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How a Secretive U.S. Agency Discovered the A-Bomb's **Effect on People**

By SUSAN SOUTHARD

August 09, 2015

When the second atomic bomb was dropped on Nagasaki on August 9, 1945, 15-year-old Do-oh Mineko was working inside a Mitsubishi factory, eagerly awaiting her lunch break. The massive concrete and steel factory imploded on top of her and thousands of other adults and young people. Doh-oh sustained severe injuries, including a large gash at the back of her head, burns, and glass splinters that remained embedded in her body for the rest of her life. Over the next few months, she developed the symptoms of acute whole-body radiation exposure, including the loss of all her hair, which did not grow back for 10 years. Ashamed of how she looked, she stayed hidden inside her house for years.

When Do-oh was 20, new hope appeared at her door. It was 1949, at the time of year, she remembered, that "the persimmon fruits started to develop color." Her injuries still hadn't fully healed, and her hair had not grown back; short, soft fuzz still grew in periodically, then fell out again. "I felt like giving up," Do-oh remembered. "At about that time, an unfamiliar, foreign car arrived and parked in front of our house.

"I have come from the ABCC to take you there,' the person told us. 'Please cooperate with our research.' I got into the car believing that I would be healed by them." Driving away, Do-oh stared out of the car window. She had no idea of the underlying purposes of the medical examination she would undergo that day or the intense international dispute in which she would play a small part.

Three years earlier, the United States had seized on what it saw as a critical and unique opportunity to conduct long-range scientific and medical research on *hibakusha* ("atomic bomb-affected people")—which an Army Medical Corps senior researcher on atomic bomb effects had believed "may not again be offered until another world war." To this end, President Harry Truman had signed an order to establish the Atomic Bomb Casualty Commission (ABCC), charged with studying atomic bomb survivors to determine how radiation exposure affected their health. U.S. leaders projected that the ABCC's studies would offer the United States numerous military, scientific and regulatory benefits—including greater understanding of the impact of nuclear weapons currently in development, support for civil defense planning for potential nuclear attacks on U.S. cities and data for the reevaluation of international radiation dose limits for physicians, scientists, radiation workers and patients.

These goals inadvertently reflected how little, prior to the atomic bombings, U.S. scientists and military officials knew about the immediate or long-term impact of whole-body radiation, and they foretold how blatantly the ABCC would ignore the medical needs of the survivors, conducting research only and failing to provide treatment of any kind. Why? Because U.S. leaders believed treating *hibakusha* would be akin to admitting responsibility for their injuries—a concession the government refused to make.

The choices the agency made in fulfilling its mission ignited a bitter, decades-long controversy between the ABCC and *hibakusha*, their physicians and research scientists across Japan.

Tensions began early. On paper, the ABCC was established as a collaboration between the United States' National Research Council and Japan's National Institute of Health, but in practice the commission was predominantly funded and controlled by agencies of the U.S. government, and it operated inside a country under U.S. military occupation. After years of vitriolic wartime slurs by each country against the other, U.S. and Japanese scientists distrusted one another's professional integrity and feared the ABCC's research outcomes would be tainted by national bias: Americans were concerned that the Japanese would exaggerate radiation effects for political purposes, and the Japanese worried that the Americans would minimize radiation effects for their own political gain. Japanese doctors working at the ABCC appreciated the United States' advanced scientific methodologies, but some felt disrespected by U.S. physicians' lack of confidence in their medical skills as well as their ability to evaluate research. One American ABCC doctor wrote: "Just the thought of what the Japanese would do if they had free unrestrained use of our data and what they might publish under the imprimatur of the ABCC gives me nightmares."

The imbalance of power at the ABCC was made worse by wage inequities between U.S. and Japanese physicians working there. The agency's longtime policy to designate only U.S. physicians and scientists as directors of each city's operations resulted in the majority of the ABCC's staff—Japanese doctors, nurses and support personnel, including many who had survived the atomic bombs and endured extraordinary losses—having to work under U.S. authority. Extreme insult arose when the United States took full possession of all of the ABCC's research data, study outcome and specimens, in part to prevent other nations from gleaning technical information about the bombs that might advance their own nuclear weapons programs. Even Nagasaki and Hiroshima doctors treating *hibakusha* on a daily basis had no access to these critical findings that could have supported their diagnoses and care. Nagasaki physician Nishimori Issei reflected that "the ABCC's way of doing research seemed to us full of secrets.

We Japanese doctors thought it went against common sense. A doctor who finds something new while conducting research is obligated to make it public for the benefit of all human beings."

In Nagasaki, the ABCC's first offices were set up over a fish market on the wharf, and patients were initially examined at the temporary hospital at Shinkozen Elementary School. During the late 1940s into the early 1950s, thousands of survivors like Do-oh heard a knock at their door and saw an ABCC jeep and staff person waiting outside to transport them to Shinkozen. The ABCC had identified and located them by using the medical studies and informal surveys of hibakusha conducted after the war, and by talking with physicians and scientists, gathering hospital records and enlisting the help of local police. Although the ABCC was not officially under occupation authority, in Nagasaki's post-war climate, some hibakusha felt forced to participate because they perceived the ABCC as a function of the occupation and thereby an extension of the U.S. military. At Shinkozen, they underwent physical examinations and were asked a series of questions about their location at the time of the bombing, distance from the hypocenter, direction they were facing and physical symptoms they had experienced since then. In keeping with the Japanese social custom of reciprocity, ABCC staff sometimes gave survivors small gifts and offered them a taxi ride home.

"We went inside the building," Do-oh remembered. "I was told to put on a white hospital gown. There was not much of an interview—I think they just looked at my injuries and took photographs of them. There were foreign doctors there, too." Do-oh had thought she would be given medical treatment—at least to help with her pain—but ABCC staff provided no treatment and no emotional support. "I went home hugely disappointed," she explained. "As a young girl, I had been seen naked from the waist up and had taken the black cloth off my head in front of men. I felt something like rage."

Do-oh was not alone. Although public opposition to the ABCC was suppressed by occupation censorship, within the highly sensitive medical, political and economic climate in Nagasaki and Hiroshima, *hibakusha* anger toward the ABCC intensified. At a time when *hibakusha* were just beginning to come to terms with their identities as the only victims of atomic warfare in human history, the Americans who dropped the bombs imposed on them a disturbing new identity as research specimens for the U.S. government. Many survivors hated being studied by doctors from the country that had irradiated them. The ABCC also transgressed cultural boundaries with invasive and intimidating procedures, by examining young people like Do-oh in the nude, collecting blood and semen samples and taking photographs of survivors' atomic bomb injuries. Other social and economic oversights alienated survivors: Polished waiting room floors were slippery for women wearing *geta*; English-only magazines were placed in the waiting rooms; and the ABCC insisted that examinations take place during the day, resulting in loss of pay for those who worked. Even the word "examination" seemed objectifying to many.

The largest complaint, however, was that the ABCC conducted medical examinations without also offering medical care. What Do-oh and other *hibakusha* didn't know was that the ABCC's mission to conduct detailed studies of survivors' radiation-related illnesses included a strict mandate to provide them no medical treatment. As *hibakusha* became aware of this directive, many felt even more dehumanized, and they experienced powerful feelings of being used by the United States as guinea pigs in a military experiment. Some also resented the ABCC's notreatment policy in light of the shortage of medicine and medical equipment available in Japan after the war, contrasted with the millions of dollars that poured into the ABCC. In the United States, activist Norman Cousins praised the ABCC's work as both excellent and important, but

he openly criticized the agency for what he saw as a "strange spectacle of a man suffering from [radiation] sickness getting thousands of dollars' worth of analysis but not one cent of treatment from the Commission."

The United States offered numerous reasons for its no-treatment policy. Early on, officials said that American physicians could not pass Japanese medical licensure exams because of the language barrier—but by 1951, 70 percent of doctors on ABCC staff were Japanese physicians who could have provided medical care. The United States also asserted that occupation policy did not allow American physicians to render aid to Japanese citizens, giving an inaccurate impression that the ABCC was under the occupation's authority. Other arguments included that medical care was not a relevant activity within the scope of the ABCC's scholarly scientific research, that the cost of providing care would be prohibitive and that the ABCC's provision of care to survivors would have a negative impact on local physicians by depriving them of the opportunity to administer these services to their own community (a position many Japanese physicians disputed). As late as 1961, U.S. authorities overseeing the ABCC maintained that offering medical care to atomic bomb survivors would oblige the United States to deliver care to every Japanese citizen injured during the war, which in return would require Japan to provide treatment to every American injured in battles with Japanese soldiers, including those wounded at Pearl Harbor. In putting forth each of these reasons, the United States failed to distinguish between other Japanese war casualties and hibakusha who were subjects of the ABCC's longterm scientific study for U.S. military purposes.

Underlying every explanation was the highly charged concern that providing medical care to *hibakusha*—even while conducting studies on their medical conditions—could be interpreted as an act of atonement by the United States for using the atomic bombs, a position that was unequivocally rejected at every level of the U.S. government. The United States held tightly to this position despite the fact that in postwar Europe, the U.S. military provided medical care to former enemies under Allied occupation without any suggestion of responsibility for their injuries. So sensitive was this issue that ABCC directors rejected a hiring proposal to prioritize *hibakusha* as employees so as not to be perceived as atoning for the bombs by giving them preferential treatment.

Japanese scientists and early *hibakusha* activists also equated treatment to U.S. atonement, and *hibakusha* were caught between the polarized stances of the two governments, each wanting the other to claim moral, financial and medical responsibility for the atomic bombings. As this fierce international tug-of-war dragged on, *hibakusha* continued to suffer and often die from illnesses related to their radiation exposure, and neither the barely solvent Japanese government nor the U.S.-directed ABCC provided financial or medical support. Out of compassion for their patients, some of the ABCC's Japanese doctors occasionally broke policy and provided medical care—including chemotherapy and other protocols—both at the ABCC's clinic and during house calls, where they could treat simple cases without notice or with the silent acceptance of their American supervisors.

Within this highly charged atmosphere, *hibakusha* found an advocate in 33-year-old pediatrician James Yamazaki, the city's third ABCC director. A second-generation Japanese American, Yamazaki had served as a U.S. Army combat surgeon in northern Europe while his family was interned in a War Relocation Authority camp in Jerome, Arkansas.

As the only American doctor at the Nagasaki facility, and with limited Japanese language skills, Dr. Yamasaki determined that one of his first goals would be to gain the confidence of both *hibakusha* and the Nagasaki medical community. To this end, Yamazaki developed a strong

collaborative working relationship with Dr. Raisuke Shirabe, now the director of Nagasaki Medical College Hospital. This relationship helped ease the tensions that had been built up between the ABCC and Nagasaki's medical professionals and survivors.

Early on, Shirabe delivered to his new colleague the still-censored research study of the acute effects on 8,000 survivors that Shirabe had conducted four years earlier. It was difficult for Yamazaki to comprehend the extent, rationale and impact of the occupation's censorship of Japanese research on the medical aftereffects of the bombs. "They completed the study in 1946," he explained, referring to Shirabe's team. "Four years later, he was handing it to me—the first medical report our team was to receive covering that critically important population."

Yamazaki was also barred access to numerous studies carried out by Japanese research teams in the four years after the atomic bomb attacks, and later he discovered that even he—an American serving American purposes who had security clearance from the Atomic Energy Commission—had not been given access to early U.S. studies on the short-term effects of the atomic bombs. In fact, he knew nothing of their existence until shortly before he left Japan two years later. These reports, Yamazaki remembered, "would have been immensely helpful ... as we groped our way toward establishing our research on the effects of the radiation."

During his tenure, Yamazaki and his staff examined many children and diagnosed microcephaly, cardiac disease, incontinence and several mental and developmental disabilities, but they remained guarded in ascribing the children's disorders to radiation exposure until their studies could definitively document cause and effect. Yamazaki recalled that even five years after the bombing, many mothers knew little about the potential effects of radiation on their children and had also been told by their family doctors that their children's physical and mental challenges were "most likely caused by the malnutrition, trauma and stress related to the bombing." Years later, when they realized that radiation from the bomb may have caused their children's conditions, they demanded to know why they hadn't been told earlier.

By the 1960s, long after Dr. Yamazaki had left Nagasaki, a study examining the effects of radiation exposure in utero in Nagasaki and Hiroshima grew to 3,600 children, including their control groups. As these children grew older, the ABCC's outcomes confirmed radiation exposure as the cause of most of the children's health conditions, including high incidences of microcephaly and neurological impairments. The studies revealed the particular vulnerabilities of timing as it related to in utero radiation exposure. Children who had been exposed at eight to 15 weeks after conception demonstrated significantly greater risk of developmental disabilities because fetal brain cells are more susceptible to radiation damage in this stage of pregnancy. In a Nagasaki substudy published in 1972, eight of nine children (89 percent) exposed before the 18th week of pregnancy were diagnosed with microcephaly—compared to two of nine children (22 percent) exposed to the same levels of radiation later in their gestational development. The ABCC periodically observed the children in this cohort through age 19 and beyond. As young adults, these *hibakusha* continued to demonstrate reduced height, weight and head and chest circumferences in addition to mental disabilities and decreased scores on intelligence tests compared with control groups.

All of this research has been possible because of the participation of tens of thousands of Nagasaki and Hiroshima survivors. Despite their political, cultural, and deeply personal concerns about the agency's methods, they have chosen to take part in the ABCC's studies for numerous reasons, including the provision of free medical exams and diagnoses even without medical care, Many found some meaning in their survival through their contribution to scientific knowledge of

radiation exposure, which they hoped could help abolish nuclear weapons development throughout the world.

Like Do-oh, however, many *hibakusha* remained adamantly opposed to the ABCC. After her first and only visit to the ABCC clinic, Do-oh decided never to go again, choosing to forgo potential diagnoses or post-mortem analyses of her conditions rather than offer her body, and her suffering, to U.S. data collection. For the next 20 years, the ABCC called and sent letters asking how she was, but she never responded. Only years later did she speak to her family about her reasons. "I refused to cooperate because of the way I was treated," she explained. "I felt like an object being kept alive for research—and my pride wouldn't allow this to happen." She was also troubled by the agonizing and unbearable fear that her participation might in some way contribute to the development of an even more powerful nuclear weapon.

Twenty-eight years after the bombing, Japan gained significant control over the ABCC and the medical research conducted on survivors' bodies, allowing the organization the opportunity to shed much of its negative reputation among survivors. The ABCC was renamed the Radiation Effects Research Foundation (RERF), with offices in Hiroshima, Nagasaki and Tokyo.

To continue their studies on the impact of radiation exposure on the immune system, medical conditions and mortality, the RERF, the Atomic Bomb Disease Institute at Nagasaki University and other research institutions continue to use immense cohorts of living *hibakusha* and the medical records of deceased survivors. The outcomes of their research have supported scientific-based responses to nuclear accidents such as the 1986 nuclear power plant meltdown in Chernobyl, Ukraine and the 2011 Fukushima nuclear disaster in Japan following the massive earthquake and tsunami there, two events that traumatized many *hibakusha*. Ironically, outcomes from *hibakusha* medical studies are also used to inform international standards for maximum tolerable radiation exposure.

The enormous number and size of studies conducted since 1945, and the extent to which they continue today, are further reminders of how little American scientists developing the bomb knew about the destruction it would wreak.