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Washing sheets in ozone could stop hospital superbugs

Bugs: Just because sheets are clean it does not always mean they are sterile

You've just got into your hospital bed.

You'd expect the sheets to be clean and free of any infection.

Shockingly they may not be. If the last patient to use them was infected with the superbug C.difficile, its spores may still be on the sheets, able to pass on the infection to you.

Last year, 36,000 hospital patients suffered the severe diarrhoea that C.diff causes and nearly 6,000 died from it. The Government has invested millions in a campaign to cut infection rates from this superbug, mainly by concentrating on hand washing.

But some experts believe this ignores the transport system that carries the bugs into wards on a daily basis: the laundry, mops and cloths used for cleaning.

How useful is regular hand washing if C.diff spores are being brought into wards to contaminate them again? In theory, sheets and mops are disinfected when they are washed in detergent and hot water.

The Department of Health guidelines for disinfecting laundry are washing for ten minutes at 60c, or for three minutes at 70c.

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However, these guidelines were issued in 1995 - before C.diff became a problem - and have never been updated. Research has since shown these temperatures aren't nearly high enough.

Five years ago, an independent firm, Microsearch Laboratories in Halifax, ran a small test on mops and cleaning cloths using the standard hot water and detergent treatment.

'We found that C.diff spores were surviving in sufficient numbers to make re-infection possible,' says director Des O'Connor.

Two years later, the laboratory tested mops and cloths taken from a dozen or more hospitals and found the same thing.

'Guidelines were issued in 1995 - before C.diff became a problem'

Further tests showed sheets and pillowcases were also still carrying the C.diff spores. (Other hospital-acquired infections such as MrSa are killed by normal washing.)

'You can kill C.diff with hot water and detergent, but it has to be over boiling point,' says Dr Paul Humphreys, senior lecturer in microbiology at Huddersfield University.

'We know quite a lot about what's needed because the food industry has done a lot of research on this. they use water hotter than boiling point.

'The fact is the 70c in the guidelines is very unlikely to kill all the C.diff,' he adds.

'This may come as a shock to most people who assume that clean means sterile, but it doesn't.'

Another issue is nurses' uniforms. Graham Tanner, Chair of the National Concern for Healthcare Infections (NCHI), is concerned these are reservoirs of infection, too.

Danger: 36,000 hospital patients suffered the severe diarrhoea that C.diff causes and nearly 6,000 died from it

'Research shows that uniforms can quickly become contaminated with C.diff,' he says.

'At the moment, nurses clean them themselves at home in a domestic machine and these don't get nearly hot enough.'

The C.diff research has only now come to light because a new laundry washing system has recently been given the green light by the Department of Health's rapid review panel.

It decides if new ways of tackling superbugs are worthwhile. Based on the evidence, it has declared a washing system using ozone and cool water is 'more effective in decontamination than current laundry systems'.

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Ozone is a gas created by thunderstorms when lightning breaks down oxygen molecules (ozone is what makes the air smell fresh when the storm has passed).

When it's concentrated inside a washing machine, ozone breaks down and destroys organic matter - including bacteria.

Tests by Microsearch found washing done with ozone in the water came out free of C.diff. the other bonus of this system (introduced in the UK by laundry firm JLA) is that the water has to be cool because hot water breaks down the ozone and turns it back into regular oxygen.

This means laundry departments don't have to use as much energy.

So would properly disinfecting the laundry make a difference to C.diff infection rates?

The Department of Health says not, as C.diff spores make their way into the body via the mouth.

'The efficiency of transfer of any remaining spores to the patients mouth has been assessed and found to be very low,' said a spokesperson. and it's true in the past year C.diff rates have dropped by 40 per cent.

'A more co-ordinated approach has improved things - better hand washing and a cut back in broad spectrum antibiotic use, for example,' says Dr Stephanie Dancer, of the Cardiff School of Health Sciences.

'Yet we don't know nearly enough about the impact of different routes - such as spores on sheets or mops - of infection.'

'But what we do know is that the most crucial area to keep clean is immediately around the patient - cupboards, trays, bedhead. anywhere there is direct hand-to-mouth contact. and bed linen is at the heart of that.'

Read more: http://www.dailymail.co.uk/health/article-1283004/Washing-sheets-ozone-stop-hospital-superbugs.html#ixzz2WYMbxM6q
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