MedicalXpress

Controlling the spread of antibiotic resistant bacteria

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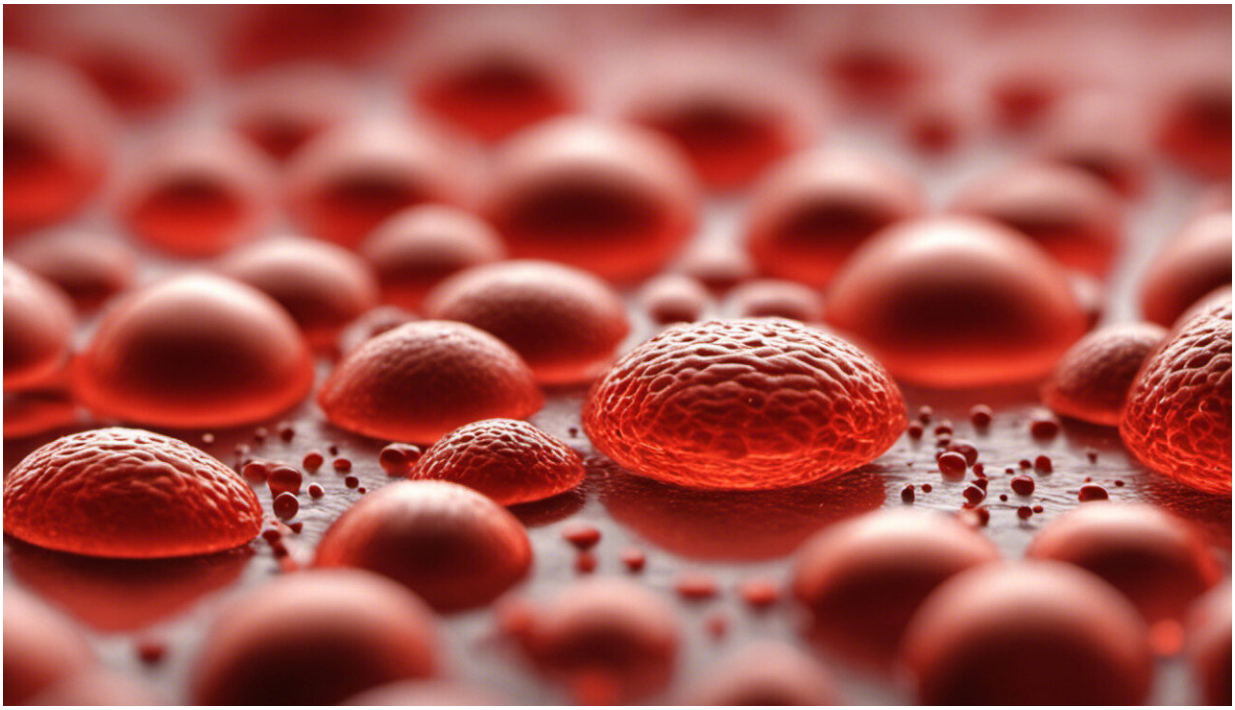

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A focus on preventing the introduction of antibiotic resistant bacteria from perceived high risk hospitals may be undermining efforts to control their spread across England.

A study published in the journal *BMC Medicine* has shown that a larger

number of patient transfers from lower risk hospitals may pose a greater absolute threat of spread than a small number of transfers from hospitals that have been identified as higher risk.

The researchers from the NIHR Health Protection Research Unit at the University of Oxford used data from the National Health Service of England Hospital Episode Statistics to examine the number of reported cases of the antibiotic resistant microbe carbapenemase-producing Enterobacteriaceae (CPE) between 2008 and 2014.

The number of reported cases of CPE across all of England rose from 26 cases in 2008 to 1,649 in 2014. There were large regional differences in reported cases, which reflected patient movements between hospitals within each of the 14 referral regions across the country. However, the vast majority of patients with CPE came from within a hospital's own region, and only 1.8% came from outside the region – even if hospitals outside the region were high risk.

Dr Tjibbe Donker of the Nuffield Department of Medicine, Oxford, said: "Controlling the spread of antibiotic resistant bacteria is a high priority for health care providers, which is why hospitals are advised to screen high-risk patients for antibiotic-resistant bacteria on admission. Patients are usually identified as high risk if they are being transferred from hospitals with known antibiotic resistance problems.

"Our study showed that the effect of the numbers of patients moving from hospital to hospital between and within regions was mostly more important than the effect caused by the difference in antibiotic resistance prevalence between the regions. This means that it would be more efficient for hospitals to focus on their own populations or region to control the spread rather than focusing on higher risk areas elsewhere.

"Performing regular point prevalence surveys would allow health care

providers to actively track and share their antibiotic resistance prevalence numbers, even if they are relatively low. These numbers are critical to distinguish between the actual and perceived levels of risk."

Responsibility for control and prevention of antibiotic resistant bacteria currently lies with individual healthcare institutions.

More information: Tjibbe Donker et al. The relative importance of large problems far away versus small problems closer to home: insights into limiting the spread of antimicrobial resistance in England, *BMC Medicine* (2017). DOI: 10.1186/s12916-017-0844-2

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