

2023 FSRACA NATIONAL CONFERENCE

9–11 AUGUST 2023
CENTREPIECE AT
MELBOURNE PARK, VICTORIA

OUR TEAMS
KICKING GOALS

Biofilms in reprocessing

Karen Vickery

In healthcare, biofilms of various physiologies impact disinfection of surfaces and instrument reprocessing. Biofilms develop when bacteria attach to a surface and then secrete a mixture of protein, DNA and polysaccharides termed EPS. The EPS covers the bacteria which makes them harder to remove during cleaning. Biofilm bacteria also have increased tolerance to disinfectants and other biocides. This is partly due to their lower metabolic rate but the EPS also slows down the penetration of biocide into the biofilm by restricting diffusion or inactivating the biocide. The sensitivity of biofilm to biocides and sterilisation depends on its physiology and age. Hydrated biofilm (HB) develops in flow situations such as in sink drains and water pipes. Build-up-biofilm (BUB) develops in endoscope channels. Bacteria attach during the procedure (flow), are then subjected to chemical stress during processing and finally subjected to dehydration during storage. Dry surface biofilm (DSB) develops on dry hospital surfaces. Both BUB and DSB are many times more resistant to biocides than HB. Compared to planktonic bacteria it takes twice the concentration of chlorine to kill 3-day old HB and 10 times the amount to kill DSB. Subjecting biofilm to periodic dehydration over time increases the amount of EPS and increases the biofilms tolerance to heat. *Staphylococcus aureus* DSB can even survive autoclaving which has major implications for infection control.