

Recycling PVC in theatres – a regional project

There is a clear proven financial case for sustainable development in healthcare, since 2007 NHS organisations supported by the Sustainable Development Unit (SDU) have ensured in excess of £190m annually remains available for front line care rather than being spent on energy, waste, water and fuel₁. Resource efficiency and improvements in areas such as energy, waste, water and raw material use have already delivered financial savings and positive environmental impacts with direct benefits to health₁.

Public Health England's 'Securing Healthy Returns' report includes a Carbon and cost benefit curve giving 35 examples of health and care interventions, that if delivered nationally, could save the health sector 1 million tonnes of carbon and £414million/year by 2020₁. Of these 35 interventions, dry recycling of general waste is among them (No. 26). We, as a group of anaesthetists, can contribute to these financial and environmental savings by recycling.

Our ambition is to become the first School of Anaesthesia and Intensive Care Medicine in the UK with engagement in high grade medical PVC recycling in all teaching hospitals across the region. High quality medical grade PVC is used to make just under half of medical devices especially those used frequently in anaesthesia and critical care (anaesthetic facemasks, oxygen tubing, post-operative oxygen masks, fluid administration sets and tubing). It is estimated that approximately 2,250 tonnes of PVC could be recycled by collecting these waste medical items from UK hospitals enabling them to save money on their waste disposal costs and increasing recycling rates₂. This could result in a cost saving of around £450,000 - £1,417,500 per annum* in the recycling of PVC in theatres alone.

In 2014 RecoMed, an award winning national PVC take back scheme, was pioneered by a group of anaesthetists. It helps anaesthetists and clinical teams increase recycling and reduce waste costs in theatres through a collection scheme for single-use waste PVC medical devices. They divert waste materials from increasingly scarce landfill sites or incineration and use them to make new goods used in the horticultural industry (making things like tree ties), having significant environmental and economic benefits₂. The project is supported by the Environment Agency and the collection, treatment and recycling process, as carried out by RecoMed's specialist recycler, is classified as low risk waste activity. Independent risk reviews carried out by infection prevention and control teams concluded that PVC oxygen masks and tubing were non-hazardous with a low infection risk₂.

In 2015 RecoMed's excellence in sustainability was recognised by the Association for anaesthetic and respiratory device suppliers (Barema) and AAGBI environmental award. The monies awarded were used to produce an educational video to help hospitals understand how to implement RecoMed and reassure staff considering the service that it can be successful₂. This resource can be accessed from the following link <http://axiongroup.co.uk/services/specialist-collection-schemes/recomed/>.

So.....how is this helping the environment (and our department)?

Clinical waste disposal is expensive. It costs around £630/tonne for yellow waste bags to be incinerated and £200-300/tonne for orange bags to be steam or microwave treated and disposed of₂. Using RecoMed services is free and will also reduce clinical waste costs in theatre by diverting the weight of these recyclable plastics from clinical waste disposal. Each tonne of recycled PVC replaces approximately one tonne of virgin PVC compound used in new products. This recycling project reduces the carbon impact of PVC. Data collected on these interventions can be used by hospitals to demonstrate efforts to reduce overall environmental impact as well as financial savings₂ and could contribute to your department's cost improvement programmes.

What are we already doing in this region?

FRH (Freeman Hospital, Newcastle upon Tyne) has adopted this project theatre wide, extending to other areas of the hospital and NUTH (Newcastle upon Tyne Hospitals NHS Foundation Trust). PVC collected from central operating theatres alone amounts to a cost saving of £1000/annum. More recently UHND (University Hospital North Durham) have also made enquiries with RecoMed to launch this recycling scheme.

Just how easy is it to get this project up and running in my hospital?

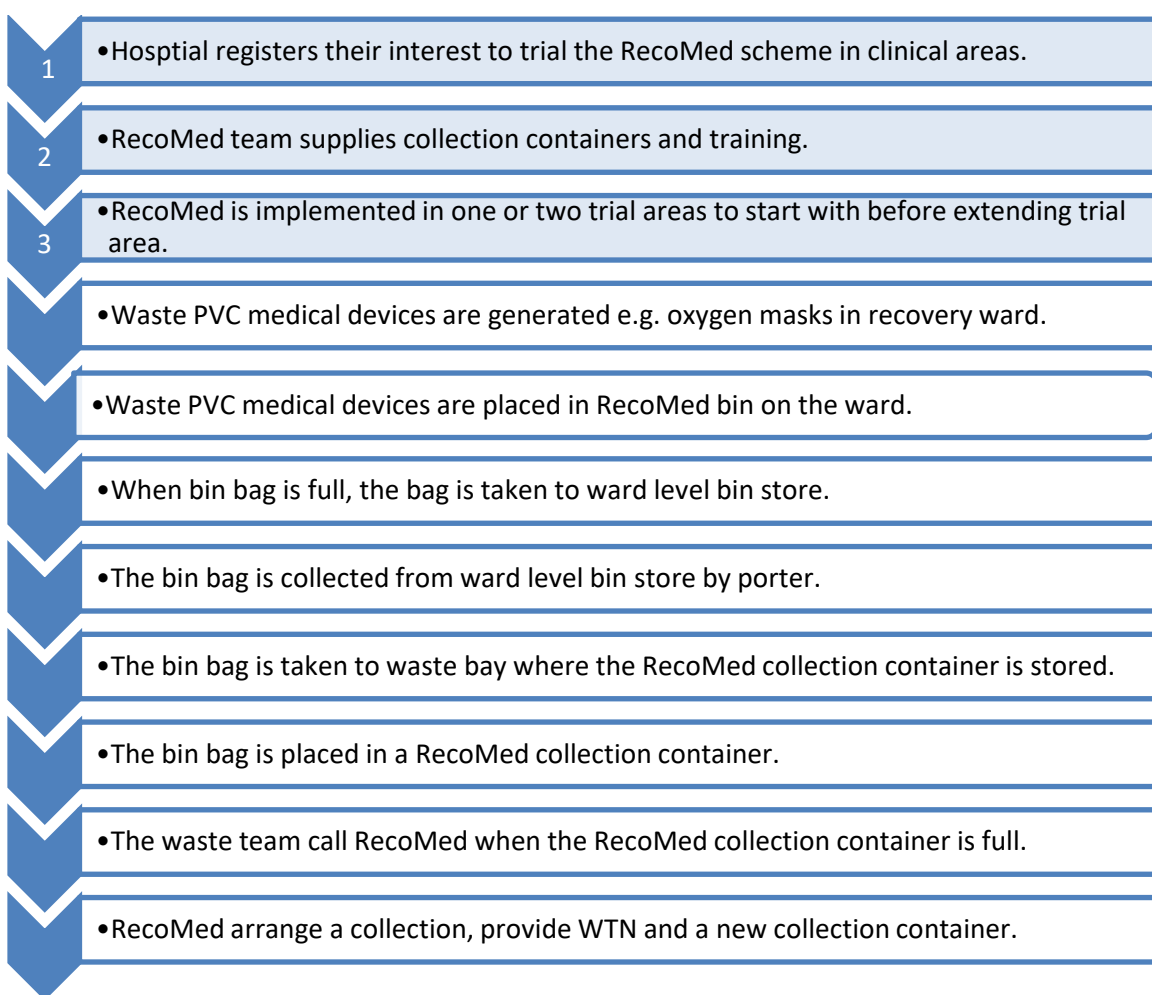
Dr Ian Baxter at Freeman Hospital, Newcastle tells us all about it.

"In short it is easy...really easy to get PVC recycling established in your theatres. Following reading an article in Anaesthesia News it took just 3 months to begin collecting and recycling PVC from theatres at the Freeman. After initially making contact with our waste management team, RecoMed came and reviewed some of the disposables which would be suitable for the programme. For us this included: anaesthetic facemasks, oxygen masks and tubing and the irrigation fluid bags we use in urology.

We undertook a baseline audit of how we were disposing of waste, forms given to all theatre and recovery areas to complete, over a two week period. Following this audit blue bins were provided, free of charge from RecoMed, and placed in our recovery areas. Anaesthetists were asked to bring the anaesthetic facemasks used in theatre out to recovery at the end of a case, a practice that in reality we already did, and recovery staff disposed of them and the other identified PVC items in the blue bins provided. The waste management team arranged the moving and storage of the PVC recycling for collection by RecoMed.

Over the last 12 months we've recycled 1.85 tonnes of PVC that would otherwise have been incinerated. To put that into context 1 tonne of plastic equals about 20,000 water bottles. We've also added in blue bins into the urology theatres to make it easier to collect the irrigation fluid bags used there."

How does it work?



What do I need to do?

Everything that you need to get this project started in your hospital is contained within this pack. First steps would be to discuss this project with your clinical director, senior nursing staff in theatres and recovery, the waste management team in your hospital and portering services. Show them the educational video and this introductory piece. The project allows your department and hospital to save money with no financial outlay. Next steps are as follows:-

- Identify a lead consultant and trainee(s) within your department
- Complete RecoMed registration form and send back to Molly Jones (recomed@axionconsulting.co.uk)
- Conduct a baseline audit of existing waste management (see audit template and data collection documents attached). All theatres, anaesthetic rooms and recovery areas will need to collect data daily on waste disposal for a one to two week period (don't forget the weekends if you can). This includes reviewing content of a few bags at random to estimate how much of the contents (%) could be recycled.
- Produce a report (see template) outlining preliminary findings and potential cost savings. Environmental and financial benefits will be highlighted here – it's cheaper to recycle than incinerate or to be putting recyclables into domestic waste bags. This represents cost savings to the Trust and the department can use these figures towards their cost improvement target.

- Identify barriers to change – speak to some members of staff and try to allay fears.
- Recomed visit, staff training and education, provision of educational material, posters and bins.
- Start recycling
- Audit again, about 6 months following implementation of the project
- Please send all audit data and reports to clawson@doctors.org.uk . I will pool data from all Hospitals with the aim to publish in Anaesthesia and at an AAGBI conference in 2018. All consultant and trainee leads within the department will be recognised in any published works.

If you need any further information on this project please do not hesitate to contact either myself, Ian Baxter (FRH Anaesthetic Consultant) or Molly Jones at Axion Consulting. We're looking forward to working with you on this project to help make anaesthesia in the North East green! Thanks for helping!

Cathy Lawson

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Ian Baxter

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References

- 1) The Sustainable Development Unit (June 2016). *Securing Healthy Returns. Realising the financial value of sustainable development.*
http://www.sduhealth.org.uk/documents/publications/2016/Securing_Healthy_Returns_Report_SDU_WEB.pdf.
- 2) Burke, H. (June 2016). *RecoMed helps anaesthetists to increase PVC recycling.* Anaesthesia News, pp. 24-25. <http://www.aagbi.org/sites/default/files/June%20Anaesthesia%20News%20web.pdf>

*Based on calculations if these items are currently being placed in orange bagged clinical waste which is steam/microwave treated from £200/tonne or yellow bagged clinical waste for incineration (at £630/tonne)₂.