

CASE STUDY

Introducing Reusable Surgical Caps

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Case Setting

Surgical caps are an important component of surgical theatre wear to minimise the risk of surgery-associated infections, and are mandated to be worn by all of our staff and students entering theatre in our hospital. We use approximately 10,400 surgical caps per year. Historically we have always used the disposable (polypropylene) type of surgical caps; given the concerns about the sustainability of this material, we explored using reusable caps (cotton) for our surgical teams.

Intervention

In 2020 we purchased 100 cotton surgical caps to replace our polypropylene surgical caps. We hypothesised that their use would be more sustainable (replacing man-made fibre with a naturally sourced material) and would reduce our CO₂ footprint, and that it would have no impact on our surgical site infection rate. In 2020 all our polypropylene caps were removed and replaced with the reusable cotton caps.

Measurement

Firstly, we undertook a simple life cycle analysis of the CO₂ footprint associated with the new caps. This found that the CO₂ footprint was reduced 7 fold (assuming each cap having a five year lifespan of 750 uses). When taking into account the equipment (washing machine) and energy CO₂ footprint of washing and drying the caps (based in Scotland, where 97% of electricity is generated from sustainable sources), there was still nearly a 4 reduction in CO₂ footprint. Staff were surveyed on their opinions on the transition to the new caps; the vast majority were accepting and supportive, and many preferred to have caps which were “sized” rather than a “one size fits all” caps. Although no concerns were raised about a potential change in infection risk to patients, we have not observed an impact in our surgical infection

data, when compared to the years before. Additionally, the cotton surgical caps were almost 50% cheaper to use each year.

Challenges and Enablers

The use of sustainable surgical caps was well accepted and had a small positive impact on our carbon footprint. Perhaps the most important observation is the magnitude of the reduction in our carbon footprint; it is less than a reduction of one person driving 200 miles less per year. We have to prioritising measures which impact the major contributors to our carbon footprint at our hospital; energy consumption for the building and emissions from travel to work.

Additional Remarks

The movement towards sustainable practices surgery is important. We need to grapple with the greatest causes of our non-sustainable practices. Every measure helps, but we need to tackle the biggest problems first.