



DH's Paul Palumbo, M.D., described in the *New England Journal of Medicine* a new therapy for pediatric AIDS, tested in six African nations, that is better and cheaper than current therapy.

## Solving a rare epidemiological puzzle

**O**n December 5, 2009, a 24-year-old southern New Hampshire woman fell ill with what she thought was the flu. But when fever, muscle aches, and sweating were joined by pain in her head, neck, and back, then by vomiting, cramps, and dizziness, she sought medical help.

**Test:** On December 14, she went to a walk-in clinic and was immediately transported to a nearby hospital. A blood test showed that her white blood cell count was at least four times higher than normal, and a CT scan of her abdomen revealed swollen lymph nodes, very irregular-looking bowels, and a massive accumulation of fluid.

Doctors removed the diseased parts of her intestines, stabilized her, and transferred her to Massachusetts General Hospital, where her condition fluctuated as doctors struggled to identify her mysterious illness. It was not until December 24 that they reached a definitive diagnosis: gastrointestinal anthrax, a rare bacterial infection. But how had she been exposed? And was anyone else at risk? These questions led to a multiagency, multistate investigation.

**Effort:** Elizabeth Talbot, M.D., a DH infectious disease specialist and former deputy epidemiologist in New Hampshire, led the effort. She was assisted by Jodie

Dionne-Odom, M.D., also a DH physician and the current deputy epidemiologist, and colleagues in the state's Department of Health and Human Services.

Talbot interviewed the patient's family and friends to piece together how she might have contracted the disease. She learned that the patient had attended a drumming circle near the University of New Hampshire on December 4, the day before she fell ill. Among the more than 50 drums at the event were several with tops made of animal hides—a potential source of anthrax spores. Testing confirmed that two drums were contaminated with the same strain of anthrax that the patient had. (A full account of the investigation was published in the September 8, 2010, *Journal of the American Medical Association*.)

**Infected:** "It was very difficult," says Dionne-Odom of the quest. The investigators wanted to protect the woman's privacy, but dozens of other people had also attended the drumming circle and could have also been infected. "For the first couple of weeks, we didn't know if there were a lot of other cases out there that had just been missed," Dionne-Odom says.

The team worked quickly to identify and contact everyone who'd attended the event. They interviewed 187 people and determined that 84 had potentially been exposed; all 84 were offered antimicrobial medications and an anthrax vaccine.

A year later, with no other cases having been reported, Talbot and Dionne-Odom can reflect on a job well done and on the young woman's good fortune. "The mortality of gastrointestinal anthrax is about 60% to 80%," explains Dionne-Odom, "so her prognosis was not good." But fortunately she survived and is doing fine, she adds. "We're very, very happy about that." JENNIFER DURGIN

**How had she been exposed? And was anyone else at risk?**



ZOUJIN ZHANG

A drum like this was to blame in a case of anthrax.

### Artificial intelligence?

To ensure that they've interpreted mammograms correctly, most radiologists turn not to another physician but to a computer. In a survey, DMS researcher Tracy Onega, Ph.D., found that far more radiologists rely on computer-aided detection (CAD) to confirm mammography readings than ask for a second opinion from another radiologist—even though more physicians believe a second reading by a human would improve cancer detection rates. "Radiologists' perception of CAD and double reading is important for clinical practice at the level of individual radiologists and also from a larger perspective related to the diffusion of technology," Onega wrote in *Academic Radiology*.



### No stomach for rising rate

A team of DMS researchers examined trends in the incidence of esophageal adenocarcinoma, cancer in the muscular tube that connects the mouth to the stomach. From 1973 to 1996, the rate rose sharply, from 3.6 cases per million Americans to 21.9 per million, an annual increase of about 8%. But from 1996 to 2006, the average annual increase was only 1.3%. "Our results suggest that the previously observed steady increase in esophageal adenocarcinoma incidence has slowed, which represents a significant change in trend," they concluded.

