Described by JAG as “outstanding”

King’s College continues to break new ground with SSD-standard endoscope decontamination

A cclaimed by the Joint Advisory Group, even at blueprint stage, as “outstanding”, the recently opened endoscope decontamination facility at King’s College Hospital NHS Foundation Trust sets the standard that others will aspire to - all driven by patient safety.

Paul Houslop, the trust’s decontamination advisor and one of the first Fellows of the Institute of Sterile Services Management, now IDSc, told Inside Hospitals: “I specialise in medical device decontamination and endoscopy, through to working out capacity for endoscopy and sterile services. My role covers everything from designing sterile service units to advising trusts how they should be run and the technical details.

The work takes me all over the country and abroad. “We’re often breaking new ground at King’s College. I wanted an AER that only processed one scope set at a time. You don’t want scopes overlapping and the risk of touching. I think one scope, one chamber will be the future. “At the time this left two companies and we chose Getinge’s ED-Flow. It offered a faster cycle time and a number of other key features. We’d also had Getinge Lancer machines previously and they’d proved reliable. “The technology is even better now. We have independent data logging with NeQis.”

As Paul explained: “The approach I’ve taken is to adopt the standards we use in sterile services for endoscopy. In an SSD you have a clean room in which to handle the devices before they are sterilized. “So in my mind, in endoscope decontamination, where you’re using detergents and disinfectants, and no sterilizer, it’s even more important to keep the bio-burden down. Surely an endoscope should be treated like any other medical device for patient safety. “To me it seemed eminently sensible to apply the same standards, even though it goes a little bit further than the current guidance does.”

Previously, endoscope decontamination was run by the endoscopy department itself, so by and large nurses and healthcare assistants were undertaking the decontamination.

“The old unit needed upgrading and there was a degree of local decontamination too,” said Paul. “We decided to become compliant, to centralise into one unit with specialist decontamination staff.

“In the new facility, we currently have a mix of specialist staff and some healthcare assistants but that will change to all specialist staff as time goes by.”

Paul said: “The difficulty I had when all this started about four years ago was the plethora of information out there at the time. There were dozens of bits of guidance but nothing comprehensive. I had to design pre-CIPP 01-06. So I used sterile services best practice and Building Note 13.”

The trust decided to relocate the endoscopy unit, including the clinical side, into an area that had previously housed the old estates department.

“Unfortunately the clinical side had to move before the decontamination side was ready so we had to evolve a temporary unit, leasing the machines from Getinge Lancer,” said Paul. “It was all done incredibly quickly and JAG approved the facility as a temporary unit.”

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Still readily available if required at any time during the new department’s early days, the compact temporary unit, is equipped with a sink, four Getinge Lancer Fibro Cleaner AERs and four drying cabinets.

“We intended to be there one
month to six weeks maximum, but we had a major setback,” said Paul. “There was a fire in the area we were due to move into that damaged the fabric of the building, and some of the equipment on the dirty side. The clean side was not touched.

“The AERs had superficial smoke damage and we had to replace some components, but not the main part of the machines. However we did have to replace all the sinks and the fabric of the room.

“The fire was just two weeks before we were due to move in. It put us back five to six months. So we had to continue with the temporary unit.”

The comprehensive staff training included three, three-day training sessions over a period of time.

Paul explained: “We began with three one-hour sessions, delivered by myself, the endoscope decontamination unit manager and endoscope nurse specialist: an introduction to decontamination in general; the quality system ISO 13485, which we’re putting in place and will be operational by early next year; and the practicalities of operating in decontamination.

“Then the tracking company came in to talk about tracking and tracing. All the scope manufacturers came in, one-by-one, and explained how their scopes are made and how they should be decontaminated.

“These were all classroom events. Then we had to show the staff the practicality - how everything works in the department. The Getinge Academy trainer, Nigel Wilson, was very good, presenting staff with certificates on completion of their training.

“Mark Smith, Getinge’s area sales manager, has also been very helpful in what was a complex contract with the standards we were building to.”

Getinge Lancer were also in for quite some time to set up the scopes, linking them to the RFID system - identifying the scope to the machines so they learned what wash process to apply to each scope. The machines were set up for staff members too.

“We were well supported, with an engineer and trainer on site during and after go live. We’ve now been operational since early January.”

Paul added: “We’re currently processing in excess of 50 scopes a day from the nearby endoscopy clinical rooms and one or two other small clinical areas. Main theatres, day surgery and outpatients are due to come in soon and the full workload is likely to be 100 to 140 scopes on an average per day.”

The new decontamination unit is located alongside the four endoscopy clinical rooms. Once a procedure is completed the scopes are treated with a bedside cleaning kit then placed into a polythene bag and onto the trolley for the short journey along the dedicated corridor. Scopes are passed into the unit through an interlocked transfer hatch with intercom.

Staff enter the negative pressure dirty area via the interlocked doors of the staff gowning room.

In the department’s dirty side there are three Goldsworth height adjustable sinks, with two basins each.

At Getinge’s suggestion, during the development of the scheme, the department decided to adopt ScopeTech for the manual washing element of the process. Incorporated into the design of the sinks, ScopeTech reduces the risk of staff incurring repetitive strain injury and carries out the standard tests of the manual phase, ensuring a consistent and reproducible performance and retains a record of the process. It also dispenses Getinge’s neutral, non-enzymatic detergent and monitors the sink bowl water temperature. The sinks’ taps deliver 35 litres per minute at a pre-mixed temperature. Cabinets handily located above the sinks hold the endoscope connectors.

The impressive array of six Getinge ED-Flow AERs stretches the length of the room. Each machine has two asynchronous, pass-through chambers enabling the department to process up to 12 scopes at a time in a fast, efficient 22 minute cycle. Connecting the individual scopes is a simple, straightforward procedure.

The machines use high-level Getinge DLC detergent and peracetic acid-based Aperlan disinfectant. This is delivered in two separate containers, Agent A and Agent B, which are mixed inside the machine. There is a separate, ventilated chemical storage room.

Each stage of the process is logged and identified using the in-built RFID technology which is linked to the department’s Scantrack track and trace system. The same track and trace technology is also used in the trust’s sterile services unit.

Windows in the Getinge ED-Flows allow viewing into the clean room. While staff are able to communicate with their colleagues via an intercom.

With the ED-Flow AERs requiring a feed of high quality purified water Getinge also arranged the RO side of the contract.

Given the very limited space in the plant room (adjacent to the washroom), Getinge turned to UK manufacturer EWS Envirogen for a bespoke solution using the latest automatic thermal disinfection technology. EWS installed a break tank, duplex booster pumps, duplex water softeners, a duplex RO system, stainless steel treated water tank, duplex...
recirculation pumps, inline UV device and inline final filtration.

This provided a back-up to all parts of the system ensuring minimal downtime for the department. Due to the very restricted space available, EWS manufactured a bespoke duplex 800lph RO all mounted on a single frame to reduce footprint. A central PLC control panel monitors all aspects of the water treatment system and provides an easy to use interface. Various levels of user access codes avoid unauthorised adjustments.

To serve the Getinge ED-Flows unobtrusively, EWS designed a special stainless steel ringmain which runs out of sight above the ceiling and drops down ‘inside’ the dividing wash wall, runs underneath the AERs down ‘inside’ the wash wall, runs underneath the AERs and back up the other side, again ‘inside’ the wash wall.

This ensures the complete 50m ringmain is out of sight. The water quality has never been in question and the users appreciate the completely automated routine sanitisation regime.

Once the AER’s cycle is completed, scopes are unloaded in the positive pressure clean room and transferred to the nine Getinge drying and storage cabinets, where they can be stored for a maximum of 72 hours. A Scantrack monitor also gives a simple green to red visual representation of the state of all the scopes in each of the cabinets assisting easy monitoring.

“Turnover is quite high for endoscopy,” said Paul. “Scopes going to other clinical areas are Vac A Scope packed, which gives us 30 days with the scope safely stored in validated conditions. “Once packed in a Vac A Scope bag the scopes are scanned-out to individual clinical units on the Scantrack system and delivered accordingly.”

The increasingly busy department has two Vac A Scopes - one acting as a backup. John Churchill, endoscopy decontamination and equipment manager, monitors the scopes on a daily basis. A print-out shows when a scope approaches ‘out of date’, and where they are. If appropriate, John recalls the scopes for reprocessing. This cycle only takes ten minutes on the Getinge ED-Flow as the scope is unused and has already been processed.

Rightly pleased with how the department is performing, Paul said: “The procurement process was through NHS Supply Chain, which enabled us to meet our time scale. The decision on which machine to choose was down to the specification and user requirements.

“From the looks point of view the Getinge ED-Flow machines win every time. The speed of the cycle time was also very good. They do everything we need them to. Now they have settled in and the decontamination team are getting used to the daily routine they’re performing very well.

The independent monitoring enhances the traceability. There is a requirement for it in sterile services and it’s relevant that it’s done in endoscopy too. Now as part of the traceability process we’re able to trace back from the patient to the process or from the scope to the patient. “It’s fully independent. That data goes directly to the NeQis servers around London. It enables us to produce a safe and reliable processing service for the patient on whom the endoscope is going to be used in full compliance with extant guidance and beyond. “There’s a lot of interest,” added Paul. “A number of other trusts have already been to have a look around.”

Equally pleased with the new facility, John Churchill said: “This is leaps and bounds above anything I’ve seen in endoscope decontamination. There’s complete separation at all stages and complete tracking and traceability. We’ve got all the high standards of a sterile services department, and we’re working towards a specialist decontamination staff.

“We’ve 16 WTEs and operate five days a week, Monday to Friday, plus some Saturday working and eventually Sundays. We also provide an on call service.

“The training through Getinge Academy was very good. Nigel Wilson was excellent, very supportive to the staff. Rod Pedro, the decontamination supervisor, and I attended the ‘Endoscope Decontamination Managers’ course, which was excellent.’”

Getinge engineers undertook the installation and validation of the AER and are providing a rolling service and warranty contract, covering quarterlies and annual validation, and any call outs, with the trust’s engineers responsible for the weeklies.

In summary, decontamination advisor for JAG’s Houslop added: “When we look to bring additional work in, we can demonstrate we have a good decontamination and endoscopy unit and we’re accredited, with all the validation documentation. “JAG carried out an assessment of the whole endoscopy unit. While the decontamination facility was not operational at the time. JAG were able to see the equipment, what the process was and the work flow. Summarising its view of the new decontamination unit, JAG’s report states: ‘Congratulations. The new decontamination facility is outstanding.’”

For further information, call Getinge UK on 01223 861 665, e-mail ukhc-sales@getinge.com or visit www.getinge.com/uk

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Vali$d% packing: one of the Vac A Scope machines