

Scientists warn of an alarming rise in superbugs that are tolerant of alcohol-based disinfectants used in hospitals

- They made the discovery after testing bacterial samples collected over 19 years
- Vancomycin-resistant enterococcus (VRE) are growing immune to disinfectants
- VRE bugs can be difficult to treat because they are resistant to many antibiotics

By [STEPHEN MATTHEWS FOR MAILONLINE](#)

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Handwash sanitisers commonly used in hospitals are becoming increasingly ineffective against a notorious superbug, research has shown.

Scientists in Australia made the discovery after testing bacterial samples collected over a period of 19 years.

They found strong evidence that the superbug vancomycin-resistant enterococcus (VRE) is growing increasingly immune to **alcohol**-based disinfectants.

VRE infections are some of the most difficult to treat because the bacteria are resistant to many classes of antibiotic, including the 'last resort' drug vancomycin.



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To combat dangerous microbes, hospitals in the UK and around the world have adopted strict hand-hygiene procedures.

These generally involve hand rubs or washes containing ethyl or isopropyl alcohol disinfectants.

The Australian team screened 139 *Enterococcus* samples collected from two hospitals between 1997 and 2015 to see how well the bugs survived when exposed to diluted isopropyl alcohol.

Those obtained after 2009 were found to be more tolerant to the disinfectant than those sampled before 2004.

In another part of the study, bacteria were seeded on the floors of laboratory mouse cages.

Alcohol-tolerant microbes were better able to colonise the guts of mice after the cages were cleaned with disinfectant wipes.

Professor Paul Johnson, a member of the team from Australian health service provider Austin Health, said: 'Alcohol-based hand rubs are international pillars of hospital infection control and remain highly effective in reducing transmission of other hospital superbugs, particularly methicillin resistant *Staphylococcus aureus* (MRSA).'

The researchers traced the increased resistance to alcohol-based disinfectants to several *Enterococcus* mutations in genes that play a role in metabolism.

Lead scientist Professor Tim Stinear, from the Doherty Institute in Melbourne, described the sanitiser-resistant VRE strains as 'a new wave of emerging superbugs'.

He added: 'Alcohol-based hand hygiene use has increased tenfold over the past 20 years in Australian hospitals, so we are using a lot and the environment is changing.'

Antibiotics have been doled out unnecessarily by GPs and hospital staff for decades, fueling once harmless bacteria to become superbugs.

The World Health Organization (WHO) has previously warned if nothing is done the world is heading for a 'post-antibiotic' era.

It claimed common infections, such as chlamydia, will become killers without immediate solutions to the growing crisis.

Bacteria can become drug resistant when people take incorrect doses of antibiotics or if they are given out unnecessarily.

Chief medical officer Dame Sally Davies claimed in 2016 that the threat of antibiotic resistance is as severe as terrorism.

Figures estimate that superbugs will kill 10 million people each year by 2050, with patients succumbing to once harmless bugs.

Around 700,000 people already die yearly due to drug-resistant infections including tuberculosis (TB), HIV and malaria across the world.

Concerns have repeatedly been raised that medicine will be taken back to the 'dark ages' if antibiotics are rendered ineffective in the coming years.

In addition to existing drugs becoming less effective, there have only been one or two new antibiotics developed in the last 30 years.

In September, the WHO warned antibiotics are 'running out' as a report found a 'serious lack' of new drugs in the development pipeline.

Without antibiotics, C-sections, cancer treatments and hip replacements will become incredibly 'risky', it was said at the time.

WHAT IS ANTIBIOTIC RESISTANCE?

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<http://www.dailymail.co.uk/health/article-6016049/Alarming-rise-superbugs-tolerant-alcohol-based-disinfectants.html#v-3701027144767717724>