NRC INTERNATIONAL TRAVEL TRIP REPORT

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Subject:

The International Workshop on Radiation and Thyroid Cancer

Dates of Travel and Countries/Organizations Visited:

February 19-24, 2014
Organized by OECD/NEA, Japan Ministry of the Environment and Fukushima Medical University
Tokyo, Japan

Desired Outcome:

The objective of this meeting is to develop a state-of-the-art scientific understanding of radiation-induced thyroid cancer, and to share knowledge and experience in this area in order to support the efforts of the Japanese government and the Fukushima prefecture to enhance public health. In addition, insights gained from these discussions can better inform NRC KI and EP policy.

Results Achieved:

Experience from the Chernobyl accident demonstrates that large exposures to ^{131}I can cause thyroid cancer in children (0 to 18 years of age), with younger children having more risk than older ones. Some experience from those exposed in Hiroshima and Nagasaki also suggests that thyroid cancer is a relevant concern. As a result of the release of significant quantities of ^{131}I from the Fukushima reactor accident, many people were and are concerned that there would be an increased risk of thyroid cancer in exposed populations, particularly the pediatric population. To address this risk the Japanese government implemented a medical surveillance program shortly after the accident for the 2 million people living in the Fukushima prefecture. The population monitored includes about 350,000 children. To date 239,000 children have had preliminary thyroid screening exams, and of these 1,100 have undergone secondary examinations. The timetable for the initial ultrasound screening of all children is to be completed within the first three years after the accident, and these will be followed by complete thyroid examinations from 2014 onwards.

As of July 2013, there were 19 cases of papillary carcinoma (thyroid cancer) diagnosed. All of these children have been successfully treated and are considered cured. Additionally another 25 children have been identified who have a suspicion of thyroid malignancy.

The thyroid cancer incidence rate identified thus far in Fukushima prefecture is higher than found in the whole population of Japan, although further study is being done on the cancer rate in Japan. Approximately 135,000 children from Fukushima Prefecture have not yet had their thyroids examined and the results of these exams may significantly alter the current findings.

There has been a worldwide increase in papillary thyroid cancer. Studies suggest that at least 50 to 60% of the increase can be attributed to enhanced screening techniques. There has been a steep increase in small (<2mm) tumors which is likely attributable to the aforementioned screening process. It is not known how many of these small tumors would progress into more serious cancers or what factors would prompt the development of these small tumors into larger or more aggressive tumors. The current medical recommendations when such small tumors are identified is “watchful waiting” without intervention.

At the conclusion of the three day meeting, representatives from Fukushima Medical University and Japan Ministry of Environment stated that the increase above the background rate in thyroid cancers in children of the Fukushima prefecture is not as a result of the accident.

Pending Actions/Planned Next Steps for NRC:

Continue to monitor the ongoing research of the potential health effects, specifically thyroid disease, as a result of the Fukushima accident.

Points for Commission Consideration/Interest:

None at this time.