Risk communication and public understanding about radiation: some lessons from nuclear accidents

Jacques Lochard
Department of Health Risk Control

Noboru Takamura
Department of Global Health, Medicine and Welfare

Atomic Bomb Disease Institute, Nagasaki University

64th Health Physics Society Annual Meeting
Orlando, Florida, USA, 7-11 July 2019
Introductory remarks (1)

• Since the end of the 80s risk communication theories and methodologies made considerable advances*

• It is now well established that risk communication is an **interactive process between experts and the public** that is effective only in a context of **trust**

• However, the public understanding of radiation has not really progressed over the last 3 decades. It remains generally very sketchy, if not inaccurate, and decision-making processes about radiation are mostly confronted with skepticism, even opposition, from the stakeholders at local and national levels

• That said, most radiological experts and professionals continue to rely on a **one-way dissemination of information** with the hope to educate the public to reduce the so-called ‘**knowledge deficit’**

* In this respect the NRC report on ‘Improving Risk Communication’ published in 1989 was a turning point
Feedback from the Chernobyl and Fukushima nuclear accidents clearly highlighted that in a context of distrust of authorities and experts and of absence of background knowledge of the population about radiation risk, the diffusion of scientific and technical information in one-way communication plays a very limited role in helping people to understand the situation they are confronted with and to make informed decisions.

However, in such a general context some innovative approaches integrating at the same time, the participation of those affected, a two-way communication and trust building have demonstrated the possibility to effectively develop a practical radiological protection culture allowing people to make informed decisions about their own protection.

The purpose of the presentation is to draw some key lessons from these innovative approaches for radiological risk communication.
The innovative approaches considered

• **Chernobyl:**
  – The **ETHOS project** and **CORE program** in Belarus (1996-2008): initiated by a team of French experts in villages of the Stolyn district, developed in cooperation with the Belarus authorities, implemented with the participation of the villagers with the support of international organisations

• **Fukushima:**
  – The **crisis communication experience** from Nagasaki University professors (Spring 2011)
  – The **Suetsugi community initiative** (2011-today): initiated by local citizens with the support of voluntary experts and local organisations
  – The **Kawauchi village experience** (2012-today) : initiated by the local authorities and professors of the Nagasaki University with the support of the Japanese government
Ethos project, Belarus

Chernobyl

Core programme, Belarus
Fukushima

Crisis communication in March 2011
Crisis communication and nuclear accidents

- Communication in the early phase of the emergency response raises several **challenges:**
  - Those affected are **afraid, disturbed and stressed,** do not understand the situation and have no vision of their near future.
  - The **trust** in authorities and experts is **seriously affected** and many people are **angry**
  - Experts have only **partial information about the event.** Given the circumstances, it is impossible for them to **plan interventions** in advance and to organize **structured dialogues**
  - Sharing information **in high stress, high concern and emotionally charge situations** is a real challenge
  - The **experience** of crisis communication in the event of a nuclear accident is **very limited.**
Lessons from the Fukushima experience in crisis communication

• Deliver the information as it becomes available. Recognise limitation in the information and do not pretend to know in the absence of reliable information – Honesty and transparency

• Avoid ready made lectures and adjust communication according the concerns expressed by participants

• Favour Q&A sessions and respond to all individual questions carefully – Listen to the people

• Rely on past experience: Hiroshima/Nagasaki, Chernobyl – Develop narrative

• Put oneself in the place of the others – Empathy

• Face residents squarely and never try to escape - Courage
Risk communication in the recovery process

• Living in a contaminated area raises many questions and concerns, generates numerous views, and exacerbates conflicts.

• Testimonies from Chernobyl and Fukushima have highlighted:
  – the ignorance of people about radiation
  – the loss of trust in authorities and experts
  – the loss of control over everyday life
  – the disintegration of family and social ties and the breakdown of the economic fabric
  – the discouragement and apprehension about the future, particularly that of children
  – the threat on the autonomy and dignity of affected people

• The challenge of risk communication in this context is to take into account both the technical aspects related to the control of exposures but also all the human factors characterising the situation.
Lessons from the innovative approaches for the recovery process

• Providing information with the intention to educate people about radiation risk is ineffective.

• Engaging people in a dialogue combined with measurements associated with their daily life allows them to establish a concrete link between the radiological situation and their activities and behaviour.

• This process takes time, is resource demanding and implies the involvement of local leaders and experts/professionals who invest in the long term.

• Through their participation to the process affected people develop a narrative about the accident, their concerns, emotions and feelings, but also their expectations about the future and allow them to progressively regain confidence in themselves and others.
The co-expertise process (1)

Combining:

- Two-way communication
- Trust building
- Citizen participation/empowerment
- Technical expertise

- Establishing dialogues to share experience and knowledge
- Engaging affected people in measurements and sharing results
- Identifying self-help protective actions and organizing collective vigilance
- Implementing local projects with the support of experts
The co-expertise process (2)

- **Dialogue**
  - Listening to the concerns
  - Put oneself in the other’s shoes (*Empathy*)
  - Credibility (*Openness, accuracy, impartiality, transparency*)
  - Sharing expertise, experience and values (*Narratives*)
  - Maintaining contacts (*Loyalty*)

- **Measurements**
  - Characterisation of the radiological situation (*making visible the invisible*)
  - Sharing results to interpret measurements

- **Self help protection and collective vigilance**
  - *Empowerment*
  - Practical radiological *protection culture*
  - Informed decisions

- **Local projects**
  - Ensuring decent and sustainable living conditions
Concluding remarks (1)

- Apart from scientists, experts and professionals, citizens are rarely informed about radiation and even less about the radiological protection system.

- The relationship of our contemporaries to radioactivity remains largely dominated by the spectre of Hiroshima and Nagasaki and the uncertainty about the effects of low doses feeds since decades an ongoing scientific and social controversy on the effects of radiation.

- Despite considerable efforts risk communication had globally a limited impact on the ‘knowledge deficit’ among the general public.

- Lessons learned in the co-expertise process in Belarus and Japan demonstrate the feasibility to develop a practical radiation protection culture to empower people in order they make informed decisions about their protection and thus restore their dignity.
Concluding remarks (2)

• The question that remains open is to know in what measure it is conceivable to develop such a practical culture outside exceptional circumstances like in post-accident situations.

• Whatever the context, this will require experts and radiation protection professionals to put their experience at the service of those affected to meet their concerns and expectations.

• It will also require:
  – to strengthen their theoretical and practical skills in the field of risk communication by including in their training the know-how on two-way communication, building trust and stakeholder participation.
  – and to put in place the conditions and means to accompany them on the ground.
http://www-sdc.med.nagasaki-u.ac.jp/abdi/index.html