

CASE STUDY: St Richard's Hospital Chichester Western Sussex Hospitals NHS Foundation Trust

Providing a full range of acute hospital care including A&E, acute mental care, maternity, outpatients, day surgery and intensive care

Horne's ILTDU has proven its effectiveness in service with persistently colonised outlets in a growing number of UK hospitals. One example is St Richard's Hospital in Chichester. During 2013, contamination of a shower outlet with *Pseudomonas Aeruginosa* was identified. The shower and inlet hoses were replaced and the problem appeared to be resolved. However, it was discovered two years later that the colonisation had re-established. To ensure continued patient safety, the Estates team had to resort to using costly point-of-use filter handsets, which trap waterborne bacteria such as Legionella and Pseudomonas to deliver clean, safe water. Electronically-controlled, the colonised shower could also be programmed to perform a daily duty flush and thermal disinfection function to kill any present bacteria. However, despite repeated thermal disinfection operations, this failed to rid the outlet of the Pseudomonas colonisation.

Ralph Woolgar, Workshop Manager, recognised that the relatively short time to colonise the new shower and the failure of its in-built thermal disinfection to remove the contamination suggested that the colonisation likely extended back up into the cold water pipework feeding the shower. The in-built thermal flush could only address colonisation of part of the shower valve and the downstream fittings; therefore it was quickly re-seeded from the untreated upstream colonisation in the cold water supply pipework.

It is now accepted that *P. Aeruginosa* can establish in the last 2m of pipework. That, however, was of little comfort to Ralph, who explained that the pipework feeding this particular shower was completely inaccessible as it vanished into a solid ceiling. Ralph was considering his options when he received a telephone call from Trevor De Silva, Horne's local Engineer, requesting an appointment to show him a new product – the Horne In-Line Thermal Disinfection Unit (ILTDU).

Trevor demonstrated the ILTDU to Ralph and explained how it had been designed as a standalone product to be installed upstream of a thermostatic mixing valve, tap or shower, specifically to deal with Legionella and Pseudomonas colonisations, and he reassured Ralph that the ILTDU would work with any make of TMV, tap or shower, not only a Horne product.

Ralph quickly understood the concept of the ILTDU, and its potential to solve his seemingly intractable problem – if he could install this in the pipework upstream of the shower, then it would treat the shower valve and its downstream fittings as well as the cold inlet pipework where the colonisation was believed to reside.

Shortly after Trevor's visit, Ralph purchased an ILTDU and had it installed on the supply pipework to the problem shower. Crucially, he located it some distance upstream of the shower, beyond the solid ceiling barrier. Not long after disinfection, Ralph had what he describes as a 'Eureka moment' when, for the first time since the problem re-emerged, the results of the water sampling came back clear.

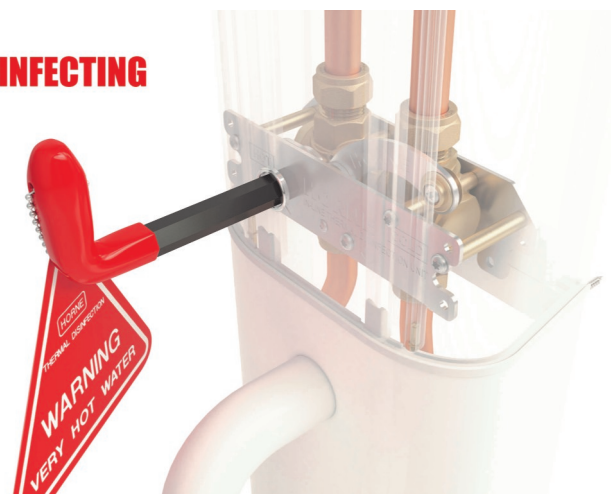
Initially Ralph implemented disinfection using the ILTDU on a monthly basis and after 3 months was delighted at the consistently clear results. He also noted some additional benefits of this approach – he did not have to close off the ward area to patients to dig out and replace embedded contaminated pipework from a solid ceiling, and so avoided the expense, inconvenience and inevitable disruption to the delivery of healthcare.

Ralph was also able to eliminate the considerable cost of the ongoing requirement for point-of-use filter handsets that required changing, at most, every 70 days. Also greatly reduced are the costs associated with laboratory analysis of each water sample - in fact, with a 3 monthly disinfection regime now in place, a bi-annual water sample test is all that is now required. Ralph confirmed that the ILTDU had paid for itself remarkably quickly.

Ralph's final words on the ILTDU are perhaps the most gratifying – he said *'It gave us the opportunity to resolve our water hygiene problem, allowing us to provide our patients with safe clean water at a time when our patients are most vulnerable.'*

At the time of writing, in July 2016, Ralph is still experiencing zero counts from the previously persistently colonised shower and is fully satisfied with the ongoing performance of the Horne ILTDU.

DISINFECTING



Horne ILTDU integrated into TSV1 shower panel with adapted pipe cover