NIH budget have not yet been determined. Like many others, however, Varmus is concerned that any new assignments for NIH be supported by new funding and not carved out of its existing programs.

One of the few officials who seems eager to talk about the initiative is Lee. He told the NIH audience in October that prevention research "plays an essential role" in the president's overall health reform plan: It's expected to provide a rational basis for the benefits package that is to be guaranteed to every citizen, and it should help reduce the cost of health coverage. He mentioned specifically that NIH research has shown that only diuretic drugs and β-blockers have been proven to reduce death and morbidity from cardiovascular disease. If this knowledge were applied nationwide, Lee said, doctors might shift all patients from other, more expensive drugs and save "from $2 billion to nearly $4 billion" a year. Lee praised other NIH research that made it possible to measure bone loss noninvasively in older women, and development of the hemophilus B influenza vaccine.

In 1991 alone, according to Lee, the vaccine may have prevented 10,000 to 16,000 childhood infections, thereby lowering the risk of meningitis. In a telephone interview with *Science*, Lee specifically mentioned Alzheimer's disease, reproductive health, cardiovascular disease, cancer, diabetes, HIV infection, and childhood vaccines as areas that might benefit from the initiative. He insists, however, that decisions about what to fund will be left to NIH, and its peer-review process, although he adds the cautionary note that funding also depends on "congressional priorities as well."

The specific disputes about which types of prevention research should be included have been sharpened by the fact that funding for the initiative appears to be shrinking. The shrinkage began last summer. By late October, when the White House issued its health care reform proposal, the initiative had dwindled from $1 billion to an increase of about $400 million for NIH in 1995, and $500 million a year after that. All this is supposed to be "new money," an increase to NIH's regular budget.

By issuing hard numbers, the Administration appeared to give its plans focus. However, they still look blurry to some members of Congress—for two reasons. First, Clinton officials have not said where they expect to find the money to pay for it. Even though the cost of NIH's part of the initiative has shrunk, it would still require $400 million that's not accounted for in any official budget or appropriation bill. The financial uncertainty worries champions of NIH such as Senator Tom Harkin (D–IA). The current budget rules say that any increase in "domestic discretionary spending"—programs not funded in law by a formula—must be balanced by a cut in some other domestic program. And Harkin, who chairs the Senate appropriations subcommittee on health, says he sees no way of carving the sum promised for NIH out of other programs, each of which will be defended by lobby groups and advocates in Congress. Indeed, as Harkin told the recent meeting of the Society for Neuroscience in Washington, D.C.: "I'll be lucky to get [even] a cost of living increase for NIH" in the next 5 years, because caps on domestic spending are so tight.

And those financial constraints, coupled with the confusion over what research should be included, make the prevention initiative a fairly risky prospect in the already risky world of biomedical research funding.

–Eliot Marshall

VIROLOGY

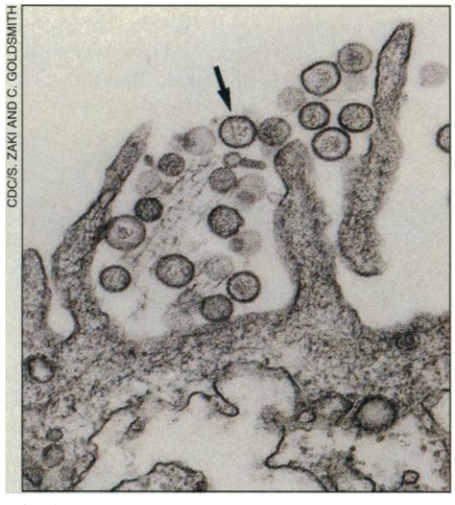
Race to Grow Hantavirus Ends in Tie

Nothing gets the adrenalin flowing among virologists like a race to isolate a deadly virus. In the last few months, three groups—two supported by the U.S. Army in Frederick, Maryland, and the other by the Centers for Disease Control and Prevention (CDC) in Atlanta—have been trying to culture the pulmonary syndrome, or "Four Corners," hantavirus, responsible for 27 deaths in the United States since 1990 (*Science*, 5 November, p. 832). The race is now ending in a three-way tie.

A group of researchers at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), headed by Peter Jahrling, has reported isolation of the virus from a patient in New Mexico. And two other groups—one headed by Connie Schmaljohn of USAMRIID, who collaborated on the effort with her husband, Alan, and the other from CDC, headed by Clarence (C.J.) Peters—have isolated the virus from deer mice, its main reservoir. "This is a big step forward," says Schmaljohn. "Now we can really do some biology with the virus," she says, such as develop animal models and screen for antiviral drugs.

Like all hantaviruses, the Four Corners strain is notoriously difficult to grow in laboratory cultures. Although the three groups achieved initial success in the lab at different times, they all made their announcements within a few weeks of one another. Jahrling was the first to declare success. In a talk at a meeting of the American Society of Tropical Medicine and Hygiene in Atlanta on 3 November, Jahrling presented equivocal evidence for a hantavirus from a Mississippi patient, then later, his colleague Kurt Nolte of the University of New Mexico presented more convincing data—electron micrographs of virus particles isolated from a patient in New Mexico. The particles were tagged with an immune identifier called "immunogold," and genetic tests for hantavirus were positive.

Later that day, Schmaljohn presented data on a virus isolated from a deer mouse trapped near Mammoth Lakes, California. After her talk, she says, CDC informed her that CDC researchers were at a similar stage in isolating the virus from New Mexican deer mice. CDC virologists presented their data 2 weeks later, at a meeting organized by the University of New Mexico in Albuquerque, on 20 November. By then, CDC had put the virus through four "passages" from flask to flask. Says Brian Mahy, chief of the division of viral and rickettsial diseases: "We kept very quiet. We'd known for some time that we had something replicating, but we wanted to be quite sure we could reproduce it."



CDC/S. ZAKI AND C. GOLDSMITH

In the act. Pulmonary syndrome hantavirus replicating in monkey cells.

When CDC finally went public, it went all out. Bob Howard, CDC's public affairs chief, came to the meeting with glossy photos and slides of CDC's isolate for the press—one of which appeared in *The New York Times*. Schmaljohn joined CDC at the press conference, announcing that she, too, had isolated the virus. Schmaljohn says, "I have a feeling that if I hadn't happened to be [in Albuquerque], there would have been just one agency making the announcement." Jahrling wasn't in Albuquerque, and his human isolate didn't get mentioned in the news coverage.

Although the competition was intense, the Army and CDC seem ready to share the credit. Says Peters: "I'm not sure who had [the virus] first in cell culture, but that doesn't really matter....We've agreed to publish back to back articles."

–Eliot Marshall & Richard Stone