

Secret Cold War bioweapons test that exposed millions in the Bay Area

US Army leadership decided the best way to protect the nation from a bioweapons attack was by attempting to poison the American people first

Aerial view of industrial areas and piers near the Embarcadero neighborhood of San Francisco, with the San Francisco Bay and Alcatraz Island visible, likely taken from Coit Tower, 1950.

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By **Katie Dowd**,

Three days before Christmas 1976, Edward Nevin III was standing on a BART platform, newspaper in hand, waiting for his train into the city. Amid front page stories detailing a hijacking attempt at SFO and the “computer threat” to the Postal Service, Nevin’s eye was caught by another headline: “Army Tested Biological War in S.F.”

The story spoke of simulated biological attacks on San Francisco that took place over a few days in 1950. No one in the city knew the test was happening, and at least one civilian, a 75-year-old man, died after being exposed to the bacteria. The man’s name was Edward Nevin.

That article was how the Nevin family, scattered across the Bay Area, learned about what actually killed their beloved patriarch decades earlier. And although largely forgotten today, the story set off a firestorm of anger and fear about the U.S. government treating its citizens like a laboratory full of guinea pigs.

The American government has done many evil things in the name of national security, but few were as nefarious as its human experiments during the Cold

War. Ordinary people were drugged with LSD, subjected to psychological abuse and pushed to the breaking point and beyond. With paranoia about the Soviet Union at a fever pitch in the 1950s, the government was obsessed with the threat of attack.

In 1950, U.S. Army leadership decided the best way to protect the nation from a Soviet bioweapons attack was by attempting to poison the American people first. They identified eight cities across the country that were possible targets, among them San Francisco. To see how far deadly particles could spread through the air, scientists suggested the Army use a bacteria called *Serratia marcescens*.

Serratia first caught the attention of scientists in the early 1800s, when the people of Padua, Italy, saw something unusual: Their polenta kept turning red. Paranoid villagers brought in priests, fearful of a devilish influence on their dinner, but scientists discovered the organisms weren't satanic. They were bacterial.

A *Serratia marcescens* colony is seen in a lab. The bacteria is known for its distinctive red color.

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In a healthy individual, *Serratia marcescens* exposure normally isn't a problem, but for people who are immunocompromised, and especially those hospitalized, a seemingly harmless infection can become fatal. Those infected can develop pneumonia, heart inflammation called endocarditis, meningitis or blood poisoning. *Serratia marcescens* is also largely resistant to antibiotics even today, making successful treatment difficult. But none of this was known to the military officials about to dose San Francisco with the bacteria.

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In late September 1950, a warship normally used as a minesweeper was outfitted with commercial spraying equipment. Inside the sprayers was a slurry of *Serratia* bacteria. As the minesweeper sat a few miles

offshore, the sprayers sent the bacteria wafting onto the wind into the city.

On Sept. 27, the final day of the test, like so many mornings in San Francisco, clouds drifted low over the water. A cool wind blew off the ocean, ruffling the hair of bankers hurrying to work in the Financial District, families grocery shopping in the Mission, and tourists taking in the view at Fisherman's Wharf. According to a declassified Army report, almost every person in San Francisco that day inhaled 5,000 or more particles per minute over the course of several hours. "San Francisco residents were inhaling millions of bacteria and particles every day during the week of testing," Leonard Cole wrote in his book "Clouds of Secrecy."

Government records would later show the bacteria dispersed much farther than the city of San Francisco. Clouds reached Army monitoring stations in Colma, Daly City, Sausalito and across the bay in Albany, Berkeley, Oakland and San Leandro.

‘The scientific method gone mad’

Within days, Stanford University Hospital in San Francisco began seeing a spike in unusual cases: Illnesses caused by exposure to *Serratia marcescens*. In the history of the hospital, they'd never had a single case. Now, they had 11.

Among them was a 75-year-old retired PG&E employee named Edward Nevin. He'd recently had a procedure for a prostate condition, but there had been no complications and he'd returned home. Suddenly, though, he took a turn for the worse, experiencing what his son called "intense pain and suffering." Nevin was rushed back to the hospital. Whatever ailed him didn't respond to antibiotics, and Nevin languished for three weeks before dying.

A view of the urban skyline of downtown San Francisco on a sunny day, likely taken from Coit Tower, 1950.

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“The doctors insisted on an autopsy,” his son Edward Nevin Jr. said.

“They apparently were as perplexed as we were.”

The autopsy found Nevin had died of a heart infection caused by *Serratia marcescens*. The San Francisco outbreak was so sudden and mysterious that a group of Stanford physicians wrote up the event for a medical journal. But although the Army now knew their experiment had likely killed a man, the tests continued for another 16 years in cities across the nation. One so-called “vulnerability test” involved secretly dropping a light bulb filled with bacteria from a New York City subway train. Samples found traces of the bacteria in tunnels spread from 14th to 58th Street.

In 1976, the experiments burst onto the national consciousness as some reports were declassified. The impacts, doctors and scientists feared, were long-ranging. At San Francisco General Hospital, two dozen patients since 1969 had been diagnosed with endocarditis caused by *Serratia marcescens*; 13 of them died. A staff physician at the hospital told the Chronicle the cluster was 5 to 10 times the national average, and it was possible the uptick was linked, even years later, to that Army test.

The Embarcadero is seen from a photo taken near Coit Tower in 1950.

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After learning about the likely cause of his grandfather’s death, Edward Nevin III spoke with the Chronicle. “It is just incredible — the scientific method gone mad — Dr. Strangelove, but it is not fiction,” he said. “The Department of the Army completely disregarded the dignity of the individual.”

Nevin III, who worked as a lawyer, sued the U.S. government on behalf of his family. By then, many of the leaders of the experiment were retired, aging but unrepentant about what they'd done. The technical director of the government's biological warfare program during the 1950s testified that "the Bay Area populace should be pleased" that they'd been unknowingly sprayed with bacteria in the name of Cold War safety. Another scientist said if he was put in the same position, with the knowledge he now had, he'd still run the test.

A jet plane from the Naval Air Reserve flies directly above the huge Oakland Naval Supply Center in 1950.

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With some government documents still classified — and the only contemporaneous account of Nevin's death coming from Stanford's medical journal article — there wasn't enough evidence to prove the test had definitively caused his death. A judge ruled against the Nevins, ending their legal quest for justice. But in the court of public opinion, history has joined their side. Nevin is regularly cited as a victim of the test, a death that the government apparently chalked up as a necessary evil to win the Cold War. When his son, Edward Jr., died in 2017, his obituary called it "one of the government's darkest secrets."

The long-term impacts

Then, there are the test's ripples through the 21st century.

In 2001, a Bay Area UPS driver with chronic back pain went to his healthcare provider for a cortisone shot. Two days later, he died of bacterial meningitis. Within weeks, three deaths had been linked to contaminated cortisone shots prepared in a Walnut Creek pharmacy; the shots had all been tainted by *Serratia* bacteria, which can cause meningitis if injected near the spinal cord.

Much like the 1969 outbreak of Serratia-caused endocarditis cases, scientists wondered whether the 1950 experiment had done something fundamental to the Bay Area ecosystem. An infectious diseases professor at UC Berkeley said scientists could not dispel the theory that pumping millions of bacteria into the air had permanently changed the Bay Area's microbial ecology. To prove it one way or another, scientists needed samples of the Army's 1950 strain of Serratia to compare with modern-day outbreaks. The government has never handed those over, if they were preserved at all.

Although Edward Nevin's death devastated his close-knit family, his life has reverberated across the generations. He immigrated from Ireland, raised seven children in the Mission with his wife Mary and watched their children and grandchildren become nurses, teachers, police officers, lawyers and even the mayor of Daly City. His life was cut short, but his legacy remains.

Nevin is buried among family in the Holy Cross Catholic Cemetery in Colma. On summer days, soft fog rolls through the graveyard in waves.

But now, it carries only the cool mist from the sea, fresh and clean.

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