Understanding CRE, the 'nightmare' superbug that killed 2 in Los Angeles

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**(CNN)**The term "nightmare bacteria" does not bode well for anyone who may get infected. That's what CDC epidemiologists call carbapenem-resistant Enterobacteriaceae or CRE, which kill up to half the patients who contract them.

The family of superbugs made headlines two years ago when the Centers for Disease Control and Prevention warned they were spreading. Now, they're back in the news after [seven patients at a Los Angeles hospital caught CRE](http://www.preview.cnn.com/2015/02/18/health/california-deadly-bacteria/index.html)after routine endoscopic treatments for bile ducts, gall bladder or pancreas.

Two of them have died, the Ronald Reagan UCLA Medical Center said Wednesday. And the hospital is contacting 179 others who had endoscopic procedures between October and January. It's offering them home tests to screen for the bacteria.



Here are some important things to know about the deadly disease.

### What is CRE?

First off, it's not "is" -- it's "are." They are a family of bacteria usually found in hospitals and other healthcare facilities, and [they've evolved a huge resistance to antibiotics](http://www.cnn.com/videos/bestoftv/2013/03/06/exp-early-cohen-cre.cnn). CRE are so potentially deadly, because few antibiotics work against them. That's what the name 'carbapenem-resistant' means -- carbapenem are a class of antibiotics often used as a last resort against a bad bacterial infection. But they are no match for CRE, [the Centers for Disease Control and Prevention says](http://www.cdc.gov/HAI/organisms/cre/index.html).

### Are these formerly unknown bacteria?

Not really; they are bacteria that just evolved. The superbug family includes *Klebsiella* and *E. coli*, which people have naturally in their intestines. But when they spread to other parts of the body, they can wreak havoc. Some CRE make an enzyme called *Klebsiella pneumoniae carbapenemase* that destroys those strong antibiotics. The enzyme seems to be a pretty new adaptation; [researchers first discovered it in 2001.](http://www.cdc.gov/HAI/organisms/klebsiella/klebsiella.html)

### How can you get it?

You don't get it, when somebody sneezes on you. You have to touch an infected wound or stool, then touch a vulnerable part of the body -- like an open wound. That's why it doesn't spread on the street but instead in hospitals, where healthcare workers and others can spread it by touch. Someone may forget to wash their hands after coming in contact with stool or a wound. Or a procedure could be performed with a contaminated instrument, like an endoscope or a surgical device. But CRE can also spread from other soiled invasive medical inserts like respirator tubes or catheters. Healthy people rarely get them. Those infected are usually patients who were being treated for some other ailment.

But some [researchers warn that CRE could spill over into the streets](http://www.cnn.com/2013/03/07/opinion/carroll-nightmare-bacteria/), too, if they become more widespread in hospitals.

### Does the procedure those patients had present a particular infection risk?

No, says the American Society for Gastrointestinal Endoscopy. The procedure is called endoscopic retrograde cholangiopancreatography or ERCP. It is used among other things to unblock bile ducts and take care of pancreas issues. "It is estimated that more than 500,000 ERCPs are performed each year in the U.S.," ASGE says. "From what we know, over the past few years, there have been fewer than 100 known cases of transmission of these problematic bacteria through ERCP."

### Do any antibiotics work against them?

Yes, but not many. And some that do can cause kidney damage. But they're only part of the treatment. Caregivers also remove some bacteria by draining off the abscess. Some CRE strains have been reported that are resistant to all antibiotics. On the other hand, some people contract the bacteria without an infection ever breaking out.

### Is there any good way to fight their spread?

Cleanliness in all things is important. Wash hands, sterilize instruments. If you're a patient in a hospital, remind staff to do the same, and don't share a room with an infected patient, the CDC says. Also, if you come down with a harsh bacterial infection after medical treatment in another country, be sure to tell your healthcare provider about that treatment. Some CRE are more common overseas than in the United States. Also, some researchers believe doctors should be careful not to prescribe antibiotics too quickly.

Spreading them around too much probably led to the superbugs evolving resistance to them in the first place.

*CNN's Debra Goldschmidt and Elizabeth Cohen and contributed to this report.*

<http://www.cnn.com/2015/02/19/health/cre-superbug-explainer/index.html>

