

Reducing the Environmental Impact of Hospital Curtains

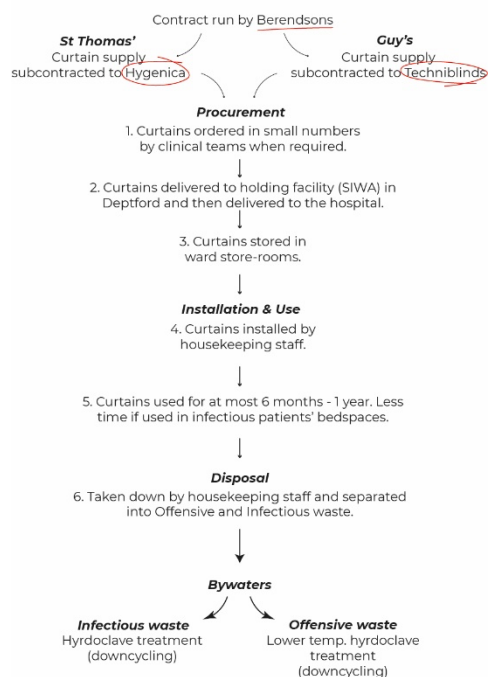
This research project was sponsored by the Arts and Humanities Research Council and part of the Future Observatory research programme. The Design Exchange Programme (DEP) included Guys' and St Thomas' NHS Foundation Trust and Brunel Design School.

In June 2021, Guy's and St Thomas' NHS Foundation Trust (GSTT) launched its Sustainability Strategy that outlined the methods by which it would achieve its net zero carbon target by the year 2050, including reducing single-use plastics and introducing circular economics into the Trust. This executive summary of the Design Exchange Partnership (DEP) outlines the current cubicle curtain procurement, use and disposal methods employed by the Trust and sets out what must be done to bring it more in line with the Trust's Sustainability Strategy.

To begin, all the processes involved in the lifecycles of the different types of curtains in use within the Trust, such as manufacturing, distribution, installation, and disposal, were mapped out (see figures 1 & 2). This was done by consulting with the different relevant departments within the Trust, such as Procurement, Hotel Services and Housekeeping, Infection Prevention and Control (IPC), Waste Management, and clinical staff. This information was then used to carry out streamlined lifecycle assessments of the current curtains. A number of alternative options to the current disposable curtains found on the market and the were also assessed in terms of sustainability and were compared to the current system.

Several years ago, clinical areas within the Trust began to switch from using washable cubicle curtains to using disposable curtains. The types of curtains now in use across the two main sites of the Trust (Guy's and St Thomas' Hospitals) are mostly consistent, with disposable cubicle curtains being used in all bay areas. This is due to a commonly held belief in that Trust that washable curtains pose a risk for infection control, however there is no local data to support this view. With the launch of the Trust's Sustainability Strategy in June 2021, the Trust committed itself to dramatically reducing the waste it produces through considering the whole-life costs of materials it uses, reducing single-use plastic, and introducing circular economy strategies such as repair, reuse and recycling. The use and disposal of the disposable curtains is not compatible with the sustainability targets the Trust has set itself and it will need change its procurement, use and disposal processes if it hopes to align with the Sustainability Strategy.

Process Map of Disposable Curtains



Process Map of Washable Curtains

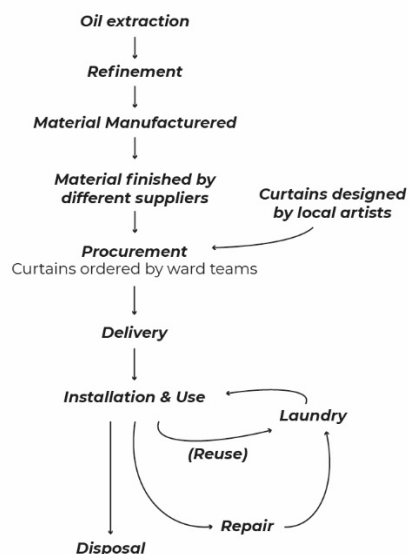


Fig. 1, Process Map of Disposable Curtains in GSTT.

Fig. 2, Process Map of Washable Curtains in RBH clinical group.

Parts of the Royal Brompton and Harefield Clinical Group (RBH), which merged with GSTT in 2021, still use washable curtains. The lifecycles of these curtains were mapped as well. Due to only recently becoming part of the now 'Super Trust', RBH still has not aligned many of their policies and practices with the rest of GSTT, including the types of curtains they use. This is a great opportunity to compare washable and disposable curtain systems to determine the benefits and downsides to using each.

Streamlined Lifecycle Assessments

When the lifecycle assessments of the washable and disposable curtains were compared, it was clear that the washable curtains to be significantly more sustainable than their disposable counterpart (see fig. XX) . Based on Trust policy, the maximum lifespan is 5 years for washable curtains whereas it is only 6 months for disposable curtains. Therefore the LCAs were conducted for a time period of 5 years and analysed the amount of CO2 produced and energy consumed by each curtain system.

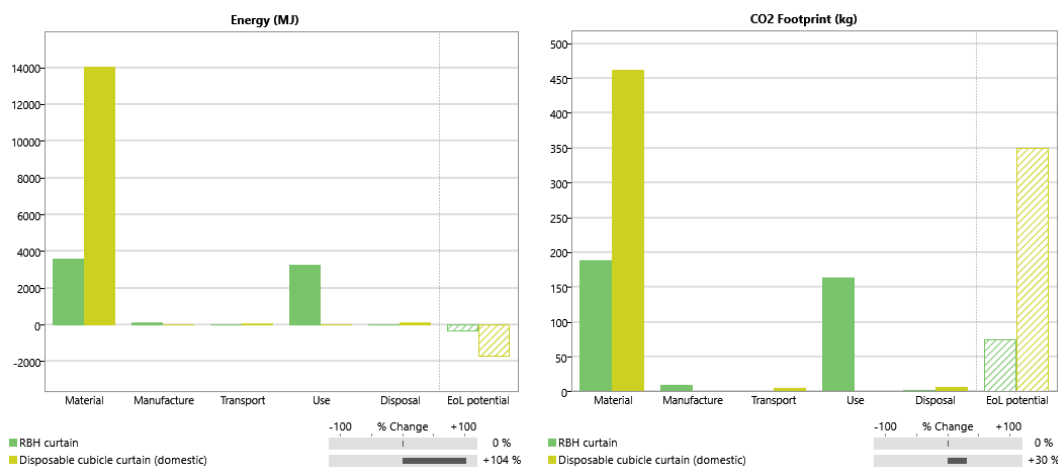


Fig. 3 & 4, Comparison of environmental impact of different curtains over 5 year period.

Additional technologies were identified that could be added to these two systems to improve them (e.g. the Amelio system and a disposable curtain recycling machine called CurtainMelt) and the different combinations of these technologies and curtains were also analysed. This data was then presented to 17 members of staff (including representatives from Procurement, Facilities and Housekeeping, Waste Management, and clinical staff) during 4 workshops to determine the preferred system. It was found that 75% of participants preferred washables, 19% preferred the hybrid system (where disposables are only used in high risk areas) and 6% couldn't decide. 0% preferred disposables. When asked to rank their top three criteria to consider when choosing the new curtain system. Overwhelmingly, sustainability was mentioned the most and ranked the highest. This shows that there is an appetite for sustainable practices within the Trust and a desire to improve, however, there were many operational barriers to change pointed out during the workshops, namely the difficulty in setting up and running a laundry service for the curtains and the cost of switching to a washable curtain system, which is likely to require different curtain rails.

Next Steps

The next steps for this project is to carry out a microbiology study of the different types of curtains (antimicrobial disposables, standard disposables, antimicrobial washables, and standard washables) and the Amelio system to determine whether the commonly held view in GSTT that washable curtains pose a risk to infection control is well founded or not. The data gathered from this study will inform the decision making process when considering how to improve the cubicle curtain system in the Trust.