

PRODUCT PILOT

BICAR_{med}



SAFE CleanBox
STK 113

Irish company MedFirst Supplies was one of the winners of the HHI, HSE and Irish College of GPs, GreenTech in Healthcare competitive call for sustainable solutions in 2024. Its product, the Safe Clean Box, is a revolutionary new cleaning system for the pre-treatment of all reusable invasive medical devices (RIMDs) prior to disinfection and/or sterilisation.

Originally developed by BICARmed (Padova, Italy), MedFirst Supplies is the exclusive distributor for the Safe Clean Box in the UK and Ireland. The company applied to the HHI GreenTech Call 2024 with the support of the Mater Decontamination Lead and CSSD Manager, following a successful pilot and subsequent purchase of the product at the Mater Misericordiae University Hospital (MMUH).

About HHI GreenTech in Healthcare

Health Innovation Hub Ireland recognises the link between the health and wellbeing of individuals and the health and wellbeing of the environment. Climate change is a significant threat to public health, the health and human services system and the social determinants of health and wellbeing. HHI is committed to stimulating and supporting the development of innovative products and services that promote environmental sustainability in healthcare.

The field of green technology in healthcare is a continuously evolving group of methods and materials, from techniques for generating energy to the use of energy, production, direct patient care provision, lab services and ancillary activities - cleaning and decontamination, catering and waste disposal.



The Healthcare Challenge

In Irish healthcare sites, reusable invasive medical devices (RIMDs) are predominately cleaned using enzymatic detergents, wire brushes, and hot water. Pre-cleaning is the first step in reprocessing RIMDs, involving the removal of visible soil, blood, and bodily fluids at the point of use. Methods vary by device and manufacturer but may include rinsing, scrubbing, hot water and detergent, or enzymatic soaks. This process is labour and resource-intensive, requiring full PPE and manual work in hot, humid environments. It also consumes significant energy (e.g., for hot water and ultrasonic cleaners) and produces high volumes of PPE waste.



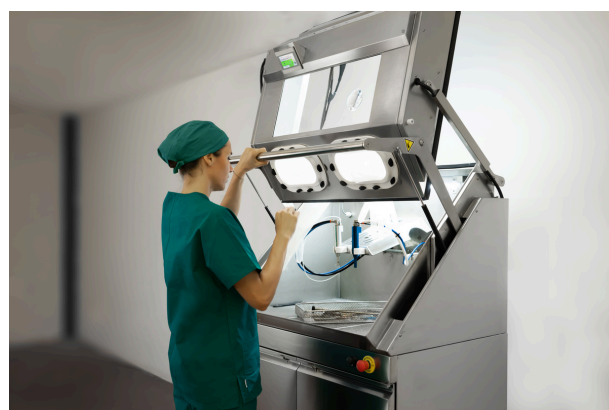
The Health Solution

Safe Clean Box is a closed cabin cleaning system, whereby a pedal controlled flow of sodium bicarbonate beads combined with air and water, runs through a handpiece and strikes the surface uniformly and continuously. The beads dissolve as they clean, removing dirt from even the smallest of crevices. Compared to the previous method of pre-cleaning there is no risk of aerosol generating procedures of contamination as the Safe Clean Box is a closed cabin with a vacuum using a HEPA 14 filter cartridge.



HIHI Role

Secured infection control and operating theatre experts for end-user evaluations. After a MedFirst Supplies presentation, in-depth discussions explored clinical insights and barriers to adoption. Evaluations by Health Innovation Hub Ireland and the MMUH use results found the Safe Clean Box to be an efficient, effective, and environmentally friendly system for pre-cleaning RMDs, reducing manual effort, improving working conditions, and cutting costs in water, labour, PPE, and energy.



Outcome Report

Data captured: [MMUH use case and HIHI clinical evaluation study](#).

Clinicians found the Safe Clean Box ergonomic, easy to use and safer. Eliminating the wet, labor-intensive manual cleaning process, increases productivity and reduces the risk of sharps injuries. The panel commended the Safe Clean Box use of biodegradable sodium bicarbonate, which aligns it with hospital sustainability and circular economy goals.

Sustainability:

- Less water used: saves 1,200 litres a day.
- Less energy (82% reduction) when compared to ultrasonic cleaners.

Workflow:

- Reduces time being spent on resolving non-conformances (re-cleaning and administration).
- Reduces cleaning time, saving approximately 40 minutes a day (or 160 hrs a year)

Revenue:

- Reduced PPE: saves approximately €20,000 per year
- Reduced wire brushes: saves €8,661.50 per year

Testimonial

"We are delighted to have showcased the benefits of the BiCarMed technology to Irish health experts. We are a big believer in sustainability in the healthcare sector. It is with this in mind that we thank and salute the great work of HIHI Greentech in healthcare for their commitment to sustainable solutions and their work to achieve this."