

# Reusable sharps containers help Chesterfield Royal cut related CO<sub>2</sub> emissions by 90%

A recent life cycle assessment study performed by The Chesterfield Royal Hospital NHS Foundation Trust, Sharpsmart and Waterman Environmental has proven that the introduction of the Sharpsmart reusable sharps container will reduce associated CO<sub>2</sub> emissions by over 90%. This equates to an average of 103 tonnes of CO<sub>2</sub> emissions per annum when compared with the use of single use sharps containers.

Rob Nash, environmental risk manager at Chesterfield Royal Hospital, said: "The introduction of Sharpsmart has proven that not only have we significantly reduced the weight and the cost of our clinical waste disposal but, in relation to the packaging of the sharps waste stream, we now have validatable proof of Life Cycle CO<sub>2</sub> reductions which exceed the targets set out in the Climate Change Act."

## NHS Carbon Reduction Strategy

The NHS Carbon Reduction Strategy for England (CRS) sets out an ambition for the NHS to help drive change towards a low carbon society. The Government has committed to take action now and has introduced the Climate Change Act with a target to cut carbon emissions by at least 80% by 2050, with a minimum reduction of 26% by 2020 across the UK.

Waste reduction continues to be a major focus for all NHS institutions and, apart from efficient waste segregation, a reusable sharps container is currently the only measurable and validatable method of significantly reducing clinical waste volumes within a healthcare environment.

Until now a complete life cycle assessment (LCA) has never been performed to compare CO<sub>2</sub>e emissions for single use and reusable sharps containers.

The objective of this study was to develop a validatable comparison to ascertain the difference in carbon emissions between reusable and single use (disposable) sharps containment systems in order to prove



Sharpsmart's claims that reusable containers significantly reduce CO<sub>2</sub> emissions in line with Climate Change Act targets for NHS Institutions.

The site has converted from polypropylene disposable sharps containers to reusable sharps container supplied by Sharpsmart. The conversion was completed on 1st August 2009.

CO<sub>2</sub>e emissions have been calculated using internationally accepted unit energy

consumptions for the following stages:

- Oil extrusion, plastic pelleting manufacture and container manufacture
- Transportation of raw materials, containers, packaging and sharps waste during all phases of the LCA
- Cleaning and emptying of Sharpsmart reusable containers
- Routine replacement and recycling of Sharpsmart reusable containers and expired components
- Incineration of single use sharps containers.

Prior to the year-long study, the volumes and weights of single use containers were analysed and compared to the volumes of Sharpsmart containers manufactured and

used across the site.

Transport distances and incineratable volumes were fed into a specifically designed Barrier Constrained Life Cycle Assessment Tool which has been created by Waterman Environmental and Sharpsmart.

The results showed that during the first year (which is when the Sharpsmart containers are manufactured) the life cycle CO<sub>2</sub> emissions were reduced by 83% (95 tonnes) and that for subsequent years, due to the fact that only a very small percentage of Sharpsmart containers will be manufactured, the yearly reduction will be 91% (104 tonnes) giving an average 10 year projection of 90% (1,037 tonnes) reduction.

The study also proved that during the first year of introduction the weight of sharps waste stream was reduced by 35% (13.96 tonne).

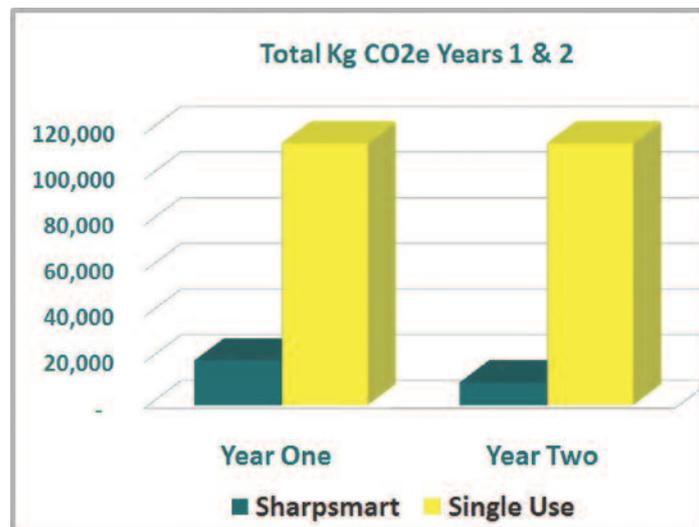
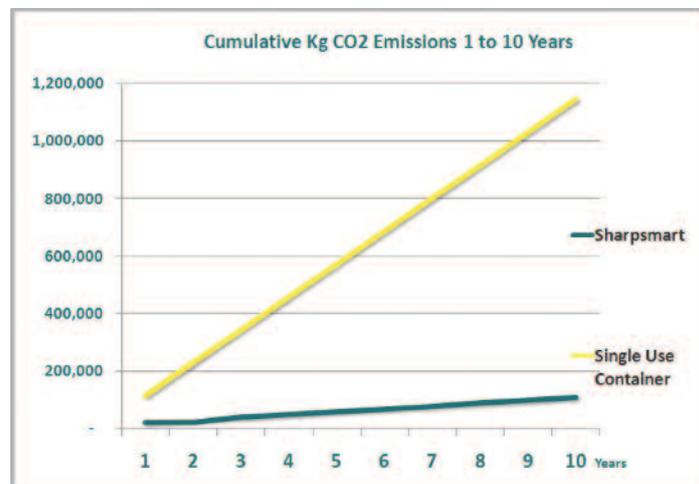
## Exceeds reduction targets

The conclusions of the study are that the introduction of the Sharpsmart provided trust with a CO<sub>2</sub>e reduction which exceeds the 2050 CO<sub>2</sub> reduction targets of 80% set out in the Climate Change Act.

A further 15 life cycle assessment studies are currently underway using this methodology including major acute trusts in the North, Midlands and South of England.

The LCA tool is capable of predicting CO<sub>2</sub> reductions at all sites using single use containers, and Sharpsmart is offering a complimentary service to all NHS trusts who would like to determine their current CO<sub>2</sub> footprint in relation to sharps waste disposal.

For further information, e-mail [info@sharpsmart.co.uk](mailto:info@sharpsmart.co.uk) or call Sharpsmart UK on 01388 810310.



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