

Comments on the update draft of ICRP publications 109 and 111

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First, I would like to acknowledge great contributions from ICRP to Fukushima and the world. ICRP publications 109 and 111 have special roles in the recovery of Fukushima. I also want to express thanks that ICRP prepares the opportunity for public comments regarding the update draft of ICRP publications 109 and 111. I hope this updated publication will be beneficial to the recovery of Fukushima and the peace of the world.

I have three comments. Two comments are related to the reference level of 10 mSv/year. One is about health surveillance especially regarding monitoring programmes for the thyroid.

1.

The reference level may be used for policy decisions such as lifting of evacuation. However, the details of dose measurement methodology are not well defined. I understand the reference level is used under a concept of optimization, as shown in Fig. 2.3 (p.23). In order to implement optimization under a frame of policy decisions, the number should be well linked with the defined dose measurement methodology. For example, does this number “in practice” represent the average value among the affected people in an area? Or, does it mean the value among high risk populations in an area (something like 95% upper confidence limit)? Several studies after the Fukushima accident revealed that average individual doses were much lower than those in the governmental model (i.e., estimation from airborne monitoring and behavior assuming outdoor stays of 8 hours and a shielding effect of 0.4) due to several factors including types of dose units (i.e., Hp(10) and H*10), the length of stay inside and outside, and shielding effects (1-3). The number in the reference level may be conceptual; however, in practice, what the number means (or how the number is defined) is really important. I feel that what the dose in policy decisions represents is not clear.

2.

Regarding how to set regulations, I would like to mention two points. First, after the Fukushima disaster, lifestyle diseases and psychological distress have increased especially among evacuees who had experienced relocation (4, 5). For some affected people, health status, especially psychological health status, may be improved after returning home (6). Overall health conditions in addition to radiation doses warrant more consideration. Second point is the right to freedom. As an important turning point under the history of ICRP

publications, the value 20 mSv/y was introduced as the occupational dose limit in 1990 (7). One of main references for this process is UK Royal Society's report (8). It says "the imposition of a continuing annual risk of death to the individual of 10^{-2} seems unacceptable. At 10^{-3} it may not be totally unacceptable if the individual knows of the situation, enjoys some commensurate benefit, and everything reasonable has been done to reduce the risk." Here, we should note that the regulation was established from a paternalistic perspective and justified from the balance between freedom and unacceptable risk (9). People have the right to self-determination. The affected people have the right to choose where to live or whether to return. Regulations possibly violate their right to freedom, whereas the regulation works to reduce radiation doses. Such viewpoints, namely, right to freedom, should be discussed more for setting the regulations. Importantly, policy decisions should support all the affected people who have various senses of value (e.g., low radiation doses, overall health, right to freedom, and well-being). Here, dialogues through stakeholder involvement have important roles in social decisions.

3.

The update draft mentions specific monitoring programmes for the thyroid (in 201, p50). I agree with the importance of discussion on this topic. Although some important points are described by citing Togawa's paper that summarizes the IARC recommendations regarding thyroid health monitoring after nuclear accidents, I feel that the descriptions are not sufficient. There are two recommendations from the IARC expert group (10): 1) The Expert Group recommends against population thyroid screening after a nuclear accident; 2) The Expert Group recommends that consideration be given to offering a long term thyroid monitoring programme for higher risk individuals after a nuclear accident. Here, the updated publication needs to mention what the "thyroid monitoring programme" means and why it is important. Thyroid screening among children and young adults brings harm of overdiagnosis or extremely early diagnosis including individual and social economic costs as well as discrimination affecting insurance coverage, employment, and marriage; it should be noted that children and young adults will experienced such life events after screening (11). Importantly, such harms do not start after treatment but after examination. When the harm outweighs benefits, screening should not be recommended; at the same time, from the right to freedom, the opportunity for participating in examinations should be considered through communications between a subject and medical professionals. IARC recommendations define the word "thyroid monitoring programme" as "including education to improve health literacy, registration of participants, centralized data, collection from thyroid examinations, and clinical management" and say that "within the thyroid monitoring programme, there should be a shared decision-making process between individuals, families, and clinicians about whether and how to engage in thyroid examinations and follow-ups." Such background and core concepts are required to be clearly described in the updated publication.

References

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