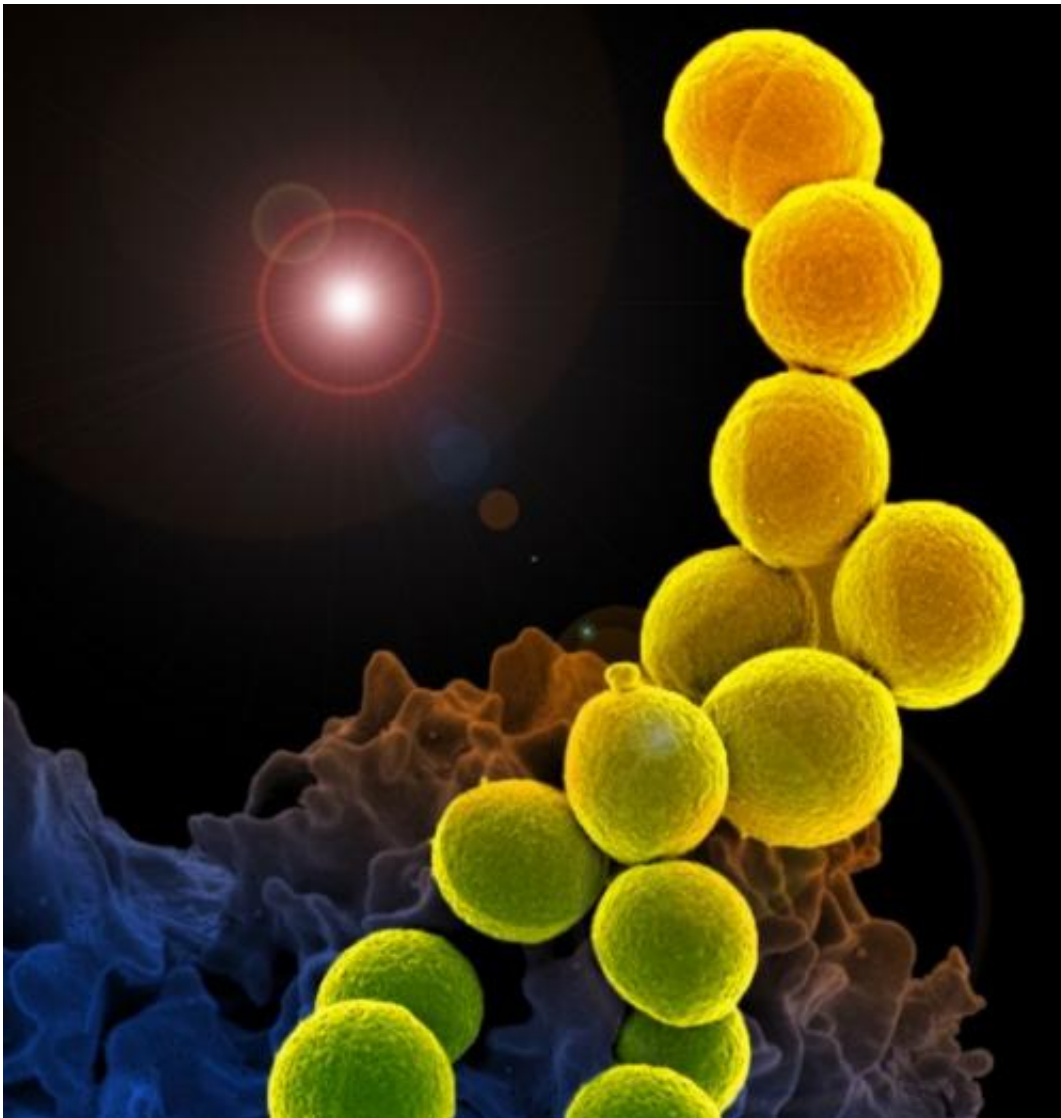


MRSA bugs linked to livestock are found in hospitals, study finds

November 3 2014



A colorized scanning electron micrograph of a white blood cell eating an antibiotic resistant strain of *Staphylococcus aureus* bacteria, commonly known as MRSA. Credit: National Institute of Allergy and Infectious Diseases (NIAID)

Some MRSA bugs in UK hospitals can be traced back to a type of bacteria found in farm animals, a study suggests.

A strain of drug-resistant bacteria carried by some [livestock](#) – the MRSA strain *Staphylococcus aureus* CC398 – has also been found in patients, researchers say.

People and animals generally harbour distinct variants of CC398, which the team say evolved from the same original bacteria. However, the CC398 strain found in livestock can be transmitted to humans, and the study shows that this has happened on many occasions.

The study provides new evidence that the livestock-associated CC398 strain could spread in hospitals, including those with newborn babies.

CC398 from [farm animals](#) is resistant to some common antibiotic drugs, which could make it harder to treat. The strain's enhanced drug resistance in livestock is likely to be the result of widespread use of antibiotics on farms, scientists say.

Patients in hospitals and nursing homes are at increased risk of MRSA infection, but healthy people in the wider community can also become infected with some strains.

Scientists at the University of Edinburgh studied how the CC398 strain evolved using a state-of-the-art genetic analysis technique. For the first time, researchers unravelled the full genetic code of CC398 strains from the UK, and compared these with published genetic data on CC398 bugs from humans and livestock around the world.

They say that CC398 has entered the UK on several occasions since the

mid-1940s, though the original source of the bacteria remains unclear.

Lead researcher Dr Melissa Ward said: "Our findings emphasise the need for strict biosecurity practices in the food production industry, as well as continued surveillance and infection control of MRSA in hospitals. Responsible use of antibiotics in healthcare settings and agriculture is of utmost importance."

The study is published in the journal *Applied and Environmental Microbiology*.

Provided by University of Edinburgh

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