Tracking Health Casualties from Fukushima

By Joseph Mangano

The recent 10-year mark since the three catastrophic reactor meltdowns at Fukushima-Daiichi poses questions, such as "How many people were harmed by the huge amount of radioactivity released?"

The answer, according to many nuclear proponents: zero. The response to that answer? "Prove it."

From the outset, the crescendo of cheerleaders asserting Fukushima harmed nobody has been loud and steady. No cancer cases, no cancer deaths. As the reactors exploded, as thousands streamed out of the area, and as enormous volumes of contaminated water poured into the Pacific Ocean, the party line has remained unchanged.

Is there any proof, any data, any evidence, supporting this belief? Only one study is under way in Japan, which identified several hundred local children who developed thyroid cancer since 2011. But researchers at the Medical University of Fukushima are quick to explain that the big number, in a disease rarely seen in children, is due only to more extensive testing, not radiation exposure.

Any objective researcher would not accept this as "proof" and would call for studies that go beyond child thyroid cancer. The meltdown is arguably the worst environmental disaster in history. Fallout affected all of Japan, and traveled thousands of miles. But studying effects on human health is left to independent researchers.

Fukushima and the United States

The Radiation and Public Health Project (RPHP) has published 38 peer-reviewed journal articles on health effects of nuclear power emissions. RPHP members believe relatively small doses of exposure affect human health — a fact supported by hundreds of studies in the National Academy of Science's Committee on the Biological Effects of Ionizing Radiation (BEIR) reports.

While Japan was the site of the disaster, and thus hardest-hit, exposure and health data from that nation has been largely unavailable. I and my colleague Dr. Janette Sherman (who died in 2019), have responded by building a database in the United States for the past 10 years.

Exposure data was first. Airborne fallout arrived on the US west coast four days after the meltdowns, and moved across the continent. Environmental Protection Agency measurements of gross beta radiation in the air from March 17 to April 30 were highest in Alaska, California, Hawaii, Oregon, and Washington (7.35 times higher than the year before, vs. just 2.38 times higher for the rest of the US.

Precipitation was next. Airborne radiation enters the food chain and human bodies from rain and snow. National Oceanic and Atmospheric Administration data showed that in Washington state, precipitation rose from 7.76 to 12.48 inches from March/April 2010 to March/April 2011. In Oregon, the jump between the two periods was from 7.46 to 10.31 inches. These large increases made these two states the rainiest area of the country — in an area hardest-hit by Fukushima fallout.

Large rises in radiation and precipitation made the five Pacific states the focus of our studies.

Quick Publication, Quick Backlash

Finding health data was next. Most official statistics require several years to be made public; but with the constant "no cancers at Fukushima" in our ears, Dr. Sherman and I moved quickly.

One immediately available source was the Centers for Disease Control's weekly estimate of deaths in 38 US cities, 30% of the nation. In the 14 weeks after Fukushima fallout arrived, deaths rose 4.46% compared to the same period in 2010. The change for the prior 14 weeks was 2.34%.

Medical staff check radiation levels in Koriyama, Japan, in April 2011. Reports from the period noted: "Radioactive iodine found in breast milk of Japanese mothers," *The Independent,* April 20, 2011. Photo: Aflo/Rex Features.

Projecting these changes to the entire US, suggested 14,000 additional deaths had occurred. Our article on the findings was published in the International *Journal of Health Services* in December 2011. We noted that RPHP founders Jay Gould and Ernest Sternglass had shown a similar spike after the Chernobyl meltdown of 1986, and estimated 15,000 excess deaths in the United States (*American Medical Association News*, August 1988).

The response was immediate and strong. Angry responses were published in the journal — none of which explained the unusual increase. Some took to blasting the research on social media. Final figures showed 9,000 excess deaths — with the greatest gaps in the hard-hit Pacific states.

Focus Shifts to Infants

We shifted our work to infants, who are more susceptible to radiation than adults. We followed our first article with three more in rapid order (March 2013, December 2013, and March 2015), each published in the *Open Journal of Pediatrics*, and each addressing infant health changes on the west coast.

In the five states, newborns born with hypothyroidism, which can be caused by radioactive iodine, jumped 16%, from 281 to 327 cases, in the period March 17 to December 31 (2010 vs. 2011). In the rest of the US, cases fell 4%. The biggest jump was in the first 10 weeks after Fukushima (28%). Rises were statistically significant.

Even so, the number of cases was small. We asked the California screening program to do a special program, in which we could analyze the "borderline" newborn hypothyroid cases — those who had a high thyroid stimulating hormone level but didn't quite qualify as confirmed cases. We found confirmed plus borderline cases rose 27% from March 17 to December 31 (2010 vs. 2011) — with a much larger number of cases (2,137 in 2011).

The next frontier was birth defects. Radiation exposure is well known to raise risk of defects in newborns, and the CDC published statistics for five of them — anencephaly, cleft palate, down syndrome, Gastroschisis, and Spina Bifida. The number of newborns born April through November with any of these anomalies jumped 13%, from 600 to 672, from 2010 to 2011. In the rest of the US, the number declined 4% — making the difference significant. Rises occurred in each state, for each defect, for babies born prematurely or full-term.

Infant Deaths and Child Cancers

In addition to immediate effects on newborns, higher numbers of infant deaths and child cancers would be expected. We plan to continue our work by focusing on these populations in the five Pacific states.

The study of Fukushima casualties is just beginning. A full review will eventually include adults, which will take decades. Of course, Japan will have the most serious hazards, as its people received the greatest radiation doses. Studies will be needed there, and throughout the world, before the full health story of the 2011 meltdowns is known.

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UN Experts 'Deeply disappointed' by Decision to Discharge Fukushima Water

By the United Nations News

Three independent UN human rights experts expressed deep regret on [April 15] over Japan's decision to discharge potentially still radioactive Fukushima nuclear plant water into the ocean, warning that it could impact millions across the Pacific region.

"The release of one million tonnes of contaminated water into the marine environment imposes considerable risks to the full enjoyment of human rights of concerned populations in and beyond the borders of Japan," said Marcos Orellana, Special Rapporteur on toxics and human rights, Michael Fakhri, Special Rapporteur on the right to food, and David Boyd, Special Rapporteur on human rights and the environment in a joint statement.

Given the warnings from environmentalists and some governments that the discharge would affect many people as well as the environment at large, the experts called the Government's decision "very concerning."

It comes after years of discussions with communities including the fishing sector (which was already severely hit by the 2011 disaster), environmental NGOs, neighboring countries, and civil society. *"The decision is particularly disappointing as experts believe alternative solutions to the problem are available,"* the letter said.

Noting that the water may contain quantities of radioactive carbon-14, as well as other radioactive isotopes, independent experts raised their concerns with the Japanese Government that discharging radioactive water to the Pacific Ocean threatens the health of people and planet.

Meanwhile, in reply to expert concerns, the Japanese Government has suggested that the treated water stored in the tanks was not contaminated. However, the experts upheld that the ALPS [Advanced Liquid Processing System] water processing technology had failed to completely remove radioactive concentrations in most of the contaminated water stored in tanks at Fukushima-Daiichi.

"A first application ALPS failed to clean the water below regulatory levels and there are no guarantees that a second treatment will succeed," they said, adding that the technology did not remove radioactive tritium or carbon-14.

Isotope concerns

While Japan said that the tritium levels are very low and do not pose a threat to human health, scientists warn that in the water, the isotope organically binds to other molecules, moving up the food chain affecting plants and fish and humans.

Moreover, they say the radioactive hazards of tritium have been underestimated and could pose risks to humans and the environment for over 100 years.

"We remind Japan of its international obligations to prevent exposure to hazardous substances, to conduct environmental impact assessments of the risks that the discharge of water may have, to prevent transboundary environmental harms, and to protect the marine environment," the experts concluded.

Special Rapporteurs are independent experts appointed by the Geneva-based UN Human Rights Council to examine and report back on a specific human rights theme or a country situation. The positions are honorary and the experts, who serve in their personal capacities, are not paid for their work.

— UN News, April 15, 2021