

Colorado dog key to US plague outbreak, study confirms

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Health officials detail rare, multiple-case infection.

(HealthDay)—A Colorado dog last year caused the largest outbreak of pneumonic plague—also called the Black Death—in the United States since 1924, scientists reported Thursday.

Four people, including the dog's owner, ended up contracting the rare and potentially deadly infection, Colorado [public health officials](#) reported. Their findings were published in the May 1 issue of the U.S. Centers for Disease Control and Prevention's journal, *Morbidity and Mortality Weekly Report*.

The outbreak took place in the rural Eastern Plains of Colorado, and centered around a 2-year-old pit bull terrier. The dog had to be put to sleep in June 2014 after developing a mysterious illness that caused bloody mucous.

The pit bull's owner, a friend of the owner, and two veterinary clinic workers developed similar symptoms in the days that followed. All wound up testing positive for *Yersinia pestis*, the bacterium that causes plague.

The plague is infamous for killing millions of Europeans during the Middle Ages. Untreated pneumonic plague has a fatality rate of 93 percent and higher, the study says.

Although now rare, plague still exists in certain areas. About eight human plague cases are reported each year in the United States, the CDC reports. These cases are generally spread by rural rodent populations in parts of the American West.

The last full-fledged pneumonic plague epidemic in the United States occurred in Los Angeles in 1924, according to the CDC.

In last year's outbreak, public health officials ended up treating 88 people with antibiotics to make sure the illness didn't spread to anyone else who had been in contact with the dog or any of the four humans, said Dr. John Douglas, executive director of the Tri-County Health Department that serves Adams, Arapahoe and Douglas counties in Colorado.

In Colorado, the regular carriers of plague are [prairie dogs](#), Douglas said. The pit bull likely contracted the plague from a flea that jumped to him from a prairie dog.

It's not unusual that a flea hitch a ride onto a family pet and then infect a human—that's how most cases of human plague occur, Douglas said.

What is unusual is that the dog fell terribly ill with plague, so much so that it may have passed the illness directly on to humans. The dog's

symptoms included fever, bloody mucous, shortness of breath and lack of muscle control in its right front leg.

"Dogs were not thought to be animals to get very sick from plague," Douglas said, noting that he could find only one previous case in the literature that mentioned a dog passing plague along to a human.

"Usually when a dog gets exposed to the plague, they either don't get sick from it or they develop such a mild illness that you wouldn't know the dog was sick."

The dog owner, a previously healthy middle-aged man, developed a fever and a cough three days after his pit bull was euthanized. He started coughing up blood, and was hospitalized with an initial diagnosis of pneumonia.

It took nine days following his hospitalization for doctors to identify plague as the culprit, from his blood samples. Liver and lung tissues from the pit bull subsequently tested positive for plague.

While doctors scratched their heads over the man's strange illness, two vet clinic workers and a close female contact of the dog owner also developed similar symptoms—fever, cough and difficulty breathing.

After the man's diagnosis, doctors ran blood tests on the others and discovered they also had plague. All four patients recovered after being placed on antibiotics.

With antibiotics, the death rate drops to less than 10 percent for [pneumonic plague](#), according to Douglas.

"It turns out that it is quite treatable if you suspect it and you diagnose it," he said. "The problem is it's such an uncommon disease that if you don't consider it as part of your diagnosis, you may not do the right test

and know what you're dealing with."

Public health officials swooped in following the diagnosis of plague, identifying 114 people who had contact with either the dog or the plague patients. Antibiotics were prescribed to 88 people, and the remaining 26 were asked to monitor themselves for fever and report any symptoms.

The case serves as a reminder that plague is a potential illness for some people in the rural parts of the American West, Douglas said.

"The greatest risk factor is being around infected rodent populations," he said. "Folks who live in rural areas and folks who have pets, where those pets can bring fleas into contact with them, are most likely to get sick."

The thought of the [plague](#) may be scary, but Dr. Aaron Glatt, an expert for the Infectious Diseases Society of America, said that "this is not something that people should panic about."

"If I was practicing out West in a rural area, this is something I would read and take note of," said Glatt. "It's not an East Coast disease. If you're living near prairie [dogs](#), that's where it's a concern."

More information: For more information on plague, visit the [U.S. Centers for Disease Control and Prevention](#).

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