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Nuclear Terrorism: Providing Medical Care and Meeting Basic Needs in the Aftermath

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Good morning, Chairman Lieberman and members of the Committee. Thank you for the opportunity to speak with you this morning to share both my concerns about our country's lack of preparation for a nuclear terrorist attack and several suggestions for improving our preparedness.

My name is Ira Helfand and I have practiced emergency medicine in western Massachusetts for 25 years. In addition I am a member of the Board of Directors of Physicians for Social Responsibility (PSR). I would like to submit as part of my testimony our 2006 report, The US and Nuclear Terrorism.

The Threat

The danger of nuclear terrorism has been clear for some time. Before September 11, in early 2001, a Department of Energy task force warned that "the most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons useable material in Russia could be stolen and sold to terrorists or hostile nation states and used against American troops abroad or citizens at home"

The attacks of September 11 clearly confirmed that there are terrorists willing to kill large numbers of innocent civilians to further their agenda, and two years later in December 2003 President Bush issued Homeland Security Presidential Directive Eight, which called for the establishment of adequate "policies to strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks."

Two years after that, in 2005, the Department of Homeland Security prepared two documents, the *National Planning Scenarios,* which detailed a number of the possible terrorist attacks we might need to deal with, and the *National Preparedness Goal* which set forth goals for dealing with these threats but which had no clear plan or timeline for implementing these goals.

And, in September 2005 the disastrous response to Hurricane Katrina made it absolutely clear that we did not have a strategy for dealing even with a major natural disaster, let alone a nuclear attack on one of our cities.

Now, three years later we still are not prepared to deal with a nuclear terrorist attack.

A Scenario

In October of 2001 the British Medical Journal asked me and several of my colleagues at PSR to prepare a description of the medical effects of a nuclear terrorist attack, which they published in February of 2002. The scenario assumes that terrorists ship a Hiroshima sized bomb in a cargo container and detonate it in the Harbor of New York. This is not a worst case scenario, as much of the blast effect occurs over the Hudson River. Nonetheless our model estimates that the 52,000 people would be killed by the blast and heat, another 238,000 would be exposed to radiation emanating directly from the explosion, of which 44,000 would suffer radiation sickness and 10,000 would die. These acute casualties would occur no matter what we had done to prepare. .

But, several thousand would suffer burns and mechanical injuries and with prompt medical attention and support they might survive. In addition, another one and a half million people would be exposed to radiation fallout blowing east across Manhattan, Queens and Long Island. As many as 200,000 of these people would also die if they were not safely evacuated or sheltered. If protected they would survive. This is crux of the issue: as catastrophic as a nuclear terrorist attack would be, we can save many lives if we prepare adequately.

Preparedness Elements

A critical planning element is to protect people from avoidable radiation exposure. In most situations that would involve getting people in the areas of maximum expected fallout to shelter for a period of 72 to 96 hours in the basement or lowest story of their buildings; in some cases, depending on local conditions, and particularly on local weather conditions, it might involve evacuating people away from the areas of highest radiation contamination.

We need to have in place a clearly designated central coordinating authority and a clear chain of command to decide whether people should shelter or evacuate, and we need to establish clear criteria to guide this authority in making that decision. We believe that authority needs to be vested in the Secretary of Homeland Security or his or her designee. We need to have in place the resources to manage an evacuation or to support a population sheltering in their basements for several days. Most of these people will not have stockpiles of food or water, and it will be necessary for adequately protected personnel to deliver these supplies on a massive scale. We need to have in place an effective means of communicating an order to evacuate or to shelter to the public, and we

need to do enough prior education so that people ordered to shelter in place will be able to understand why this is the best thing to do instead of jumping in their cars and trying to drive as fast as they can away from that terrible mushroom cloud hanging over their city.

Disaster Medical Care Centers: A New Idea.

We also need to plan how to care for the tens of thousands people who would be injured by the blast itself. It is critically important that hospitals not be the site of triage and health care first response. I can tell you from my clinical experience that most hospitals and emergency rooms just do not have "surge" capacity. My emergency room is working at capacity almost around the clock. A flood of injured, contaminated and frantic victims could functionally close down a hospital emergency facility in an urban center.

Rather we need to establish a system of Disaster Medical Care Centers at community sites easily accessible by ambulances, patients and care providers. Convention centers or sports facilities are possible candidates. These centers should be stocked with pre-positioned supplies and equipment to conduct the initial medical response. The goal would be to eliminate crowding and panic, reduce travel, prevent infection and contamination, and maintain the ability of hospitals to offer complex services to their existing patients and to refer disaster patients.

Disaster Medical Care Centers should be established in high risk urban areas such as New York, and Washington. Planning for these centers needs to take account of the fact that a designated Center may be destroyed by the initial explosion or lie within the area of subsequent heavy radiation contamination. It may be necessary to have several Centers located in different parts of a metropolitan area. In addition we need to establish mobile field hospitals that can be used if the Disaster Medical Care Centers are destroyed or contaminated in the attack, or if terrorists decide to strike a less obvious target, like Oklahoma City, or Portland, or Hartford where Disaster Centers might not have been established.

We need to preposition radiation protection and monitoring equipment and stockpiles of medical supplies that can be moved quickly to the affected area.

Finally, we need to develop an adequate National Disaster Medical System. The Department maintains some 50 Disaster Medical Assistance Teams of doctors, nurses and other health professionals. The concept is right, but the existing system must be greatly expanded to be able to deal with a disaster on the scale of a terrorist attack. Even if we were able to successfully protect most people from radiation exposure from the expected fallout, we would still have to deal with 44,000 cases of radiation sickness caused by radiation emanating directly from the explosion and several thousand people suffering from mechanical injuries and burns, perhaps 50,000 patients in all in the New York scenario.

A Level One DMAT team is supposed to be able to care for 250 patients, which implies that we would need to have as many as 200 DMATs on standby at all times. In addition we

need to establish a mechanism for quickly mobilizing existing military medical teams and for rapidly integrating volunteer health professionals, many of whom traveled spontaneously to New Orleans after Katrina but were not put to use.

If we believe that the threat of nuclear terrorism is real, and if we are truly committed to doing what is needed to prepare for this possibility, these are some of the specific steps that we need to take, and they will involve a lot of work. They are not rocket science, but they need to be implemented. To that end we would recommend that the Homeland Security Department establish a Working Group that is charged with carrying out these measures in a short and specified time frame - certainly no more than six months.

Prevention

I would like to make two final points. First, even with the best of planning a nuclear terrorist attack would clearly be a catastrophe without precedent in our national history and with consequences we can barely imagine. While we must plan how to deal with the aftermath of such an attack as best we can, it is even more important that we focus on prevention. Specifically we must take steps to limit the availability of nuclear weapons and fissile materials by providing adequate funding to complete security upgrades of all vulnerable sites where nuclear weapons or fissile materials are stored. We have been working on this problem for more than a decade and have made some substantial progress; we need to get the job done.

Second, as serious a threat as nuclear terrorism poses, it is not the greatest nuclear threat we face. Nuclear weapons states still possess more than 20,000 nuclear weapons. Several thousand of these in the US and Russian nuclear arsenals are maintained on hair-trigger alert and can be launched against targets in the other country in 15 minutes. A PSR study published several years ago showed that if only 300 of the warheads that Russia keeps on high alert were targeted and fired upon American cities, up to one hundred million people would die in the first half hour and our country would, for all intent and purpose, cease to exist.

A more recent report that PSR issued last year investigated the global effects of even a very limited nuclear war, such as might occur in South Asia. We found that the climate disruption caused by that conflict would trigger a world-wide famine that might claim one billion victims during the following several years.

It is urgently in the United States national security interest to eliminate these weapons, and to that end the United States must lead all nuclear weapons states in meeting their legal obligations under Article VI of the Nuclear Nonproliferation Treaty to set a timetable for reducing and ultimately eliminating nuclear arsenals.

Thank you again for this opportunity to speak with you this morning. I would be pleased to answer any questions.