

A MEDICAL PRESCRIPTION FOR SURVIVAL

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The physician's responsibility to the sick extends beyond correct diagnosis. The aim is to find an effective remedy. The activities of diagnosis and treatment are indissolubly linked and are part of the singular process of healing. For more than two decades, physicians have been calling attention to the dire medical consequences of nuclear war and the social and health costs of the arms race.¹ The facts are not in dispute. In the case of thermonuclear war modern medicine has nothing to offer—not even a token benefit. The complex health care system, acquired so painfully and at such cost, will be turned into an incinerated junk heap. Even though nuclear bombs have not been detonated in anger since 1945, the cost of preparation for Armageddon is already inflicting suffering and death. In fact, a pica-yune fraction of the daily expenditure of more than two thousand million dollars would save the 40 000 children destined to die each day from hunger, infection, and diarrhoeal disease.²

Does our responsibility as physicians stop with educating the public?

While many in our profession would concur about the unprecedented medical, economic, and ecological consequences of the arms race and nuclear war, they are reluctant to act on this issue in their capacity as physicians. Almost all would agree with the commitment of various professional societies to educate both the public and political leaders that "prevention is the only reasonable medical response".³ But must a physician's activities be limited to descriptions of the medical and environmental consequences of nuclear war? Or should physicians advocate and lobby for policies that will reduce the likelihood of nuclear war?

Historically, the medical profession has not shied away from involvement in diverse social and political issues when these have impacted on the health of their communities. Health hazards have not been excluded from the province of

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medical concerns because their remedy required political activity.⁴ The imperatives of preventive medicine have compelled physicians to engage in a variety of social and political struggles. Physicians have worked to improve nutrition of impoverished families and have supported legislation to remove asbestos from insulation and lead paint from schoolrooms. Paediatricians have pressed successfully for legislation to require safety caps on household chemical and medication containers, so as to reduce the chances of childhood poisoning. Recently, physicians have received acclaim for their efforts to develop automobile safety legislation, especially to protect child passengers. Doctors were not accused of being out of their element, being neither legislative politicians nor automotive engineers.⁵ Certainly, nuclear war is an issue of no lesser magnitude than lead paint, safety caps, seat belts, smoking, or highway safety.

Physicians must respond to the moral imperative of their commitment to life and health rather than worry about crossing the ill-defined boundary of the political realm. While the nuclear threat is a highly charged political issue, it is also the key public health issue of our era.

The highest duty of physicians in the nuclear age is marshalling professional resources to work for preventing the final epidemic. The struggle for human survival requires no apologies. It is consonant with the most hallowed traditions of medicine. Over a century ago, Rudolph Virchow, a principal architect of scientific medicine, maintained that "medicine is a social science, and politics nothing but medicine on a grand scale".⁶ He taught that, to improve the health of the public, the physician must not shy away from social action. The principles that Virchow espoused have even greater relevance today, when the question concerns not only the health but the very survival of life on earth.

In fact, the physicians' movement in opposition to the nuclear arms race has already affected the political process. Because our message has been heard, one no longer hears about the possibility of keeping nuclear war limited or about nuclear demonstration shots to prove national resolve. Nor is there discourse about winning or prevailing in a nuclear conflict. The subject of civil defence preparations for nuclear war has become a butt for social satire. In many countries, concern about the nuclear arms race has gained respectability as a legitimate issue among political parties.⁷

In less than 5 years, the International Physicians for the Prevention of Nuclear War (IPPNW) has grown to over 135 000 members in 41 countries. This antinuclear movement was founded by American and Soviet

cardiologists. Indeed the most notable accomplishment of the IPPNW has been the broad-based, free-flowing dialogue between physicians of the two contending power blocs.⁸ Its success stems largely from an insistent avoidance of linkage with problems that have embittered relations between the superpowers. The IPPNW has resisted being sidetracked to other issues, even those which are morally compelling. Combatting the nuclear threat has been IPPNW's total and exclusive preoccupation.

The IPPNW has not limited itself to dire prognostication. A year ago, at its fourth annual congress in Helsinki, IPPNW offered a medical prescription for peace. That prescription called for a comprehensive moratorium on all nuclear explosions.⁹ Such a moratorium is an achievable first step in slowing and then reversing the arms race. In the words of the chemist Glenn Seaborg, former chairman of the USA Atomic Energy Commission, "A comprehensive test ban would halt that aspect of the arms race that is most threatening, the qualitative improvement in nuclear weapons. Such improvements in offensive weapons continue to make them ever more dangerous. Improvements in defensive weapons might tempt either side to launch a first strike on the assumption that this can be done with relative impunity or needs to be done before the other side achieves an effective defense".¹⁰

A commonly heard objection to a moratorium on all nuclear explosions is the alleged difficulty of verifying a comprehensive nuclear test ban. However, seismologists have argued convincingly that there can be no substance to such doubts.¹¹ In fact, it is now possible to verify nuclear explosions down to the one kilotonne level (fig 1), and the largest explosion that would have a 30% chance of escaping detection in any setting except an elaborate "salt dome" would be 0.5 kilotonne. While an occasional explosion of such small size might go undetected, it is clear that in order to develop "improved" nuclear weapons systems, several such explosions would be necessary, decreasing drastically the chances that detection could be evaded.

The science of differentiating earthquakes from explosions has advanced substantially since the Limited Test Ban Treaty of 1963; and Seaborg, a participant in the Limited Test Ban (LTB) negotiations, now feels that even in 1963 detection techniques were adequate to verify a comprehensive, rather than simply an LTB, treaty.¹⁰ Underground testing is now, therefore, readily verifiable and does not require trust between the superpowers. There seems to be a broad

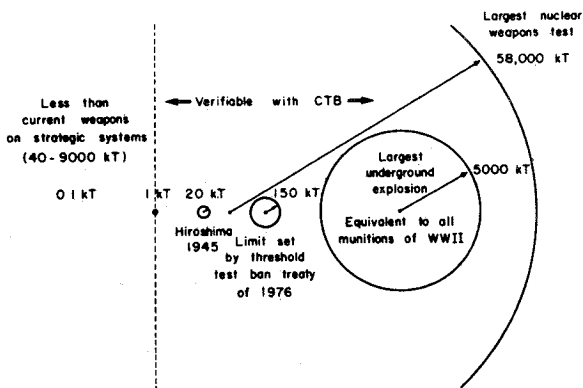


Fig 1—Size and detectability of thermonuclear explosions.

Data from Sykes LR, Testimony before Congress, May 8, 1985.
CTB=comprehensive test ban.

consensus that what is lacking is not scientific skill but political will.

A complete testing moratorium is a prescription simple in concept, devoid of complexity, free of risk to either party, and verifiable without need for intrusive on-site inspection. Perhaps most importantly, it has the ability to begin unwinding the potentially doomsday process.

The experience of the LTB treaty of 1963 provides a historical precedent. On June 10, 1963, President Kennedy announced that the United States would no longer conduct atmospheric testing. Five days later Premier Khrushchev commended Kennedy and announced that the Soviet Union would discontinue production of strategic bombers; three weeks later it stopped atmospheric bomb tests. Averell Harriman travelled to Moscow and, when asked how long the negotiating process would take, responded, "If Chairman Khrushchev wants an agreement as much as the President wants it, we should be out of here in two weeks". Harriman later reported that "on the 13th day we initiated the treaty; on the 14th, we left for home".¹²

Harriman did not permit the experts to become involved until an agreement was reached with leaders of the Soviet Government. After all, expertise involves the capacity to discriminate among minutiae. It is therefore not unreasonable to leave the experts to deal with the details after the broad scope of agreement has been defined.

In 1963 a groundswell of world public opinion energised political leaders and provided them with the will to act. The threat of radioactive fallout gained wide attention in March of 1954 after atomic test Bravo on the Bikini Atoll in the Marshall Islands spewed radioactive fallout over a wide expanse of the Pacific, contaminating the Japanese fishing trawler Lucky Dragon more than 1000 km away. The newly founded American Physicians for Social Responsibility, working in collaboration with the St Louis Committee for Nuclear Information, provided scientific evidence that strontium-90 was affecting children. Doctors and dentists all over the Midwest sent in children's deciduous teeth by the thousands for analysis. The evidence was incontrovertible. Strontium-90 behaved like calcium; it worked its way up the food chain, became concentrated in milk, and was deposited in bones and teeth. Fallout was no longer an abstract threat. This "political action" by physicians was instrumental in generating a climate of public opinion that in turn provided the political resolve for enactment of the LTB treaty of 1963.

While the LTB treaty put an end to atmospheric explosions by the United States and the Soviet Union, underground

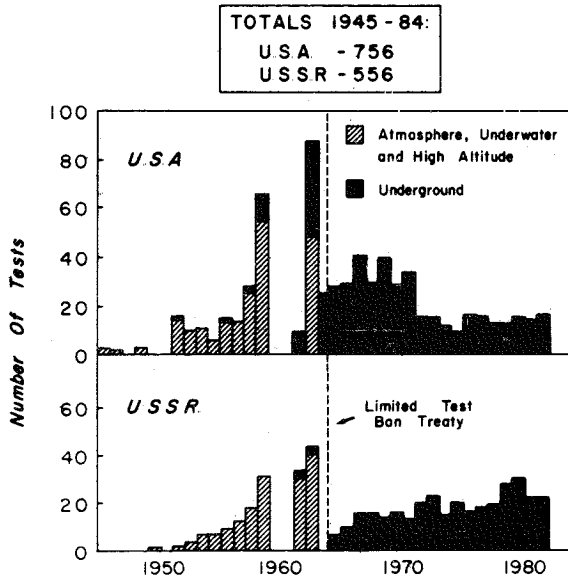


Fig 2—Testing of nuclear weapons by the USA and the USSR.

Modified from Sykes I.R, testimony before Congress, May 8, 1985.

testing has proceeded at a brisk pace (fig 2). Over the past ten years, an average of one nuclear device has been exploded weekly. In 1984, fifty-three nuclear devices were tested. Forty-three of these explosions were carried out by the United States or the Soviet Union.^{13,14}

Continued testing is essential to the development of qualitatively improved nuclear weapons and indeed is a prerequisite for generating potentially destabilising weapon systems with first-strike capability.

Physicians have the opportunity and indeed the responsibility to prescribe an effective treatment to end this illness. A moratorium on all nuclear explosions must be the first step.

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