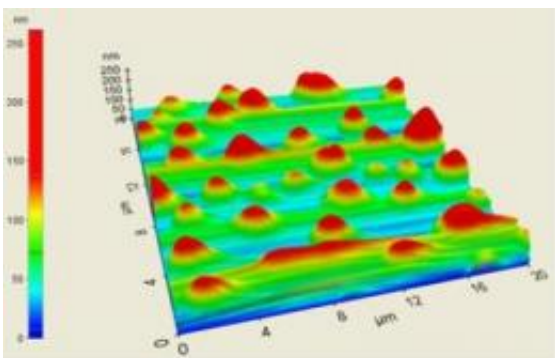


Antimicrobial catheters could save NHS millions

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This is a non-contact atomic force microscopy showing the topography of a glass surface coated with a positively charged antimicrobial compound. Credit: The University of Manchester

A new catheter coating that reduces bacterial attachment to its surface is being developed by scientists who are reporting their work at the Society for General Microbiology's Spring Conference in Dublin this week. The antimicrobial coating could eventually be applied to other medical implants to reduce infection which would provide significant socioeconomic benefits to the NHS.

Urinary tract infections (UTIs) account for 25% of all [hospital infections](#) and cost the NHS around £125 million each year. The major predisposing factor for UTIs is the presence of a urinary [catheter](#), upon which bacteria clump together in communities called biofilms. Bacteria

in biofilms coat themselves in a sticky substance that provides a barrier to antibiotics, making infections difficult to clear. If the catheter is not regularly replaced, the infection may spread beyond the bladder, causing potentially life-threatening complications. Catheter replacement is costly, time consuming and causes distress to patients.

Researchers at The University of Manchester are trying to find a new antimicrobial catheter coating that will reduce the need for catheter replacement. They have been investigating a range of positively charged compounds which are known to have antimicrobial effects, explained Miss Nishal Govindji who is working on the project. "We have identified a solution containing a group of positively charged compounds which, in combination, are excellent at killing the bacteria such as *Escherichia coli* that attach to catheters. Observing the coating under the microscope, when applied on to a glass surface, has given us an idea of how it might work to prevent biofilms from forming on surfaces. This combination of compounds is completely new and the results are very promising - it's really exciting work!"

Preventing biofilm formation will not only reduce NHS costs by prolonging the life of the catheter but also minimise possible patient complications. "If we can prevent bacteria from attaching to a catheter surface by just an extra 24 hours, it will save a lot of money for the NHS and most importantly, it will save a lot of stress to patients by reducing the risk of serious infection and minimizing discomfort," said Miss Govindji. "In the future, if this antimicrobial compound is successful at coating a surface to kill bacteria that would attach to urinary catheters, we are hopeful that we can extend its use to coat other types of catheters and medical devices such as artificial heart valves and other prosthetic devices," she said.

Provided by Society for General Microbiology

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