

Identification of lay people mental models of uncertainty management in emergency situations

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Background

- WP5 CONFIDENCE
- Emergency Preparedness and Response (EP&R) plans are prepared for many radiological and nuclear threats at different levels.
- Prepared by responsible authorities, very rarely developed based on the public involvement.

Mental models theoretical background



- Mental models are cognitive representations of some domain or situation, which support understanding, reasoning and prediction (Gentner, 2001; Morgan et al., 2002).
- These representations help individuals to better interact with possible situations and also to predict most probable evolution of the events in which they are involved.

Objectives

- To show the Mental Model Map originated through the study:
 - What lay people believes and what information they need to make a decision.
- To explain with more details the Mental Model Map of the Protection Measures.

Method

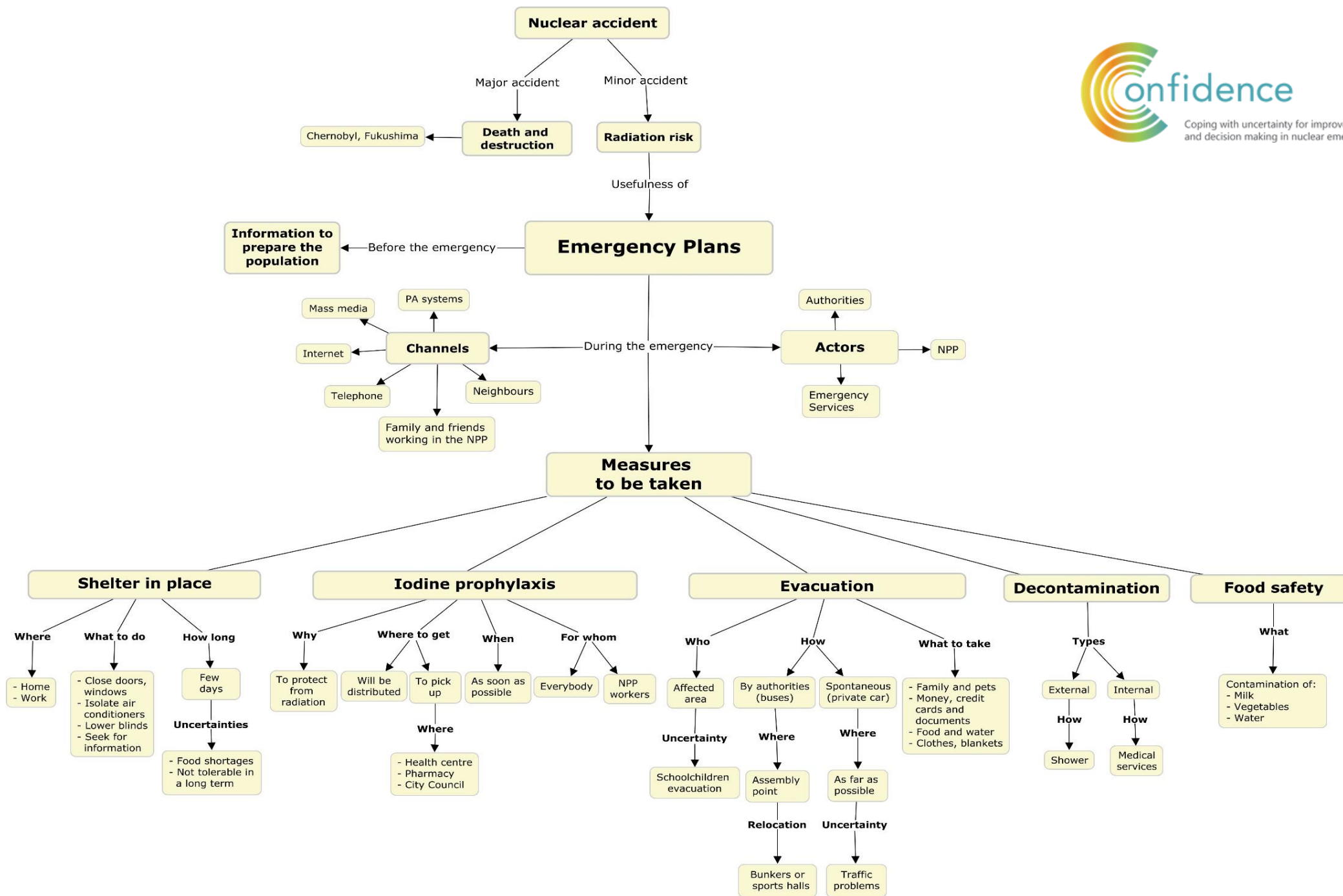
- Individual open-ended interviews following a protocol to allow:
 - The organized collection of information and the comparison of results and findings.
 - Eliciting people's beliefs about the hazard, understanding of protective measures and communication issues.
- Research was performed in five countries: Germany, Greece, Slovak Republic, Slovenia and Spain (countries with different nuclear experiences).
- Discussion with experts on their understanding of EP&R and associated uncertainties.

Sample

- People living in the areas for which the EP&R plans are developed.
- The total sample was 82 lay responders plus one student for testing of protocol.

Country	Sample (N)
Germany	15
Greece	20
Slovak Republic	17
Slovenia	15
Spain	15

Mental Model Map



Measures to be taken



- Interviewees think they would be confined inside (for instance, at home or at work) and they would have to be there for many days.
- Some protective measures such as to close doors and windows or to isolate air conditioners were mentioned.
- Some images exist that such shelters should be underground bunkers with thick concrete walls.
- The main uncertainty is whether they would have enough food and drink.

Evacuation (I)

- A clear difference between evacuation leaded by authorities and spontaneous evacuation is done.
- They would take with them mainly money, credit cards and documentation, food and water, and clothes; and their family and pets.
- The evacuation of schoolchildren is mentioned as an important uncertainty.



Evacuation (II)

- Accommodation and relocation would also be different in case of spontaneous versus advised evacuation.
 - In case of advised evacuation, participants imagine they would be confined in bunkers or in sport halls.
 - In case of spontaneous evacuation, they would go as far as possible, to a second residence if possible or even abroad.

Iodine prophylaxis

- In general, participants have very little knowledge about iodine prophylaxis.
- They do not know what the tablets are used for.
- An important uncertainty is where to get iodine tablets.



Decontamination

- Interviewees have very limited knowledge about decontamination.
- Only some participants relate it with having a shower if the contamination is external or with the need of medical care if the contamination is internal.



Food Safety

- Participants believe that milk, vegetables and water would be affected in case of accident.
- They do not have any idea of what food safety measures will be taken.



Conclusions

- Mental model investigation in five countries revealed main uncertainties of the public regarding EP&R management.
- In general – there are no major differences between countries – nuclear or no nuclear.
- Lay people generally showed low awareness of emergency plans, though basic elements were better known in some of the countries.
- In most countries lay respondents expressed doubts on the effectiveness of EP&R plans.

Bibliography

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THANK YOU

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