

Infection prevention success at Shrewsbury Renal Unit



In 2009, Royal Shrewsbury Hospital's Renal Unit reported excellent results in infection prevention and the unit's manager, Sister Nonny Stockdale, believes that the Inov8 AD air disinfection unit has contributed to this success.

Since 2007, the Renal Unit had experienced a three-fold reduction in bacteraemia episodes, despite a significant rise in the number of patient visits during this period. Sister Stockdale oversaw the study at the Renal Unit and is delighted with the steady decrease in the number of patients experiencing infections during line insertion for haemodialysis.

In May 2009, the Renal Unit introduced the Inov8 AD Air Disinfection device. The AD emits a constant low level stream of hydroxyl radicals that attack airborne bacteria and viruses.

The hospital has conducted microbiological analysis of air within the Renal Unit and results have demonstrated a significant reduction in airborne bioburden since the device was installed in a clinical procedure room. In order to evaluate the continued effectiveness of the AD unit, air quality samples have been taken on a regular basis. Microbiological assessment has measured the number of Colony Forming Units (CFUs) both before and after the AD's installation. Typically, results have included Micrococcus, Penicillium and Diphtheroids.

Microbiological air quality assessments were conducted across a range of different conditions in order to fully evaluate the effects of the AD. These conditions included air sampling when the room was empty; when a patient was present; and with up to six staff in the room.

Summarising the results of the air quality investigations, Sister Stockdale said, "We have never experienced significant problems with excessive infection rates in the Renal Unit but I wanted to explore the merits of this new disinfection technology to see if we could improve the situation further.

"The decrease in bioburden, once the AD Unit had been installed, was extremely noticeable and almost instantaneous, even when the room had many people in it and also post-operation, when there had been a great deal of air disturbance.

"The most impressive readings resulting from the AD Unit included CFU counts of 23 when the room was empty and a count of just 56 with six staff and a patient. This compares with counts without the AD Unit of 174 with a patient in the room, 131 in an empty room and 72 in a newly cleaned room.

"The results without the AD Unit are all significantly above the recommended rate of 35 CFU for clinical work, which proves how effective it has been in helping to improve air quality. I am therefore



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confident that the AD is making a significant contribution to the success of our infection prevention strategy.”

It is important to emphasise that the Renal Unit was already achieving success in infection prevention prior to the installation of the AD. This was a direct response to initiatives such as increased vigilance regarding hand hygiene and improved contingency plans to help counter any potential infection outbreaks.

Summarising her views on Inov8 Science’s technology, Sister Stockdale said: “I think the AD Unit could benefit other hospitals by helping to prevent the spread of infection and by improving air quality for patients, staff and visitors.”

Following the success of the Royal Shrewsbury Hospital trials, Inov8 Science’s Chief Technology Officer, Dr Ian Widger said, "We are delighted that the AD has been a contributory factor in the effectiveness of Royal Shrewsbury Hospital Renal Unit's infection prevention strategy, which corroborates work in other hospitals with similar experiences. The AD unit can also be used in a variety of other applications to help fight the spread of infections. These include offices, schools, leisure and the hospitality industry.”

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