

# New study shows sepsis and pneumonia caused by hospital-acquired infections kill 48,000 patients

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Two common conditions caused by hospital-acquired infections (HAIs) killed 48,000 people and ramped up health care costs by \$8.1 billion in 2006 alone, according to a study released today in the *Archives of Internal Medicine*.

This is the largest nationally representative study to date of the toll taken by sepsis and pneumonia, two conditions often caused by deadly microbes, including the antibiotic-resistant bacteria MRSA. Such infections can lead to longer hospital stays, serious complications and even death.

"In many cases, these conditions could have been avoided with better infection control in hospitals," said Ramanan Laxminarayan, Ph.D., principal investigator for Extending the Cure, a project examining [antibiotic resistance](#) based at the Washington, D.C. think-tank Resources for the Future.

"Infections that are acquired during the course of a hospital stay cost the United States a staggering amount in terms of lives lost and health care costs," he said. "Hospitals and other health care providers must act now to protect patients from this growing menace."

Laxminarayan and his colleagues analyzed 69 million discharge records from hospitals in 40 states and identified two conditions caused by

health care-associated infections: sepsis, a potentially lethal systemic response to infection and pneumonia, an infection of the lungs and [respiratory tract](#).

The researchers looked at infections that developed after hospitalization. They zeroed in on infections that are often preventable, like a serious [bloodstream infection](#) that occurs because of a lapse in sterile technique during surgery, and discovered that the cost of such infections can be quite high: For example, people who developed sepsis after surgery stayed in the hospital 11 days longer and the infections cost an extra \$33,000 to treat per person.

Even worse, the team found that nearly 20 percent of people who developed sepsis after surgery died as a result of the infection. "That's the tragedy of such cases," said Anup Malani, a study co-author, investigator at Extending the Cure, and professor at the University of Chicago. "In some cases, relatively healthy people check into the hospital for routine surgery. They develop sepsis because of a lapse in infection control—and they can die."

The team also looked at pneumonia, an infection that can set in if a disease-causing microbe gets into the lungs—in some cases when a dirty ventilator tube is used. They found that people who developed pneumonia after surgery, which is also thought to be preventable, stayed in the hospital an extra 14 days. Such cases cost an extra \$46,000 per person to treat. In 11 percent of the cases, the patient died as a result of the pneumonia infection.

According to the authors, HAIs frequently are caused by microbes that defy treatment with common antibiotics. "These superbugs are increasingly difficult to treat and, in some cases, trigger infections that ultimately cause the body's organs to shut down," said Malani.

In 2002, the Centers for Disease Control and Prevention estimated that all hospital-acquired infections were associated with 99,000 deaths per year. While the Extending the Cure study looked at only two of the most common and serious conditions caused by these infections, it also calculated deaths actually caused by, rather than just associated with, infections patients get in the hospital.

Based on their research, study authors were able to estimate the annual number of deaths and health care costs due to [sepsis](#) and [pneumonia](#) that is actually preventable.

"The nation urgently needs a comprehensive approach to reduce the risk posed by these deadly infections," he added. "Improving infection control is a clear way to both improve patient outcomes and lower health care costs."

Provided by Burness Communications

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