

Air Disinfectant helps fight viral disease



The infection prevention and control programme at Hereford Hospitals NHS Trust showed excellent progress during 2009 and technology company Inov8 Science is delighted that some of this success is being attributed to the AD Air Disinfection unit.

The AD unit emits a constant low level stream of hydroxyl radicals that attack airborne bacteria and viruses.

Measuring less than 41 x 20cm, the AD is a small device, either wall mounted or floor standing that is placed in locations with the greatest potential for pathogen proliferation. So, for example, at Hereford Hospital AD units were initially placed throughout the larger Nightingale style wards where there had been particular problems with outbreaks and ward closures. Subsequently units have been placed in all wards in the main hospital except for the children's and women's health wards.

Reporting excellent progress, Hereford Hospital NHS Trust has had no MRSA bloodstream infections since April 2009 and Clostridium difficile numbers have more than halved compared with the same time the year before.

Dr Budd, Medical Director and Director of Infection Prevention and Control said, "We are very pleased with these figures and think they reflect the impact of the introduction of MRSA screening of all hospital inpatients, reviewing the antibiotic prescribing policy, continued vigilance about hand hygiene, extra auditing of infection prevention practices on all our wards, and possibly the installation of Inov8 air disinfection units on nine wards. It is very gratifying to see these results and naturally we are keen to maintain this progress and do even better in the future."



Dr Alison Johnson, Consultant Microbiologist at Hereford, believes that it is difficult to attribute success with a particular organism to one part of the infection prevention strategy. However, she said, "**We do think the Inov8 AD units are making a contribution, particularly in preventing norovirus outbreaks and ward closures.** The AD units were installed in some of our older Nightingale style wards in June 2008 and then in the main hospital wards in January 2009. In this period between June 2008 and January 2009, there was one norovirus outbreak in the older wards (which lasted only 3 days) and 11 norovirus outbreaks in the main building, which resulted in 112 days of ward closures, affecting 137 patients and 61 staff. However, since the units were installed in the main hospital building there have been no further outbreaks of norovirus or ward closures **As time passes, it is looking more and more as if the AD units are effective in the prevention of the spread of norovirus infection.**"

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Summarising her views on the benefits of the AD units, Dr Johnson added: "I think that more hospitals could benefit from these devices, particularly if there is further evidence relating to their effect on ward closures."

Norovirus are part of a group of viruses that are the most common cause of gastroenteritis (upset stomach). It spreads very easily from person to person and can survive for several days in a contaminated area. It is also possible for infection to occur several times because, following infection, immunity to the virus only lasts for 14 weeks. Norovirus outbreaks are of particular concern within contained environments such as hospitals, nursing homes and schools

Gill Hill is the Matron in Infection Prevention and Control at Hereford Hospitals NHS Trust. She admits to a high level of scepticism when she was first made aware of the Inov8 AD units. However, reviewing the evidence, she says, **"We have been absolutely delighted with the success that we have achieved to-date with the AD units. Norovirus represents a major challenge to hospitals – national data shows that 18 in every 100 patient admissions carry the norovirus infection and with no treatment currently available, our success in controlling the virus can only be attributed to the AD units in tandem with normal hygiene measures."**

Commenting on the benefits of norovirus control, Gill added, **"In the absence of any opportunity to prevent norovirus outbreaks, the AD units have become the only means by which we can minimise the threat. In my view, even if the ADs had no effect on any other organisms, their role in norovirus prevention would be sufficient justification for using them."**

During early October 2009 Gill's views on the benefits of the AD units was further reaffirmed when norovirus was diagnosed in one patient and a staff member. In the past this would normally lead to an outbreak of the disease and ward closure, however, Gill has been pleased to report that no such outbreak has occurred.

Looking forward, Inov8 Chief Technology Officer Dr Ian Widger says, "The results at Hereford are particularly pleasing and we congratulate them on their excellent results. The technology behind Inov8's AD Air Disinfection unit has now become well established in a number of markets, especially the healthcare sector. This is as a result of a number of successful hospital trials, in addition to being named as a winner of the UK NHS Smart Solutions for HCAI Programme 2009. We are also making inroads in other sectors that include hospitality, commercial and education."



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