

One in ten have 'superbugs'

According to a report published in the *New Scientist*, more than one out of every ten British children are carrying "superbugs" resistant to one or more antibiotics. The proportion of adult carriers could be even higher.

Superbugs are no immediate threat to those carrying them, but could cause dangerous infections after an operation, for example. Carriers can also infect other people.

The finding has serious public-health implications, warned Michael Millar of Bart's and the Royal London School of Medicine, the study's author. "This may be just the beginning of something that will take off in a big way. We need policies to control antibiotic resistance that go across boundaries."

Marcos Espinal, leader of the World Health Organization's surveillance project on drug-resistant tuberculosis, agreed. "These are very important findings," he said.

Superbugs such as MRSA are already a big problem in hospitals, but relatively little is known about the extent of resistance in the healthy population.

To find out, Millar and his colleagues took various samples from 539 seven and eight-year-old children in Bristol, England. He found that 11% of stool samples contained bacteria such as *E. coli* that were resistant to chloramphenicol, a drug rarely given orally to children.

Even more worrisome, 3% of the children carried bacteria resistant to ceftazidime, an antibiotic reserved for treating serious conditions such as cystic fibrosis.

The researchers were surprised by how *many* children were carrying bacteria resistant to antibiotics they had never been given.

Bacteria resistant to a particular drug should be most common in people given that drug, because this allows these bugs to thrive while susceptible strains die. But the researchers found that resistance to drugs such as chloramphenicol was usually linked to resistance to more commonly used antibiotics, such as ampicillin, which is often given to children.

This implies that the genes that make the bacteria resistant are found on the same piece of bacterial DNA, and are passed on together.

So, giving people ampicillin can encourage bacteria to acquire and hang on to bits of DNA that make them resistant to other drugs as well.

Once resistant, bacteria can easily spread from person to person. People could pick them up from friends, family and pets. They might also get them from food and agricultural sources.

Doctors had thought reducing antibiotic use would curb resistance, because bacteria would lose resistance genes if they didn't need them. But this isn't happening. It appears as though, once the damage is done, it can't be "undone."

"You can't assume that by reducing the use of an antibiotic the resistance is going to disappear," said Lucinda Hall, also at Bart's and the Royal London School of Medicine, who led the study. "Instead, the key is to prevent resistance to antibiotics developing in the first place. That means using new antibiotics as sparingly as possible, for example."

SOURCE: *New Scientist*, May 19, 2001.

