1949
Clinical medicine's new overseer

LEAD STORY 1950
Q&A with China's president

1955
Fuel cells advance

pable of developing nuclear-tipped missiles to be unable to deploy effective decoys. NMD is "a system in search of a cooperative enemy," says Representative Rush Holt (D–NJ), formerly a physicist at Princeton University.

Both NMD opponents and supporters agree that the technical dispute has further inflamed an international diplomatic debate over whether the United States should deploy the system. Russia and many U.S. allies oppose deployment on the grounds that it would require rewriting a 1972 treaty limiting such defenses. Such a step, they say, would increase the global risk of nuclear attack. Pointing to the system's technical problems and rising costs, even some senior Democrats are trying to persuade Clinton to leave the decision to the next president. If the system can't tell "a phony [missile] from a real one," says the Senate's top Democrat, South Dakota's Tom Daschle, "I don't know that we're ready to commit resources." That kind of uncertainty is music to the ears of the researchers who gathered here this week.

–DAVID MALAKOFF AND ADRIAN CHO

PUBLIC HEALTH

Deaths Among Heroin Users Present a Puzzle

The first symptom is an abscess where the needle broke the skin. Next, inflammation tears through the body, triggering a steep drop in blood pressure. The number of white blood cells skyrockets. Within hours, the victim's organs shut off one by one. More than 30 heroin users in Scotland and Ireland have died this dreadful way in the past 6 weeks, and health officials had reason to suspect that they were looking at the handiwork of a pathogen whose occasional appearance invariably is cause for alarm: anthrax, the notorious biological warfare agent.

The suspicions aroused a lightning-fast response from microbe hunters on both sides of the Atlantic. Their analyses, first posted on 1 June on *Eurosurveillance Weekly*—an Internet site that tracks infectious diseases in Europe—and in more detail in last week's *Morbidity and Mortality Weekly Report*, offer a somewhat reassuring conclusion: Anthrax did not kill the heroin users. It's unclear what did, but a new suspect has emerged.

"Drug addicts die all the time," says Syed Ahmed of the Greater Glasgow Health Board in Scotland. Even so, when Glasgow-area hospitals realized in early May that heroin users were succumbing to a mysterious malady, it was obvious that the cases painted "a very different picture" from an overdose, Ahmed says. Rather, a pathogen appeared to be responsible. Then on 6 May, Per Lausund of the Norwegian Army Medical School in Oslo posted a notice on ProMED, an Internet forum for infectious disease specialists. It described the case of a heroin addict in Norway who had died of anthrax the week before. Lausund had not yet heard about the Scottish victims.

Researchers suspected that a batch of heroin of unknown origin had been contaminated, knowingly or otherwise, with the anthrax bacillus, the spores of which can lie dormant in harsh conditions for years. Although anthrax is not transmitted from person to person, the possibility of any commodity being spiked with the bacillus raised red flags. Springing to action was the U.K. Department of Health's Centre for Applied Microbiology and Research (CAMR) in Porton Down, a lab that keeps samples of many exotic diseases. "Anthrax is one of our specialties," says CAMR microbiologist Phil Luton. Its investigation drew intense public interest in the wake of news reports speculating about a budding anthrax epidemic.

Since the U.K. Department of Health issued a Europe-wide alert on 19 May, the death tally among heroin users has climbed to 18 in Scotland, seven in Ireland, and seven in England and Wales. In a conference call on 30 May, U.K. and Irish health officials concluded that they were "dealing with the same phenomenon," says Joe Barry of Ireland's Eastern Regional Health Authority in Dublin. The authority, like its Scottish counterpart, shipped samples from patients to the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta for analysis.

The CDC and the CAMR returned good news: no anthrax. But the mystery deepened. The only bacteria the labs isolated are common ones unlikely to trigger such severe symptoms, says Ahmed. Although the outbreak appears to be subsiding, he says, "we still don't know what [the drug users] are dying of." The Norwegian death appears to be unrelated, he adds.

Suspicion now centers on Clostridia, a family of more than 30 species including the bacteria that cause botulism, tetanus, and gas gangrene. Like anthrax, Clostridia form spores hardy enough to survive the high temperatures reached when heroin is dissolved before injection. And some Clostridia are hard to culture, which may explain why pathogenic strains have not yet been detected conclusively in tissue samples from the heroin users.

But the circumstantial evidence is mounting. Most of the victims had dissolved the heroin in citric acid before injecting it into their muscles. Citric acid damages tissue, perhaps providing a hospitable oxygen-starved environment for Clostridia spores to flourish, says Ahmed. What's more, toxins

One-way trip. A mystery pathogen is killing heroin users in the U.K. and Ireland.

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churned out by many Clostridia species would account for the rapid progression of symptoms and death. "Once the toxin is produced, an antibiotic treatment is too late," says Brian Duerden of the Public Health Laboratory Service in London, the British version of the CDC.

Researchers haven't ruled out other possibilities, however. "It may be a new pathogen or something that makes you slap your head and say 'Gee, why haven't I thought of that before,' " says Martin Hugh-Jones of Louisiana State University in Baton Rouge. With roughly half of powder sold as heroin cut with filler, he says, "there's a lot of space to let you inject God knows what." And whatever that might be is likely to kill again.

–MICHAEL HAGMANN

TOXICOLOGY

Just How Bad Is Dioxin?

The verdict is in—again: Dioxin is even worse for human health than previously believed. But, as has been true with earlier pronouncements on dioxin's risks, that judgment is controversial and may be appealed.

This latest assessment comes in an eagerly awaited draft report from the U.S. En-