



Nuclear Crisis in South Asia (1999-2002)

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South Asia faces a nuclear crisis of proportions unseen since the height of the Cold War between the US and the former Soviet Union. India and Pakistan, both armed with nuclear weapons and missile delivery systems, are on the verge of war, with more than a million troops facing off against each other at their common border. While both countries have been embroiled in a territorial dispute over Kashmir for several years, the current crisis has been exacerbated by Indian charges that Pakistan is supporting recent terrorist attacks. According to journalist Praful Bidwai:

"'Limited strikes' by India seem imminent. So does 'retaliation' by Pakistan, leading to a full-scale conventional conflict. Indian and Pakistani leaders may well bend to the inexorable logic of action-reaction, escalate that conflict to the nuclear plane, and thus finally disprove deterrence theory -- with catastrophic consequences for their peoples." (The News (Pakistan) May 16, 2002)

Since May 1998, when India conducted a series of nuclear weapons tests only to be followed immediately by Pakistan, the capacity of these adversaries to wage nuclear war has grown with frightening rapidity. David Albright of the Institute for Science and International Security estimates that Pakistan may have material for about 30-50 nuclear weapons and India about 40-100. Both countries have engaged in rhetorical nuclear brinksmanship; both have tested missiles capable of carrying nuclear warheads; and both have engaged in armed conflict over the disputed territory of Kashmir. If there is any one place in the world where the prospect of nuclear war is imminent, the South Asian subcontinent is that place.

In 1999, IPPNW published a study by M. V. Ramana of Princeton University on the effects of a nuclear explosion over the city of Bombay. Ramana concluded that a single, low yield (15 kiloton) nuclear weapon, comparable to the one detonated over Hiroshima in 1945, would cause between 160,000 and 866,000 deaths in the first few months. A larger weapon – 150 kt – would immediately claim almost 9 million lives. Recent US intelligence estimates have projected 9 million to 12 million immediate deaths, and 2-7 million immediate injuries.

Physician organizations in both India and Pakistan, working in coalition with strong grassroots disarmament movements in the region, have advised IPPNW that the South Asian public, Indian and Pakistani medical professionals, and key governmental decision makers are largely unaware of the medical reality about the consequences of nuclear war and, therefore, do not sufficiently appreciate the dangers they pose. In particular, they have not acknowledged the effects of physician casualties and the destruction of medical infrastructure on the capacity to mount a medical response.

Nuclear Crisis in South Asia: Casualty Estimates

[From "Nuclear War in South Asia," Matthew McKinzie, Zia Mian, A.H. Nayyar, M.V. Ramana. In: Out of the Nuclear Shadow, Smitu Kothari and Zia Mian, eds.(Lokayan, rainbow Press, and Zed Books) 2001.]

The most recent Indian census data (from 1991) gives the population of Greater Bombay as 9,910,000; if the neighboring town of Thane is also included, the population is 12,572,000. Since the decadal growth rate for Bombay during the decade preceding this census was 20.21%, these numbers may understate the current population significantly. Furthermore, there is also some evidence of

undercounting in the 1991 census. The average population density of Bombay is about 23,000 people per square kilometer. There are regions, however, where the population density exceeds 100,000 people per square kilometer.

Since a nuclear explosion and its effects are complicated physical phenomena, with different types of effects occurring around the same time, it is impossible to predict numbers of casualties or injuries accurately. There are three ways to estimate the number of casualties from prompt effects. All of these are based on empirical data from Hiroshima when the casualties were expressed as a function of different variables—radius, overpressure, and thermal fluence, respectively. Using these three models and assuming the above population densities, we can calculate that there will be somewhere between 150,000 and 800,000 deaths in Bombay within a few weeks of the explosion. These would be the result from just the blast and fire effects of a Hiroshima-sized nuclear weapon, and assuming that fallout effects are negligible (assumptions that lead to a very conservative casualty estimate).

For comparison, in the case of a weapon exploding at ground level, the areas damaged by fire and blast are somewhat less but radioactive fallout would be a more significant cause of deaths and sickness. Assuming that all the fallout is deposited in inhabited areas (and assuming they have a population density of 23,000, the average for Bombay) the number of people dying of all causes could be as high as 350,000 to 400,000 for a 15-kiloton weapon. Many more people would be subject to lower doses of radiation, which in the case of already sick people, the old and the young, could well be lethal in the absence of medical care.

The above numbers include only the "prompt" casualties, those who are injured or die right away or within a few weeks of the explosion. Many more people will certainly die from long term effects, especially radiation-related causes. Studies involving survivors of the atomic bombing of Hiroshima and Nagasaki reveal that the mortality rates for all diseases, leukemia, and malignancies other than leukemia, are all significantly higher than among people not exposed to radiation. Increases in the cancer rates of survivors of an atomic bombing of Bombay may be comparable to, if not greater than, those among Hiroshima and Nagasaki survivors.

There are a number of other reasons to believe that the casualty numbers cited above would be an underestimate in a city like Bombay. First, the assumed population densities are lower than the actual densities. Apart from undercounting and variations among regions, a substantial number of people come in every day from places as far away as Pune (four hours by train) to work in Bombay. The census does not take such commuters into account. Since an attack from the air is quite likely to take place during the day in order to maximize visibility, many commuters will also be killed or injured. Second, casualties from fallout have not been included in the estimates. Since fallout, even if present only in small quantities, can spread out to large regions and cause local hot spots, this is an important omission. Third, conservative figures for blast damage and regions affected by fire have been deliberately chosen. The actual areas are likely to be higher, implying a greater number of casualties.

There is another significant uncertainty in the estimates offered here, one which is likely to increase the casualties. There are a large number of industrial facilities in Bombay and its vicinity. India's highest concentration of chemical plants is in the Trans-Thane creek area, which has more than 2,000 factories. Central Bombay is home to several mills, which could cause additional fires and explosions, and which could spread toxic substances. The Union Carbide accident in Bhopal is an example of the kinds of effects that are possible due to escape of toxic chemicals. In addition to chemical industries, the largest nuclear laboratory in India--the Bhabha Atomic Research Centre--is in Trombay, just outside Bombay. A nuclear explosion in the vicinity of either reactor at the Centre (CIRUS and Dhruva) or near the reprocessing plant or the facilities storing radioactive waste and/or spent fuel could lead to the release of large amounts of radioactivity in addition to the quantities resulting from the explosion itself. This would increase the amounts of fallout significantly.

Hospitals and medical care in an overcrowded city such as Bombay are limited to begin with, and facilities within the affected area would be destroyed or damaged during the attack. The injured would be unlikely to find medical treatment.

Estimated nuclear casualties (dead, severely injured and slightly injured persons) for each of 10 large Indian and Pakistani cities

City Name	Total Population within 5 kilometers of Ground Zero	Killed	Severely Injured	Slightly Injured
India				
Bangalore	3,077,937	314,978	175,136	411,336
Bombay	3,143,284	477,713	228,648	476,633
Calcutta	3,520,344	357,202	198,218	466,336
Madras	3,252,628	364,291	196,226	448,948
New Delhi	1,638,744	176,518	94,231	217,853
Pakistan				
Faisalabad	2,376,478	336,239	174,351	373,967
Islamabad	798,583	154,067	66,744	129,935
Karachi	1,962,458	239,643	126,810	283,290
Lahore	2,682,092	258,139	149,649	354,095
Rawalpindi	1,589,828	183,791	96,846	220,585

A total of 2.9 million deaths is predicted for these cities in India and Pakistan with an additional 1.5 million severely injured.

Source: "Nuclear War in South Asia," Matthew McKinzie, Zia Mian, A.H. Nayyar, M.V. Ramana. In: Out of the Nuclear Shadow, Smitu Kothari and Zia Mian, eds.(Lokayan, rainbow Press, and Zed Books) 2001.

IPPNW's International and Regional Leadership Urges Heads of State of India and Pakistan to Show Restraint; Warns of Consequences of Nuclear War

May 29, 2002

The Hon. Atal Bihari Vajpayee
Prime Minister
South Block, Raisina Hill
New Delhi 110011
India

Dear Prime Minister Vajpayee:

We write to you and to your Pakistani counterpart out of a deepening sense of impending danger for your countries, your neighbors in the region, and the global community. Relations between India and Pakistan have deteriorated so quickly and so completely over the last few days that we cannot remain silent at the prospect that armed conflict between your two countries may escalate into a nuclear war.

Were India and Pakistan to attack each other with nuclear weapons, the outcome could well be the destruction of both societies, the deaths of millions of people, and the radiological contamination of vast areas of land within and beyond your borders that would be rendered uninhabitable for

generations.

Nuclear weapons are not simply more powerful versions of conventional bombs. Even a small (15 kilotons) nuclear weapon, approximately the size of the bomb used against Hiroshima at the end of World War II, exploded over a city such as Mumbai would completely destroy everything within a 1.1-km radius. Firestorms would extend to at least a 2-km radius and in an overcrowded city such as Mumbai, few people would escape. Those who did would suffer from extensive second and third degree burns. Depending on wind and weather conditions, radioactive fallout from the explosion would spread across an area of hundreds, if not more than a thousand square miles.

Even this relatively small nuclear weapon would cause the deaths of 160,000 to 866,000 people. A single nuclear weapon with a larger yield - 150 kt - could cause more than 8,000,000 deaths. These are conservative estimates and do not include the many thousands of long term cancer deaths and genetic mutations that would plague future generations.

As physicians who have studied the medical consequences of nuclear war, we are obliged to tell you that there would be no effective medical response to such a catastrophe. The numbers of seriously injured survivors would overwhelm even a well functioning medical infrastructure, even if by some miracle such an infrastructure did survive a nuclear attack.

During the 1980s, at the height of the Cold War between the United States and the former Soviet Union, IPPNW brought this same information to the leaders of those countries, who were engaged in a nuclear weapons buildup and confrontational rhetoric that threatened not only mutually assured destruction but also the survival of all life on Earth. Fortunately these leaders heeded our warnings about the consequences of nuclear war and stepped back from the brink. They understood then, as you must understand now, that prevention of nuclear war is the only effective response to the inevitable consequences.

We do not project anything comparable to global nuclear winter from the use of the arsenals that we believe are now available to India and Pakistan. But we are convinced, based upon the medical and environmental evidence, that those arsenals are capable of destroying both countries as functional societies and devastating your neighbors in the region for generations to come. Moreover, regional destruction on this scale would have an enormous impact on the global economy and on the collective security of the world's people.

Terrorism in any form and for whatever reason must be condemned unequivocally because it indiscriminately kills innocent civilians. Only by addressing the root causes of terrorism, however, will we be able to end it. A military response will only aggravate the situation and escalate the violence.

We implore you, therefore, to renounce the use of nuclear weapons, to take immediate steps toward nuclear disarmament and the dismantling of nuclear weapons that may currently be in your arsenals, and to do everything possible to achieve a non-violent, negotiated solution to the territorial dispute over Kashmir.

The medical facts presented in this letter are derived from comprehensive and detailed studies that we would be happy to share with you in a consultation between members of your government and a delegation of IPPNW physicians. We are at your disposal should you wish to arrange a such a meeting.

Respectfully,

Ronald S. McCoy, MD
President, IPPNW

L.S. Chawla, MD
Indian Doctors
for Peace and Development

Tipu Sultan, MD
Pakistan Doctors for Peace and
Development
Regional Vice President, IPPNW

May 29, 2002

General Pervez Musharraf
President of Pakistan
Islamabad
Pakistan

Dear President Musharraf:

We write to you and to your Indian counterpart out of a deepening sense of impending danger for your countries, your neighbors in the region, and the global community. Relations between Pakistan and India have deteriorated so quickly and so completely over the last few days that we may no longer remain silent at the prospect that armed conflict between your two countries may escalate into a nuclear war.

Were Pakistan and India to attack each other with nuclear weapons, the outcome could well be the destruction of both societies, the deaths of millions of people, and the radiological contamination of vast areas of land within and beyond your borders that would be rendered uninhabitable for generations.

Nuclear weapons are not simply more powerful versions of conventional bombs. Even a small (15 kilotons) nuclear weapon, approximately the size of the bomb used against Hiroshima at the end of World War II, exploded over a city such as Karachi would completely destroy everything within a 1.1-km radius. Firestorms would extend to at least a 2-km radius and in a densely populated city such as Karachi, few people would escape. Those who did would suffer from extensive second and third degree burns. Depending on wind and weather conditions, radioactive fallout from the explosion would spread across hundreds if not more than a thousand square miles.

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Respectfully,

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Pakistan Doctors for Peace
and Development
Regional Vice President, IPPNW

L.S. Chawla, MD
Indian Doctors for Peace
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Dhaka Declaration

A Regional meeting of IPPNW physicians from South Asia was held at the Bangladesh Medical Association (BMA) office on July 7, 2002, chaired by Dr. Rashid-E- Mahbub of BMA. Dr. Kamrul Hasan Khan, the Organizing Secretary of the Bangladesh Medical Association, gave the keynote address. IPPNW affiliates from India, Pakistan, Nepal, and Bangladesh agreed to release the following joint declaration to the press in all countries of the Subcontinent:

South Asia, in recent months, has been the focus of attention of the rest of the world due to an extremely dangerous resurgence of armed conflict between India and Pakistan, the two nuclear-armed states in the region. One million fully armed troops from both countries are standing eye to eye at the border and there is no sign of resolution in the near future.

Although there appear to be some signs of de-escalation of tension, there is no room for complacency, since any adverse event could trigger renewed conflict. This armed conflict between India and Pakistan endangers all South Asian countries by threatening to wreak havoc through a disastrous exchange of nuclear weapons.

South Asian countries are among the poorest in the world, struggling to survive and desiring only to develop a decent quality of life for their people. The region is already under a heavy burden of debt. Although health is a fundamental right, all of these countries have very high maternal and child mortality rates. They have failed to provide safe drinking water to most of their inhabitants. Their per capita incomes and literacy rates are among the lowest in the world.

With this backdrop, this meeting of concerned citizens of Dhaka and of representatives of IPPNW from South Asian countries call upon the governments of India and Pakistan to refrain from any armed conflict, including the use of nuclear arms.

India and Pakistan must disengage their armies as soon as possible and engage in mutual dialogue to address all the conflicts and issues that presently divide them.

Signatories

Dr. Tipu Sultan
Vice President,
IPPNW South Asia

Dr. Mustafa Jalal Mohiuddin
Secretary General, BMA
Bangladesh

Dr. Arun Mitra
Secretary, IDPD, India

Dr. B. K. Thapa
PSR, Nepal

The India-Pakistan Conflict: Effects on South Asia

Dr. Kamrul Hasan Khan

Organizing Secretary, Bangladesh Medical Association

More than half of a century old, the Indo-Pakistan conflict appears to be on its way to finding a solution at present. It is by no means a long term solution but hopefully the parties will avoid a major conflict, where neither can expect to win..

We observed an Indo-Pak war in 1947-48, another in 1965, and a third in 1971. There was an outburst over Kargil in 1998 and now this most recent war situation. We also observed many bilateral, tripartite, and international agreements, joint declarations, and other accords, but the situation has remained unresolved.

The economic conditions of the common people in both countries are far from satisfactory. Billions of dollars have to be invested simply to provide the bare necessities of housing, sanitation, education, and health care facilities for the people. Except for acquiring some prestige as nuclear powers, these countries will not benefit in any way. Despite their so-called nuclear deterrents, open warfare has broken out.

The economic strength of both India and Pakistan does not enable them to continue a full scale conventional war for even a month. Any prolonged war will bring immense misery to their people. Their economic crises will make them more dependent on the wealthy nations who will try to dictate terms to gain economic concessions. This is already happening. We have seen a similar situation in Russia, which, for all her nuclear capability, cannot face her current economic crisis without help and cooperation from the western powers.

Without peace and political stability in the region, no multilateral cooperation can bring about any positive result. Apart from the common problems of poverty and health that confront the population in the region, other critical problems such as the political crisis in India, the economic crisis in Pakistan, political instability in Bangladesh, the Tamil rebellion in Sri Lanka, the Maoist problem in Nepal, and the cloud of fundamentalist politics over the whole region are hindrances to rapid economic development in South Asia.

As long as the Kashmir dispute remains unsettled, good neighborliness is not likely to develop. India, as the largest of the South Asian Association for Regional Cooperation (SAARC) countries, must provide leadership that will ensure a peaceful SAARC.

A nuclear war will tremendously affect the whole region. Bangladesh will not be spared if a nuclear war happens at our backdoor. Most of our rivers flow from India; the wind could move in any direction; and due to our porous border, people and goods move unabated. If a nuclear conflict occurred, Bangladesh would not be able to control radioactively contaminated food and agricultural products coming from our neighbors. We can remember the Chernobyl nuclear reactor accident in Ukraine in 1986.

We should not forget that consumers in the developed countries are extremely cautious of the quality of their food. In 1978-80, the USA blacklisted the import of frozen foods from South Asian countries due to unhygienic condition in our processing plants and the levels of contamination by pathogenic microorganisms in the processed products. After great efforts to rebuild confidence, our processors are once again able to export these products. Any news about contamination would scare foreign buyers and immediately affect the export of our food and agricultural products.

Our Ministry of Foreign Affairs, when asked during the recent Indo-Pak war situation why it was not recalling its mission from Delhi and Islamabad when the western missions were doing so, replied that if there were any nuclear war in the region they would have to accept the same fate even if they were in Dhaka. So we think there is no difference between Delhi, Islamabad, and Dhaka: in the event of a nuclear conflict, everybody will be affected equally, irrespective of their geographical position in the region.

It is the responsibility of the people of South Asia to prevent any war, particularly nuclear war. Therefore we want to see the prompt fulfillment of the following demands in order to achieve a peaceful South Asia:

1. The Kashmir dispute must be resolved immediately. The socioeconomic needs and the rightful aspirations of the people of Kashmir should be addressed properly.
2. India and Pakistan should sign the CTBT and the NPT immediately.
3. All countries in the region should work for the success of the campaign to abolish nuclear weapons.
4. Fundamentalist politics should be discouraged.
5. Mutual cooperation among the SAARC countries should be established. This is the only way to bring prosperity to one of the poorest regions in the world, which is home to one-fifth of humanity.