The IRSN Emergency Center during the Fukushima NPS Accident: Responding to Health Concerns
The first weekend following the tsunami (March 12-13, 2011), numerous questions were raised about the possible health consequences resulting from the events occurring at the Fukushima Daiichi Nuclear Facilities.

To tackle concerns of the public authorities and the population, IRSN has decided to bring together health experts in a dedicated team within the IRSN’s emergency response centre.

The objectives of the Health Unit were to evaluate the putative health consequences for people exposed to radioactive releases in Japan and France.

The Health Unit has been activated the 14th of March 2011.
The IRSN’s Health Unit

- A core team of 8 experts in communication, radiobiology, dose assessment & health risk assessment has been set up.
- To support the core team, 16 other experts from the internal dosimetry, external dosimetry & radiobiology IRSN’s departments have been called.
- The Health Unit has been placed under the authority of Jocelyne Aigueperse, Deputy Director of Radiation Protection & Human Health.
- Two health experts have been asked to answer questions raised by the French journalists.
- 6 dedicated phone lines (3 for France, 3 for Japan) & one email address have been opened to answer questions from the French population & nationals living in Japan.
Activities of the IRSN’s Health Unit

- Providing information & advices to individuals, industrials and health professionals
- Answering inquiries of French public authorities: French Embassy in Tokyo, nuclear safety authority (ASN), ministry of health, ministry of environment, ministry of interior, ministry of foreign affairs, ministry of labour
- Writing FAQs to be published in the IRSN’s website & fact sheets for internal use to ensure the consistency of answers provided by the members of the Health Unit
- Organising provision of dosimeters and performing in vivo & in vitro measurements for nationals returning from Japan (area of 60 km around the Fukushima NPP)
Answering Phone Calls & Emails

Distribution of inquiries as a function of the contacting mode

Number of inquiries

Date


Calls to Health Crisis Unit
Calls from Japan
Emails to dedicated box
Emails to IRSN box
Answering Phone Calls & Emails

Distribution of inquiries as a function of the caller

Number of inquiries

Industry
Rescuers
Public
Health Professionals
Journalists
Public Authorities

Date

Answering Phone Calls & Emails

- During the four weeks following the tsunami, more than 1,300 requests have been received:
  - About 1,000 phone calls, including 30 calls from Japan
  - About 300 emails

- During the first week, the main issues of concerns were:
  - Nationals travelling to, living in or returning from Japan: how to evaluate a radioactive exposure, risks for the neighbouring countries (South Korea, China, etc.)
  - Journalists: protective actions to be taken in Japan, control of radioactive contamination (individuals, materials)
  - Health professionals & rescuers: how to take care of people returning from Japan, stable iodine prophylaxis
Answering Phone Calls & Emails

Distribution of inquiries as a function of questions raised
Answering Phone Calls & Emails

- During the four weeks following the tsunami, the distribution of inquiries as a function of the issue of concern was as follows:
  - Consequences for France: 248
  - Return to Japan: 244
  - Risks for neighbouring countries of Japan: 173
  - Risks in travelling to Japan: 155
  - Controls of things arriving from Japan: 138
  - Whole body counting: 90
  - Iodine prophylaxis: 70
  - Teleray devices: 45
  - Dosimetry: 21
Answering Phone Calls & Emails

- During the 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} weeks following the tsunami, the main issues of concern were:
  - Consequences of contaminated air masses arriving from Japan over France the 21\textsuperscript{st} of March
  - Significance of measures performed by the TELERAY network devices
  - Controls of products manufactured in Japan arriving at the Parisian airports
  - Risks associated with travels to Japan
- During the 5\textsuperscript{th} week after the tsunami, the number of inquiries has decreased dramatically and was essentially focused on controls of Japanese foodstuffs as well as travels to neighbouring countries
List of Typical Questions Raised

- I’m returning from Japan, what should I do to make sure that I haven’t been exposed?
- What do I have to do with my luggage and clothes?
- What are the health consequences of the arrival of radioactive air masses over France?
- How understand the values of radioactivity measured in air and how confident could I be with?
- How cautious should I be with Japanese foodstuffs?
- Should I postpone my travel to Japan & neighbouring countries? To which risks could I be exposed?
- Where and how can I get stable iodine tablets?
- How dangerous is stable iodine if I’m allergic to iodine or if I suffer from a thyroid disease?
Typical FAQs & Fact Sheets Written

- Radiation-induced leukaemia and thyroid cancer
- Consequences of the Chernobyl fallout in France
- Deterministic & stochastic effects resulting from an exposure to ionising radiation
- Acute radiation syndrome
- Stable iodine prophylaxis in France & Japan
- Sources of exposure to ionising radiation in France
- Evaluation of a contamination with radioactive material
- Minimum radioactive activity detectable with in vivo and in vitro measurements (I-131, Cs-137)
Evaluating External Doses Likely to be Received

Evaluation of external doses likely to be received the first year based on US DoE/NNSA measures.
Measuring Nationals Returning from Japan

- 500 measurements in 250 individuals were performed as for August 31, 2011
- Only individuals who stayed in the most affected areas were measured

Whole body

Thyroid
Measuring Nationals Returning from Japan

Radionuclides measured in nationals returning from Japan

Thyroid Dose: 0.01 to 1.3 mSv
Effective Dose: 0.001 to 0.03 mSv

No significant contamination detected
Provision of Passive & Active Dosimeters

- **287** passive dosimeters have been provided:
  - **77** to airlines companies (Air France, Air Calin)
  - **80** to the French Embassy in Tokyo
  - **105** to journalists
  - **25** for the mission of President Sarkozy & Jacques Repussard

- **40** active dosimeters have been provided to the French Embassy in Tokyo

- **56** dosimeters have been received at IRSN:
  - **2** showed doses above the registration threshold of 50 μSv
  - **1** showed a dose of 370 μSv attributable to luggage control
  - Others showed doses below the registration threshold
Further Activities

- Contributing to a WHO international panel expert responsible for performing a dose assessment
- Contributing to the UNSCEAR report to be published by the end of 2013: IRSN participates in the 4 expert groups and leads the expert group on worker doses and health risks
- Collaborating with Japanese organizations involved in the evaluation of long-term consequences of the Fukushima Daiichi releases
Lessons Learnt

- The events didn’t occur in France: easier to manage, not so easy to communicate...
- The role played by the other French public authorities was minor: IRSN endorsed all responsibilities and widely communicated in the media.
- The consequences of lack of transparency for the Chernobyl accident are still present in France.
- French public doesn’t trust the politicians but is confident with information given by experts.
Lessons Learnt

- There is a clear lack of knowledge about radiation protection issues in French medical communities, especially with regard to stable iodine prophylaxis.
- IRSN is capable to perform in vivo and in vitro measurements for many individuals but should improve the result delivery phase to the patient.
- The implementation of specialized units within the emergency response center is essential (reactor, environment, health).
- International cooperation needs to be improved.
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