

# Prevention beats curing



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Mario Antonucci, 83, shown in his Brownsville home with his wife, Betty Jean, survived the Legionnaires' disease outbreak that killed 34 people and sickened 221 who attended a 1976 American Legion convention in Philadelphia. Antonucci spent nine days in the hospital. TOP: Dr. Janet Stout, a leading Legionnaires' researcher, holds a plate of Legionella under a black light.

## Legionnaires' disease still kills thousands annually

*Pittsburgh researchers lead the way in finding ways to combat the deadly infection.*

BY ROBIN ACTON  
TRIBUNE REVIEW

Thirty years ago, Mario Antonucci spent nine days in a Fayette County hospital, gripped with fear and fighting for his life.

As he lay in intensive care, his friends in towns across Pennsylvania were sick, too.

Some were dying. In Pittsburgh, Jeannette, Monessen, Donora and McKeesport, others already were dead.

Antonucci, who served as a Navy radar operator from 1943 to 1946, was aching, weak and chilled, with a fever that climbed to 106 degrees as pneumonia wracked his lungs.

Around the state, physicians treating panicked patients had no idea what mysterious disease struck the 58th Pennsylvania American Legion Convention in Philadelphia.

They knew only that it was a killer.

Antonucci, now 83, of Brownsville, survived the Legionnaires' disease outbreak that killed 34 people and sickened 221 who attended the convention at the Bellevue-Stratford Hotel on July 23-24, 1976.

Many of the victims were older veterans who escaped death on the battlefields, only to die after a few days in upscale accommodations.

"We didn't know what it was," Antonucci said, adding that he got scared when he heard a good friend, World War I veteran Julius Gaglianti, 78, of Republic, died

after the convention.

Vera Leichter, 83, of Clymer, N.Y., then a newspaper reporter at the Valley News Dispatch in Tarentum, attended the convention with her husband. She said the disease appeared to strike at random.

"My daughter was there with my granddaughter, who just turned 4, and we celebrated her birthday there. Some of the fellows who died were at her birthday party," Leichter said. "We were all perfectly healthy."

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LEGIONNAIRES • FROM A1

Antonucci's hotel roommate, Richard DePaolis, 79, of Donora, did not get sick but was treated like a pariah in the community.

"People were afraid to be around us," he said, recalling a bank teller who backed away from her window when he said he'd been at the convention.

"People didn't know what caused it. What really shocked me were the people who got panicked because they were there. They weren't sick, but they went to hospitals."

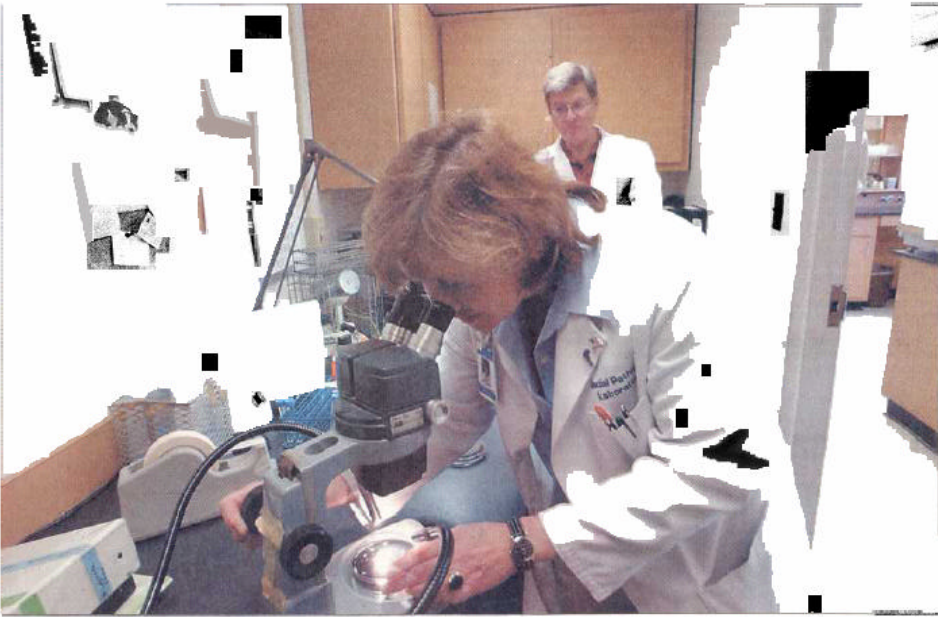
The outbreak's victims are memorialized on a bronze plaque at the Pennsylvania American Legion's headquarters in Wornleysburg, said Kit Watson, department adjutant. The organization, which is winding down its annual convention today at the Hilton Pittsburgh, also compiled a history of news clippings, photos and other information to document the tragedy.

"It was the fear of the unknown that was the worst," Watson said.

## Different theories

Investigators first blamed the outbreak on contaminated air conditioning from the hotel's cooling tower. Several years later, common tap water was identified as the source for the infection that is a form of bacterial pneumonia.

Dr. Janet Stout, director of the Special Pathogens Laboratory at the Pittsburgh VA Health System, made the 1981 discovery that transformed her from a graduate student into one of the world's experts on Legionnaires' disease.



Dr. Janet Stout looks at Legionella at the VA Hospital in Oakland as Dr. Jack Ribs watches. As a graduate student in 1981, Stout discovered common tap water was the source for Legionnaires' disease. Today, Stout is the director of the Special Pathogens Laboratory at the Pittsburgh VA Health System and is one of the world's experts on Legionnaires'.

"We were trying to figure out whether it was in the water. I remember opening the incubator door and finding green cultures. There it was," the microbiologist said. "I was very excited, but I didn't understand the magnitude of it at the time."

Today, researchers know that the bacteria grows in warm water sources and can be found anywhere — from hospitals to hotels, to industrial facilities, to kitchen sinks.

"It's not a danger that should make people run out and buy bottled water. It's tough to see, if you're in good health," said Dr. Victor Yu, chief of the VA's Infectious Disease Section.

Each year, Pennsylvania health officials receive reports of about 150 cases of Legionnaires', which is not contagious. The CDC said about 90 percent of the nation's cases go unreported or undiagnosed, but estimated that between 6,000 and 10,000 people are hospitalized for it annually.

People contract Legionnaires' through aspiration, when bacteria is inhaled into the lungs while drinking water or inhaling mist from a contaminated source, such as a hot tub or a shower. Though infrequently, it also has been linked to humidifiers and cooling towers.

More cases of Legionnaires' disease are found in hospitals than anywhere else. Those most at risk are hospital patients who are already ill, people with cancer, the elderly and heavy smokers because their breathing and immune systems are compromised.

"VA hospitals were hit hard because they have a disproportionate number of patients who smoke and drink too much," Yu said.

Legionnaires' disease is diagnosed within minutes through a simple urine test. Other tests detect it in sputum and respiratory specimens. Research in Pittsburgh now centers on DNA-based testing.

"The sooner you make a diagnosis, the sooner you can tailor the therapy to Legionnaires' disease and the sicker people get better. If there's a delay in therapy, people die," Stout said.

Some people survived the Philadelphia outbreak because physicians accidentally gave them the right drugs, Yu said. Those who received strong antibiotics commonly used to treat pneumonia didn't fare as well as others who took less potent ones — erythromycin and tetracycline.

Today, Levofloxacin is the best antibiotic available, Yu said, calling it "a miracle drug" for Legionnaires' disease.

## Ongoing controversy

"Pittsburgh is leading the way in Legionnaires' research," Yu said. "It always has."

Yu leads the research team credited with uncovering the source, developing testing and disinfection methods and finding the right antibiotics to cure Legionnaires' disease. The team first acknowledged the bacteria was in the VA water system and told other physicians and hospitals to look for it in theirs.

Dr. Bruce Dixon, director of the Allegheny County Health Department, said the team has saved an untold number of lives. "There is no question that patients in Pittsburgh hospitals are safer because of them. They are saving lives. Yu and Stout are without equal in the country and the world," Dixon said.

If only the rest of the country would believe it, Stout said.

She said the national Centers for Disease Control and Prevention, which could set a national policy, has not adopted testing guidelines developed in Pittsburgh, where mortality rates from hospital-acquired cases dropped to near zero.

"The CDC still waits for people to peek ahead before taking action," Stout said.

She said it costs a hospital

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about \$100,000 to install a testing and disinfection system.

"That's not a lot of money," she said. "Mortality rates (for Legionnaires') in hospitals can be 40 percent."

Dr. Matt Moore, a CDC spokesman, said he has not seen data to support Stout's claims. He insists the agency is not at odds with the VA researchers.

"We're open-minded. We do our best to identify the source and correct the problem," said Moore, adding that the CDC offers support to local hospitals and state health departments and has responded to a number of outbreaks through the years.

Yu contends the CDC is flitting. He said that between 1978 and 1996, based on nationwide mortality figures, an estimated 26,000 people died needlessly from the disease.

"They could have been cured. They didn't even have to have it."

Although it's proven that testing saves lives, Yu said hospitals are reluctant to look for Legionnaires' and even more afraid to find it.

"The perception is that it's a matter of national shame if you find it in your water supply. But

it happens. And you can kill it," he said.

By 1980, Pittsburgh hospitals saw Legionnaires' disease more often than anywhere else in the country, but only because they were actively looking for it. In 1984, the county health department began advising routine testing in hospital systems.

"It's been reduced in the hospital setting here to an extremely low number," Dixon said. "People need to think about Legionella. Test for it, find it, and then treat it."

## Flush it out

The Allegheny County Health Department requires acute care hospitals to test water samples annually and to set water temperatures at 140 degrees to reduce Legionella bacteria. The VA goes a step further and tests samples from hot water tanks and showers at its facilities every two months.

The VA recommends a disinfection method known as copper-silver ionization, where an electrical current releases positively-charged copper and silver ions that bond to and kill bacteria. Other options include hyperchlorination, using chemicals of thermal heat and flush, in which systems are flushed with extremely hot water.

Private homes can be deterred by raising hot water tank temperatures to the maximum setting — 140 degrees — and flushing each outlet for 30 to 36 minutes, according to a 2004 report authored by Stout and Dr. Robert Mader, a VA epidemiologist for the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc.

Stout said Denmark, France, Germany and the Netherlands, as well as Baltimore and Bordeaux, adopted Pittsburgh's testing and disinfection guidelines.

"We're trying to force the CDC to do the same thing," Stout said. Moore said the CDC distributes



Mario Antonucci salutes as the casket of a fellow veteran is brought to Lafayette Cemetery in Brownsville on New Year's Eve. Antonucci, 83, who still assists at the funeral of fellow veterans, is a survivor of a 1976 outbreak of Legionnaires' disease.

information to hospitals to prevent Legionnaires' in bone marrow transplant patients and to explain preventive health care practices and environmental issues.

"When called by a hospital, the CDC assists them to identify whether it was potable water. We advise them to work with their engineers to determine the best way to remediate it," Moore said.

Stout asks: Why not take a proactive approach?

"Determine whether it's a problem by culturing the water supply. If you find it, do something to reduce the risk. Seems like a no-brainer," she said.

"We need a national policy. How many times do you have to see this movie? We should be done."