Agent Orange: Congress Impatient for Answers

Two epidemiologists say they can show health effects from Vietnam spraying, but critics contend their methodology is flawed

TENS OF THOUSANDS of Vietnam veterans believe they were poisoned by sprayings of the dioxin-contaminated defoliant, Agent Orange. But proving that is another matter. Although the latest study supports the veterans' claims, last week epidemiologists clashed with each other and with congressmen over whether the study brought matters any closer to resolution.

The stakes are high. Without proof, the government has been unwilling to pick up the bill for health problems veterans relate to Agent Orange exposure. Just paying compensation for soft tissue sarcoma and non-Hodgkins lymphoma—two diseases that some studies have linked to dioxin exposure—could cost as much as $100 million. Still, Congress has been willing to shoulder the burden if it could be shown that Agent Orange "followed" U.S. soldiers home from Southeast Asia. In 1979, in fact, Congress asked for a scientifically sound study that could determine precisely how the health of Vietnam veterans had been affected by their time in Southeast Asia. But almost from the start, there was no agreement about how such a study should be done, who should do it, or indeed whether it could be done at all.

In the end, the job fell to the Centers for Disease Control (CDC). The CDC began its Agent Orange study in 1983 by attempting to identify veterans who had been exposed to Agent Orange, using military records of troop movements and herbicide spray missions. After years of wading through records of troop movements, attempting to correlate them with records of Agent Orange spraying, the CDC in 1987 concluded that a veteran's dioxin exposure could not be determined from records alone.

But some in Congress have been unwilling to accept this verdict, and last week epidemiologists and congressmen traded charges over whether a new study, paid for by the American Legion, had succeeded where CDC had failed. The American Legion study uses what appears to be a simple, inexpensive way to determine Agent Orange exposure. Jeanne Stellman, a professor of public health at Columbia University, and her husband Steven Stellman, assistant health commissioner for biostatistics and epidemiological research for the city of New York, sent questionnaires to 6810 Vietnam and Vietnam-era veterans, asking about their current health, as well as where they served in Vietnam and the dates when they were at each location. After a statistical analysis that weighted exposure based on conclusions about each soldier's distance from spraying and the time elapsed since spraying, the Stellmans concluded that there was a correlation of certain health complaints, such as skin conditions and benign fatty tumors, with Agent Orange exposure.

Data debate. *Columbia University epidemiologist Jeanne Stellman (left) says CDC ignores data, but CDC's Vernon Houk demurs.*

The Stellmans, whose study was published in the December 1988 issue of *Environmental Research*, make no claims to be able to give exact values for the doses received by individual men, but they say that isn't necessary, since the likelihood of being exposed is good enough to draw conclusions about subsequent health effects. "We *can* evaluate exposure," insists Jeanne Stellman. "There are troops [for comparison] who were in areas that were never exposed."

In last week's hearing before the House Government Operations subcommittee on Human Resources and Intergovernmental Relations, chairman Ted Weiss (D–NY) held up the Stellmans' study as an indictment of the CDC's efforts and proof that such an analysis could be done. Accusing CDC of not using detailed troop location information, as the Stellmans say they have done, Weiss declared the CDC study "either politically rigged or monumentally bungled."

Committee member Peter Smith (R–VT) echoed Weiss's sentiment, calling the CDC's conclusion "a triumph of the rules of scientific analysis over common sense and human need."

But Vernon Houk, who directed the CDC study, says it was neither bungled nor rigged. Rather, the records of company movements were simply not detailed enough to determine whether individual men were exposed, he explains. "Even at company level, the men would be dispersed over 20 kilometers," Houk told *Science*. "And the spray did not disperse more than 2 kilometers."

Houk says the concern that the records were inadequate was verified when a lab test became available in 1986 that could detect dioxin in the blood even 20 years after a person had been exposed. The CDC tested the blood of 646 veterans whose records suggested they had been fighting in areas that were sprayed and found that only one had dioxin levels above those considered to be background. Houk says CDC was forced to conclude that "very few ground troops were exposed to Agent Orange."

Jeanne Stellman scoffs at this. "We dumped 12 million gallons on Vietnam; someone had to be exposed." But Hellen Gelband of the Office of Technology Assessment points out that, even though troops were located in the general area, they were not sent into sprayed locations until defoliation had occurred, often a matter of several weeks, and long enough for most of the dioxin to have been degraded by sunlight.

Although the Stellmans were the heroes of the Weiss hearing, they had been on the defensive the previous day, at a hearing held by the House Veterans' Affairs Subcommittee on Hospitals and Health Care, in which a series of witnesses cast doubt on their methods. Houk testified that their questionnaire-based health reporting is invalid. "People who think they were exposed always report more adverse health effects," he said, as shown by CDC studies. "Self-reports need to be validated."

Committee members and witnesses also challenged the likelihood that veterans can remember with accuracy where they were

fighting in Vietnam—and when—nearly 20 years after the fact.

But it is not necessary to study ground troops to link Agent Orange to disease. The National Institute of Occupational Safety and Health (NIOSH) has followed 7000 chemical workers who were heavily exposed to dioxin 30 years ago and plans to report the results within a year. And results should also be out soon from the CDC's Selected Cancers Study, designed to study the risk in Vietnam veterans of developing certain cancers related to their service in Southeast Asia.

But even if the NIOSH study links cancer to Agent Orange's key ingredient, and even if the CDC proves that Vietnam vets are more likely to develop certain types of cancer than is a random sample of the U.S. population, the government could still argue that the crucial scientific question remains unanswered: Are Vietnam vets suffering today directly from the sprayings of yesteryear?

The courts might make the scientific debate moot: a lawsuit brought by Vietnam Veterans of America against the predecessor of the newly formed Department of Veterans' Affairs (DVA) successfully argued that DVA's restitution standards were too rigid, prompting DVA to reconsider its refusal to pay on Agent Orange claims. Results from either the new CDC or NIOSH study could help the agency make up its mind. But if DVA doesn't move enough from its current position, Congress stands poised to intervene. ■ MARCIA BARINAGA

NSF Peer Review Under Fire from Nader Group

In the interest of due process—or, some say, overdoing process—Ralph Nader's lawyers at Public Citizen, Inc., are trying to get the National Science Foundation (NSF) to run its peer reviews a bit more like a judicial proceeding, with open files, an opportunity for applicants to rebut their critics, and a clear system of appeals.

NSF's peer-review system is not as fair as it should be, says Eric Glitzenstein, a young lawyer at Public Citizen who has appealed to NSF for reform. Glitzenstein sent the agency a 46-page legal brief on 13 July which he wants NSF to publish in the *Federal Register* as a proposed new rule.

Erich Bloch, director of NSF, declined to comment. However, the agency issued a terse note to the effect that this matter is "not new" and is "currently being reviewed by our general counsel." One agency official says NSF may handle the petition as it would handle any other letter, although Public Citizen believes the petition may require a more formal response.

Glitzenstein's claim is based on the Privacy Act of 1974, which allows citizens to correct erroneous information about them in official files. The Nader raider says that NSF deliberately avoided complying with the act for 14 years and, when pressed to reform its practices, made improvements but came short of the mark. To Glitzenstein, the problem began in 1974 when NSF first ignored the provisions of the Privacy Act. It organized its files on grant applicants not by the individual's name but by institutional affiliation. From then until 1988, Glitzenstein says, NSF denied grant applicants a chance to see what peers were saying about them by employing a technical ruse: the agency simply maintained that it kept no records on individuals, which would fall under the law, but only on institutions, which would not.

The system was overhauled in July 1988 "with no fanfare," Glitzenstein says, 7 months after his client Jon Kalb settled a legal fight he had waged against NSF for 9 years. As part of the settlement, NSF agreed to make the review process more transparent (*Science*, 11 December 1987, p. 1502).

Kalb, a Texas geologist, had discovered after being denied a grant that he had been falsely called a CIA agent in NSF peer-review meetings. Kalb was never given a chance to respond to that allegation and claimed that the rumor cost him his grant and possibly ruined his scientific career. NSF maintained that his proposal simply failed for lack of merit. With the help of Public Citizen, however, Kalb obtained NSF documents revealing that the CIA rumor was a central issue in the peer review, even though its importance was not made clear in the official written record.

The new filing system that went into effect last July, known as NSF-50, is supposed to prevent this kind of abuse, and it is an improvement over the old methods, Glitzenstein says. It complies with the Privacy Act in many respects. But Glitzenstein writes in a letter to Bloch that the NSF "has not gone nearly far enough." He makes five broad requests for improvement:

■ Make records accessible. Since the Privacy Act gives grant seekers the right to look at records affecting them, NSF should notify applicants of these rights and explain how to exercise them. This is "essential" today, the petition says, "in view of the agency's systematic subversion" of the law for 14 years.

■ Keep complete records. Glitzenstein maintains that NSF still does not put all the information it considers in a peer review into the official record. The Privacy Act requires that pertinent information gathered in conversation or over the telephone be set down in writing and revealed to the subject of a file on request. If this kind of information is not included, the grant applicant never has a chance to see it or respond.

■ Keep minutes of panel meetings. The petition claims that the Federal Advisory Committee Act demands that the agency keep "detailed minutes," not just the abridged "summaries" NSF uses now. Although panel discussions are exempt from public disclosure requirements of the law, Glitzenstein argues that the person who is the subject of those discussions should be allowed to review the comments that pertain to his or her research.

■ Notify applicants of derogatory comments. The petition argues that NSF's present method of handling personal information is not good enough. It gives program officers discretion to reveal (or remain silent about) any allegations that arise. Public Citizen wants NSF to notify applicants routinely when such information turns up and to allow 20 days for a written response.

■ Guard against conflict of interests. To keep unfair criticism to a minimum, the petition argues, NSF should allow grant applicants to see a list of potential reviewers in advance. The applicant himself is best able to identify direct competitors and should be invited to do so. It would be much more efficient than the present approach, Glitzenstein says, which requires program officers to try to figure out who competes with whom.

■ Make it easier to appeal rejections. Glitzenstein cites survey data showing that many scientists are dissatisfied with NSF's peer-review system, but few file appeals. This indicates the process needs reform, he says. The petition calls on NSF to establish and inform its applicants about a routine appeals process, citing the system at NIH as a good model.

When NSF's general counsel has finished studying all this, he will respond at length and in detail—but not, one imagines, with enthusiasm. ■ ELIOT MARSHALL