IOM Presents More Nuclear War Data

Elaboration of scenarios for nuclear war continues at universities and think tanks throughout the country, but none of the new calculations is yet being factored into the federal government's thinking on the topic, according to speakers at a September symposium at the Institute of Medicine in Washington.

The meeting, on medical implications of nuclear war, was funded by the Carnegie Corporation, which is headed by former IOM president David A. Hamburg. Hamburg noted the broad interest American groups have taken in the issue and suggested that the Europeans ought to be taking a more active role in analyzing the consequences of a nuclear exchange.

Speakers at the symposium presented newly refined estimates of the devastation that would be wrought by limited nuclear strikes on urban centers and strategic targets and on medical care systems. There were also attempts to bring more attention to bear on the effects of emotional stress on decision-making.

One of the major presentations was by Theodore A. Postol of the Stanford University Center on International Security and Arms Control, who announced that superfires from a 100-megaton strike on urban centers throughout the country would cause two to four times as many deaths—or 36 to 56 million—as predicted by the government. Standard estimates use "blast scaling" derived from the Hiroshima explosion. These do not take into account the qualitative differences of a much larger blast, which would raise ground-level temperatures to the heat of boiling water and create 60-mile-an-hour winds. The "ferocious hurricane of fire" would annihilate anyone in a 6 to 8 mile radius of ground zero; the ratio of dead to injured would be far higher than postulated by government estimates. Postol also predicted that, contrary to assumptions put out by the Federal Emergency Management Agency, attacks on lightly built-up urban areas would result in massive fire storms like those in World War II Germany and Japan.

Postol's account was complemented by Frank von Hippel of Princeton University's Center for Energy and Environmental Studies, who said that attacks limited to strategic targets would cause so many civilian deaths as to make the urban/counterforce distinction almost meaningless.

Von Hippel said that the LD50/60 (the dose that will kill half a population within 60 days) for radiation is closer to 250 rads than to the 450 rads assumed by the government. This decreased threshold is warranted because of the synergistic effects of trauma and burns with radiation, and the fact that no antibiotics or blood transfusions would be available for the vast majority of victims.

David S. Greer, medical school dean at Brown University, presented a fusion of the two most horrifying issues of the day with his report that a nuclear attack would probably promote an epidemic of a disease similar to AIDS. Greer, who conducted an extensive review of literature on immune function, noted that "a striking similarity exists between AIDS and the anticipated immunosuppressed condition of survivors of a nuclear war." Although AIDS is caused by a virus that attacks the T-cell component of the immune system, a similar syndrome could be produced by other factors that would be present: increased ionizing and ultraviolet radiation, malnutrition, burns and trauma, and emotional stress and depression. Large increases in tuberculosis, leprosy, and other viral and fungal diseases could also be expected. Although Greer spoke of a "very large increase" in an AIDS-like disease, he said the interaction of the factors he mentioned does not raise the estimates but "explains some of the mechanisms for projected increases" in disease.

Radiologist Herbert Abrams of Harvard University added some embellishments to the appalling medical scenario that physicians have been publicizing for the past 5 years. A single 1-megaton airburst over Detroit, for example, would create medical demands that the entire state of Michigan could not begin to satisfy.

Nuclear war is totally unmanageable not only biologically but managerially, according to other speakers. Defense analyst John Steinbruner of the Brookings Institution said the only way to have successful crisis management is to avoid crises in the first place, since the demands made on the decision-making structure would exceed the knowledge or capacity of the responsible individuals.

Furthermore, said Steinbruner, a crisis sets up terrific internal conflicts because of the "inherent tension between the imperative to avoid war and that of controlling the circumstances of initiation if war cannot be avoided." Alexander L. George of the Stanford Center outlined the perils that emotional stress poses at the decision-making level—including impaired attention, rigidness of thinking, and narrowed focus. He cited some well-known instances where leaders temporarily lost their grip in a crisis: Stalin's depression after the Nazi invasion of the Soviet Union in 1941, and British prime minister Anthony Eden's near collapse after the failure of the 1956 invasion of Suez.

Abrams also raised the specter of unstable individuals among the weapons handlers going off the deep end in a crisis. He pointed out that ICBM launch crews, for example, spend up to a year of inactivity and isolation in underground bunkers, an experience that can lead to high levels of alienation and anxiety. And submariners have shown a rate of neuropsychiatric illness twice that of surface fleet personnel. The greatest problem, though, is alcohol and drug abuse.

Abrams was critical of the Defense Department's Personnel Reliability Program (PRP), the screening program for the 120,000 Americans who have access to nuclear weapons. The PRP entails a background investigation, security clearance, and medical evaluation, but no psychiatric interviews or testing and no continuous monitoring of personnel. Over 5000 individuals a year are "disaffiliated"—about one-third of them for drug problems. Yet, said Abrams, the Defense Department has not, to his knowledge, done any assessment of the PRP, nor has it disclosed any analyses it may have done on the human factors contributing to nuclear weapons accidents.

The IOM intends to get maximum mileage out of the symposium, which also covered ecological, atmospheric, genetic, and psychological effects and the impact on the food supply of nuclear war. Proceedings will be published soon along with a popular book drawing on much of the material. A videotape digest of the meeting will also be made, which the IOM hopes will be aired in the Soviet Union.—**CONSTANCE HOLDEN**