

innovating for enhanced
water safety in the hospital



innovating for enhanced water safety in the hospital

Water purification systems play an important role in both public and private healthcare systems, often providing large volumes of high purity water throughout the hospital. This paper looks at how modern water purification technology ensures the consistent supply of clean water for hospitals while meeting the need to offer compact, cost-effective systems.

The need for effective, efficient water purification in hospitals is great. In the laboratory, for example, water is typically the most commonly used element and the quality of supply can be critical. Likewise, renal departments require a regular, reliable, high purity supply, not only to protect patient health but to avoid any failure that may result in a stressful disruption in service for patients. Meanwhile, SSDs require large volumes of high purity water for a range of uses, from endoscope and equipment washing and sterilisation, to autoclaves, which sterilise equipment and supplies using high pressure saturated steam.

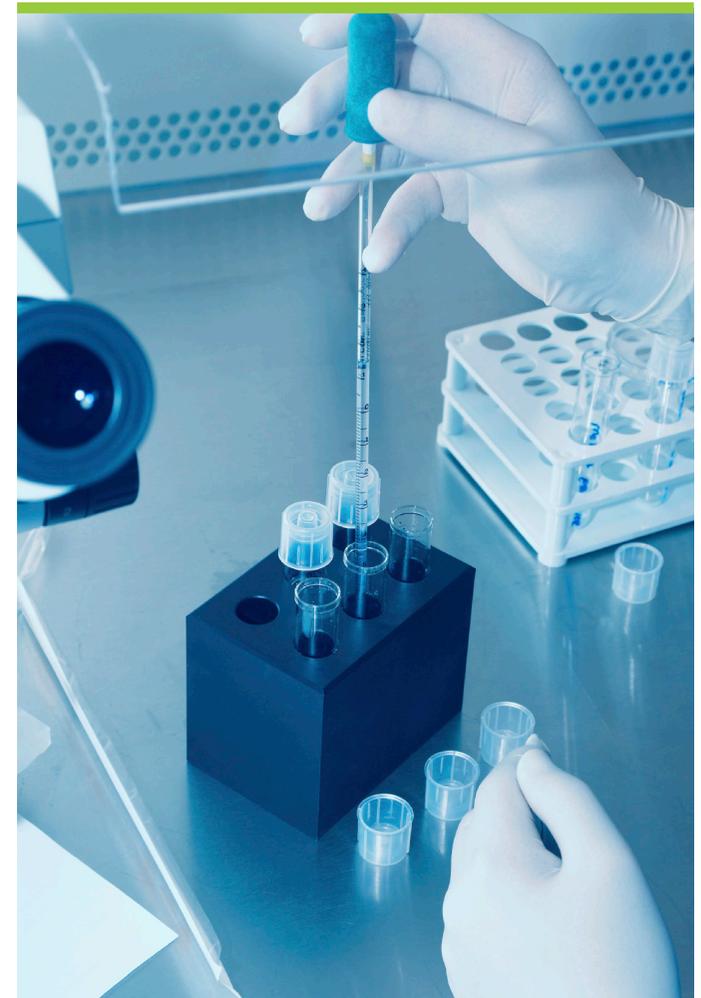
Another example of where there is constant pressure on hospital departments to improve patient safety is in guaranteeing low level TVCs (Total Viable Counts) on final rinse water in the sterile service departments. Meeting these demands requires making regular checks and, from time to time, consulting with expert suppliers

to see if the best possible quality is being achieved. Through such monitoring and evaluation, innovations can be developed that make significant steps forward in performance.

Reverse osmosis (RO) water purification is required to stop bacteria entering the washer disinfectors final rinse stage or, over time, the machine may gradually become infected. If disinfection is difficult, or not even possible, this leaves the hospital with no alternative other than to buy and install expensive replacement parts.

A case in point is Papworth Hospital, which witnessed high TVC counts on the final rinse water on the Radiology AER system. When the system was installed, there was not an RO (reverse osmosis) unit small enough to fit within the confines of the AER scope room so an Olympus ETD3 machine with mains-filtered water was used. Although this complied with the appropriate standards, the final rinse dosing with a low level Parasitic Acid (12ppm) was not enough to stop bacteria entering this final stage.

Over a period of time the machine would gradually become infected with bacteria. Due to the nature of the machine, disinfection was not possible, so expensive replacement parts were often required.



innovating for enhanced water safety in the hospital



When the Estates Department was asked to take over the running of the service, it decided to re-investigate the possibility of installing an RO unit for the sole purpose of supplying good, consistent quality water.

SUEZ Water Purification Systems was their first choice provider, as we had delivered many years of excellent service to the Trust through other existing on-site units. The Estates Department also asked its water treatment contractor for a quotation to ensure fair competition and best value for the Trust.

We recommended a water purification unit called the Mini Integra. This was a small unit, ideal for the room, that had already been successfully installed on an EDT3 machine for another customer. The unit was thus installed at Papworth with a small ring main.

The Trust wanted to enhance safety by testing the mains water, RO ring and also the final rinse weekly. As a result, they discovered that clean water was not being maintained within the system and so we stepped in to further increase safety.

First, we carried out a full system clean, replaced the RO membranes, filters and ring main, and fitted a water dumping system to stop the ring main temperature

from getting too high. Then, pooling the findings from other Trusts, we found that the only way to keep RO ring main bacteria levels down was to thermally sanitise and chemically disinfect on a regular basis.

Our solution was to supply a Centurion RO unit, which is normally used in renal dialysis as a direct water-fed system with a small integral break tank, internal thermal disinfect, and chemical disinfect capabilities.



innovating for enhanced water safety in the hospital

As the Centurion unit had not previously been used for this type of application, we needed to prove to the Trust that it could deliver the correct level of purity at the rate required for the AER.

We offered to install the machine as an experiment so it could be monitored over a period of months. The Trust was more than happy to accept the addition of 4 minutes to the 33-minute AER final rinse cycle time to gain the exceptional water quality provided. The system is set up now to thermally sanitise every week, and chemically disinfect every 4th week.

Since the Centurion RO unit has been installed, the Trust has enjoyed zero service shutdowns and excellent weekly TVC test results. All this proves that by setting the bar high, establishing a tough monitoring regime and consulting an expert water purification supplier, innovations can be achieved that make a real difference to patient safety.



▶ Water purification systems play an important role in both public and private healthcare systems, often providing large volumes of high purity water throughout the hospital.

Contact

Water Purification Systems

Email: mail.waterpurificationsystems.uk@suez.com

Web: www.suezwatertechnologies.com/products/water-purification



The application of these marks only confirm that the QMS have been approved by LR, they are not an endorsement, by LR, of any products or services offered by SUEZ WPS

