

COMMITTEE ON DISARMAMENT

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LETTER DATED 3 FEBRUARY 1982 ADDRESSED TO THE CHAIRMAN OF THE COMMITTEE ON DISARMAMENT BY THE REPRESENTATIVE OF VENEZUELA, TRANSMITTING THE RESULT OF THE STUDY CARRIED OUT IN OCTOBER 1981 BY THE PONTIFICAL ACADEMY OF SCIENCES, AT THE REQUEST OF HIS HOLINESS JOHN PAUL II, ENTITLED "STATEMENT ON THE CONSEQUENCES OF THE USE OF NUCLEAR WEAPONS"

I have the honour to request you kindly to arrange for the circulation of the enclosed text, entitled "Statement on the consequences of the use of nuclear weapons", which is the result of the study carried out in October 1981 by the Pontifical Academy of Sciences at the request of His Holiness John Paul II, as an official document of the Committee on Disarmament under the item, "Cessation of the nuclear arms race and nuclear disarmament".

(Signed) Reinaldo Rodríguez Navarro
Ambassador
Permanent Representative

GE.82-60199

STATEMENT ON THE CONSEQUENCES OF THE USE
OF NUCLEAR WEAPONS

On 7-8 October 1981, under the Chairmanship of Professor Carlos Chagas, President of the Pontifical Academy of Sciences, at the headquarters of the Academy (Casina Pius IV, Vatican City), a group of fourteen specialized scientists ^{*}/ from various parts of the world assembled to examine the problem of the consequences of the use of nuclear weapons on the survival and health of humanity.

Although most of these consequences would appear obvious, it seems that they are not adequately appreciated. The conditions of life following a nuclear attack would be so severe that the only hope for humanity is prevention of any form of nuclear war. Universal dissemination and acceptance of this knowledge would make it apparent that nuclear weapons must not be used at all in warfare and that their number should be progressively reduced in a balanced way.

The above-mentioned group discussed and unanimously approved a number of fundamental points, which have been further developed in the following statement.

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Recent talk about winning or even surviving a nuclear war must reflect a failure to appreciate a medical reality: any nuclear war would inevitably cause death, disease and suffering of pandemic proportions and without the possibility of effective medical intervention. That reality leads to the same conclusion physicians have reached for life-threatening epidemics throughout history: prevention is essential for control.

In contrast to widespread belief, much is known about the catastrophe that would follow the use of nuclear weapons. Much is known too about the limitations of medical assistance. If this knowledge is presented to people and their leaders everywhere, it might help interrupt the nuclear arms race. This in turn would help prevent what could be the last epidemic our civilization will know.

The devastation wrought by an atomic weapon on Hiroshima and Nagasaki provides direct evidence of the consequences of nuclear warfare, but there are many theoretical appraisals on which we may also draw. Two years ago, an assessment undertaken by a responsible official agency described the effect of nuclear attacks on cities of about 2 million inhabitants. If a one-million-ton nuclear weapon (the Hiroshima bomb approximated 15,000 tons of explosive power) exploded in the central area of such cities, it would result, as calculated, in 180 km² of property destruction, 250,000 fatalities and 500,000 severely injured. These would include blast injuries, such as fractures and severe lacerations of soft tissues, thermal injuries such as surface burns, retinal burns and respiratory tract damage and radiation injuries, both acute radiation syndrome and delayed effects.

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Even under optimal conditions, care of such casualties would present a medical task of unimaginable magnitude. The study projected that if 18,000 hospital beds were available in and around one of these cities, no more than 5,000 would remain relatively undamaged. These would accommodate only 1 per cent of the human beings injured, but it must be stressed that in any case no one could deliver the medical service required by even a few of the severely burned, the crushed and the radiated victims.

The hopelessness of the medical task is readily apparent if we consider what is required for the care of the severely injured patients. We shall cite one case history, that of a severely burned twenty-year-old man who was taken to the burn unit of a Boston hospital after an automobile accident in which the gasoline tank had exploded. During his hospitalization he received 140 litres of fresh-frozen plasma, 147 litres of fresh-frozen red blood cells, 180 millilitres of platelets and 180 millilitres of albumin. He underwent six operative procedures during which wounds involving 35 per cent of his body surface were closed with various types of grafts, including artificial skin. Throughout his hospitalization, he required mechanical ventilation. Despite these and many other heroic measures, which stretched the resources of one of the world's most comprehensive institutions, he died on his thirty-third hospital day. His injuries were likened by the doctor who supervised his care to those described for many of the victims of Hiroshima. Had twenty score of such patients been presented at the same time to all of Boston's hospitals the medical capabilities of the city would have been overwhelmed. Now, consider the situation if, along with the injuries to many thousands of people, most of the medical emergency facilities had been destroyed.

A Japanese physician, Professor M. Ichimaru, published an eyewitness account of the effects of the Nagasaki bomb. He reported: "I tried to go to my medical school in Urakami which was 500 metres from the hypocentre. I met many people coming back from Urakami. Their clothes were in rags and shreds of skin hung from their bodies. They looked like ghosts with vacant stares. The next day I was able to enter Urakami on foot and all that I knew had disappeared. Only the concrete and iron skeletons of the buildings remained. There were dead bodies everywhere. On each street corner, we had tubs of water used for putting out fires after air raids. In one of these small tubs, scarcely large enough for one person, was the body of a desperate man who sought cool water. There was foam coming from his mouth, but he was not alive. I cannot get rid of the sounds of the crying women in the destroyed fields. As I got nearer to the school there were black, charred bodies with the white edges of bones showing in the arms and legs. When I arrived some were still alive. They were unable to move their bodies. The strongest were so weak that they were slumped over on the ground. I talked with them and they thought that they would be O.K. but all of them would eventually die within two weeks. I cannot forget the way their eyes looked at me and their voices spoke to me forever ...".

It should be noted that the bomb dropped on Nagasaki had a power of about 20,000 tons of TNT, not much larger than the so-called "tactical bombs" designed for battlefield use.

But even these grim pictures are inadequate to describe the human disaster that would result from an attack on a country by today's stockpiles of nuclear weapons, which contain thousands of bombs with the force of one-million tons of TNT or greater.

The suffering of the surviving population would be without parallel. There would be complete interruption of communications, of food supplies and of water. Help would be given only at the risk of mortal danger from radiation for those venturing outside of buildings in the first days. The social disruption following such an attack would be unimaginable.

The exposure to large doses of radiation would lower immunity to bacteria and viruses and could, therefore, open the way for widespread infection. Radiation would cause irreversible brain damage and mental deficiency in many of the exposed in utero. It would greatly increase the incidence of many forms of cancer in survivors. Genetic damage would be passed on to future generations, should there be any.

In addition, large areas of soil and forests as well as livestock would be contaminated, reducing food resources. Many other harmful biological and even geophysical effects would be likely, but we do not have enough knowledge to predict with confidence what they would be.

Even a nuclear attack directed only at military facilities would be devastating to the country as a whole. This is because military facilities are widespread rather than concentrated at only a few points. Thus, many nuclear weapons would be exploded. Furthermore, the spread of radiation due to the natural winds and atmospheric mixing would kill vast numbers of people and contaminate large areas. The medical facilities of any nation would be inadequate to care for the survivors. An objective examination of the medical situation that would follow a nuclear war leads to but one conclusion: prevention is our only recourse.

The consequences of nuclear war are not, of course, only medical in nature. But those that are compel us to pay heed to the inescapable lesson of contemporary medicine: where treatment of a given disease is ineffective or where costs are insupportable, attention must be turned to prevention. Both conditions apply to the effects of nuclear war. Treatment would be virtually impossible and the costs would be staggering. Can any stronger argument be marshalled for a preventive strategy?

Prevention of any disease requires an effective prescription. We recognize that such a prescription must both prevent nuclear war and safeguard security. Our knowledge and credentials as scientists and physicians do not, of course, permit us to discuss security issues with expertise. However, if political and military leaders have based their strategic planning on mistaken assumptions concerning the medical aspects of a nuclear war, we feel that we do have a responsibility. We must inform them and people everywhere of the full-blown clinical picture that would follow a nuclear attack and of the impotence of the medical community to offer a meaningful response. If we remain silent, we risk betraying ourselves and our civilization.

(Signed) Carlos Chagas