Quick, simple, low cost HPV boosts infection control at Derby

Less than an hour to decontaminate a four-bed bay

Derby Hospitals NHS Foundation Trust is making good use of low cost, easy to use Oxypharm HPV machines - with outstanding results.

Describing earlier trials of various disinfection options, Helen Forrest, lead nurse infection prevention and control, told *Inside Hospitals*: "We did a research project, taking over eight side rooms and infecting them with C. diff 027. Using the same staff to ensure consistency, each room was treated with a different disinfectant.

"The eight treatments were chlorine releasing agent, sporicidal wipe, microfibre, microfibre with chlorine releasing agent, hydrogen peroxide vapour, steam, super heated steam, and ozone. We looked at the kill rates for the bacteria, and brought in a health economy team, who looked at the ease of use, time factor and cost.


The lightweight machine is easily portable

"We graded all to come up with a top three, all statistically similar, of HPV, chlorine releasing agent and sporicidal wipe. At the time we were using chlorine releasing agent and sporicidal wipe, so we stayed as we were."

Jackie Marriott, assistant head of facilities, explained: "We had funds available, and wanted to ensure it was spent wisely. We visited other hospitals that were using various types of HPV systems and machines, and spoke to the teams about their experiences - the cost and time factors.

"We found some were very expensive and time-consuming. We're a busy hospital and can't afford for an area to be out of commission for up to four hours while it is decontaminated.

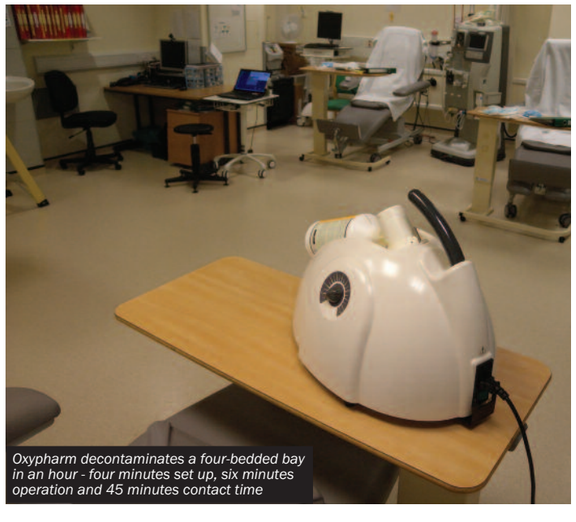
"We came across Oxypharm HPV and learned that it cost considerably less than other systems. Neill Simmons, of Oxypharm's UK distributor Innotec Hygiene Solution, brought in a machine and we did some trials in an empty four-bedded bay with all the normal furniture and an en suite.


Jackie Marriott, left, assistant head of facilities, Paul Brooks, assistant director of facilities management, and Helen Forrest, lead nurse infection prevention and control

"We 'hid' some indicator strips in what are typically hard to reach areas when doing a deep clean - bed mechanism, curtain track, plug hole, shower head, bedside drawer, for example. The Oxypharm unit was placed in one corner and the door of the en suite left open.

"Once the room area had been entered it took about six minutes for the actual HPV dry gas dispersal process and about 45 minutes for the contact time. That's all it needs to do its magic. So in an hour the room was ready to be used."

And the result? "It was brilliant," said Jackie. "All the indicator strips changed colour. I was quite shocked." Helen agreed, adding: "It does exactly what it says on the tin."


Oxypharm decontaminates a four-bedded bay in an hour - four minutes set up, six minutes operation and 45 minutes contact time

The trial was repeated in a single room with an en suite, again with hidden indicator strips. And again Oxypharm worked perfectly. "The beauty of the 6% HPV we use is that it isn't strong enough to cause any problems - it's all perfectly safe, yet gives outstanding results," added Jackie. Each trial was completed within an hour."

Paul Brooks, the trust's assistant director of facilities management, said: "What sold Oxypharm to me was its flexibility. It's small, and requires little training and labour.

Jackie added: "It's quick and easy to use and reasonably priced. The consumables are cost-effective too - especially when compared with other suppliers we investigated.

The trust bought three Oxypharm machines, at around £2,800 each - two for Royal Derby Hospital and one for London Road Community Hospital. They have been in use for six months

Royal Derby Hospital's two-man HPV decontamination team works a split shift - one mornings, one afternoons, with both in at weekends to treat outpatient areas and clinics.

"The decontamination team has a four-week schedule to go around each ward and clinical area, enhancing the normal cleaning," said Jackie. "Nursing staff take all the equipment that's not being used, such as drips stands, commodes, and note trolleys, into an available side room and we decontaminate everything with HPV. It's entirely safe for equipment. Oxypharm have done a lot of validations. It gives an 'icing on the cake' clean to all the equipment.

"We use Oxypharm for norovirus and C. diff in terminal cleans. Whenever the team is doing a four-bedded bay the wards put the equipment in there too," added Jackie. "Besides the bays and side rooms, we've done the microbiology lab and some theatres. We use two machines for larger areas."

Helen explained: "We've found we can turn a four-bedded bay with an en suite round in an hour. The curtain goes to the laundry, and we do a normal deep clean using the chlorine releasing agent with a disposable cloth. One of the decontamination team sets up the machine and it does its work."


The Oxypharm canister is connected to the machine

Helen added: "It's given us the ability to have an enhanced deep clean service, with minimal disruption in the ward areas. I believe it has a positive effect in reducing the spread of norovirus in our ward areas and helps prevent its return. During the current winter months and norovirus season we've had eight full ward closures. Previously we've had up to 21 full ward closures in a season.

"We've good cleaning standards, so we're effectively deep cleaning clean. We have the validations from Oxypharm and felt that with the trials we'd done that the 6% concentration is sufficient, and that's been the case. We know we can go to 12% if we want to."

Neill Simmons, MD of Oxypharm's UK supplier Innotec Hygiene Solutions, explained: "The machine uses a non-corrosive, non-allergenic biodegradeable gas, with no residue. The disinfectant range comprises either 6% - as used at Derby - or 12% hydrogen peroxide in distilled water, for preventative or curative treatments respectively. Their nebulised diffusion initiates the self-destruction of bacteria with no creation of resistance. They are totally bio products, totally safe for the environment.

"The latest test reports and outstanding independent test data illustrate impressive log reduction against numerous pathogens, including C. diff, MRSA, and norovirus."

For more, call Neill Simmons at Innotec Hygiene Solutions on 07791 797955, e-mail neill@innotechygienesolutions.com or visit www.innotechygienesolutions.com

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Bodycote, left, and Marein Zubel, visit each ward and clinical area, enhancing the normal cleaning with Oxypharm HPV.

"It's a simple system and a very straightforward process," explained David. "Setting up the machine takes about four minutes. We measure the room using a laser. There's six minutes operation and 45 minutes contact time. It's very efficient.

"We close the door and leave the machine to operate. If we're decontaminating a bay we use the Derby Door (see below). That takes just two minutes to assemble."


A laser device measures the room area

Marein added: "We're working a floor by floor rota or a priority if there's a phone call from infection control."

Decontamination duo

In a four-week schedule the trust's decontamination team of David

Inflatable door for faster, easier cleaning

Two-minute solution creates isolation area and helps cleaning teams

In a "light bulb moment" - while trying to get an inflated airbed through a doorway - Paul Brooks, assistant director of facilities at Derby Hospitals NHS Foundation Trust, solved the problem of how to seal of a ward area or bay to allow easier cleaning and safely use HPV or to quickly provide an isolation room.

Paul immediately put his idea to paper (actually on the kitchen table) producing a working drawing, quickly turned into reality by Airquee - a company who normally produce bouncy castles. And so the Derby Door was born.

"We leak tested it, using the door to seal off an area, blowing the highest possible setting of hydrogen peroxide vapour directly at it," explained Paul. "We were armed with a highly sensitive meter on the 'safe' side and it didn't register anything."


Derby Door inventor Paul Brooks, with Helen Forrest, left, and Jackie Marriott

The innovative solution won best product at the Building Better Healthcare Awards in 2011 and the Patient Choice Award at the same event.

The Derby Door has now been in production for three years, with the trust receiving a third of the profit, and a batch of the first doors off the production line. These are regularly in use throughout the hospital where it is a boon to cleaning and infection control.

"It takes just two minutes to inflate and there's an emergency deflate," explained Paul. "It's self-sealing - you don't need to keep blowing it up. We can use them back to back to make an air lock." There's an advantageously low rate for NHS hospitals of £800 to £1,000 depending on the size of the door required. "Sales have been to hospitals in the North and one on the South coast," said Paul. "And a hospital in Perth, Australia."

Helen Forrest, lead nurse infection prevention and control, added: "We use the Derby Door to isolate a four-bedded bay to make a cohort ward. It's a good visual barrier too and makes you think about what you should do when you go through."

Jackie Marriott, assistant head of facilities, said: "It's made of good quality material, with heavy duty welding. It's stood up to all the typical abuse you would expect - with no punctures."

For more on the Derby Door, e-mail paul.brooks@nhs.net

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