

Long-term Health Consequences of Nuclear Weapons

70 Years on Red Cross Hospitals still treat Thousands of Atomic Bomb Survivors

Information Note 5
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**Prepared by the International Committee of the Red Cross (ICRC)
in cooperation with the Japanese Red Cross Society**

In 2015, seventy years after the atomic bombings of Hiroshima and Nagasaki, Japanese Red Cross Society hospitals in those cities are still treating many thousands of people who survived the blasts and are suffering from the long-term health effects of exposure to nuclear radiation.

The Japanese Red Cross Society has run hospitals for atomic bomb survivors in Hiroshima since 1956 and in Nagasaki since 1969. **During the period of Red Cross management through 31 March 2015, these hospitals have together handled more than 2.5 million outpatient visits by atomic bomb survivors and more than 2.6 million admissions of survivors as inpatients.**

1. Hiroshima

In the year ending 31 March 2015 alone, the Hiroshima Atomic-Bomb Survivors Hospital treated 4,657 individual officially recognized atomic bomb survivors whose care involved 62,130 outpatient visits and 34,807 inpatient admissions.

Of the atomic bomb survivor deaths that occurred in the hospital through March 2014, nearly two-thirds (63%) were attributed to malignant tumors (cancer) of which the primary types were lung cancer (20%), stomach cancer (18%), liver cancer (14%), leukemia (8%), intestinal cancer (7%) and malignant lymphoma (6%).

2. Nagasaki

In the year ending 31 March 2015, the Japanese Red Cross Nagasaki Genbaku Hospital treated 6,030 officially recognized survivors as outpatients and 1,267 as inpatients. Their care required 36,260 outpatient visits by survivors and 23,865 outpatient visits by their children, underlining concerns about second-generation health effects of nuclear weapons. The Nagasaki hospital also managed 18,187 inpatient visits by survivors and 12,878 visits by children of survivors.

In the Nagasaki hospital 56% of atomic bomb survivor deaths in the year ending March 2014 were attributed to cancers of which the primary types were lung cancer (38%), liver cancer (12%) and stomach cancer (9%). In addition, cancers of the colon, lymph system, gall bladder and pancreas together accounted for 24% of cancer deaths by survivors.

3. Health issues for the broader population of atomic bomb survivors

As of March 2014 the Japanese government officially recognized 192,719 living persons as atomic bomb survivors or "hibakusha". Of these 119,169 were directly exposed at the time of the atomic bombings, 45,260 were exposed by entering the cities in the following weeks, 20,939

risked exposure through relief, burial and similar activities and 7,351 were unborn children at the time of the exposure of their parents (from the types of exposure just listed).

According to studies cited by the Honorary President of the Japanese Red Cross Nagasaki Genbaku Hospital,¹ the incidence of leukemia among survivors reached a peak of 4-5 times that of a non-exposed control group in the years following the atomic bombings, before diminishing 10-15 years later. Children under 10 years who were exposed to atomic radiation in 1945 were later shown to have a type of leukemia (MDS) that normally occurs in elderly people at a rate 4 times that of the general population. Childhood survivors of the bombings have also experienced a trend of suffering from multiple types of cancer over decades, each developing independently. This is attributed to exposure of the entire body to radiation at the time of the bombing, causing damage to stem cells in multiple organs which in turn can produce abnormal cells that become cancerous.

The health of non-exposed children of atomic bomb survivors has been intensively followed in recent years.² These are children born to hibakusha in the years following their parents' direct exposure. This "second generation" population includes some 200,000 persons who are currently approaching the cancer-prone age of 50-60 years. If the radiation exposure damaged the genes of hibakusha, as it has done in animal studies, hereditary transmission of radiation effects will be another long-term concern requiring years of treatment. A large-scale epidemiological study of this population is currently underway.

The psychological impact of exposure to the atomic bombings is also significant, even among healthy survivors, as the serious risk of radiation-related illnesses among survivors is well known. Studies in 1995 using World Health Organization methodology demonstrated long-lasting psychological instability, including depression and post-traumatic stress disorder (PTSD) among many survivors.³ Those who lost their relatives in the bombings and those who themselves suffered from acute radiation sickness tend to have more pronounced psychological instability. Their health condition typically deteriorates around August every year. Radiation fear is a common clinical problem when physicians examine survivors' health condition once a year, in accordance with Japanese Government policy.

In light of the large number of survivors still alive it is expected that many thousands of these will require care by Red Cross and other hospitals for radiation related illnesses in the coming years.

4. Key messages

- The use of two relatively small nuclear weapons in 1945 have resulted in increased levels of leukemia and cancers amongst atomic bomb survivors over a period of 70 years, with new illnesses and diseases expected for years to come.
- The health consequences of genetic damage to non-exposed children of survivors are an ongoing concern.
- The effects of nuclear weapons on the populations of Hiroshima and Nagasaki who were exposed to radiation produced a massive medical caseload that was difficult to treat before the rebuilding of the health infrastructure in post-war Japan.
- Most countries would be unable to provide adequate medical care to a population exposed to the use of a nuclear weapon in the immediate aftermath of the explosion and meet the long-term needs of survivors. The use of multiple weapons could be expected to overwhelm the individual or collective health resources even of most developed countries.

In August 1945 the Japanese Red Cross Society, later assisted by the International Committee of the Red Cross (ICRC), were among the first organizations to bring assistance to the sick, wounded and dying in Hiroshima and Nagasaki. Although the Japanese Red Cross hospital in Hiroshima was nearly destroyed, its stone walls were still standing and thousands of people flocked to it for help and safety. Surviving Red Cross staff tried to provide what care they could, although 85% of the hospital staff were themselves injured and nearly 10% dead (51 of 554).⁴ In reality, however, the hospital could no longer function adequately as its laboratory equipment was damaged and most drugs were contaminated by the blast. In addition, there was no possibility of blood transfusions as donors were either dead or had disappeared. Of a thousand patients who had taken refuge there on the first day, 600 rapidly died.⁵

Based on its experience of trying to assist survivors of the atomic bombings and a more recent assessment of its own capacities and those of other international agencies, the ICRC has concluded, that today an effective means of assisting a substantial portion of survivors of a nuclear detonation, while adequately protecting those delivering assistance, is not currently available in most countries and is not feasible at international level.

The experience of Hiroshima and Nagasaki and the ICRC's recent analysis has also convinced the International Movement of the Red Cross and Red Crescent that nuclear weapons must never again be used and that negotiations to prohibit the use of and eliminate nuclear weapons are urgently needed, in accordance with existing obligations.

The Japanese Red Cross Society's seventy years of sustained assistance to the survivors of the Hiroshima and Nagasaki atomic bombings is an impressive testimony to its fortitude, commitment and perseverance on behalf of humanity. The same commitment by the entire international community is now needed to ensure that there are no more Hiroshimas and no more Nagasakis. Humanity can and must learn from its experience.

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¹ Dr Masao Tomonaga, «Case Study: Use of Atomic Bomb in War – Hiroshima and Nagasaki », in « Unspeakable Suffering: The Humanitarian Impacts of Nuclear Weapons », Reaching Critical Will, 2013.

² Idem

³ Honda, et al., Mental health conditions among atomic bomb survivors (2002), Psychiatry and Clinical Neuroscience, vol. 56, No. 5, pp. 575-583, as cited in ibid.

⁴ « Hundred Years History of Japanese Red Cross Hiroshima Branch”, published by Hiroshima Branch, JRCS (1991)

⁵ “Soixant ans après: Le Désastre de Hiroshima”, Dr. Marcel Junod (ICRC), Labor et Fide (2005), p.58