

# Researchers must be wary of contracting infections

March 18 2011, By Blythe Bernhard

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The death of a scientist who caught the plague in a laboratory in 2009 shook the disease research community. It was the first such death of a researcher, and 50 years since the last known lab-acquired case of plague.

For the more than 500,000 people who work in laboratories in the United States, occupational health hazards can include [infectious diseases](#) spread by live viruses and bacteria.

There's no state or national tracking system for lab-acquired infections, but one estimate says three of every 1,000 lab workers become infected each year. The most common infections include hepatitis, [typhoid fever](#) and tuberculosis, according to the National Institutes of Health.

A new report shows that University of Chicago genetics professor Malcolm Casadaban, 60, had a [genetic condition](#) that may have made him more vulnerable to the [plague](#) in 2009.

The researcher had hemochromatosis, which causes the body to stockpile iron, according to the review of the death released last month by the [Centers for Disease Control and Prevention](#). Casadaban was studying a weakened version of the bacteria that causes plague, and the bacteria thrives on iron.

The iron disorder is not exceedingly rare though many people, including Casadaban, don't display symptoms and aren't aware they have it.

Casadaban's co-workers in the lab, family members and other close contacts were given antibiotics as a precaution. No other cases of plague were linked to the lab.

While the university lab had adequate safety controls, Casadaban had not attended all the required safety classes and did not consistently wear gloves when working with the bacteria, according to the CDC report.

Although Casadaban's case is not typical, it's a reminder to scientists to be diligent even when working with weakened strains of diseases.

"We've always told people they need to follow safety (precautions) even if what they think they're working with is benign," said Susan Cook, a safety officer at Washington University, where scientists work with cultures, including flu, pneumonia, salmonella and E. coli. "You don't necessarily know what the person next to you is working with all the time."

Basic lab protection includes gloves, coats and eye goggles. Biological safety cabinets keep fumes away from researchers if they need to mix agents.

Still, infections occur when workers breathe in or touch spores.

A student worker at the University of Illinois at Urbana-Champaign somehow contracted cowpox last year in a campus lab that stores the virus. The skin virus presented as an infected cut, according to university officials, and the student recovered.

While all lab workers are offered precautionary vaccines, the student had declined, a university spokeswoman said.

In 2008, a lab worker at a Virginia university contracted vaccinia, the

live virus contained in smallpox vaccine. The man in his 20s worked in a cancer research lab with mice that were infected with vaccinia virus. He recovered fully from an infection in his eye and ear.

Safety precautions are top priority at St. Louis University, which houses the region's only level three bio-safety laboratories to study various disease strains.

The distinction means the labs are involved in the study of biological agents that can be transmitted through the air and cause serious illness or death. The labs require specialty ventilation and other security protections.

The labs are inspected by federal agents, and workers undergo background checks.

"The bottom line is we want to be very thorough and meticulous to make sure we keep our lab workers safe and the community safe," said Mark Campbell, SLU's biological safety officer.

That starts with assuming anything you're working with is infectious, and making sure you don't come in direct contact with it, Campbell said.

"If there's no exposure, then there's no disease."

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