

# Public health response to the combined Great East Japan Earthquake, tsunami and nuclear power plant accident: perspective from the Ministry of Health, Labour and Welfare of Japan

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## GREAT EAST JAPAN EARTHQUAKE

At 14:46 on 11 March 2011, eastern Japan was struck by the largest earthquake in Japan's recorded history. With the epicentre off the Sanriku coast, the magnitude 9.0 quake triggered a tsunami, which together with the effects of the quake ignited a serious accident at a nuclear power plant. The damage was grave and widespread with the death toll as of 9 November 2011 at 15 835 and the number of missing and unaccounted for at 3664.<sup>1</sup> Immediately after the earthquake, the Japanese Government, local governments in the stricken areas, hospitals, external organizations and volunteers launched coordinated relief and recovery activities. The role of the Ministry of Health, Labour and Welfare (MHLW) in a disaster includes securing medical and nursing care, providing public health services and ensuring the safety of food and water supplies.

## FIRST RESPONSE BY THE MINISTRY OF HEALTH, LABOUR AND WELFARE

As a first response, the Japanese Government prioritized search and rescue and, working closely with local governments in the stricken areas, committed resources to assessing the damages, evacuating residents and providing first aid and relief to victims. However, understanding the medical needs in the affected area in a timely manner was not easy. MHLW set up a Disaster Response Headquarters a few minutes after the earthquake and established local

headquarters in Iwate, Miyagi and Fukushima prefectures on the following day to enhance communication between local and central governments. In the initial stages, from 11 to 22 March, approximately 380 Japan Disaster Medical Assistant Teams (DMATs) were dispatched to provide emergency medical assistance at the local hospitals and support for transporting patients across a wide area; for example, DMATs rescued more than 300 inpatients in hospitals isolated by the tsunami. The opportunities for medical assistance were mostly for chronic diseases, not for wound injuries, probably because most victims were killed by the tsunami. Hospitals and nursing facilities in other regions admitted victims in need; however, coordinating such a large-scale translocation was a challenge, especially for patients who required special care such as dialysis treatment. Almost 80% of hospitals and a third of medical/dental clinics in the three affected prefectures experienced different levels of damages, including total collapse of their facilities. Prolonged blackouts, water outages and fuel shortages also affected the continuity of hospital care. Following assessments of the medical needs of the stricken areas, several medical teams of doctors, nurses and other medical staff; mental health care teams; pharmacists; public health nurses and nutritionists were sent to provide medical and public health assistance to evacuees and backup for damaged hospitals. MHLW also provided medical information and secured medical supplies such as drugs. Additionally, MHLW ensured victims could seek medical care without health insurance cards and waived co-pays.

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## RESPONSE TO THE NUCLEAR POWER PLANT ACCIDENT

The earthquake and the following tsunami caused serious damage to the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Plant; a considerable amount of radioactive material was discharged into the environment. Due to the potential effects from the accident at the power plant, many residents living nearby were forced to evacuate. MHLW assisted with the evacuation of about 1700 people from hospitals and nursing homes within a radius of 20 km to 30 km from the power plant where a "stay indoors" instruction was ordered. MHLW also dispatched medical teams to provide contamination screening and to address concerns about radiation exposure among residents. MHLW was primarily responsible for securing food and water safety by establishing a monitoring system for food, setting provisional regulation values of radioactive materials in food in accordance with the Food Sanitation Act, adopting the indices for limits on food and drink ingestion established by the Nuclear Safety Commission of Japan,<sup>2</sup> and regularly inspecting radioactivity levels in tap water to restrict the intake of contaminated water.<sup>3</sup> Several water-supply corporations asked users to refrain from using tap water for babies when the radiation level exceeded the regulation value for a few days in March. Some local governments provided bottled water for babies during that time.

MHLW also issued a leaflet on 7 April to address concerns about the child and maternal health effects of radiation.<sup>4</sup> However, step-by-step long-term efforts to explain the risks of radiological contamination are necessary. The Japanese Government has taken several measures to ensure the safety and security of residents such as radiation monitoring in the affected areas, decontamination of hot spots, health surveillance and monitoring of residents and risk communications on the health impacts of radioactive materials.

## INFORMATION SHARING WITH THE PUBLIC, THE WORLD HEALTH ORGANIZATION (WHO) AND ITS MEMBER STATES

Receiving accurate information on damages, evacuations, medical and logistic needs and supplies is crucial for residents, local governments, concerned

organizations and people across Japan so they can make proper decisions and take appropriate actions. MHLW began issuing a situation report on 11 March, the day the earthquake hit, both in Japanese and English.<sup>5</sup> In addition, MHLW was committed to sharing timely and accurate information on damages and radiation contamination with WHO and its Member States through the International Health Regulations (IHR).<sup>6</sup> MHLW regularly updated the information about radioactive materials, with a particular focus on water and food, on the IHR event information site until 31 May; MHLW also responded to inquiries.

## PREPAREDNESS FOR FUTURE PUBLIC HEALTH EMERGENCY: ADDRESSING A COMBINED DISASTER

The triple combined disaster of an earthquake, tsunami and nuclear power plant accident made the disaster relief operations more complex and difficult. The Basic Disaster Management Plan<sup>7</sup> for Japan included plans for four natural disasters and eight accidental disasters; however, a combined disaster plan was not included. Resources for and knowledge of radiation protection were very limited in those who responded to the natural disaster. On the other hand, expected resources such as electricity and lines of communication in the off-site centres were not available for responding to nuclear emergency. This unprecedented challenge raises new scenarios to be envisioned and prepared for, not only for Japan but also for the international community. MHLW remains committed to sharing the lessons learnt from this new category of emergency with the international community to strengthen global disaster preparedness.

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None declared.

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