overcome the obstacles. My heart is filled with gratitude for the staff members who supported me. I can only hope for the situation to improve from this day on.

Reports of the Fukushima Prefecture Medical Association Vol. 73 No. 8 (8/23)

Mudra of Supreme Wisdom

Toshihiko Fukushima, Department of Organ Regulatory Surgery, Medical University Physicians Association

Do you know what the mudra of supreme wisdom is? It is the hand gesture of the Vairocana Buddha, but it might be easier to understand if I say that it is the gesture that ninjas make—hands together in front of their chests, right before disappearing.

Two years ago, while at a conference in Kyoto, I happened to visit the hall of Toji Temple. Once I saw the seated statue of Vairocana Buddha, I could not move for a long while. Not that I was particularly interested in Buddhism or Buddhist sculptures, rather I was transfixed by the power of those eyes filled with loving kindness.

Later, I learned that Vairocana Buddha is at the center of the universe, whose light shines wide and illuminates the entire universe.

The Key Word is "Loving Kindness"

With the Great East Japan Earthquake, I was able to experience the loving kindness of many people. After the disaster, I was sent to the Disaster Response Headquarters in the prefectural offices, helping a mixed team of people from DMATs and FMU on their mission to transfer patients from hospitals within the evacuation zone to areas outside it.

The confusion and struggles of the doctors and staff at these hospitals was beyond imagination. Amidst all this was Dr. K, who calmly dealt with even the most absurd requests such as making a list of all transfer patients in one evening. The abundance of his loving kindness was apparent even from his phone calls.

In addition, Dr. E continued with consultations at a hospital outside the evacuation zone (but still within 30 km) to which we had transferred patients. On March 25, I accompanied members of the Self-Defense Forces on their field surveys, and it was then that I met Dr. E. He recounted the evacuation in a matter-of-fact manner, with what can best be described as not a sense of responsibility but loving kindness.

There were many doctors, such as Dr. I and Dr. S, who provided medical care in the evacuation centers while still being victims of the disaster themselves. I was able to speak with Dr. S over the phone. Without a touch of exhaustion he told me, "You know, I didn't have a change of clothes, so I was still in my jersey, ha ha." This further motivated me. Loving kindness accurately describes Dr. S, who even in the most difficult situations, is filled with sympathy for others.

With our mission to transfer patients out of the evacuation zone, we also made quite absurd requests to the doctors and staff at intake hospitals. They readily and willingly cooperated, with their hospital functionality less than perfect and without knowing what type of patients they would be getting, just negotiating the number of patients. Amidst all this came words encouraging us to come and talk in case of any trouble. Here, too, there was loving kindness.

During the field survey mentioned above, we came across an unidentified dead body in a high school gymnasium. Looking at the body, I was paralyzed by the thought of the terrible power of this tsunami. That very moment, the chief priest of a nearby temple was chanting a sutra. Burning an incense stick, I noticed a small Buddhist sculpture next to the chief priest—it was the Vairocana Buddha with the mudra of supreme wisdom.

The key word is "loving kindness." University staff members are also struggling to do whatever they can.

Posted on goo Healthcare [http://health.goo.ne.jp/]

Messages from Fukushima Family Physicians

Atsushi Ishii, Assistant Professor
Department of Community and Family Medicine
Fukushima Medical University School of Medicine

People Cannot Live Alone

Family physicians were the gear wheels behind the large-scale disaster medical relief. They provided medical support with pride and joy of living and working in the area (May 7, 2011).

Our 3-11

March 11, 2011, 2:46 pm. The Great East Japan Earthquake and tsunami: A great test of our fortitude.

A tragedy unfolds before my eyes for which no amount of common sense or guidebooks provide help. I am a victim too. Despite being unable to confirm the safety of friends and family due to the breakdown of all communication networks, throughout Fukushima, senior residents and supervisory doctors trained in medical facilities (such as clinics and small- and mid-sized hospitals) took up their posts the instant the disaster struck, each thinking and acting on their own initiative.

Fortunately, although our staff were in the coastal areas that suffered tremendous damage from the tsunami, they were not directly affected by it. Amidst the frequent aftershocks, clueless about the status of neighboring medical facilities, we had to quickly clean up the chaotic mess in the ER. One after another, we took in victims of the tsunami and did nothing but emergency triage (the prioritization of medical attention) and initial treatments. Faced with delays in the provisions of essential utilities and circumstances that prevented sufficient testing and procedures, we could rely only on our diagnostic skills.

Even in an area that had few direct impacts, we saw an unusually large number of patients arriving from hospitals that had lost their functionality. We scrambled to secure space for them and laid vinyl sheets down in the hospital lobby.

In particular, dealing with the rush of patients from hospitals whose electronic patient record systems had failed was a struggle. Some patients had medical notebooks that we could refer to for administering proper medical treatment. In other cases, however, the name of the disease, and even that of the patient, was unclear. The biggest challenge was caring for patients who were perhaps exposed to radiation, care for which we had no experience. We treated these patients while frantically gathering information on how to do so.

A Fukushima that Prioritizes Family Medicine

First, why were we physicians from Fukushima Medical University (FMU) caring for patients at medical facilities throughout the prefecture? Standing by at locales throughout the prefecture, had we anticipated this unprecedented disaster? Not in the least.

Damage from the tsunami in coastal Iwaki City (March 12, 2011)

Preparing to take in patients

(Photo/Image: Community Family Physician Medical Workshop, Fukushima Medical University School of Medicine, same below)

The lack or uneven distribution of physicians in Fukushima was previously a societal problem. Thus, in 2006, predating similar programs in the rest of the country, the prefecture made efforts to provide high-quality training for family physicians. Family physicians can provide appropriate care for common physical ailments such as a cough, headache, stomach ache, backache, high blood pressure, and lipid disorder; other lifestyle diseases including diabetes; and psychological disorders such as depression and insomnia. They specialize in providing "patient-centered care," which considers the state of a patient's well-being and family, and area peculiarities, and work together with all types of medical specialists and caregivers.

From the patients' viewpoint, family physicians are doctors who they visit, from infancy to old age, when they are worried or uncertain about their own or their family's health conditions.

Care/education centers with family medicine courses in Fukushima (2011)
* The creation of the Futaba community or family medicine center has been postponed because of the Fukushima Daiichi nuclear power plant incident.

Family physicians appropriately and effectively treat all medical problems that arise in an area, build strong relationships with local residents, and continually feel responsible for their area's well-being. Thus, with the current decline in the Japanese medical system, family physicians are becoming increasingly valued as medical saviors of the community.

Fukushima Prefecture has collaborated with our university, multiple medical facilities, local residents, and the government to train family physicians on a large scale. This state-of-the-art project is known throughout Japan as the "FMU Model."

Training family physicians who live and work in the local area is our school's mission for both the rebirth of local medicine in Fukushima and the future of medicine in Japan.

Bringing Together Old Friends

This unpredictable disaster evoked a feeling of joy in me as I was able to work for the very people who had watched over us each day. Some may be irked with my mindless feeling of joy during such traumatic times. However, the truth is, as the severity of the situation became clear, I was all the more inspired to happily contribute with all my capacity, even in such harsh conditions. Not once did I regret that I was in Fukushima at the time. Why is that?

FaMReF group discussion

On April 23, 2011, six weeks after the disaster, the Family Medicine Resident Forum (FaMReF) was held again at FMU after a two-month hiatus. FaMReF is a monthly study workshop for senior residents of family medicine.

The workshop had been religiously held every month since its inception five years ago; however, for the first time, FaMReF was cancelled in March because of the disaster.

We were overwhelmed to see our friends, who had overcome the crisis, for the first time in two months. FaMReF began with a moment of silence before proceeding to the main theme, "Stories from the Disaster." These are those stories…

A Heart Full of Joy and Pride of Living and Working in the Community

Even though the whole of Fukushima was affected by the disaster, different parts of the prefecture experienced widely different conditions. But, I can look back and say that all of us, from our respective posts, worked together with on-the-ground staff as gear wheels for the large-scale efforts toward disaster medical relief throughout the prefecture.

Now, I understand the feeling of joy. It was the existence of my fellows who upheld the big dream of "family physicians that live and work in the community," all those who supported them, and gave me strength from afar.

For me, 3/11 was the day that I realized two important aspects: We cannot live alone, and working in Fukushima as a family physician will continue to give me joy and pride for the rest of my life.

In Times of Disaster, the Role of Family Physicians is Especially Important!

Family physicians who comprehensively care for patients on a long-term basis are needed as evacuation periods prolong. (August 2, 2011)

Large-Scale Evacuation Caused by the Unprecedented Tsunami Damage and Nuclear Accident

In the recent disaster, people from all walks of life had no choice but to evacuate because of the widespread damage wrought by the earthquake and tsunami in coastal areas and the nuclear accident. Because of the nuclear hazard, many bedridden patients who were unharmed by the earthquake were forcibly rushed into a mass evacuation without sufficient food or medical resources. With communication systems in disarray and little time for requisite medical support to arrive, over 20 souls were tragically lost in the temporary evacuation centers and the arduous process of long-distance transfers.

Furthermore, unlike previous earthquakes, such as the Great Hanshin-Awaji Earthquake and the Chuetsu Earthquake, the core medical facilities of the affected areas reported that most casualties were caused by drowning, and relatively few patients suffered traumatic injuries caused by buildings collapsing as a result of the earthquake. Many disaster medical assistance teams from across the country were present in the affected areas; however, some days after the disaster, acute care for external injuries settled down. What followed were mismatches between the medical needs of the evacuation centers and the actual practices by the assistance teams that rotated among the evacuation centers. This is what those in the evacuation centers asked of us medical practitioners…

Medical Confusion at the Evacuation Centers

Prolonged periods as an evacuee necessitate not only care for contagious diseases such as colds and transmissible gastroenteritis but also the appropriate, continued management of chronic conditions such as high blood pressure, diabetes, insomnia, and constipation. Many evacuees had multiple common health disorders, such as high blood pressure and depression, as a result of continuous restless nights from the terror of aftershocks or worries about the nuclear accident. In fact, those vulnerable to disasters—such as the elderly, those with pre-existing conditions, infants, and pregnant women—were most affected. Moreover, people who were free of medical ailments gradually began suffering health problems from living in an environment of extreme stress and an unbalanced diet.

As normal medical systems were not functioning in the evacuation centers, disaster assistance teams rotated among the centers, providing medical care during the critical phase (48 h after the disaster). Undoubtedly, they contributed to the health management of the evacuees. However, 10 days after the disaster struck, some evacuees were commenting: “I’m grateful that these doctors come to see me so often, but it’s a different doctor every day and they all leave different medicines for me, so I don’t know which to take!” or “It’s a pain to repeatedly say the same thing from the very beginning.”

With no end to life as evacuees in sight, the sporadic and non-continuous medical assistance was finding it difficult to cover everything. At that time, evacuees were asking for private doctors who could treat them comprehensively and uninterruptedly.

We Should Put an Emphasis on the Role of Family Physicians, Especially During Disasters

Sometimes, in the evacuation centers, I would run into patients that I had treated before. My questions of “Are you alright?” were responded to with happy exclamations of “Doctor, you came!!!”

The author with patients injured by the earthquake

Some private medical facilities were damaged, and others were within the areas that were possibly exposed to radiation. Thus, for many in the evacuation centers, there was no prospect of immediately receiving personalized medical assistance.

If not their regular private doctor, evacuees needed physicians that could continuously treat various health issues. Wanting to fill that role, I visited as many neighboring evacuation centers as possible. As a result, even patients who I had not seen before would call out, “Doctor, you came!” and I was conscious of both the joy of being recognized as a new private doctor and the sense of the mission that it entailed.

As noted above, family physicians are “specialists that can provide appropriate care for common physical and psychological ailments, considers the state of a patient’s well-being and family, and area peculiarities, and work together with all types of medical specialists and caregivers” This does not change in times of disaster. Rather, I am now convinced, because of my experience during the disaster, that especially during times of emergency, the role of family physicians becomes more important.

In affected areas lacking medical resources, it is difficult to assemble teams of multiple physicians from different specialties and to rotate them among the evacuation centers. At such times, doctors such as family physicians who treat various medical ailments play an important role in increasing medical efficiency. Evacuation centers, especially, need to continuously and comprehensively treat common medical issues from colds, headaches, stomach aches, and backaches to high blood pressure, lifestyle diseases such as diabetes, and mental issues including insomnia and depression.

Furthermore, the unique circumstances of disasters necessitate cooperation between all types of specialists and medical professionals to provide patients with care that fully considers the well-being of the patients, their families, and the community. These are the most suitable conditions under which family physicians can fully exercise their characteristic abilities.

From Evacuation Center Care to Community-Wide Long-Term Care

As noted thus far, by visiting evacuation centers, I was able to get a glimpse of the complete picture of health issues and medical needs in the community; something I would never get by merely seeing patients who visited the hospital or clinic. There were people enduring major and multiple physical, psychological, and social problems. The emotional conversations with them taught me that my only purpose in this world is to be a family physician.

The situation at the evacuation centers only partially reflects the harsh reality of the affected areas. Helping the elderly who live alone at home was of utmost importance. In addition, we needed to follow-up with those who relocated to temporary housing arrangements to ensure that the new life they lead is not solitary, but an autonomous, yet social livelihood. We were required to discern these cases and provide changing yet necessary forms of support continuing community-wide long-term care in an ever-changing environment, I strongly hope to prevent an increase in the solitary deaths and disaster-related deaths during the sweltering heat of summer.

Proposal from Fukushima for a New Medical System

Whatever the circumstance, we citizens shall each push forward and create a functional, community-wide health system. (September 6, 2011)

Collapse of Community Medical Care and Integrated Care during the Earthquake

The most important element for achieving trouble-free provision of high-quality medical care in the community is the healthy cooperation of community clinicians and hospital specialists. Even during the critical phase after the disaster, community clinicians played a vital role in the care of patients with mild injuries, the ongoing treatment of chronic conditions, and lifestyle guidance for disease prevention.

Collapsed corridor in a hospital after the disaster (source: Hoshi General Hospital Foundation)

However, in reality, many local clinics could neither provide continuous treatment nor function as a network to support community healthcare. As a result, many people rushed to hospitals, and therefore, hospital staff were exhausted. Moreover, it became difficult for hospitals to fulfill their primary tasks: care for more seriously injured patients and specialized treatments. How did we get into such a situation?

For some time, all methods of communication were severed in the affected areas. As a result, some have pointed out that this led to a collapse in community medical care because the system for cooperative medical care could not be carried out effectively. In addition, the provision of relief supplies were impeded because of the effects of radiation contamination from the nuclear accident, causing severe shortages in not only water and food but also gasoline in Iwaki City and the areas surrounding the Fukushima Daiichi nuclear power plant. This complicated the work of commuting medical staff, home doctors, and home nurses, and medical facilities, starting with small-scale facilities, had no choice but to gradually shut down. But were these truly the only reasons?

The Vulnerability of the Community Medical System in Japan

Today, most local clinical physicians in Japan run private practices, and a majority of them have been specialists at hospitals prior to starting a private medical practice. Thus, they are not the type of doctor you could go see for any type of condition, as is the case of a family physician. Patients can see the clinician's specialty just by looking at the clinic name or sign, such as "X Gastroenterology Office" or "Y Neurosurgery Clinic," and choose the clinic they want to visit based on their symptoms and purposes. This has been perceived as a strong point of the Japanese medical system because anybody can freely see a specialist; on the other hand, it also has the shortcoming that patients as medical laymen must themselves decide the specialist they want to see.

The division of labor at clinics that support community medicine is not based on the community, but instead on the medical specialty. Thus, there is no tacit understanding that "That doctor in this community will see us," or "The clinics in our area were all damaged in the disaster, so the doctor in the neighboring community will surely see us." The responsibility that clinicians have toward the community is yet to be clearly delineated.

This disaster, and being confronted with the need to provide comprehensive and effective care to people with various health issues, made me keenly aware that the present community medical system in Japan was vulnerable and inefficient in times of disaster. However, is it only a disaster that can expose the flaws in a country's medical care system?

In Japan, the scene of masses rushing to the hospitals and exasperating hospital staff is not unique to times of disaster. It is a serious social problem that occurs every day. With most clinical physicians now in private practice, it is unrealistic for a single physician to provide 24-hour care, 365 days a year, even if we consider only his or her existing patients. There are instances of physicians sacrificing their private lives so that they are accessible to their patients at all times, and efforts by the local medical association or government to create holiday or night-time clinics or on-duty physicians. However, there appears to be more than a few cases of patients with medical problems outside of the physician's specialty visiting the clinic beyond regular hours. Therefore, proper healthcare becomes difficult. Hence, it becomes easy for patients to overwhelm hospitals at night and on holidays.

The Efforts of One Person Start a Movement throughout Fukushima and Japan

Numerous people spent worrisome days at the evacuation centers. One particular doctor, even though his own clinic was damaged, would visit a few of the evacuation centers around his clinic every day. This doctor, who would say "When you don't have medicine, you can cure with kind words and a smile," is one of the people I admire the most, and the reason I wanted to become a family physician. It goes without saying that in the midst of a crisis, the words of a familiar, local private doctor saying "It's okay, don't worry," can really spur you.

That doctor has supported the local medical care in his small fishing village in Iwaki City for over 50 years. Facing all types of medical issues head-on, regardless of age or disease, he carried on a practice rooted in his community, similar to a family physician. This position did not change even in the slightly, even in during this unprecedented disaster.

There are doctors, even those without specialized training experience in family medicine, who can admirably perform the role of the community's local doctor through their own efforts, which is truly commendable. However, I cannot help in saying that the Japanese medical system, supported by these types of individual efforts, is vulnerable. Moreover, in the present medical education system of Japan, it is exceedingly difficult to gain the skills necessary to be a family physician through single-handed efforts, and the number of family physicians is unequivocally low. With advances in medicine, specialized areas of medicine are rapidly becoming segmentalized, and a stronger trend exists now wherein patients are demanding treatment from specialists. Medical education is now centered on a specialization training system that is vertically structured, resulting in an environment in which it is difficult to train family physicians who can treat all types of conditions.

However, as noted in "People Cannot Live Alone" this workshop has already been conducted throughout the prefecture, training family physicians to revitalize community medicine. Training is showing favorable progress throughout the prefecture. We have already trained young family physicians and are opening community family medical centers required for the successful running of family medical training facilities throughout the prefecture.

But in Fukushima, where even now many are still forced to live as evacuees, we need to accelerate the project implementation, since there are still insufficient family physicians. Now, in particular, we are pressed with the need to train as many family physicians as possible.

Professor Kassai surrounded by trainees and Hula Girls at the First Family Medicine Summer Forum in Fukushima, 2010.
The second forum entitled "Studying Family Medicine in a Fukushima Recovering from the Disaster (Learning Family Medicine with the Symbol of Recovery, Hula Girls)" was conducted on September 10 and 11 in Iwaki City. Center: Forum Chief and Head Professor of the workshops Dr. Ryuki Kassai and the author.

The lack of family physicians is not the only issue that Fukushima is facing. At the earliest, we must create an environment in which medical students and residents throughout Japan who hope to become family physicians can receive specialized training in family medicine. In addition, physicians who are already practicing medicine at their local clinics can learn the skills necessary for practicing family medicine.

Toward the Revitalization of Community Medicine that Works with Communities and Facilitates Citizen Participation

Finally, as a family physician in Fukushima, I would like to share two messages with the citizens of Japan:

(1) Be Active in Managing Your Health and the Health of Your Family!

When calamities such as large-scale disasters strike, it is only you who can save the lives of yourself and your family. Similar to past disasters, when personal health and medical records are swept away by the tsunami, physicians lose requisite treatment information. Similarly, when electronic patient record systems fail and are temporarily inaccessible, we can only rely on the memory of the patient. No matter how easy it is to succumb to the severity of the situation, it is vital for not only the physicians but also the patients to actively participate in health management and create a more resilient community medical system.

However, it feels uneasy to solely rely on your memory, right? The unthinkable proliferates in times of disaster, and there is no one thing that can make you say, "If I just had this, I'd be fine!" So the more backup tools you have in times of emergency, the more secure you feel. For instance, in one case, a patient would update her health information (weight, blood pressure, examination data, medicines, etc.) online daily. Therefore, when she lost her personal medical records and her private doctor's office was no longer operational, she was able to retrieve the information necessary for her healthcare, even after being evacuated to a distant place. This showed that, in addition to her having a backup of her medical history, she was strongly interested in fully understanding her daily health condition and was capable of appropriate self-care.

(2) Ask for Family Physicians that can be by Your Side at Any Time!

You may be saying to yourself in frustration, "But there are no doctors like that near me." But if you do not ask for one, you will definitely never find one. If citizens across Japan raised their voices, the movement for training family physicians and an ideal community medical system will accelerate. I want you to insatiably demand for "my family physician" who can stand by community residents in good and bad times, and come to your aid in times of need.

In addition, if family physicians carry out appropriate guidance and management of health issues among community residents daily alongside community nurses, care managers, and government staff, community residents can actively self-care and prevent diseases in times of both disaster and normalcy.

To prevent the lessons learned from this disaster from going to waste, we citizens must each proactively participate in the creation of community-wide health management systems (community medical governance) that can uninterruptedly function no matter the situation and fully mobilize the medical resources available in the community. I would like your support in training family physicians who can play a guiding role in the creation of this community medicinal governance system.

Elementary school students participating in medical office training as part of the "comprehensive community care" program

We will encounter innumerable obstacles. But, today's Japan does not have the luxury of putting this off just because it is difficult. It is an issue of utmost urgency. I have many colleagues who share my passion for family medicine and are willing to provide mutual support and assistance. If this passion is transmitted to all of you, and all the citizens of Japan act upon it, we can definitely achieve the revitalization of the community healthcare system!

Source: goo Healthcare
Editing/Text: Houken Corp.

Ginkai No. 215 “Notes from the Disaster: One Month After the Earthquake off the Pacific Coast of Tohoku”

Mailing Lists Useful for Emergency Readiness

Gratitude to the Families who Supported Efforts During the Earthquake, Power Outage, and Water Supply Cut Off

Tetsuju Sekiryu
Associate Professor, Fukushima Medical University

Friday, March 11 was a surgery day. We had finished operating on a patient with proliferative diabetic retinopathy and were returning the patient to the ward. The earth rumbled as we were shaken by upthrusting quakes. We could not stand up, so the staff and I leaned on walls and columns. We turned toward the windows to try to find an evacuation route, but we could not walk with all the shaking. Ten seconds, thirty seconds, one minute…the quakes did not stop.

It must have lasted for five minutes. Once the tremors died down, I went to the outer hallway, which was hazy as if yellow dust had just blown in from China. All twelve operating room doors were wide open. I could see a charge nurse staggering to check inside each operating room through the haze. Looking into the Surgery Department’s operating room, I saw a blue tarp covering the patient for protection against the dust. I was greatly relieved to see that there was no damage inside the operating room.

Leaving the operating room, I saw patients who should have returned to the ward unable to move past the entrance. I climbed the dust-filled emergency stairwell, from the operating rooms on the third floor to the sixth floor. All the emergency exits and windows on the sixth floor ward were open, and a cold breeze blew through. Thankfully, there were no major injuries to the hospitalized patients. However, post-operative patients could not return to the ward because the elevators were broken, so they were moved to the School of Nursing rooms on the same floor. In multi-story hospitals, though it may be possible to descend from the emergency stairwell while transferring patients, it is difficult to climb the stairs with them.

The university buildings did not collapse, but there were several long cracks along the walls, and a portion of the connecting corridor was displaced. Going up and down the stairs, I tried to return to the doctor’s offices, but I could not get in because books, magazines, copy machines, computers, and clocks had fallen to the floor. Three large freezers that had been against the wall in the laboratory had moved to the center of the room. Objects with casters in the outpatient area and hospital wards moved around but did not fall down. On the other hand, bookcases and other objects secured with quakeproof stoppers had all broken down.

We were able to verify the safety of physicians within the university at once, but it took longer for those physicians dispatched to other hospitals. We were able to verify the safety of the entire doctor’s offices staff only three days after the earthquake.

The university held a meeting to address the disaster. Lector Minoru Furuta and others began to address the effects of the disaster on the hospital. We learned that although there was no problem with the provision of electricity, there was no running water. Large cities within the prefecture, such as Fukushima City, Koriyama, and Iwaki, had also lost water supply. The university had some water stored in water supply tanks, but the use of water for surgeries was limited. This made me realize that tertiary emergency medical facilities should have backup delivery systems for their main utilities.

The accident at the Tokyo Electric Power Company’s Fukushima Daiichi nuclear power plant also happened after the earthquake, so the entire hospital was in a state of emergency readiness. Commutes could not go as planned because roads were cut off and there was no gasoline, and landlines and cell phones were not working. Thus, we were faced with the need to take emergency measures. The doctor’s office’s mailing list was a great help during these times. It included the email addresses and cell phone numbers of all staff related to the office, and we were able to contact them. Professor Tomohiro Iida was in America at the time of the disaster because of his participation in the Macula Society; however, with the mailing list, we were able to contact him and seek his guidance. He returned to Japan immediately, connecting to a temporary Haneda–Fukushima flight to return to the university.

All areas of Fukushima were damaged from the disaster, but, of course, the most affected area was Hamadori, which suffered the effects of the tsunami. The Hamadori area is divided into the Soma area to the north, the Futaba area with the nuclear power plant, and the Iwaki area in the south. Since entry into the Futaba area was forbidden because of the nuclear power plant, we were not sure about the extent of damage there. I heard that in Iwaki, some doctors had reopened consultations in the midst of the effects of the disaster and water shortage. The Soma area was the first to report effects from the tsunami. However, roads and rail lines were cut off, and there was no gasoline, so we could not get information from there.

Two weeks after the earthquake, Professor Iida first visited the Soma area. It was greatly damaged by the disaster, and we learned that all doctors had evacuated, so there were no ophthalmologists in the area. We began aid work for the disaster areas and evacuation centers together with the Fukushima Ophthalmologists Association. The university became a distribution center for aid supplies, and I was a liaison with the Ophthalmologists Association. As expected, there was an imbalance between the supplies provided and the demands of the disaster areas and evacuation centers, so I worked hard to coordinate these.

Later, the aid work spread throughout the university and continues even today when things have gradually calmed down.

Fukushima has many famous places to view cherry blossoms, such as Mt. Hanami in Fukushima City and the Takizakura tree in Miharu. It is currently the best season of the year, when the sprouting cherry leaflets cover the hillsides in verdant green. At first glance, it seems like we have returned to calm, normal lives, but Fukushima’s nuclear accident has still not come to a conclusion, and we have no relief yet. The radiation piles on top of our heads like a headdress that we cannot shake off. That we have come so far is the result of huge efforts of the professors and the curriculum’s doctors, nurses, and staff, not to mention the help from the families that supported their efforts. Not a single family in Fukushima was able to avoid the effects of this great earthquake. I am deeply thankful to all the families who, in spite of damaged houses and belongings and without power or water, sent doctors to our offices—especially those with small children with concerns about the radiation.

The week after the earthquake, we received support from Senju Pharmaceutical Company and other major eye medicine manufacturers in Japan. We also received support from the Japan Ophthalmologists Association and many other related groups—from contact lenses and care products, eyeglasses and eyeglass cases, to drinking water. I would like to take this opportunity to thank all those related parties.

With everything damaged by this disaster, I realized deeply that normal medical operations are not just supported by physicians and medical staff but also by a variety of professionals in transport, water supply, electricity, logistics, manufacturing, and retail. I thank again all of those that support our work every day.

Fukushima will suffer from the aftermath of this disaster for a long time. I am thankful to those who warmly look over us as we work together toward restoration.

(Personal Notes from May 10)

Care during the Earthquake, Tsunami, and Nuclear Accident

Activity Records of the Fukushima Medical University Hospital

Yumiko Nakajima, Fumiko Meguro, Mihoko Yokoyama, Kayoko Watanabe, Miyo Saitou, Noriko Uezawa, Michiko Ootsuki, Rumi Hosaka, Yasuko Suganuma, and Megumi Satou
Fukushima Medical University Hospital

Care at the Hub Hospital during the Disaster

Yumiko Nakajima
Hospital Vice President and Director of Nursing

(1) The True Picture of Care during the Disaster

[Immediately after the Earthquake]

The seemingly endless earthquake came without a warning. My computer fell to the floor, and I had to use all of my strength to prevent my bookcase from falling. Amid the quakes, three assistant nursing directors ran upstairs to check on the rest of the hospital. Outpatients gathered at the entrance, and some were evacuated outdoors even though it snowed. After checking on the status of the patients in our hospital ward, we started verifying the whereabouts of those who were not present. Patients who were outside the ward because of referrals to other departments, rehabilitation, or other reasons gathered at the main entrance on their wheelchairs. In the emergency outpatient unit, we began to prepare for the disaster medical assistance team (DMAT), setting up a place to conduct triage and dividing tasks among ourselves. We expected large number of patients to be brought in, and hence, with the help of faculty from the School of Nursing, we carried 33 beds from their practice rooms to the hospital entrance. Throughout, we discussed among ourselves challenges such as requirement of supplies, placement of beds so that we would have sufficient room to move, and preventive measures for cold. As the elevators were not working, we moved the patients who were brought to the critical care center and those who could not get back to the ward using stretchers, with tremendous help from students of the School of Medicine.

After the earthquake, we had information about buildings collapsing, but none about the transfer of patients. After 9 pm, four patients with artificial respirators were transferred to our intensive care unit since the hospitals in the city were destroyed. After this, we visited all the wards through the night looking for emergency patients we thought would eventually come to us, but there were hardly any patients with trauma or other issues transferred to us at night. This was the first phase.

[Transferring Patients from the Nuclear Evacuation Zone]

With the hydrogen explosion at the Fukushima Daiichi nuclear power plant the next day, transfer of patients began from medical facilities within 20 kilometers of the nuclear power plant. This was the second phase. We changed our system at the hospital from one that can admit trauma patients to another that could admit patients from the nuclear evacuation zone.

At our university's emergency response department, we received requests to take in patients sometimes from the prefecture's emergency response headquarters, and sometimes directly from other hospitals. We worked in a state of confusion with information coming from different channels. Day and night, without a solid grasp on the numbers coming in, and with unclear procedures, we spent significant time and effort trying to take in patients from one facility. Our nurses worked with the school faculty to prepare for the influx of patients, moving 74 mattresses, which the hospital was not using and had been removed from the beds, to the school's practice rooms.

Some patients were brought in by Self-Defense Forces helicopters or transporters, while others traveled in the dark by a tourist bus at 3 am in the morning. After conducting triage, we directed those needing care to the hospital, while those who did not were temporarily moved to the School of Nursing and taken by bus to another place the next day. I talked to the faculty involved who mentioned how difficult and time-consuming it was to transport by bus people who should have been transported by an ambulance. They also expressed how sorry they felt for the patients. We even transported patients who had initially been admitted to the hospital, once their destination was decided. At first, it was decided that they would be transported by a tourist bus, but later, we shuttled them using ambulances that other prefectures had sent as aid. There was shortage of water in our hospital, and so we could not take in dialysis patients; thus, we gathered them into a bus at 4 am on a snowy morning and relocated them to a hospital in Tokyo. It was a scene that hit close to home. From March 14 to 26, we handled a total of 173 patients.

[Caring for Patients Exposed to the Nuclear Accident]

After this came the third phase, in which we created a system to care for patients exposed to radiation. We measured the radiation levels of those coming into the hospital with dosimeters set up at exits and entrances. Our hospital is now equipped with emergency medical care for patients exposed to radiation.

(2) Securing the Nursing Department Staff

As the situation rapidly changed with the passage of time, our nursing objectives and systems also had to change within a short time. We were able to continue providing care with wards closed at the instruction of the nursing department while smoothly changing our work content; however, this placed significant stress on nurses who had to perform tasks that they were not used to. We addressed this situation by having them discuss with the nursing department or the liaison nurses.

Our hospital did not lose power but we had no water supply; hence, we worked with water that was stockpiled in tanks. It became necessary for the nursing department to provide security for staff who were able to work. Most of our staff commute by car, but given the insufficient gasoline supply, we authorized the use of taxis. Some areas continued without power, and schools and nursing schools were closed because of water shortage. Thus, there were employees who could not leave their children at home amidst the aftershocks. Consulting with the administrative department, we were able to set up a childcare center at the university despite the short notice. We used a conference room and staffed it with the School of Nursing faculty, nurses, administrative staff, and student volunteers, but later, the hospital's special needs school was able to staff it for us. Every day, six to eight employees availed of the childcare, and were very happy to do so. Infants were looked after in the hospital's daycare center.

We also addressed employees' nutrition requirements. The evening immediately after the earthquake, we made rice balls in the School of Nursing and distributed them to hospital employees early on. By the 12th, a substantial amount of rice balls was brought from the school and distributed to everybody in the hospital. In a state where employees could not go shopping and there were not even products to buy, we were able to give them some peace of mind as they could at least avail of food at the hospital. We continued to make rice balls at the Nursing School until the hospital cafeteria was able to supply them.

Immediately after the earthquake, physicians from the mind–body medicine department were available to address the staff's mental health. We also opened the hospital nap room and the dormitories for providing place to sleep for the employees who could not go home or were too scared to be alone.

As the state of the nuclear power plant started to change, professors from Nagasaki University conducted three short-term courses about radiation for us, and many employees attended all the classes. I believe it was because of the acquisition of correct knowledge that the staff was able to continue working with a certain level of confidence and composure.

(3) Holding a Plenary Emergency Response Meeting with Representatives from All Departments

At 9 pm and midnight of the day of the earthquake, representatives from all departments gathered for a plenary emergency response meeting. Thereafter, it was held twice everyday at 9 am and 3 pm. The meeting was attended by hospital staff and medical school faculty, and we were able to create a sense of coherence among the staff. Each time we would have substantial discussions, gaining opinions from every side about topics such as the current state of affairs, return of essential utilities, information about the nuclear power plant, next steps, issues to be addressed, and areas of concern. Given the dynamic situation, we contributed to the best of our capacity from our respective positions. By filling the meetings with jokes, we prevented the meetings from tending toward negativities or a sense of foreboding. Although this may seem insensitive, the jokes/meetings

were enjoyed by the emergency response team and there was laughter/light moments around, thanks to the efforts of the hospital director, assistant director, and the doctors of the mind-body medicine department. We shared emotions over various moving events and miserable situations and sometimes burst into outrage. It was a place to express our emotions. After every plenary meeting, the nursing department met to discuss the nursing system and adjustments to staffing and to collect our opinions and complaints.

I hope to never be in such a situation again. However, from the viewpoint of the nursing department, sharing this time together with the building maintenance staff and medical school professors and physicians, who we do not normally see often, and tackling this disaster with them, was an opportunity to learn the important aspects required to conduct medical care as a progressive team.

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Finally, we are extremely grateful for the support of nurses from the Kyushu and Kanto Blocks of the National Hospital Organization and the Iwaki Hospital, which was also affected in the disaster.

Struggles of an Outpatient Nursing Director
—Records from the Two Weeks after the Earthquake and Nuclear Accident

Fumiko Meguro

Assistant Director, Nursing Department
(Previously, Director of Outpatient Nursing)

(1) Outpatient Care after the Earthquake

At 2:46 pm on March 11, just as the outpatient consultation peak had passed and we were starting to see fewer patients, the lengthy, forceful earthquake struck. Darting out from the Outpatient Director's Office on the first floor, I saw that all the emergency exits in the corridor were shut. Opening the small doors of the emergency exits, doctors and nurses started to work together to evacuate the outpatients. Patients who were in the middle of their treatment procedures were accompanied by their physicians and nurses. Thereafter, all outpatient staff (medical office staff, clinical laboratory technicians, radiation technologists, and many other types of employees) led patients who could walk and those in wheelchairs to the main entrance, keeping their safety in mind. It was cold and snowing outside, but considering the danger from the frequent aftershocks, we waited it out and distributed blankets to the patients. After receiving a report from facilities management that there was no danger of the building collapsing, we moved inside the main entrance. Once the aftershocks had subsided to a small extent, we sent some outpatients home, deferring their payments, since our electronic patient record system was out of service. We also gathered all the outpatients who were being treated/attended to at one location and by verifying their names and wards mentioned on their wristbands, we contacted each ward to check on their safety. Since the elevator was not working, with the support of staff from the medical professionals division and students in training, we carried patients who could not walk on stretchers and sheets to the proper ward.

Thereafter, we started preparing to take in patients injured from the disaster. Our hospital's outpatient care is made up of 29 departments, but the nursing department is separate from these wards and comprises a staff of 79 people, including assistant nurses. As the telephones were not working, we were unable to verify the safety of all of our outpatient nurses, but we continued our preparations together with the staff that volunteered to help. We transferred patients with a red tag after triage to the outpatient critical care center. Next, we set up relatively spacious orthopedic surgery and internal medicine areas on the first floor of outpatient care to accept green- and yellow-tagged patients, respectively. The green tag area was mostly for wound treatment and yellow tag area was set up such that a whole stretcher could enter into the waiting room. We brought oxygen, intravenous drips, aspiration devices, and emergency carts from the other outpatient areas. We also arranged the neighboring outpatient areas as storage areas as a backup in case of lack of supplies.

The three outpatient nurses each worked in shifts to admit the green- and yellow-tagged patients during the night. As directed by the nursing department, all staff were on duty until 9 pm, and thereafter, the outpatient area sent temporary workers and employees with small children home. The rest of the staff was divided into a group that worked until 12:30 am, and a group that started their shift at 12:30 am, giving them time to get much required sleep. We prepared for an anticipated rush of trauma patients into the hospital, but contrary to our expectations few patients came, and it was a quiet night with a regular number of night-time patients.

(2) Care the Day After and Thereafter

On March 12 at midnight, 9 am, and 9 pm, all department heads gathered for a plenary meeting. We discussed how to exchange information, contact methods, and the next steps. We then decided on measures to be taken by the nursing department. Outpatient care took the same form as the previous day; outpatient consultations with appointments beyond normal hours took place in the outpatient orthopedic surgery area (green-tagged patient area). The day after the earthquake, also a weekend, there was no major confusion in the outpatient area.

With the water shortage, we had to limit the amount of water we used, and thus, also regulated the number of outpatients and visitors. We made the main entrance the only entrance into the building, and the exit was a different location. By doing so, patients could move in one direction, and we could measure their radiation levels. Outpatient nurses also worked on decontamination of those exposed to radiation, and oversaw the temporary childcare center that the employees could avail. Each person in charge had a personal handy phone system by which they could be contacted.

On March 13, the following Monday, we started to adjust staffing in coordination with the outpatient system. We decided to have day-shift nurses (including assistant nurses) in charge of support work, preparing for outpatients and organizing and conducting emergency care. We also placed two nurses in charge of radiation screening and two in charge of decontamination. Outpatient care changes with the demands of a particular day. Thus, I adopted the role of a head nurse and responded to needs with adjustments in staffing.

On March 14, we conducted entryway triage, with nurses and administrative staff standing at the entrance of the hospital grounds stopping cars as they came in. The staff explained to them that we were limiting outpatient consultations and visitors and decided whether an examination was necessary. The nurse in charge of triage decided whether the patient had an emergency situation, and if so, they were given an outpatient examination. Moreover, we explained to non-emergency patients with appointments that if they brought their medical records or a doctor's prescription from their last visit to the hospital pharmacy, they would receive medication as part of the disaster relief program. The radiation technologists also measured the radiation of patients from the nuclear evacuation zone, but none of them needed decontamination. We also had many telephonic inquiries about insulin and stoma care products, with one nurse responding to each query.

On March 15, the entryway triage became crowded, requiring us to increase the number of nurses. We also had an increase in the number of patients who were temporarily evacuating the disaster area; thus, outpatient nurses could enter the hospital wards to help with meals and to change the position of bedridden patients. The nurses, it seemed, were becoming irked with the lack of clear patient data and complaints and accusations about the acts of other staff members. It was believed that the lack of water or electricity at home and the difficulty in securing food may have also been factors. At these times, I said to them, "Our outpatient care system is changing and we don't know what type of patients will come in next. It was wonderful that amid such situations, outpatient nurses worked quite well on a night shift after a long interval." or "Everybody in the hospital is giving their best with the work that they can do, so let's recognize this in each other and overcome the situation!"

On March 16, given the dwindling gas supply, the staff requested to change the outpatient care system from three to two shifts. Because the entryway triage was as busy as always, we increased the number of nurses in charge from two to four. By March 18, one week after the earthquake, night-time outpatients had reduced in number; thus, we combined the surgery and internal medicine into one examination area. We also scaled down the number of students and medical professional staff who we had for support. From the 19th, we began preparations to reopen the outpatient area, and on the 22nd, 12 days after the earthquake, outpatient internal medicine areas returned to their normal state. We continued to limit outpatient surgeries, and asked the staff who had relentlessly worked until then to go on vacation. On the 24th, outpatient surgery returned to its normal state, we did away with limits on visitation and stopped entryway triage.

(3) Looking Back on Our Work

This is an outpatient nursing director's record of the two weeks after the earthquake.

I learned that in times of emergency, head nurses often must make independent decisions. It is important to make case-by-case determinations without the aid of a manual. I deeply realized how important it is to educate head nurses on how to improve their day-to-day decision-making skills.

A wide array of skills was demanded of outpatient nurses with this disaster, and our nursing system underwent changes. I learned that as long as there is a head nurse who can give clear directions, most nurses will promptly follow-up. I believe the experience of our nursing staff was also a factor, and that the quality of outpatient nursing will only increase if the head nurse believes in the nurses' strengths and supports them to act based on their thoughts.

Outpatient staff often work within the confines of their own booths and do not interact much with other outpatient staff. But this time, many outpatient nurses worked together regardless of their division throughout the night and commuted together by taxi or carpools. This led to communication among staff, which was a good opportunity for improving outpatient nursing.

What I aimed for as the outpatient nursing director was the collection and transmission of information, but that information became snarled, leading to confusion. I think that it is necessary to create a single chain of command for communication during times of disaster to avoid confusion. As the head nurse, I sought to eliminate the psychological worries of the staff who had met with the disaster, organize them, and confidently explain decisions about changes in the outpatient care system and the acceptance of transfer patients. However, I regret that I devoted all my energy to the re-grouping of nurses in response to changes in the outpatient care system and did not focus on the care and well-being of the staff as I should have. It was necessary to consider their mental state at an early stage, and if I could not do so, I should have delegated this responsibility to someone who was more capable at the time.

Care in the Operating Room during the Disaster

Mihoko Yokoyama
Department of Surgery

(1) The Operating Room Immediately after the Earthquake

When the earthquake struck at 2:46 pm on March 11, I was working in the surgery department's supply room, where we store surgical and sterilization equipment. At the time, surgeries were being conducted on six patients under general anesthesia and two under local anesthesia; one postoperative patient under local anesthesia was moved within the operating room. With the initial earthquakes, the two high-pressure steam sterilizers in the operating room stopped working. Immediately thereafter, instructions to move the operating lights away from the operative field were broadcast. Being the nurse in charge of the supply room, I went to all the operating rooms, ensuring that the corridors were clear for evacuation and that patients and medical staff were safe. All operating rooms had their operations stopped. Several staff were accompanying patients and holding back medical electronic equipment and intravenous drips to stop them from falling on the patients. I had a patient, who was being moved from one operating room to another, to wait in the nearest empty operating room.

As a result of the earthquake, the elevators and heating equipment in the hospital stopped working. Because of the intermittently continuing aftershocks, a few storage shelves used for the operating room equipment fell over. At this time, I was still unaware of the magnitude of the earthquake. I visited operating rooms with patients under general anesthesia and distributed drugs, pain relievers, and bag valve masks.

At 3:30 pm, with the continued, forceful aftershocks and learning of the earthquake magnitude, the assistant director of the nursing department and the head anesthesiologist decided to cancel the 11 unadministered but scheduled surgeries. Each operating room was instructed to stop performing surgery, and postoperative patients under general anesthesia were transported to the intensive care unit on the same floor.

After verifying the safety of the hospital buildings, using stretchers, we transported patients undergoing tests and dialysis on the first and second floors to the appropriate hospital ward through the emergency stairwell. Because of this, patients under local anesthesia could not return to their hospital rooms in the wards after surgery; thus, until the elevator was back in operation, we had them temporarily wait in the rooms belonging to the School of Nursing on the same floor, about 400 meters away. The attending doctor and the surgery department's night nurse transported the patients there, where they were taken care of by the attending doctor, surgery department nurse, and the School of Nursing faculty.

The last remaining patient in the operating room had safely left the room about two hours after the earthquake. Even at that time, the strong aftershocks were intermittently continuing, so we left the doors of all the operating rooms open.

We also went to the rooms that the patients had left, and cleaned and checked them for damage to the equipment. The sprinklers in the supply room were knocked out, the area around them was covered with building material dust, and the air conditioning equipment was out of place. In the operating rooms, we found operative field cameras dangling from their bases, and a room whose central ceiling pipes had become dislodged. We detached the camera to prevent it from falling and cordoned off the room with the broken pipes, forbidding its use until it was serviced.

We did not receive any details of how much damage

was cause by the earthquake, but we nevertheless prepared ourselves to promptly perform emergency surgery. Thus, in nine rooms, we placed equipment for general anesthesia, open chest surgery, abdominal surgery, craniotomy, transforation, osteosynthesis, and for other procedures we expected might be needed. We also placed emergency carts, antiseptics, rinse water, medication, gauzes, and syringes in the middle of the supply room.

A large part of the city lost water supply in the earthquake, as did the hospital. We were unable to wash equipment or other machines after they had been used. Because we could no longer use high-pressure steam sterilization or ethylene oxide gas, we could only sterilize using Sterrad machines. The Sterrad machines of the surgery department had small capacity. Hence, we moved the higher capacity ones of the supplies department to the surgery department so that we could use them on a regular basis. For the time being, we had to wipe down the machines after use with more protein-dissolving cleaners than usual and covered them with plastic bags to prevent them drying out.

The hospital set up an emergency response team, and because the extent of the damage was unclear, all staff were instructed to stay, except for contract employees and those who were pregnant or had small children. We also quickly rearranged staffing to increase staff at night and during the weekend. Although we stayed on duty in the hospital until 10 pm the day of the earthquake, there were no patients transferred to us for surgery.

(2) The Operating Room Thereafter

The following week, all surgeries in the hospital were cancelled; however, as certain hospitals in the city were unable to perform surgery due to the lack of water, we performed a few emergency caesarian sections and osteosyntheses on a daily basis. Some of our operating room staff helped at other wards to take in patients transferred from hospitals and facilities in the disaster area.

On the 18th, one week after the earthquake, water supply finally resumed. We could re-operate on patients who had been in surgery at the time of the earthquake and perform a few other scheduled surgeries. But the provision of supplies had still not completely returned to normal. Hence, we were not in a situation to perform as many surgeries as we could prior to the earthquake. Thus, a few surgery department nurses visited various disaster areas to perform examinations.

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Because there was no direct damage to the hospital buildings from the earthquake, we applied all that we learned from evacuation drills held by the surgery department at the end of the previous year; the staff were able to calmly address the situation. At the time of the evacuation drills, we noted an insufficient supply of back valve masks and flashlights appropriate for the number of operating rooms. So we had purchased and restocked these and were able to tackle the disaster without a lack of supplies. But from the supply management viewpoint, we had not thought about where to store the stretchers, which is a regrettable. Thus, when the hospital asked to borrow them, no staff member knew of the stretchers' whereabouts. Moreover, because we had kept them in the back of the instrument room, it took a long time to get them out. Although the physicians' and operating room staff's efforts to ensure everyone's safety are commendable, the need for each division to quickly create a staff manual, keep staff informed, and rethink on supply management remains.

Engaging with Affected Infants and Families in the Pediatric Ward

Kayoko Watanabe
West Ward, 4th Floor

(1) Rushing to the Hospital after the Earthquake

I was at home the day of the earthquake. With the sudden, vigorous quakes, I went outside oblivious to what was going on, only to find my neighbors standing motionless together and looking worried, each pair of eyes fixed on their shaking homes and cars. Looking at the people around me and everything that shook, I realized that this was a massive earthquake. I was very anxious at seeing a reality I had never experienced before.

Our hospital's emergency medicine response manual

tells us to voluntarily gather at the hospital when an earthquake with an intensity of nearly five or more on the Japanese scale occurs. The intensity of the earthquake in Fukushima was just under six. After the strongest tremor had died down, I immediately went to the hospital. The aftershocks continued as I made my way there and I could feel the tremors as I drove. I hurried to the hospital, seeing outlandish sights I had never seen before—a landslide beneath part of the national road causing a large truck to be swept down a cliff and a house on top of the slope precariously hanging over the side of the road. The national road I usually use to commute was impassable owing to a landslide, and the passable roads were jammed with cars. It took me more than an hour to drive what usually takes only about ten minutes. But I finally made it to the hospital.

I work in the pediatric ward. Arriving there I saw children and their families standing worriedly in the hallways and nurses running through the hospital rooms at every aftershock. It was clearly an abnormal situation.

(2) The Pediatric Ward after the Earthquake

None of the hospital buildings collapsed, but the day of the earthquake marked a significant change in the hospital's environment. To conserve energy, only some lighting was used; hence, the entire ward was dimly lit. To conserve water, water from the sink was diverted from the drain and reused in the toilets. Furthermore, to prepare for a lack of supplies, we reused everything we could, instead of discarding them. Because of the lack of water, we could not provide satisfactory cleansing care to infants, who normally would have a tub bath or bed bath every day. In these circumstances, we thought about methods of care so that each staff member could do their utmost for the patients.

In the pediatric ward, mothers often accompany their hospitalized children and live in the hospital with them. Many of them, in addition to the strain of having a child in the hospital, could not contact other family members and check on their safety or the state of their homes. I believe that apart from changing the lives of these accompanying family members, the earthquake also placed a great psychological burden upon them.

The children's responses to the earthquake were varied. Some children clung onto their mothers at every aftershock afraid that they would go away, whereas others played and laughed as if nothing had happened. Even children of the same age had different reactions. Middle-school students would cry uncontrollably at night, some children became very quiet and never smiled, and others showed changes in physical condition such as getting stomach aches. I expected children who experience this type of crisis to express the trepidation they hold inside them through physical changes, emotions such as anger, or crying. But I did not know what to make of the unexpected reactions of the children that seemed fine, but would still cry uncontrollably at night. The earthquake that even brought fear to adults must have caused great anxiety in these children, and the change in the hospital environment after the earthquake must have, at the very least, left a deep impression on their minds.

(3) Looking Back at the Disaster

This earthquake made me realize the great strength we can call up through manpower. Everybody thought that the national road would be impassable for quite some time because of the landslide; however, thanks to those who worked day and night, it was functional in just a few days. Supermarket managers, who were themselves affected by the disaster, still opened their stores during the continuing aftershocks to provide us with food and supplies. The situation was such that, without the sense of cooperation in each and every resident, we would never be able to overcome the disaster.

Even in the hospital, each staff member thought about what to do for his or her patients during these difficult circumstances. Seeing the reality outside our experiences, we might have stood motionless in a daze for the first few moments. But thereafter, we tirelessly did whatever we could, giving our all to overcome this situation, and thanks to that, I believe we have our old lives back today.

We realize how easy our life was only when we can no longer lead that ordinary life. After the earthquake, many people did not merely stand by in shock, faced with the new reality of this unprecedented disaster, but instead worked hard to resume their normal lives. In all honesty, I cannot think of what role I played in this. When I saw the different reactions of those children after the earthquake, I was not sure of the type of care I was expected to give those children so that they could overcome their fears and worries. In fact, I am unsure of the care I did give. But I believe that because I also experienced this disaster, there are some contributions that only I could have made. I hope to ponder over these experiences, think about further requirements in the nursing profession, and apply all that I have learned and experienced to my nursing career.

Taking in Psychiatric Hospital Patients from the Nuclear Evacuation Zone

Miyo Saito
Head Nurse, Mind–Body Medicine Ward

(1) Delays in the Intake of Transported Patients

On March 12, the day after the earthquake, a hydrogen explosion was triggered at the Fukushima Daiichi nuclear power plant, causing dissemination of evacuation orders for those within a 20 kilometer radius of the plant. Our hospital was requested to admit patients from a psychiatric hospital within the evacuation zone. We decided to admit patients with severe illnesses to our mind–body medicine ward. Although the ward has 34 operational beds, 28 patients had already been hospitalized on March 11, the day of the Great East Japan Earthquake and tsunami.

We were also faced with the challenge of muddled and inaccurate information in the disaster-stricken areas. The patients were scheduled to arrive at our hospital by bus at around 7 pm on March 15, four days after their admission was decided; however, they arrived at around 8 pm because the bus travelled via Iwaki City after leaving the hospital of origin.

Our ward took in 21 patients, many of whom were elderly, from the psychiatric hospital damaged by the disaster. We received word from their hospital that their overall conditions had worsened, but had no further patient data including three patients' names, ages, addresses, and the names of their conditions. We looked for the patients' names by checking their respective forms and the bags of oral medicine they were carrying; however, this was not possible for patients who did not carry such bags. To further complicate matters, since these patients were unable to properly communicate or did not respond to their names, swiftly determining their conditions became difficult. Thus, it took a total of two and a half hours to complete the intake process.

(2) Care after Intake

The intake process of patients from the disaster-affected areas was conducted with the help of five day-shift nurses, four night-shift nurses, four support nurses from other departments, one occupational therapist, and fourteen physicians. We decided to have two nurses in charge of intake, eight in charge of the hospital rooms (with one nurse from our ward and one support nurse per room), and physicians in each room so that they stayed in the same groups. The occupational therapist made rounds. The nurses first monitored the patients' vital signs and overall condition. The prolonged exposure to the cold and insufficient food intake had marked effects on the patients, such as body temperatures of 34° to 35°C and blood pressure so low that it could not be measured. Almost all patients had limb contracture and could not move voluntarily. Most patients also had bedsores on their buttocks and epidermal stripping. Patients in critical conditions were moved to two separate rooms, each of which could accommodate only two patients at a time. For patients in need of aspiration, we placed a portable aspiration device into a room with multiple beds. We attempted to rewarm patients with hypothermia using hot water bottles borrowed from other wards because bedding had not yet arrived at the hospital due to the disaster. At around 2:30 am, a patient, transferred due to an injured lower jaw, began to have respiratory problems. This caused the patient's condition to abruptly deteriorate and pass away. We had no personal or medical information of this patient. Once the cadaver was taken to the morgue at around 5 am, a doctor performed an autopsy on the body. Excluding the patients from the psychiatric hospital, a few patients were mentally disturbed because of the disaster, thus, the ward was never at rest.

The next day, six to seven of our ward's day-shift nurses, six to ten support nurses, and two School of Nursing faculty members were on duty. The ward nurses monitored the patients' conditions, followed physicians' instructions, and cared for patients. The support nurses gave bed baths to patients from disaster-stricken areas, attended to their bedsores, and managed their nutrition. The faculty from the School of Nursing cared for hospitalized patients with unstable mental conditions. Given the insufficiency in information and difficulties in communication, caring for the patients became extremely difficult. Moreover, our instructions often changed in response to patients' changing conditions, and the state of some patients who were already hospitalized worsened in reaction to the influx of new patients from the disaster areas. Many patients from the disaster-affected areas needed changes in body position or sputum aspiration every two hours. In addition, changing their clothes for bedsore treatment or bed baths was extremely time-consuming because of their severely contracted limbs. We requested the School of Nursing faculty to help in the smooth functioning of work, interviewing and caring for patients, as well as providing treatment for hospitalized patients with serious illnesses. We also had the support nurses designate a leader who helped them manage their workload.

On March 18, four days after the intake of the

patients, we learned that many patients had physical disorders that were more serious than their psychological ones. We explored the possibility of transferring them to the general ward. Finally, at 2 pm, we moved them to the 9th floor of the east ward. Thereafter, it was decided that they would be taken to Aizu City. Thus, on March 26 and 27, we bussed them there. By this time, we had received numerous phone calls and faxes from family members identifying the patients from the disaster-stricken areas and were able to verify their identities.

(3) Looking Back on the Intake of the Patients from Disaster-stricken Areas

During our experience, we faced various issues with the intake of the patients from the disaster-stricken areas. After speaking with the ward staff, I would like to share a few important points.

First, either the information we received beforehand was markedly different from the patients' actual conditions, or we did not receive patient information at all. This made us extremely anxious because, as nurses, we are accustomed to working with a sufficient amount of data. To effectively cope with such a situation, we first need a system that can quickly send the requisite, minimal patient information to evacuation hospitals.

Second, it is essential to designate a leader when there are many support nurses. In a general scenario, it is acceptable for a ward nurse to take up the role of a leader. We tried to alleviate our situation—a shortage of ward nurses and a confused work environment—by appointing a leader from among the support nurses. The leader was fully capable of delegating work to the support nurses, even though this leader was a nurse from a different ward.

Third, it is necessary to have a person experienced in mental health nursing to care for patients with serious psychiatric disorders, particularly in such pressing times. Nevertheless, by having the School of Nursing faculty treat severely manic-depressive patients, we were able to provide appropriate care and help stabilize the patients' mental conditions. Thus, dividing the work on the basis of nursing experience can create an effective support system.

Finally, staff from the hospital of origin did not accompany their patients while they were transported to our hospital. Given the state of the nuclear power plant, it may have been unreasonable to expect this of them. But we medical professionals are responsible for our patients. We must constantly think of measures to ensure the safety of our patients and ward staff and ask what we would do if they were in the same situation.

Role of Nurses during the Fukushima Nuclear Accident: Emergency Treatment for Radiation Decontamination

Noriko Uezawa
Certified Nurse, Cancer Radiation Therapy
Michiko Ootsuki
Director, Outpatient Nursing

(1) Implementation of the Program for Emergency Treatment of Radiation Contamination

On March 12, while the emergency medical system was responding to the earthquake, hydrogen explosions were reported at the Fukushima Daiichi nuclear power plant. This caused an immediate increase in air radiation levels in the Hamadori and Nakadori areas of Fukushima. In the main hospital entrance, physicians, radiation technologists, and nurses with survey meters were frantically asking each other, "How many thousands of cpm are you getting?" Night-shift nurses in the emergency outpatient ward breathlessly gazed at the television ticker that displayed the μSv/h readings.

The Fukushima Medical University Hospital is a treatment facility for secondary radiation exposure. We began our program for emergency treatment of radiation exposure according to the prefectural manual. The hospital houses a well-kept decontamination system that is used for annual emergency radiation decontamination drills. Though the emergency radiation treatment manual was written in 2002, the system was never used except for these drills. Therefore, we nurses believed a nuclear disaster would be an impossible, fanciful occurrence. The radiation decontamination treatment ward was an "empty box"; most of the equipment, emergency medical supplies, and medical instruments were loaned to other wards and departments.

Meanwhile, it was officially decided that our hospital would receive support for emergency treatment of radiation exposure from a specialized medical team comprising the Radiation Emergency Medical Assistance Team (REMAT), Nagasaki University, Hiroshima University, and others. Our Emergency Radiation Decontamination Treatment Group collaborated with this team. The nurses from the critical care center and outpatient radiology division scrambled necessary materials together to conduct first response decontamination and general status observation and

Photo 1: Radiation decontamination treatment simulation

treatment. They provided nursing care while keeping our patients out of danger.

(2) Management of Nurses as a Full-Time Member of the Emergency Radiation Decontamination Treatment Group

About a month after the earthquake, the Fukushima Daiichi nuclear power plant had emerged from the worst of its predicaments. However, even today, patients with radiation contamination appear at the hospital. This seems to be a long-term problem; thus, we must start creating systems that can function despite a change of personnel within the systems. Under these considerations, given my experience with emergency radiation decontamination drills, on April 18, I was assigned to manage nurses as a full-time member of the Emergency Radiation Decontamination Treatment Group. Three students pursuing their masters in radiology nursing from Nagasaki University joined us as support nurses. We were able to create an environment for emergency radiation decontamination treatment. We gradually laid the groundwork by exploring a treatment room setup while referencing the Nuclear Safety Council's pocket manual. We worked with physicians to prepare examination materials necessary for radiation decontamination treatment based on our hospital's systems.

Emergency radiation decontamination treatment requires constant preparation for the worst-case scenario and cannot be done by a few people. Moreover, cooperation from the nurses throughout the hospital is indispensible. Because it is also necessary to have sufficient hands-on staff for casualties during the night and on weekends, we decided to have rotational shifts for nurses. Initially, certain nurses had little experience in radiation-related work. However, this work requires a high level of skill to ensure that critical care is given with proper radiation protection so that the entire hospital is not contaminated. Thus, we placed the head nurse and a mid-level nurse on their shifts. Despite this, many concerns such as "Can I even provide critical care while thinking about radiation exposure?" and "Is one person sufficient for both treatment and decontamination?" were voiced. There was much worry and lack of knowledge about this invisible radiation. Our problems continued to pile up. We were concerned about how the staff would come to have faith in the emergency radiation decontamination treatment. Since the nurses on shift were veterans of everyday nursing procedures, we expected them to provide care without getting flustered, growing accustomed to the flow of decontamination treatment each time they repeated the procedure.

Then, in mid-May, we decided to conduct weekly treatment simulations with people from many different professional backgrounds (Photo 1). We recorded the simulations using a video camera so that we could review and discuss them the following week. The simulations were extremely beneficial in getting people from different professions work together on a treatment. Other benefits included the smooth flow of procedural knowledge, such as "a set of gloves should be used on only one patient," and the identification of areas for improvement using the video review.

(3) How to Treat Unprecedented Long-Term, Low-Dose Radiation Contamination

Today, three months after the earthquake, the Fukushima Nuclear accident has gradually taken shape as a problem of low-dose, long-term radiation exposure—a type of nuclear disaster the world has never seen before. Attention has shifted toward residents' and aid workers' concerns about the effects of radiation. From a nursing perspective, sharing accurate information and lending an empathetic ear helped those struggling with this mental and physical anguish. The least that is expected of us is to listen to and care for each afflicted person. We are expected to understand their emotions, such as the anxiety of a parent whose child is in the

affected area, the pains of living without one's family, or the sentiments of those who are required to continue with relief efforts despite being affected by the disaster themselves.

This nuclear disaster is the first of its kind in not only Japan but also the world. We carry the responsibility of ensuring that the radiation decontamination treatment guidelines formulated at FMU become the universal guidelines. We must now create a system that reaffirms the role that nurses play in serving as bridges between medical care teams.

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Finally, I would like to express my gratitude to all the specialists from afar who provided their support; for example, the long-term support of the nurses of Nagasaki University. Each day we work toward a speedy medical recovery of all those affected by the disaster.

Reflecting on the Experiences during the Great Earthquake

Rumi Hosaka
Oncology Nurse

(1) The Day of the Earthquake

Ever since my experience with the Great Hanshin-Awaji Earthquake of January 17, 1995, every year when that day came around, I would feel uneasy. This year, on the same date, I was in the break room at my workplace, watching a news report about the Great Hanshin-Awaji Earthquake and exchanging experiences about the same with my boss. My boss and I had grown close while providing medical care as members of the Fukushima Emergency Rescue Group dispatched to Kobe's Nagata Ward immediately after the earthquake.

At 2:46 pm on March 11, 2011, another earthquake struck. I was sleeping after returning from a night shift when my house suddenly began to violently tremble. I was alone at the time and attempted to confirm whether it indeed was an earthquake, but the quakes only grew more forceful and showed no signs of dying down. My furniture instantly toppled over, leaving me no place to walk. Once outside, I saw screaming mothers sitting on the roads with infants in their arms. The terrifying quakes struck one after the other. Then, all of sudden, it started to snow. I went back into my house and turned on the TV, hoping to gather some information, but all I saw was a stream of unbelievable images that gave me the shivers. They showed National Route 4, a main road commonly used by commuters, blocked by a landslide, and images of a tsunami swallowing entire communities. Worried that the hospital would be in utter chaos, I repeatedly attempted to contact them over phone and email, but all communication networks had crashed.

The neighboring roads were jammed and people stood on the roadsides in the cold. It was impossible to use my private car that day, and considering how hard it would be to get to the hospital given the conditions of the roads, I decided to stay and help my community. Moreover, there were many elderly people in my locality who needed to be tended to. So together with my neighbors, I checked on the safety of local people, directed them to the evacuation center or places they needed to go if they were injured or sick, accumulated food, and cleaned up indoor areas to improve living conditions.

(2) The Hospital after the Disaster

Immediately after the earthquake, the hospital primarily focused on emergency procedures and implemented tertiary medical care systems. It suspended normal outpatient consultation and canceled all scheduled surgeries. Disaster Medical Assistance Teams (DMATs) arrived from all over the country. Seeing DMATs in our hallways made me realize the state of emergency we were in, and I knew we were far from our routine protocols; all these thoughts ran chills down my spine. We decided to hold a plenary meeting with the faculty and employees to analyze information from all departments, which would then be transmitted to each division. This would help in giving nurses the necessary information about the state and direction of the hospital as well as peace of mind and a sense of solidarity with the other employees.

As for our hospital lifelines, we still had electricity, but disruptions in the water supply forced us to be cautious about the use of water. In addition, because the supply of goods into the Tohoku region had ceased, nurses had to use every trick in the book to conserve resources while continuing to provide patient care. Nevertheless, we were able to handle the situation rather well, with everybody pitching in with ideas. We were able to secure a few days' worth of food for the patients, but there was not one piece of candy in the stores. Moreover, it was hard for the hospital staff to find enough food and drink for themselves. In this regard, we are truly grateful to the School of Nursing, who amid all of this, started to cook for the employees. I was later told that they made rice balls until their hands became numb and red.

The lack of gasoline supply posed an obstacle for employees wanting to commute. Nonetheless, all of the staff banded together to overcome the situation. Many employees either carpooled, keeping an eye on the fuel gauges of their personal cars, or spent the nights at the hospital to conserve resources. Ten days after the earthquake, I was finally able to refuel my car after waiting for five hours at the gas station.

Because the hospital's communications systems had broken down immediately after the earthquake, patients were unable to check on the safety of their families and homes. Their concerns and anxiety grew along with their fear of aftershocks and they suffered significant psychological burden. Patients whose treatments had been temporarily suspended expressed their frustration to the nurses, who could do nothing but lend an ear. But we must not forget that these nurses were also among the many who suffered significant losses in the disaster.

(3) Effects of the Fukushima Nuclear Accident

Fukushima was not only affected by the natural disasters but also the accident at the Fukushima Daiichi nuclear power plant on March 12. The latter mandated an evacuation zone with a radius of 20 kilometers, and thus began the large-scale transportation of patients and citizens requiring care. We measured the radiation of those coming from the evacuation zone at the hospital's entrance.

At first, there was a flood of information about the effects of radiation exposure, which caused a spread of anxiety among not only community members but also the nurses. In addition to constant news updates, which only deepened speculations, our hospital provided information about radiation exposure and received clarifications from radiation experts during the plenary meetings. We also set up a consultation desk.

But in all honesty, we nurses remained nervous about the unprecedented co-occurrence of the earthquake and potential radiation contamination; we were both physically strained and mentally insecure. I felt self-condemnation, powerlessness, and frustration in the voices saying "With so many people in worse conditions, how did I get away so easy?" "Isn't there something more I could do?" or "I cannot do this by myself." Having left a small child at home and thinking of the safety of my family members in areas seriously damaged by the disaster, I could empathize with nurses who had to continue with their work. The leaders in my ward sought to relieve our anxieties and prevent the staff from falling into depression by creating opportunities for us to vent our fears and worries and an atmosphere with signs of normal life, such as the much-valued laughter. Under these conditions, the fact that we could calmly and energetically care for patients is a testament to our sense of responsibility, mission as specialists, and mental strength. It was extremely encouraging to have the help and cooperation of the university's liaison nurses who cared for us when we were close to our limit. It was truly invaluable to have these nurses, also affected by the disaster, realize their role of providing psychiatric care at the right time.

(4) Looking Back on the Disaster

As a trained oncology nurse, although I did not perform specialized oncology nursing care during the disaster, it was a good opportunity for me to rethink caring for cancer patients, particularly in times of disaster. As a disaster response nurse, it is essential to have requisite knowledge about cancer patients. This would allow me to help those living in my community as well; however, I regret that I was not well prepared at the time.

In panic after the earthquake struck, I searched the website "Information Base for Disaster Nursing Knowledge and Skills to Protect Lives (University of Hyogo College of Nursing Art and Science, 21st Century Center of Excellence Program)," where anybody can obtain information about disaster nursing, and both community members and experts can access an information network to prepare for disasters. Helpful manuals about disasters, the elderly, children, cancer patients, psychiatric health, and other topics are posted on the website. I was able to use these as guidelines while providing nursing care during the disaster. We must now review our experiences caring for cancer patients during this disaster and build systems that can disseminate new information.

Even today, Fukushima is dealing with the repercussions of the earthquake and radiation, and the path to recovery is a long one. The situations in which the two disasters took place were different; however, I believe we should look back on the strength, resolution, and perseverance of the victims of the Great Hanshin-Awaji Earthquake. Just as these victims have, we must also carry the belief that one day the people of Fukushima will overcome the problems caused by the earthquake and nuclear accident. I hope that nursing can fulfill the role of bringing us closer to that day.

Struggles of a Rice Ball Chief: Providing Food to Employees after the Earthquake

Yasuko Suganuma
Administrative Officer,
Department of Nursing

(1) Day-Shift Employees Working Overtime and Stranded Students: Linking Emotions and Rice

At 2:46 pm on March 11, our office on the third floor of the Fukushima Medical University Hospital, was struck by a violent tremor it had never experienced before. This was nearly a year after I was given full-time charge of new employee training at the nursing department's administrative office. The quake tossed our desks that were arranged together and toppled upright hardware such as computers and file cabinets. The quakes continued for what truly seemed like three minutes to everybody, and having no place to shelter myself, I crouched between a locker and a door.

When the tremor seemed to have died down, the nursing department director assistant director, and the rest of the staff rushed out of the room to the departments they were in charge of. The nursing department's assistant director of general affairs organized the arrival of numerous ambulances for emergency outpatient care, and returned to the office to oversee our handling of the situation. The TV was our only source of news so we did not know about the extent of damage in Fukushima, our home prefecture. The nursing department then decided to prolong the working hours of both day- and night-shift nurses.

It was then that we were confronted with the problem of insufficient food supply for the day-shift workers. The hospital shop had run out of food. At around 7 pm, as the assistant director of the nursing department was discussing medical care, I suddenly remembered my cooking lessons at nursing school. "There has to be a rice cooker in the School of Nursing. We can use that to cook!"

At around the same time, K chief, an office manager at the School of Nursing, had a similar thought. About 20 School of Nursing students were still at school, taking supplementary classes during spring break. After the earthquake, there was a major gridlock on National Route 4 that was visible from the school's windows, and city buses could not pass through. As the aftershocks continued, the students watching the news about the earthquake and tsunami grew anxious and decided to spend the night at school. K chief realized that the students must be fed. But when we went to the kitchen, we only found two handfuls of rice, salt, miso, and plastic wrap. The only food item left in the hospital shop was potato chips. At 5 pm, faculty living in the Hourai Housing Complex right next to the hospital brought us 15 kilograms of rice from their houses. Since we had plastic wraps, we could hygienically store food. "So let us cook it all and make rice balls!"

Our cooking in the School of Nursing was fortunate to have a number of lucky breaks. Hearing from the school dean that we might have disruptions in the water supply, we used all of the kitchen pots and kettles to store sufficient water. Because we still had electricity, we were able to use all of the small electric rice cookers in the dormitory (an electrician from facility management ensured that we did not plug in too many cookers into one outlet). We were able to gather about 30 people, including faculty and students who had come from the nearby dorm, which was just the right amount of help. The only question was whether the rice would be sufficient for all of us.

The administrative office of the nursing department was puzzled over ensuring a steady supply of rice. The assistant director of the nursing department suggested that the hospital's nutrition manager should stockpile rice. So we immediately asked the medical department to help arrange for some rice. Hearing our discussion, the specialist faculty nurses, who usually make rounds between the School of Nursing and the hospital's nursing department, served as liaison for our cooking squad at the school. At 8 pm, our first line of 100 rice balls was served from the School of Nursing's kitchen and carried by the students' wagons to the nursing department. These 100 precious rice balls were prepared earlier than everybody's expectations and our success in doing so brought us to tears.

There are 20 wards in the hospital and each ward had about 20 employees. We distributed five rice balls per ward. Covering the entire hospital was our first priority; thus, the assistant director of the nursing department and I went around distributing the rice balls. While we were still passing out the first line of rice balls, five to six bags of rice, 30 kilograms each, arrived at the school kitchen. Cooking nearly four liters at a time by using three rice cookers and several electric rice cookers, we could make 200 rice balls in two hours. K chief thought "This is the ticket!" Our second line of 200 rice balls was distributed just past 10 pm and we did not stop cooking until after midnight.

800–1,100 rice balls a day

(2) Rice Balls for Other Departments and External Support: The Nursing Department Helps the Entire Hospital

These rice balls had originally been made for the night-shift workers and students; however, three days after the earthquake, our rice ball provision had become the lifeline of the hospital. Physicians were even asking the nursing department "Where can we get these rice balls?" On March 12 and 13, 200 to 300 rice balls were distributed every two hours (about 1,100 per day) throughout the hospital by our School of Nursing cooking squad. They were passed around the hospital wards, hospital departments, and the Disaster Medical Assistance Teams (DMATs), who arrived on March 12 from across the country.

In addition, for the plenary meetings of multidisciplinary professionals held three times a day to discuss necessary measures during the disaster, we prepared rice balls so that attendees could take some on their way out. They were absolutely thrilled with the gesture. Shortly after, news about the rice balls became a topic of relief in the plenary meetings. Most of Fukushima City had lost its water supply; convenience stores and supermarkets were closed, and it was hard for city residents to obtain food. With most of our hospital employees living in Fukushima City, they treasured the rice balls that we distributed throughout the hospital. I believe our work helped create a sense of security in the hospital.

On March 13, a group of support nurses arrived from Fukushima Prefectural Aizu General Hospital. A nurse technician named T, who was made my assistant, helped me in moving around the hospital with a wagon and passing out rice balls. As the hospital became aware of the increase in the supply of rice balls, it became important to figure out how to distribute the rice balls to the departments that needed them, without any omissions. T took charge of writing a roster for the rice ball distribution, which was started the previous day by the assistant director of the nursing department. She arranged her distribution roster not according to the organization chart but the hospital floor plan. Contract employees and special departments, such as the central control room, janitor's station, and decontamination ward, do not appear on the organization chart. But they were all actively involved in tackling this crisis. T and I made rounds, politely enquiring how many rice balls each office needed. Thanks to T's calm dedication, we were able to cater to 55 distribution locations in the hospital.

On March 14, the hospital cafeteria reopened and we tried to supply as many rice balls as we could from the outside. At 7 pm, 10,000 rice balls arrived as aid supplies. Thereafter, the number of rice balls needed to be significantly increased because offices all over the hospital were demanding for more. Our School of Nursing student volunteers continued making rice balls until March 17. Several other aid supplies in addition to the rice balls started to come in. We revised the hospital rice ball distribution list, which also became useful in information sharing between the nursing and administrative departments. I had become the head of the rice ball program, which led recognize the work of the nurses, the nursing department, and other hospital departments once again.

(3) Looking Back on Our Work

Reflecting on our response to the crisis, I learned the importance of storing food and the wisdom and dedication of flesh-and-blood humans to solve a given problem. I am proud that we were able to overcome these harsh times with the help of my wonderful colleagues in the hospital's nursing department, administrative department, the School of Nursing's faculty, support staff, and student volunteers.

Almost three months have passed since the great earthquake. Fukushima still has a long way to go toward recovery. But I hope that the warm support we have received from across the country and the humble contributions of the Fukushima Medical University Hospital, a disaster base hospital, can help get us there sooner.

Assignment to the Fukushima Disaster Response Headquarters —a Disaster Medical Assistance Team Member

Megumi Satou
Critical Care Center

(1) Preparation and Treatment under the Emergency Medical System

The Great East Japan Earthquake struck at 2:46 pm on March 11. Fukushima City felt a quake with a magnitude of almost six on the Japanese scale. At the Fukushima Medical University (FMU) Hospital, we lost our supply of tap water for eight days. Forunately, we did not lose other lifelines, the buildings did not collapse, and there was no major damage.

At the time of the earthquake, I was assigned to medical helicopter duty in the hospital's critical care center. After the earthquake, our hospital became the hub hospital for Disaster Medical Assistance Teams (DMATs) and medical helicopters. As a DMAT member, I prepared our emergency medicine system under instructions from supervising doctors and nurses. I liaised between the hospital staff, DMAT members, and transported patients.

On March 11, a DMAT Coordination Center was formed within the Fukushima Disaster Response Headquarters in accordance with the DMAT activity guidelines. The guidelines state that "Prefectural and city governments shall establish a DMAT Coordination Center that shall supervise DMATs gathered within their jurisdiction in times of disaster and coordinate with relevant organizations. Furthermore, additional DMAT centers such as DMAT Activity Bases or DMAT-Special Care Unit Centers will be established where necessary." The Hamadori area in eastern Fukushima was severely damaged from the earthquake and tsunami. On March 12, with the hydrogen explosions at the Tokyo Electric Power Company's Fukushima Daiichi nuclear power plant, our disaster response need became three-fold—earthquake, tsunami, and nuclear accident. A tense atmosphere enveloped Fukushima Disaster Response Headquarters.

(2) Caring for those Exposed to Radiation

From March 13, I worked in the prefectural government building as an assistant at the prefecture's DMAT Coordination Center, and was part of the relief team of the Fukushima Disaster Response Headquarters. At the hospital, I only cared for the patients who were admitted, but at the headquarters, I cared for nearly 2,000,000 Fukushima residents. Realizing the rapidly changing state of disaster and the true scale and severity of the situation, I began to feel fear and anxiety that I was responsible for the lives of our prefectural residents; emotions I had never felt when I was at the Fukushima Disaster Response Headquarters.

After the hydrogen explosions at the nuclear power plant, Fukushima Disaster Response Headquarters received many inquiries about radiation: "Does it affect the body?" and "I might have been exposed to radiation. What should I do?" Working for the critical care center and with my experience in emergency drills as a DMAT member, I knew what to do in cases of disasters and emergencies. But I struggled with answering questions about radiation exposure, a subject in which I had little confidence and limited knowledge. Faced with a sense of urgency, I carefully chose my words and responded. However, the headquarters alone could not tackle these kinds of inquiries. Thus, we teamed up with FMU Hospital and a medical support group from Fukui University, who shared their knowledge about medical treatment of radiation exposure. Thereafter, we gained support from the National Institute of Radiological Sciences and Hiroshima University, and soon put into place a radiation exposure medical system.

(3) Accommodating Maternal and Pediatric Medical Care in the System

Our system was adjusted such that it accommodated both radiation decontamination medicine as well as maternal and pediatric medicine. We focused on promoting breast-feeding for infants. With utilities down and hygiene compromised due to the disaster, bottle-feeding could hamper infants' digestion. Moreover, if diarrhea had spread, there would have been an increased risk in the spreading of communicable diseases. Pediatricians wanted to disseminate this information, but could not contact the relevant departments. So they got in touch with us at the headquarters. We verified their information and passed it on to the Office of Health and Welfare. The pediatricians provided documents about breast-feeding, stress-relief for mothers in the disaster area, breast-feeding methods using paper cups, and other topics. While confirming the methods that would be most effective or the available tools for sharing information with those concerned about mother–child health, we found that the Office of Health and Welfare was already making progress on the preparations of maternal and pediatric medicine systems. So we collaborated with the Office of Health and Welfare and pediatric medical facilities to provide this information to mothers affected

by the disaster.

In addition, we cooperated with FMU Hospital to treat patients with psychiatric disorders, who could not obtain adequate care after evacuation. We also provided care for patients who were psychologically affected by the disaster.

(4) Looking Back on our Work at the Headquarters

Initially, I thought that I could manage working at the Fukushima Disaster Response Headquarters, helping strangers without hesitation or grief. But for two weeks I was away from my normal workplace given the disaster circumstances, which were different from regular ones. I did not have direct contact with those who needed critical care and medical treatment and was doing a job that I was not used to. All these things worried me, as I did not know what exactly I would be needed for. Moreover, my work was not being evaluated, and I felt powerless as a nurse. This led me to depression, making it hard for me to even smile on the job.

At those times, I received encouraging emails from my head nurse or hospital staff. This would cheer me up and get my emotions back on track, ready to concentrate on work again. During my breaks, the liaison nurse at FMU Hospital set up interviews with me. Using a scale, she conducted stress tests measuring how much impact a given occurrence had. Being aware that I was in a stressful state, I was able to think about ways to relieve stress, and consequently my anxiety decreased.

*

FMU Hospital hosted last fall's Tohoku DMAT Conference and Emergency Drill. As the host facility, we received the cooperation of many medical facilities, firefighters, and the National Self-Defense Forces to prepare for and conduct the drill. The drill made us realize the importance of tasks such as information transfers at the headquarters logistics to process gathered information. After the earthquake, the first-hand experience of doing logistics work at the Fukushima Disaster Response Headquarters and handling the flood of information with the constantly changing situation, allowed me to reaffirm the importance of the accurate transmission of information. Along with the logistics work at the headquarters, I was able to draw on my medical knowledge and nursing experience gained while working with various professionals. I plan to continue acquiring the requisite knowledge and skills so that I can apply this experience of processing information in future collaborations with DMATs.

Overview of Faculty Affected by the Disaster

General Affairs Department

0 of 2,065 University staff members killed or injured by the earthquake

*as of February 1, 2012

Teaching faculty	429
Nursing staff, etc.	1,087
Subtotal	1,516
Visiting and associated staff, etc.	549
Total	2,065

Overview of Student Victim Status

Student Affairs Division

1. Confirmation of Student Safety

- Friday, March 11, 2011, 19:25
  The University received an email from the Kyudo (Japanese archery) Club in Sendai for a training camp (21 student participants), which notified that one female student in the medical school was admitted to hospital due to a bone fracture. Other students were reported to have safely taken refuge.
- Saturday, March 12, 2011, 06:30
- Initiated e-mail safety check of all University students.
- March 12 15:45: The injured female Kyudo Club student was able to leave the hospital, and all club members returned to Fukushima City.
- Tuesday, March 15, 2011, 13:30: Completed safety check on all medical school students.
- Friday, March 18, 2011, 16:20: Safety check on the last nursing student, who had returned to Rikuzentakata, Iwate Prefecture. This completed the university's safety checks on all students.

2. Rescheduling of University Entrance Examination and other Events

- General Entrance Examination (March 12): Cancelled
- Degree Award Ceremony (March 24): Cancelled
- Campus closed until April
- Postponed 2011 Entrance Examination Date (from April 5 to May 6)
- Start of new semester rescheduled (from May 9, 2011 to a later date)

3. Message from the University President to current students, new students, new medical residents, and guardians

The University President's message was sent by postal mail and posted on the University homepage, which urged current students, new students, new medical residents, and guardians to not be overly concerned about radiation and stated the University's mission in the wake of the crisis.

4. Impact on Academic Facilities and Equipment

- Impact of the disaster on academic facilities and equipment was minimal, and the new semester was able to start as per schedule.

5. Provision of Donation Stipends (June)

- The University provided student victims of the Great East Japan Earthquake an emergency stipend donated in part by the University faculty. (10,000 JPY per stipend) Total amount provided: 930,000 JPY.
  Medical School: 43 students, Nursing School: 42 students, Medical Research Dept.: three students, Nursing Research Dept.: five students; Total: 93 students

6. Status of Student Disaster Victims (All Departments)

(7/13/2011– present)

- Homes destroyed or half destroyed (24 students), homes not half-destroyed but sustained severe damage (13 students), students whose families took refuge from nuclear evacuation zones (27 students), students facing severe tuition burden due to substantial loss of income as a result of the disaster (8 students), students forced to move their place of residence due to the disaster (26 students); Total: 98 students

7. Waiver of Course Tuition Fees

- The University waived tuition fees for students who suffered significant harm from the disaster. (June 30)
  Waivers for previous semester (Full tuition waivers: 13; 50% waivers: 22)
  Waivers for next semester (Full tuition waivers: 31; 50% waivers: 37)

8. Scholarship Applications (7/25/2011–present)

- The Japan Student Services Organization and other groups received scholarship applications due to the earthquake disaster. (11 applications)
  Granted: Eight