

Case Study – Endoscopy Disinfection Unit

The Problem

In the Endoscopy Disinfection units at Epsom & St Helier University Hospitals NHS Trust, a problem with air quality has persisted.

As the AER (Automatic Endoscopy Reprocessor) doors opened and closed throughout the day, peracetic acid (used as disinfectant for the endoscopes) vapour levels increased cumulatively within the unit.

This caused some discomfort for AER operators. Peracetic acid vapour can be irritating to the eyes, mucous membranes of the respiratory tract, and skin in humans after exposure to concentrations as low as 15.6 mg peracetic acid/m³ (5 parts per million) for only 3 min.

The Solution

Previously in healthcare settings, PCO (Photo Catalytic Oxidization) has been used to eliminate mould, bacteria, and viruses in the air, these devices also eliminate toxic gas VOC (Volatile Organic Compound) pollutants including formaldehyde, benzene, toluene, and odours like ammonia from the air. Following a trial the Trust purchased a number of **Airsteril Photo Catalytic air purifiers**.

The result

After only a few hours with the devices in use the air quality in the Endoscopy Disinfection Units improved significantly, operators expressed satisfaction at experiencing a feeling of clean fresh air, no eye or breathing irritation, no headaches, altogether a nicer place to work.

How the technology works

Photo Catalytic Devices use catalyst assisted UVC light wavelengths to produce hydroxyl radicals and super-oxide ions, hydroxyl radicals are among the most powerful oxidizers in the world.

Bacteria Viruses and Volatile organic compounds such as peracetic acid vapour are held together by carbon-carbon, carbon-oxygen or carbon-hydrogen bonds. Oxidizers destroy these bonds and fragment the molecule into smaller harmless compounds

Testimonial

"I am delighted with the performance of the AirSteril Units and appreciate greatly the professionalism and subject matter expertise demonstrated by the AirSteril Team. The "plug and play" PCO devices are virtually maintenance free, they have made an almost immediate effect on the quality of the working environment for our Endoscopy Disinfection Unit staff"

"From a Health & Safety and Decontamination perspective this a remarkable win-win, air quality is healthier and cleaner containing no bio-aerosols and no particulates greater than 0.001 microns which is far superior to HEPA filtration, these devices are now being used in treatment rooms in NHS Hospitals"

S D Magee

Darren Magee FInstLM ASEE DEngM ASME
Head of Medical Physics & Clinical Engineering
Medical Device Safety Officer MDSO
AP(Decontamination)
Epsom & St Helier University Hospitals NHS Trust