

No more problems with damaged sterilizer wrap - instantly

Cancelled operations and the need to reprocess instruments due to issues with sterilizer wrap are a thing of the past at Hull and East Yorkshire Hospitals NHS Trust

There have been no more cancelled operations due to torn or damaged sterilization wrap since Hull and East Yorkshire Hospitals NHS Trust installed the VacioPak vacuum packing system supplied by BES Decon.

At the trust's offsite SSD, head of sterile services, Jan Clapham, explained: "We process an average of 20,000 units a month - trays, sets and packs - which equates to over five million items a year. We are serving forty theatres across two sites, Hull Royal Infirmary and Castle Hill Hospital, and some GP practices.

"Because we had four old tunnel washers we didn't have the capacity to wash any additional instrument containers. We can only handle six containers at a time, which caused delays. As approximately fifty per cent of what we processed was in containers we looked at taking some of the lighter equipment out of the containers and putting it into wrapped packs instead.

"But we had issues with torn and damaged wrap, which meant cancelled operations and reprocessing. We changed to a different wrap, but were still having the same old problems."

Jan said: "Being an offsite facility, we have to transport the sets and packs, and there are storage issues too. The impact on the wrap tends to be with our trauma and orthopaedic kits.



Jan Clapham, head of sterile services Hull and East Yorkshire Hospitals NHS Trust, with a 'VacioPaked' set

These are also the heaviest sets, and thus the easiest to damage when wrapped. So we started to look at the type of damage, how it was sustained, and what we could do to prevent it.

"Due to the damage to the wrap, the trust decided to move to using more containers. But that gave us processing problems so we needed to find another solution.

"There's an infection control risk when the integrity of the basket's wrap has been compromised. Due to the issues with damaged wrap, operations were having to be cancelled, and we were having to reprocess instruments, which took up valuable capacity," said Jan. "We looked at the whole-life journey, from cleanroom to theatre, to determine what was causing the problem.

"We travelled with the sets in the vehicles and looked at how they were stored, and the number of times they were moved. Some of the sets were moved several times before being used. So we looked at ways to reduce the amount of moving and handling.

"We asked that any damaged ones were returned to us as they were, so that we could do a root cause analysis to try to resolve the issues."

Jan explained: "We did a

complete audit of our DIN baskets and removed any damaged ones. Some had rough edges that could possibly be damaging the wrap. Any new DIN baskets that we add have perforated sides, rather than mesh through which instruments can project and pierce the wrap (and damage the instruments too).

"We tried plastic trays and putting the wrapped sets into plastic bags. With each step we saw a reduction in the amount of damage. The plastic bags helped to reduce the drag tears. The other type of wrap damage was caused by pressure tears. This was still happening. These are big heavy kits, not easy for some

staff to handle.

"Then, in August 2014, Matt McCormack and Garth Rowbottom, from BES Decon, came in and showed us the VacioPak vacuum packing machine. We took a unit on trial for a couple of weeks."

While the machine is now also on trial with a number of leading hospitals across the country, Jan was the UK 'guinea pig' for VacioPak. The system is made by Enthral, in Germany, and distributed here by BES Decon.

So how did the trial go? "We wanted to look at the impact time-wise and have feedback from theatres: we didn't want to cause them problems," explained Jan. "It was fairly straightforward to use. The whole process takes less than a minute. We trained several staff on how to use the equipment. We didn't have any issues here in the department. We liked it and were pleased with it.

"During the trial, the VacioPak was used for orthopaedics, neuro, and trauma instruments - what we classed as our high risk sets.

"We went to theatres and explained how to open the vacuum packing. It's just a simple tear across the end. The bag is crimped at each side to enable easy opening. We explained that it was a vacuum process and thus, even if the vacuum is lost, as long as the wrap is intact it does not affect the sterility of the set.

"The trial highlighted that we needed to spend time explaining the system to all theatre personnel who might handle the sets, so they know the reason for the vacuum packing and how to open it."

BES Decon's Matt McCormack said: "We've also taken on-board what we learnt with the trial in Hull and we now deliver more training to theatres before a trial is undertaken."

Jan explained: "The trial went well. VacioPak was a great success. It's quick and easy to use. It makes transportation easier and improved the storage too. Staff only need to be shown



once and have a couple of goes under supervision. Whatever the size of set, the process takes only a few seconds. The tight vacuum holds everything in place. It makes it nice and compact, making the sets easier to handle.

"When the set's required in theatre it's just a simple 'tear of the seal' and the pouch is open and the safely packed, sterile set is ready to use.

"We started with two sizes of plastic pouch which cover most orthopaedic sets. Our wrapped sets have a 12-month shelf life and the vacuum has also been shown to hold for over a year. The tough plastic pouch helps to maintain the integrity of the wrap.

"Theatres are happy," said Jan. "They're not having to send things back due to the damage to the wrap. We haven't had one single set returned. We haven't had one irate phone call. It's the usual 'no news is good news' situation."

"There used to be regular Datix reports on incidents. Since we've been using VacioPak there have been no reports for us to investigate. There have been no cancelled operations through damage to the wrap and no reprocessing of sets. Following



Drawing the vacuum

on from the trial we're using the system for orthopaedic, neuro, and trauma, and added any others where we've had issues.

"Now if we have had an incident with another department we expand the use of the VacioPak to cover their sets too.

"Loan kits which are not containerised are also 'VacioPaked'. There's only one loan kit at a time, so if there's an issue with damaged wrap with that set, there are big problems."

Jan explained: "We class the VacioPak pouch as a transportation wrap, so we don't have to go through any form of validation, other than establishing its fitness for purpose.

"Out of around forty theatres, including day surgery, we're using VacioPak to protect the sets for a quarter of the theatres. There's a benefit in using less containers too."

In summary, Jan said: "Whatever we introduce, we look to see it adds value. VacioPak has certainly helped in theatres as there have been no cancellations due to damaged wrap, which has benefitted patients too. It's also eliminated reprocessing.

"VacioPak has certainly made life easier. It's taken away what was an ever-present problem and everyday frustrations - such as

when you've fast-tracked a set through, only for the wrap to be damaged. It's given us time to look at other areas."

As the department's equipment is upgraded and the tunnel washers replaced, vacuum packing will continue to be a major part of the process, as Jan explained: "Due to new weight restrictions which apply to our transport vehicles, we anticipate that we will be looking to reduce the number of containers and therefore increase the use of VacioPak."

Stacey Healand, divisional manager for theatres, sterile services and anaesthetics, explained: "VacioPak was purchased through 'Spend to Save' and it's certainly delivered. It's my favourite toy.

"The benefits were noticed in theatres in that the VacioPak affords us protection in transportation. It makes life easier for us in theatres when we're storing equipment. The plastic pack gives us a second, very durable layer of protection.

"Since using it we haven't had to cancel one operation. It also gives staff confidence that the pack is sterile."

With a user's perspective, Martin Taylor, autoclave technician, said: "We had initial

concerns over the time it might take, but it's less than a minute. It aids transportation too.

"Anybody who is qualified to use the autoclaves is able to use VacioPak. The equipment's been very reliable.

"We're always trying to improve the quality of the end product, particularly from a transport point of view. I've not known us to have any problems since we started using VacioPak."

Matt McCormack, regional sales manager BES Decon, said: "Following the success at Hull, VacioPak is now on trial at a number of leading UK hospitals, in Scotland, the North West, Yorkshire, the Midlands and Wales.

"VacioPak is available through capital purchase, as chosen by Hull, or through a rental option. With rental there's no charge for the equipment, just a slightly higher charge for the pouches, with a minimum amount of bags used per month.

"When you consider the cost of a cancelled operation and the time in reprocessing sets, VacioPak quickly pays for itself."

For more information, contact BES Decon on +44 (0) 1179 666 761, e-mail info@besdecon.net or visit www.besdecon.net



VacioPak includes a heat sealer (top) and vacuum pump (below)

HOW IT WORKS:

To see the system in action on YouTube: search VacioPak.

The VacioPak system includes a heat sealer, which welds the end of the plastic pouch, and a vacuum pump to draw the vacuum.

There is also a turntable unit to enable easy loading of the wrapped set into the plastic pouch. However, the team in Hull decided not to use this as they were already accustomed to placing the wrapped sets into plastic pouches.



Using the turntable, the open end of the pouch is slid over two metal rods which open the pouch up as it is pulled forward so that it easily covers the wrapped set. The

turntable and set is then swung around, enabling the open end to be placed in the heat sealer, and the nozzle from the vacuum attached to the pouch's vacuum valve.

Once activated, VacioPak quickly seals the end and draws the vacuum. During the process an indicator card placed inside the pouch turns from Red to Green to confirm the vacuum is successful.

When the process is finished the operator simply slides over the lock on the vacuum valve and the process is complete - all in a matter of seconds.

The sturdy pouch can also be used by theatres as a returns bag.