SITUATION SUMMARY


- **Population status**
  - Number of deaths increased by 336 since 30 March (11 438 deaths as 15:00, 31 March)
  - Number of missing also increased by 48 since March 30 (16 541 persons missing as 15:00, 31 March)
  - Number of evacuees decreased by 5 050 since 30 March (172 415 persons as of 15:00, 31 March)

- **Health status**
  - Based on the identified mental health and psychosocial needs, several response activities have been coordinated. Official government information indicate that, as of 29 March, 22 "Kokoro no kea" ("Care of the Heart [for mental wellbeing]") teams (106 workers) are working on the ground (7 in Iwate, 11 in Miyagi [3 in Sendai city], and 1 in Fukushima). Some 17 paediatric mental health care providers have been dispatched by the Ministry of Health, Labour and Welfare (MHLW) to Iwate (as of 31 March).
  - A recent meeting of key MHPSS NGO workers summarized coordination as a priority area and on key information items to collect: locations of MHPSS staff; types of MHPSS staff activities; timeline of MHPSS staff on the ground: by activity type, location and planned length of mission on the ground. Various free telephone and email consultation services have been set up for MHPSS (e.g., Labour Health and Welfare Organization, Inochi No Denwa).
  - Based on the identified noncommunicable disease needs, several response activities have been coordinated. Facilities for supporting dialysis and rheumatism patients, and a telephone consultation service for cardiologists, were put in place in March. Some 270 bags of dialysis liquid and 2 000 dialyzers have been delivered to Miyagi Prefecture.

- **Nuclear facilities**
  - The temperatures of Reactors 1 (256.2 C) and 2 (166.5 C) are stable. The pressure of Reactor 1 is stable (0.394/0.583 MPa g, 1 April, 02:00).
- Drainage operation of pooled water in the building has been done for Unit 1 and preparation to have enough capacity of the tanks for drainage water has been underway for Units 2 and 3.
- Drainage of pooled water in the tunnel outside the building of Unit 1 has been done.
- Water spray for spent fuel storage pool was done in Units 1 and 3 on 31 March.

- **Food safety**
  - No new food sample results have been received today, however media reports that caesium at a level of 510 Bq/kg has been found in beef from Fukushima Prefecture (the sample was taken approximately 70 km from the Fukushima Daichii). This is the first time caesium has been found in meat in relation to this event.

- **Drinking water**
  - Restriction of tap water consumption for the general population in Iitate Village commenced on 21 March, and has now been lifted effective 1 April.
  - As of 1 April, the restriction of tap water consumption for infants remains in place for the following two water supply utilities in Fukushima Prefecture: Date City, Tsukitate Small-Scale Water Supply Utility and Iitate Village, Iitate Small Scale Water Supply Utility.

- **Environmental monitoring**
  - 1 April media reports: 430Bq/cubic cm of Iodine-131 (approximately 10 000 times normal) was detected from the underground water collected from ground water 15 meters below Unit 1 in Fukushima Daiichi nuclear plant. The Japanese government indicated that they intend to enhance monitoring of radiation levels. This is the first time radiation has been confirmed in ground water.
EVENT INFORMATION

Weather
(Source: Japan Meteorological Agency, 1 April)

In the northeast Tohoku region (Iwate, Miyagi and Fukushima prefectures), the weather is sunny on 1 April, turning mostly cloudy on 2 April. While the weather has improved, the lows remain near freezing, with the temperature ranging from 1 to 16 degrees. Overall, the wind is blowing from the west.

POPULATION STATUS

- Number of deaths increased by 336 since 30 March (11,438 deaths as of 15:00, 31 March)
- Number of missing also increased by 48 since March 30 (16,541 persons missing as 15:00, 31 March)
- Number of evacuees decreased by 5,050 since 30 March (172,415 persons as of 15:00, 31 March)

Table 1: Confirmed number of deaths, missing, injured and evacuated persons (15:00, 31 March)

<table>
<thead>
<tr>
<th>Prefectures</th>
<th>Death</th>
<th>Missing</th>
<th>Injured</th>
<th>Evacuee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aomori</td>
<td>3</td>
<td>1</td>
<td>66</td>
<td>262</td>
</tr>
<tr>
<td>Iwate</td>
<td>3,370</td>
<td>4,562</td>
<td>130</td>
<td>43,272</td>
</tr>
<tr>
<td>Miyagi</td>
<td>5,969</td>
<td>6,177</td>
<td>1135</td>
<td>73281(INCLUDING evacuees from Fukushima)</td>
</tr>
<tr>
<td>Akita</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yamagata</td>
<td>1</td>
<td>18</td>
<td></td>
<td>2695(Evacuees from Fukushima and Miyagi)</td>
</tr>
<tr>
<td>Fukushima</td>
<td>1049</td>
<td>4,798</td>
<td>220</td>
<td>29,762</td>
</tr>
<tr>
<td>Tokyo</td>
<td>7</td>
<td>77</td>
<td>1,037</td>
<td>(Evacuees from Fukushima and Miyagi)</td>
</tr>
<tr>
<td>Ibaragi</td>
<td>22</td>
<td>1</td>
<td>662</td>
<td>1,752(INCLUDING evacuees from Fukushima)</td>
</tr>
<tr>
<td>Tochigi</td>
<td>4</td>
<td>133</td>
<td></td>
<td>2,098(INCLUDING evacuees from Fukushima)</td>
</tr>
<tr>
<td>Gunma</td>
<td>1</td>
<td>35</td>
<td></td>
<td>3,223(Evacuees from Fukushima and Miyagi)</td>
</tr>
<tr>
<td>Saitama</td>
<td>42</td>
<td></td>
<td></td>
<td>3,196(Evacuees from Fukushima etc.)</td>
</tr>
<tr>
<td>Chiba</td>
<td>17</td>
<td>2</td>
<td>209</td>
<td>1,279(Evacuees from Fukushima and Miyagi)</td>
</tr>
<tr>
<td>Kanagawa</td>
<td>4</td>
<td>127</td>
<td>519</td>
<td>(Evacuees from Fukushima)</td>
</tr>
<tr>
<td>Niigata</td>
<td>3</td>
<td></td>
<td>7,145</td>
<td>(Evacuees from Fukushima)</td>
</tr>
<tr>
<td>Yamanashi</td>
<td>1</td>
<td></td>
<td>957</td>
<td>(Evacuees from Fukushima and Miyagi)</td>
</tr>
<tr>
<td>Shizuoka</td>
<td>4</td>
<td></td>
<td>682</td>
<td>(Evacuees from Fukushima)</td>
</tr>
<tr>
<td>Kouchi</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagano</td>
<td>652</td>
<td></td>
<td></td>
<td>(Evacuees from Fukushima)</td>
</tr>
<tr>
<td>Total</td>
<td>11,438</td>
<td>16,541</td>
<td>2,773</td>
<td>172,415</td>
</tr>
</tbody>
</table>

Source: The National Police Agency
HEALTH STATUS, LIFELINE SERVICES AND RESPONSE

Health care facilities
Table 2 presents the situation in main disaster-designated hospitals for the Miyagi, Fukushima and Iwate prefectures as of 28 March.

<table>
<thead>
<tr>
<th></th>
<th>No of hospitals</th>
<th>Death</th>
<th>Severe patient</th>
<th>Moderate</th>
<th>Mild</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miyagi Prefecture</strong></td>
<td>14</td>
<td>150</td>
<td>947</td>
<td>3190</td>
<td>7482</td>
</tr>
<tr>
<td><strong>Fukushima Prefecture</strong></td>
<td>8</td>
<td>19</td>
<td>248</td>
<td>363</td>
<td>482</td>
</tr>
<tr>
<td><strong>Iwate Prefecture</strong></td>
<td>11</td>
<td>11</td>
<td>377</td>
<td>1023</td>
<td>1411</td>
</tr>
</tbody>
</table>

No update on severity based data after 28 March

March 25: The local medical associations reported limited capacity of the health facilities. Out of 231 hospitals and clinics in Iwate, Fukushima and Miyagi prefecture, 121 (52%) are unable to accept new patients, while 33 (14%) are unable to accept any patients due to lack of resources including staff.

Table 3 shows the current capabilities for disaster-designated hospitals in Miyagi, Fukushima and Iwate.

<table>
<thead>
<tr>
<th></th>
<th>Number of hospitals capable of receiving patients for hospitalisation</th>
<th>Number of hospitals capable of receiving patients for check up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miyagi(14 hospitals)</strong></td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td><strong>Fukushima(8 hospitals)</strong></td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>Iwate(11 hospitals)</strong></td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Health supplies

**Medicine and hygiene products (March 25, official source)**
The following have been delivered:

- 538 bottles of medical oxygen including 103 bottles of 7000L to Miyagi, and 68 bottles including 20 bottles of 7000L to Iwate
- 100 tetanus toxoid vaccines to Miyagi
- 270 bags of dialysis liquid to Miyagi
- 2000 dialyzers to Miyagi
- 1000 first-aid kits
- 1000 kg of no-wash rice, 1 320L of water, 2 006 packs of porridge and 2520 dense liquid diets as hospital meals to Miyagi
- 1 210 000 disposable diapers to Iwate, Miyagi, Fukushima.
• By March 21, assortments of nonprescription Drugs like cold medicines or digestive medicines and hygiene products like sanitary napkins or diapers arrived at Shiokama port in Miyagi by the fisheries agency ship. (Japan Pharmaceutical Association, Japan Association of Chain Drug Stores, Japan OTC Pharmaceutical Manufacturers Association, etc.) The second ship departed toward Iwate at 11:00 on 21 March.
• 1 000 blankets to Miyagi
• 7 600 packs of wet tissue and 9 000 bottles of alcohol disinfectant cleaner to Miyagi
• Medicines (approximately 10 tons) to the medical associations in the field sent by the Japan Doctors Association (the medicines were offered by Japan Pharmaceutical Manufacturers Association according to the request from Ministry of Health, Labour and Welfare.)
• 1 790 000 sanitary items to Iwate, Miyagi and Fukushima
• 1 240 000 masks to Iwate, Miyagi and Fukushima
• By 22 March, digestive medicines and painkillers delivered to Miyagi by Japan Generic Drug Association through collaboration with Japan Generic Medicines Association (JGA)
• By 23 March, 1 500 of nonprescription drugs, e.g., antiseptic or fomentation to Iwate, distribution of first-aid medicines for significant accident etc. by the industrial injury insurance to Miyagi and Fukushima (it’s been planned to deliver 8 000 of nonprescription drugs within March)
• By 24 March, medicines for chronic disease delivered to Miyagi and Fukushima by Japan Generic Drug Association through collaboration with Japan Generic Medicines Association (JGA).

**Communicable diseases**

The Infectious Disease Surveillance Center, National Institute of Infectious Diseases released risk assessment result for communicable disease in the affected sites on 14 March, updated on 25 March. According to this, acute diarrhea, influenza and other respiratory infections (e.g., RSV), measles and other vaccine-preventable diseases (e.g., pertussis and tetanus) are considered to have high public health importance. Reports of note include:

• Sporadic cases of influenza from evacuation centres and clinics, but no large outbreaks, have been reported. Eighteen out of 77 evacuees have been infected with influenza in a shelter in Kuwaori-cho, Fukushima (25 March, media). Control measures include wearing of face mask for people with respiratory illness, use of alcohol disinfectants and increase of fluid intake. An order was made to make available influenza medications (antivirals) in stock to those who have been affected as a preventive measure (20 March, official sources).
• Sporadic cases of gastrointestinal infection have been reported from evacuation centres and a gastroenteritis epidemic was detected in Shiogama (21 March, media).
• An internet based ad-hoc surveillance system was set up by the Infectious Disease Surveillance Center, National Institute of Infectious Diseases (22 March, official source) ([http://www.syndromic-surveillance.net/hinanjo/index.html](http://www.syndromic-surveillance.net/hinanjo/index.html)).
• Directly associated with the event, there have been 2 cases of tetanus (one each from Miyagi and Iwate prefectures) and 2 cases of legionella from Miyagi prefecture. The
diagnosis of these cases occurred between 17 and 21 March. One hundred vials of
tetanus toxoid were shipped to Miyagi (25 March, official source).

- There was survey on the sanitary situation in the evacuation centres in Ishimaki, Higashi
  Matsushima and Onagawa. Around 40% (107/272) toilets had sanitary-related problems.
  Acute gastroenteritis (50 patients with diarrhea and 20 patients having vomited) and
  UTI such as cystitis have been reported (31 March, media).

**Noncommunicable Diseases**

Priority high-risk conditions for NCD management in an emergency include patients on dialysis,
those with Type 1 Diabetes (insulin-dependent), those requiring respiratory support or acute
 coronary care and those post-organ transplant. Other priorities include patients with diabetes
mellitus, heart disease, asthma, cancer and chronic lung disease.

The following reports are noted:

- The Japan Medical Association started to ship insulin to affected sites but there has
  been difficulty in reaching the affected areas because of bad road conditions and lack of
  petrol (23 March, media report)
- The national cardiovascular research centre began telephone consultation for
  cardiologists by cardiovascular expert staff (24 March, official report)
- The Ministry of Health, Labour and Welfare, in cooperation with the Japan Association
  of Dialysis Physicians, requested prefecture and city governments to set up a system for
  accepting dialysis patients outside of affected areas. Facilities available are shown
  below (Table 4) 270 bags of dialysis liquid and 2 000 dialyzers have already been
  delivered to Miyagi Prefecture (25 March, official report).
- Facilities are available for supporting rheumatism patients (Table 5) (official report).

**Table 4: Number of dialysis facilities by prefecture (as of 1 April)**

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Hokkaido</th>
<th>Aomori</th>
<th>Iwate</th>
<th>Miyagi</th>
<th>Akita</th>
<th>Yamagata</th>
<th>Fukushima</th>
<th>Ibaraki</th>
<th>Tochigi</th>
</tr>
</thead>
<tbody>
<tr>
<td>With artificial dialysis</td>
<td>78</td>
<td>25</td>
<td>20</td>
<td>19</td>
<td>36</td>
<td>16</td>
<td>37</td>
<td>42</td>
<td>71</td>
</tr>
<tr>
<td>Number of rooms for artificial dialysis</td>
<td>359</td>
<td>85</td>
<td>74</td>
<td>5</td>
<td>131</td>
<td>171</td>
<td>85</td>
<td>139</td>
<td>197</td>
</tr>
</tbody>
</table>

Source: Japan Association of Dialysis Physicians website

**Table 5: Number of rheumatism patient facilities by prefecture (as of 1 April)**

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Hokkaido</th>
<th>Aomori</th>
<th>Iwate</th>
<th>Miyagi</th>
<th>Akita</th>
<th>Yamagata</th>
<th>Fukushima</th>
<th>Ibaraki</th>
<th>Tochigi</th>
</tr>
</thead>
<tbody>
<tr>
<td># of facility for rheumatism patient</td>
<td>12</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Japan Rheumatism Foundation Information Center for Arthritis and other Rheumatic Conditions website

Patients with major noncommunicable diseases are particularly vulnerable to exacerbations of
their condition. Factors which contribute to this vulnerability include interruption of regular
medical treatment, severe situational stress and anxiety, overcrowding and reduced living
standards, shortage of water and regular food supplies, degraded environmental conditions and physical injuries.

**Tsunami-related symptoms/aspiration pneumonia**
- One suspected case of aspiration pneumonia ("Tsunami Lung") has been reported (20 March, media report). This condition may be reported some weeks after an event and so enhanced surveillance for cases is advisable.

**Care of the elderly and people with disabilities**
- 31 March: Some 280 caregivers (home helpers) for elderly and people with disabilities are responding to Iwate (89), Miyagi (98) and Fukushima (93). And 8 126 caregivers are on standby.
- The Japan Care Manager Association dispatched 8 care managers to Ishimaki city Miyagi.
- The Japan National Council of Social Welfare sent another 8 managers for needs assessment and support to affected area staffs to Iwate.
- 31 March: Beds in special facilities have been prepared for standby. Some 35 557 beds for elderly people, 8 756 beds for people with disabilities, 7 148 beds for children with disabilities. Additionally, 919 beds are prepared in protection shelters.
- 687 elderly people and people with disabilities in evacuation centers have been moved to special facilities (nursing home, etc) in other prefectures.
- It was reported that there were 15 out of 170 elderly who died within one week after evacuation.
- As of 26 March, 52 deaths in shelters have been reported, particularly among the elderly.

**Mental Health**

**Situational assessment of mental health and psychosocial support (MHPSS)**
Currently, it is difficult to make complete estimates of the disaster impact on mental health. Rapid surveys are being prepared/sent to Japan to identify mental health needs. Preliminary key mental health areas identified are pediatric mental health and survivor's guilt. Based on evolving situation on the ground, continued assessment is necessary (e.g., some evacuees now relocating to homes of relatives and friends, and soon relocations to temporary housing will begin).

**Monitoring activities in the affected sites**
The situation of mental hospitals is being monitored at: [http://assertivecommunitytreatment.jp/ph/](http://assertivecommunitytreatment.jp/ph/) (including locations and current working capacity of mental hospitals). The National Institute of Psychiatry and Neurology [http://www.ncnp.go.jp/mental_info/index.html](http://www.ncnp.go.jp/mental_info/index.html) also regularly updates its website to provide guidance on various issues for different populations.

A recent meeting of key MHPSS NGO workers summarized on key information to collect:
1. Locations of MHPSS staff
2. Types of MHPSS staff activities
3. Timeline of MHPSS staff on the ground: by activity type, location, and planned length of mission on the ground

Children with missing or dead parents are being recorded and services are being provided to them by local government and paediatric mental health care providers. A survey on mental health issues in Iwate Prefecture found that around 60% of the 73 shelters investigated had patients who needed immediate psychosocial support.

**Current response**

At this stage, coordination has been identified as a key area, and information sharing is key to enhance coordination. Both MHLW and numerous NGOs are working on the ground now offering psychological support. A recent meeting of key MHPSS NGO workers concluded that NGOs are to supplement and complement efforts of the Japanese government and local actors. Key experiences of working on psychosocial issues in disaster situations, specifically earthquakes and tsunamis, continue to be compiled, shared and translated into Japanese.

Official government information indicate that, as of 29 March (latest available information) 22 "Kokoro no kea" ("Care of the Heart [for mental wellbeing]") teams (106 workers) are working on the ground (7 in Iwate, 11 in Miyagi [3 in Sendai city], and 1 in Fukushima). Some 17 paediatric mental health care providers have been dispatched by MHLW to Iwate, and 396 paediatric psychological care providers are on standby (as of 31 March). MHLW has provided tips for maintaining good health and mental health conditions in affected prefectures: [http://www.mhlw.go.jp/stf/houdou/2r985200000155g1](http://www.mhlw.go.jp/stf/houdou/2r985200000155g1).

On 26 March, several key agencies and actors working on psychosocial issues came together for a face-to-face, cooperation meeting in Japan. It was recommended to keep the Inter Agency Reference Group on mental health and psychosocial support in emergencies fully informed. Coordination meeting of relevant MHPSS NGO agencies will be called in the second week of April in Sendai. This meeting is planned to be called by the government, the Ministry of Health, Ministry of Social Welfare, and others. The Japan NGO Centre for International Cooperation (JANIC) has reported that regular meetings among key players on the ground have been carried out in Ishinomaki City on a regular basis. Japan Platform is the focal point for international NGOs: [http://www.japanplatform.org/E/donate/jp_eq_tsunami20110321.pdf](http://www.japanplatform.org/E/donate/jp_eq_tsunami20110321.pdf). Any expression of need for a meeting should be addressed to the Japan Platform.

Various free telephone and email consultation services have been set up. The Federation of Inochi No Denwa Inc. started a free telephone call consultation from 28 March to 9 April from residents in Iwate, Miyagi, Fukushima and Ibaraki. The Japan Labour Health and Welfare Organization ([http://www.rofuku.go.jp/sanpo/](http://www.rofuku.go.jp/sanpo/)) has expanded its free hotline service to all of Japan on 30 March.
Response to health and lifeline services
The National Emergency Management Committee, led by the Prime Minister, has been established to oversee and coordinate all response activities. A state of emergency has been declared. All prefectures have also activated the local government response.

Medical team activities
- Some 121 public health teams have been deployed to evacuation centres and public health centres in a number of the affected areas including in Fukushima, Iwate, Sendai and Miyagi. An additional 10 teams have been mobilized or placed on standby for health-related services.

Table 5: Public health care teams activity situation (29 March)

<table>
<thead>
<tr>
<th>Number of teams</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responding</td>
<td>Iwate(37), Miyagi(50)+Sendai city(21, Fukushima(3)</td>
</tr>
<tr>
<td>Mobilizing</td>
<td>Sendai city(1)</td>
</tr>
<tr>
<td>Standby</td>
<td>Iwate(2), Fukushima(5), Miyagi(2)</td>
</tr>
<tr>
<td>Total</td>
<td>Iwate(39), Miyagi(52)+Sendai city(22), Fukushima(8)</td>
</tr>
</tbody>
</table>

- As of 31 March, a total of 20 mental health care teams of 95 members have been deployed to provide psychosocial support to the affected areas, including Iwate (7), Miyagi (10), Sendai City (2) and Fukushima (1).
- The National Centre for Child Health and Development and Japanese Society of Emergency Paediatrics deployed a team to Miyagi prefectural Paediatric Hospital for assessing the paediatric medical needs.
- Some 142 teams, consisting of 640 members are responding to Iwate, Miyagi and Fukushima from the National Hospital Institution, Japan Red Cross Society, Japan Medical Association, etc.
- Some 634 pharmacists are deployed to Miyagi (427), Fukushima (144), Iwate (59), Ibaragi (3) by the Japan Pharmaceutical Association and Japanese Society of Hospital Pharmacists.
- On 31 March, the Japanese Nursing Association dispatched 256 nurses to Iwate (27), Fukushima (2) and Miyagi (49). Some 30 nurses have been mobilized to Iwate and Miyagi.
- 1 dentist, 1 dental hygienist and 1 driver for a round clinic will be dispatched to Iwate from 31 March to 14 April.

Food/water/essentials
MHLW reported on 30 March that 371 194 households were without water. Food, water and other essentials items continue to be supplied to affected areas.

Management of dead bodies:
MHLW is supporting local government for the management of the dead.
Communication
As of 30 March: Some 118,927 telephone lines remain out of service. (Some companies provide free "pay phone" and specially laid out "payphone" in 16 prefectures). A reported 2,046 base stations of mobile companies are not working. Some mobile companies provide free satellite phone, cell phone and charger as well as disaster messaging services.

Buildings
As of 30 March, there are 16,501 buildings completely destroyed and 7,828 partially destroyed.

Electricity
As of 30 March, approximately 190,000 households remain without power, mostly in the Tohoku region.

Gas
As of 30 March, 329,875 households remain without gas supply.

Petrol
Some purification plants remain out of operation.

Transport
As of 30 March, 2,126 roads damaged have been reported from 11 prefectures (Aomori, Miyagi, Yamagata, Akita, Tokyo, Ibaragi, Tochigi, Saitama, Gunma, Chiba and Iwate). There were reports of 56 damaged bridges in four prefectures. Many roads and highways have remained closed.

As of 30 March, 29 damaged rail lines in three prefectures were reported. About 30 local trains in the affected area remain out of service.

Sendai airport operates for 24 hours for rescue operation.

NUCLEAR FACILITIES

Updates on Fukushima Daiichi plant
- The temperatures of Reactor 1 (256.2 C) and 2 (166.5 C) are stable. The pressure of Reactor 1 is stable (0.394/0.583 MPa g, 1 April, 02:00).
- Drainage operation of pooled water in the building has been done for Unit 1 and preparation to have enough capacity of the tanks for drainage water has been underway for Units 2 and 3.
- Drainage of pooled water in the tunnel outside the building of Unit 1 has been done.
- Water spray for spent fuel storage pool was done in Unit 1 and 3 on 31 March.
FOOD AND DRINKING WATER SAFETY

Food safety and drinking-water quality

Monitoring and risk management actions - Japan
As of 17 March 2011, all local food safety inspection authorities were directed to monitor/investigate radionuclide levels in foods for identification/prevention of potential food safety risks associated with radioactive nuclide contaminations. The notice indicates the provisional regulation values for radionuclide in different types of foods. Foods that exceed these levels are regulated under the Food Sanitation Act. As such, actions to prevent consumption of foods that exceed the provisional levels must be applied.

In addition to these measures, Table 6 outlines the restrictions that are in place following Article 20.3 of the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156, 1999):

Table 6: Restrictions that are in place following Article 20.3 of the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156, 1999)

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Risk Management Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fukushima</td>
<td>Consumption and distribution of all leafy vegetables (spinach, komatsuna, cabbage, parsley), flowerhead brassicas (broccoli, cauliflower), and milk produced in Fukushima (n.b milk and turnip – distribution limited only) have been stopped.</td>
</tr>
<tr>
<td></td>
<td>Voluntary ban (which has been implemented) on consumption and distribution for all agricultural products from &lt;30 km from Daiichi (implemented on 19 March)</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>Consumption and distribution of all spinach, kakina, parsley and milk produced in Ibaraki have been stopped.</td>
</tr>
<tr>
<td>Gunma</td>
<td>Consumption and distribution of all spinach and kakina in Gunma have been stopped.</td>
</tr>
<tr>
<td>Tochigi</td>
<td>Consumption and distribution of all spinach and kakina in Tochigi have been stopped.</td>
</tr>
</tbody>
</table>

Information from Chiba and Tochigi prefecture websites indicate that distribution has been stopped for Garland Chrysanthemum in Asahi City, Tako-cho (Chiba) and in Tochigi Prefecture.

Analysis results of foods originating from Chiba, Ehime, Fukushima, Gunma, Ibaraki, Kanagawa, Miyagi, Nagano, Niigata, Saitama, Tochigi, Tokyo, Yamagata prefectures have been received. A total of 780 milk, produce and other food samples results have been obtained from the MHLW from 19 to 31 March, with 111 sample results received since yesterday's situation report. Samples are tested for both radioactive Iodine and Caesium or Caesium alone. Tables 7 and 8 provide a summary of the results received to date.
Table 7: Food sampling results from MHLW for radioactive cesium and/or iodine, 16-30 March

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Total no. samples above provisional regulation value *</th>
<th>Total no. samples tested **</th>
<th>Proportion above limit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiba</td>
<td>11</td>
<td>65</td>
<td>17</td>
</tr>
<tr>
<td>Ehime</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Fukushima</td>
<td>71</td>
<td>287</td>
<td>25</td>
</tr>
<tr>
<td>Gunma</td>
<td>3</td>
<td>67</td>
<td>5</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>40</td>
<td>140</td>
<td>29</td>
</tr>
<tr>
<td>Kanagawa</td>
<td>0</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Miyagi</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Nagano</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Niigata</td>
<td>0</td>
<td>69</td>
<td>0</td>
</tr>
<tr>
<td>Saitama</td>
<td>0</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>Tochigi</td>
<td>11</td>
<td>55</td>
<td>20</td>
</tr>
<tr>
<td>Tokyo</td>
<td>1</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Yamagata</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>780</td>
<td>18</td>
</tr>
</tbody>
</table>

* Provisional regulation value for Iodine-131: Milk (300 Bq/kg), Vegetables (2000 Bq/kg), Radioactive caesium: Milk (300 Bq/kg), Vegetables, Grains, Meat, Eggs, Fish (500 Bq/kg).

** Samples may be tested for both Iodine and Caesium or Caesium alone. (For example meat, fish and egg samples are not always analysed for Iodine–131).

Table 8: Food sampling results from MHLW for radioactive iodine and caesium, 16 - 30 March

<table>
<thead>
<tr>
<th></th>
<th>Iodine – 131</th>
<th>Caesium (134 and 137)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. samples tested</td>
<td>No. samples above provisional regulation value*</td>
</tr>
<tr>
<td></td>
<td>Total No. samples above provisional regulation value</td>
<td>Total No. samples tested</td>
</tr>
<tr>
<td>Milk*</td>
<td>23 176</td>
<td>13</td>
</tr>
<tr>
<td>Produce**</td>
<td>96 556</td>
<td>17</td>
</tr>
<tr>
<td>Seafood***</td>
<td>0 4</td>
<td>0</td>
</tr>
<tr>
<td>Meat and eggs***</td>
<td>0 21</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>119 757</td>
<td>16</td>
</tr>
</tbody>
</table>

*Acceptable level for dairy: 200 Bq/kg for radioactive caesium, 300 Bq/kg for iodine.

**Acceptable level for fresh produce: 500 Bq/kg for radioactive caesium, 2000 Bq/kg for iodine.

***Acceptable level for meat, eggs, fish: 500 Bq/kg for radioactive caesium. (No level established for Iodine-131 meat, fish and eggs in Japan. Codex guideline level is 100 Bq/kg).

Monitoring and risk management actions - International

Tables 9 and 10 outline the additional imported food control measures put in place associated with this event that have been put into place internationally.
Table 9: International Monitoring and risk management actions in WPR

<table>
<thead>
<tr>
<th>Official information source: Australia, China, Hong Kong, China, Philippines, and Singapore</th>
<th>Assessing situation but no specific monitoring procedures in-place</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td></td>
</tr>
</tbody>
</table>

| Unofficial information source: Malaysia, New Caledonia, Republic of Korea and Taiwan, China |

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Table 10: Focus of international imported food control measures by region and country (from official information available)

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Japan Prefectures (name and number)</th>
<th>Food products</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPR</td>
<td>Australia</td>
<td>Gunma, Ibaraki, Fukushima and Tochigi (4)</td>
<td>Milk and milk products, fresh fruit and vegetables, seaweed and seafood (fresh and frozen)</td>
</tr>
<tr>
<td></td>
<td>Hong Kong, China</td>
<td>Gunma, Ibaraki, Fukushima, Tochigi &amp; Chiba (5)</td>
<td>Agricultural and fishery items</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>Fukushima, Ibaraki, Tochigi, Gunma, Kanagawa, Tokyo, Saitama and Shizuoka (8)</td>
<td>Meat, milk, milk products, vegetable, fruit, and seafood</td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>EURO</td>
<td>European Union (EU)*</td>
<td>Fukushima, Gunma, Ibaraki, Tochigi, Miyagi, Yamagata, Niigata, Nagano, Yamanashi, Saitama, Tokyo and Chiba (12)</td>
<td>All feed and food originating in or consigned from 12 prefectures*</td>
</tr>
<tr>
<td>AMRO</td>
<td>United Stated Food and Drug Administration (US FDA)</td>
<td>Gunma, Ibaraki, Fukushima and Tochigi (4)</td>
<td>All milk and milk products and vegetables and fruits produced or manufactured from the 4 prefectures**</td>
</tr>
</tbody>
</table>

*EU: Have to be tested before leaving Japan and will be subject to random testing in the EU – Feed and food products from the remaining 35 prefectures will have to be accompanied by a declaration stating the prefecture of origin and will be randomly tested upon arrival in the EU.

** US: Foods detained upon entry into the United States. Not be allowed to enter the United States of America food supply, unless shown to be free from radionuclide contamination, with the exception of the specific products restricted by the Government of Japan. Those products will be refused admission into the United States of America. Other food products from this area, including seafood, although not subject to the Import Alert, will be diverted for testing by FDA before they can enter the food supply. FDA will also be monitoring and testing food products, including seafood, from other areas of Japan as appropriate.

Japan requested WTO’s SPS committee to ensure imported food control measures are science-based (as per the SPS Agreement) (30 March).

Member States continue to receive updates through the International Food Safety Authorities Network (INFOSAN) and have been requested to report results undertaken on imported food from Japan. Japan is informed of these findings through INFOSAN and WPRO. A basic background information document titled ‘INFOSAN Information on nuclear accidents and

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Radioactive contamination of foods' has been provided to food safety authorities through the INFOSAN network (30 March).

Frequently asked questions on the food contamination issues have been updated and are available at: http://www.wpro.who.int/media_centre/jpn_earthquake/FAQs/faqs_foodcontamination.htm

**Drinking water quality**

On 19 March, MHLW issued a notice to local governments that when the provisional regulation values for drinking water (300 Bq/kg for Iodine; 200 Bq/kg for Caesium) are exceeded, MHLW requests the water supply utilities to notify residents to refrain from drinking the water.

On 21 March, MHLW issued an additional notice that for infants, the provisional regulation value for the intake of water is set at 100 Bq/kg.

On 26 March, MHLW issued a notice to water supply utilities to stop or reduce intake of surface water, and cover water treatment facilities with plastic sheets, following rainfalls, where possible, which would reduce the iodine levels in drinking water.

**Advice on refraining from drinking water: Whole population**

Fukushima Prefecture – MHLW requested Iitate Small-Scale Water Supply Utility, in Iitate-mura to inform residents to refrain from drinking tap water. The restriction became effective at 07:00 on 21 March, and is lifted on 1 April.

**Infants**

A total of 20 water supply utilities in five prefectures (Fukushima, Ibaraki, Tochigi, Chiba and Tokyo) have been requested by MHLW to inform residents to refrain from having infants consume tap water since 22 March. Two water supply utilities (Tsukitate Small Scale and Tamura) in Fukushima Prefecture issued the restriction twice. Subsequently, the restriction has been lifted for most water supply utilities. As of 1 April, the restriction is in place for the following two water supply utilities in Fukushima Prefecture: Date City, Tsukitate Small-Scale Water Supply Utility and Iitate Village, Iitate Small Scale Water Supply Utility.

**Trend**

The Fukushima Prefecture Environmental Radioactivity Monitoring Center continued to monitor radioactivity in tap water at 9 points within the prefecture on a daily basis since 16 March. Iodine-131 measurements peaked at 348 Bq/L in Tamura City on 17 March and have generally declined since then. Iodine-131 peaked at 293 Bq/L in Kawamata town on 18 March; and peaked at 185 Bq/L in Minamisouma city on 19 March. Iodine-131 peaked at 965 Bq/L in Iitate village (iitoitaki shita area) on 20 March. Iodine levels have been on a generally downward trend following the peaks and are now below 100 Bq/L in the afore-mentioned locations. In Iwaki City, Iodine-131 levels have generally been around or below 100 Bq/L since 16 March but a spike at 215 Bq/L was seen on 24 March. Iodine-131 in Iwaki city dropped to 100 Bq/L on 25 March and 85.7 Bq/L on 26 March (Error! Reference source not found.).
Data from Ibaragi Prefecture is available from Hitachiota City (Mizuhu area) from 22 March onward and from seven other locations from 23 March onward. Iodine-131 peaked in Hitachiota City (Mizuhu area) at 245 Bq/L on 22 March and declined to 29 Bq/L the following day. No new data is available for Hitachiota City (Mizuhu area) since then. On 23 March, iodine-131 levels peaked in Hitachi city (Moriyama) at 150 Bq/L, Hitachi city (juo) at 298 Bq/L, in Hurukawa city at 142 Bq/L, in Tokai village at 188.7 Bq/L, and in Kasama City at 170 Bq/L. Iodine-131 levels peaked in Toride city at 106.5 Bq/L on 24 March. Iodine levels have been on a generally downward trend following the peaks and are now below 100 Bq/L in the afore-mentioned locations.

In Chiba Prefecture, data are available from the Kashiwai and Kuriyama water purification plants. Iodine-131 was measured at 130 Bq/L at Kashiwai on 25 March and 180 Bq/L at Kuriyama on 23 March.

Caesium levels have generally been below detectable levels in the above-mentioned locations with sporadic findings well below levels of concern.

The Ministry of Education Culture Sports Science and Technology (MEXT) continued to report radioactivity readings in tap water sampled in major cities in 47 prefectures. All readings are below the reference values.

ENVIRONMENTAL MONITORING

1 April, media reports: Some 430Bq/cubic cm of Iodine-131 (approximately 10 000 times normal) was detected from the underground water collected from ground water 15 meters below Unit 1 in Fukushima Daiichi nuclear plant. The Japanese government indicated that they intend to enhance monitoring of radiation levels. This is the first time radiation has been confirmed in ground water.

Monitoring of radiation levels in seawater
On 23 March, MEXT began surveillance of coastal waters near the Fukushima Daiichi NPP site. Seawater samples have been collected in coastal waters along transects that are separated by 10-km intervals. Sampling has been performed along each transect to a distance of about 30 kms offshore. From 28 March, two more sampling points (9 and 10) were added. The ocean current flows from north to south in the area.

The maximum permissible concentrations in seawater are 40 Bq/L for I-131 and 90 Bq/L for Cs-137. Values in excess of the Iodine-131 limit were detected at sampling points 3, 4 and 5 on 23 and 24 March but dropped below the limit on 25 March. On 30 March, data were collected only at sampling points 2, 4, 6, 8 and 10. At sampling point 10, the maximum permissible concentration of 40 Bq/L for I-131 was exceeded. MEXT is continuing to monitor the situation.

According to media (30 March), seawater near the water discharge point at the Fukushima Daiichi plant contained radioactive iodine at 3 355 times the legal limit on 29 March, up from
1 850 times the legal limit on 26 March. But an official said that the iodine would have deteriorated considerably by the time it reached people.

According to media (31 March), Japan’s Nuclear and Industrial Safety Agency says 180 becquerels per cubic centimeter of radioactive iodine-131 has been detected in seawater sampled on 30 March at a location 330 meters south of the troubled Fukushima Daiichi nuclear plant. This level is 4 385 times higher than the legal standard, and far above the 3 355-times level detected on 29 March.

TEPCO stated in a media release (1 April) that official figures for seawater radiation have yet to be updated, but will be updated as soon as possible.

**Monitoring of radiation levels in soil**

At the request of MEXT, Fukushima Prefecture began the monitoring of radioactivity levels in soil on 18 March. At 9 sampling points, the radioactivity levels of soil are monitored.

The radioactivity levels of I-131 in all but the sampling point in Itate Village (40 km northwest of the Fukushima Daiichi NPP) have been low and generally declining. In Itate Village, the radioactivity peaked on 20 March (1.17 megaBq/kg for I-131 and 0.163 megaBq/kg for Cs-137) and has since then been declining.

TEPCO conducted an analysis of soil, as part of monitoring activity of the surrounding environment, at five sampling points in the premises of the Fukushima Daiichi NPP. The soil samples on 21 and 22 March were analyzed and plutonium 238, 239 and 240 were detected. According to TEPCO, the density of detected plutonium is equivalent to the fallout observed in Japan when the atmospheric nuclear test was conducted in the past. The detected plutonium from two samples out of five may be the direct result of the recent incident, considering their activity ratio of the plutonium isotopes. However, the density of detected plutonium was such that it would not pose major impact on human health. TEPCO will continue the radionuclide analysis of soil.

**Monitoring of radiation levels in air**

Overall, radiation levels in the air in prefectures nearby to the Fukushima Daiichi plant are stable. Levels are still above historic background levels but low in terms of human health risk. For the past two days, Kanagawa reported below background levels.

**National response to radiation/nuclear facility issues**

Due to potential radiation exposure, all people within a 20-km radius of the Fukushima Daiichi Nuclear power plant have been evacuated from the towns of Okuma, Tomioka, Naraha, Futaba. On 25 March, the Chief Cabinet Secretary of Japan advised residents to voluntarily evacuate from within the 20-km-to-30-km radius from Fukushima Daiichi Nuclear power plant, in view of the difficult living conditions in the area.
WHO/WPRO RESPONSE

- WPRO Situation room is collecting information to monitor the evolving events, in communication and coordination with the Ministry of Health, Labour and Welfare of Japan (MHLW), WHO Kobe Centre, the WHO Headquarters and partners.
- WPRO has been closely working with the National IHR Focal Point in Japan and the WHO Headquarter to facilitate sharing of information through the IHR Event Information Site (EIS) that is open to all the Member States.

TRAVEL AND TRADE ADVISORIES

The Japan National Tourism Organisation (JNTO) announced that the Japanese Government has decided to temporarily suspend its tourism promotion activities considering there still exists some possibility of aftershocks. The government’s highest priority is to be given to rescue and relief efforts.

JNTO further assured the public that once the situation in Japan stabilises, it will strive to resume all promotional activities as soon as possible. It reinforced its commitment to provide timely information on the current situation to the travel industry and to the public through its website.

WHO’s recommendation and advice on international travel remains the same at this time: WHO is not advising general restrictions on travel to Japan. The International Civil Aviation Organization (ICAO), on behalf of the International Atomic Energy Agency (IAEA), International Maritime Organization (IMO), the World Health Organization (WHO) and the World Meteorological Organization (WMO), issued a joint statement on the continued safety of air transport operations in Japan.

These five organizations confirmed that there are no restrictions to normal air transport operations at Japan’s major airports, including both Haneda and Narita.

RISK COMMUNICATION

WHO Action

- Came up with a response to rumors about the detection of radioactive materials in 15 cities in China. WHO says no health risk at this time from radiation in China.
- Responses to inquiries from researchers and the public that come into the SITROOM mailbox.
- Will need to continue to address issues on the long-term effect of radiation on food, water and the environment.
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