

# Beating the Biofilm



**Royal Shrewsbury Hospital has overcome a recurring problem of high TVC by upgrading the water purification system for its endoscopy department.**

The water purification system for endoscope reprocessing at Royal Shrewsbury Hospital commissioned in 2006 operated successfully until late 2007, when it failed to achieve the HTM 2030 bacterial standard. Chemical sanitisation brought the system back into specification but eventually had to be repeated every six to ten weeks.

Investigation of the weekly TVC results led Environmental Water Systems (UK) (EWS) (A Division of Envirogen Water Technologies) to conclude that a persistent biofilm had developed in the distribution ABS plastic piping ringmain – particularly in ‘hide out’ areas where chemical sanitisation may not be 100 per cent effective, resulting in re-growth to an unacceptable level.

David Hayes, Sales Manager at Environmental Water Systems (UK) explained: “We recommended removal of the ABS plastic piping and upgraded the system by installing a stainless steel, treated water storage tank and 316L stainless steel distribution ringmain with



automatic hot water sanitisation. “Modifications to the water purification system also increased the system output to cater for a further two AER’s – bringing the total to six.”

Hospital Technician David Howells said: “It’s all going fine now the TVC results we’re getting are perfect.” Sanitisation takes place during the night and is a routine preventative maintenance activity, proactive rather than a reaction to a problem. Conduction results in sanitisation in depth. For example, the transfer of heat through valves ensures that the entire valve body benefits from sanitisation, including any ‘hide out’ areas.

EWS undertook the upgrade over a continuous nine day period during which no purified water was available.



Jenny Ellis, Senior Sister endoscopy, explained: “When we had high TVC’s we flushed through with chlorine. However, we had a number of high quality filters so at the point at which we had contact with the patient there was no problem.

“While the work was carried out we shut down for a week, which was challenging in itself and patients were offered the opportunity to transfer to Telford – but it all went very well and the TVC’s have never been better.”

EWS’s David Hayes added: “We’re doing an increasing amount of work for endoscopy departments. Specifications are changing – with the move from HTM 2030 to HTM 01 there’s more focus on water quality.

EWS has extensive experience in water purification systems for healthcare – for example, at Leighton Hospital, Crewe and Bath Royal United Hospital. Indeed, Bath had similar problems to Royal Shrewsbury Hospital, having experienced excessive bacteria levels the decision was made to upgrade its system with a thermally sanitised stainless steel tank and ring main. Results of 0 cfu/100ml are now routinely achieved.”



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