Inivos®

PROXCIDE®
SYSTEM

Providing HPV Decontamination

Log-6 Kill.
Every Surface.
Every Time.

EFFICACY with a unique HPV decontamination process that adapts to every room's requirements

SAFETY with intelligent one-touch technology and automated reporting to validate every decontamination process

EFFICIENCY with a typical 2 hour process time and Inivos support tailored to your specific needs

INV1.1

Challenges of Infection Prevention and Control
Healthcare-Associated Infections

Healthcare associated infections (HCAIs) pose a serious risk to patients, staff and visitors. They can incur significant costs for the NHS and cause significant morbidity to those infected. As a result, infection prevention and control is a key priority for the NHS.[1]

What are the common infections your hospital is facing?

- *Clostridioides difficile*
- *Carbapenemase producing Enterobacteriaceae (CPE)*
- *Vancomycin-resistant enterococcus (VRE)*
- *MRSA* and *MSSA*
- *Norovirus*

What is your overall cleaning and decontamination process?

- Empty ward decants can be supported by Inivos
- Site visits can be arranged where hospital outbreaks have been handled successfully
- Inivos RAG Poster - an effective traffic light system can be created to support your decontamination protocols

Log Reduction	No. Of CFUs Remaining	Percentage Reduction
log-0	1,000,000	0%
log-1	100,000	90%
log-2	10,000	99%
log-3	1,000	99.9%
log-4	100	99.99%
log-5	10	99.999%
log-6	1	99.9999%

Why is Log-6 important?

- Decontamination processes are usually measured in Log Reduction of Colony Forming Units (CFUs).
- Log Reduction (or Log Kill) is important because microorganisms can increase rapidly to millions or more in a short time, resulting in a high risk for infections.
- Log-6 Kill is the most effective outcome for a decontamination process.

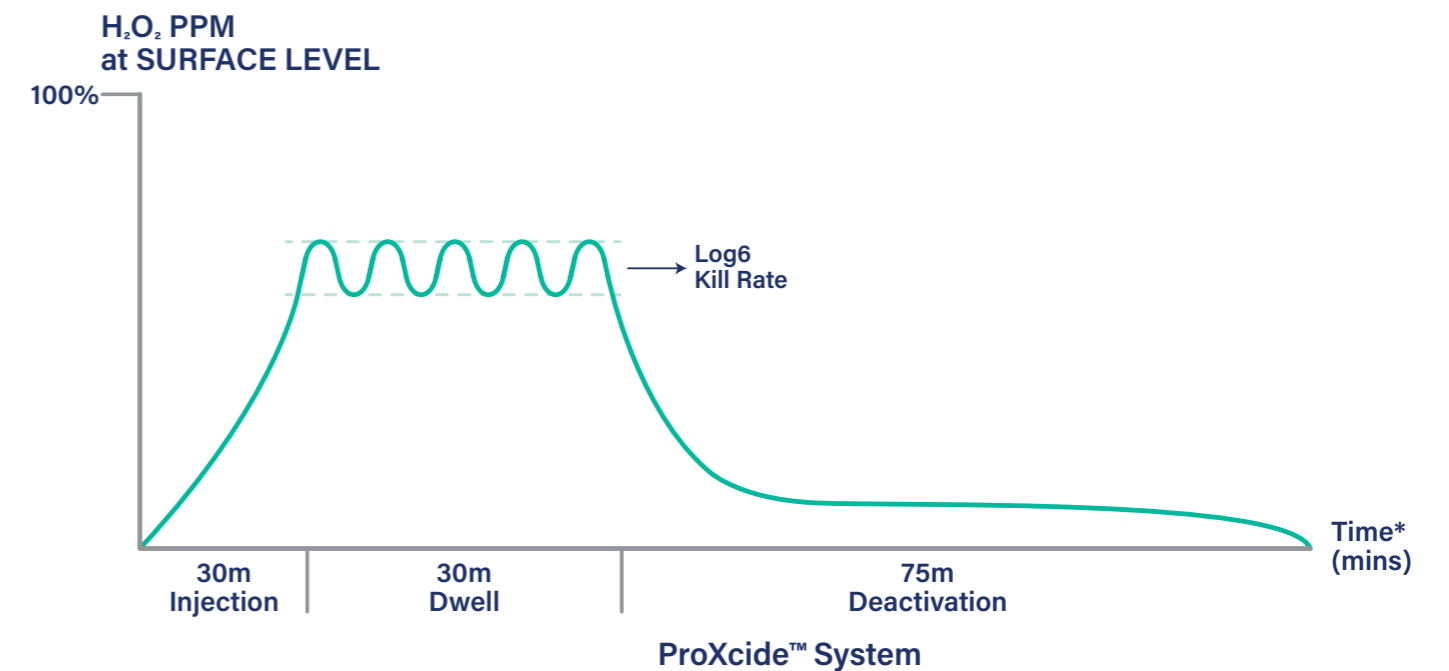**Higher resistance to decontamination and cleaning**

8. Bacterial Endospores
Bacillus anthracis
Clostridioides difficile

7. Mycobacteria
Mycobacterium tuberculosis
Non-tuberculous mycobacteria

6. Small non-enveloped viruses
Enterovirus D-68
Norovirus

5. Gram-negative bacteria
Carbapenemase producing Enterobacteriaceae (CPE)
Escherichia coli
Klebsiella spp
Pseudomonas aeruginosa

4. Fungi
Blastomyces dermatitidis
Candida albicans
Candida auris
Candida parapsilosis

3. Large non-enveloped viruses
Astrovirus
Enteric virus
Rotavirus

2. Gram-positive bacteria
Enterococci
Pneumococci
MRSA and MSSA
Streptococci

1. Enveloped viruses
Influenza
Coronavirus
Respiratory syncytial virus (RSV)

**Lower resistance to decontamination and cleaning**

> Inivos can provide you with decontamination solutions – with validated results – to meet your specific challenges in infection prevention and control.

ProXcide® System
Log-6 Kill

ProXcide® System has patented Hydrogen Peroxide Vapour (HPV) technology which provides a unique decontamination process that adapts to every room's requirement and guarantees log-6 kill efficacy on every surface, every time. This is validated with real time data each time the ProXcide® System is used.

H_2O_2 **PPM at SURFACE LEVEL**

100%

Log6 Kill Rate

Time* (mins)

30m Injection | 30m Dwell | 75m Deactivation

ProXcide™ System

Injection Phase

ProXcide® System measures 'hydrogen peroxide ppm' at the surface level by monitoring the relative humidity of the room. It then breaks down hydrogen peroxide liquid into vaporised particles to circulate evenly throughout the entire room.

Dwell Phase

ProXcide® System maintains the target relative humidity and hydrogen peroxide vapour levels.

Hydrogen peroxide vapour gets to work by contacting all exposed surfaces and decontaminating them from harmful microorganisms.

Deactivation Phase

ProXcide® System quickly and efficiently draws back all the atmospheric hydrogen peroxide vapour through a catalyst, returning the room to safe levels for re-entry.

Note: safe re-entry to be confirmed by the operator.

Evidence-based Data

- ProXcide® System is effective at achieving a log-6 kill against a broad range of microorganisms, including *Clostridioides difficile*, *Staphylococcus aureus*, *Escherichia coli*, *Enterococcus hirae* and *Acinetobacter baumannii*.
- ProXcide® System has been independently tested to achieve Log-6 kill against *C.difficile* by UKHSA in Porton Down.
- Inivos are the first and only HPV decontamination manufacturer to acquire a **full UKAS accredited BS EN 17272:2020** Chemical disinfectants and antiseptics - methods of airborne room disinfection by automated process against a range of microorganisms.
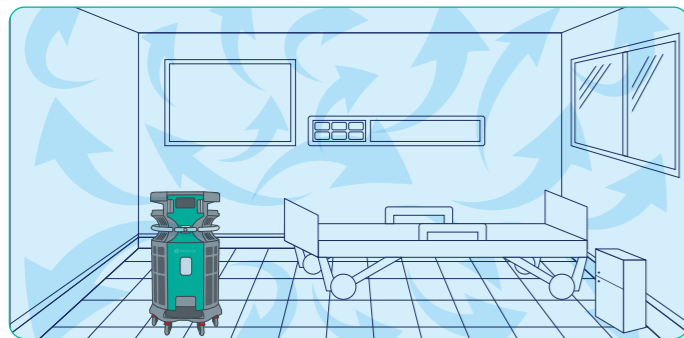
ProXcide® System
Every Surface

ProXcide® System uses a combination of technology patents that provide an even distribution of hydrogen peroxide vapour throughout the room. All surfaces are exposed to hydrogen peroxide vapour at the right concentration for the right amount of time, ensuring all surfaces are successfully decontaminated from harmful microorganisms.
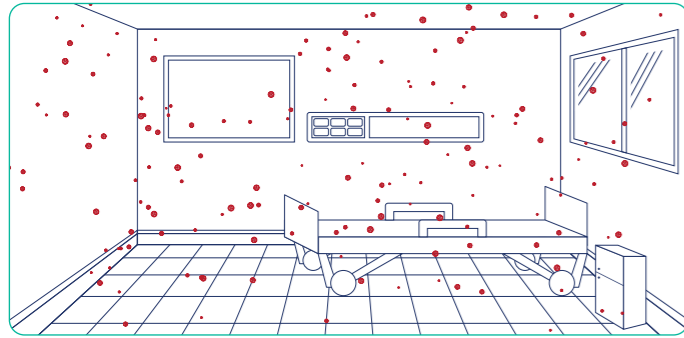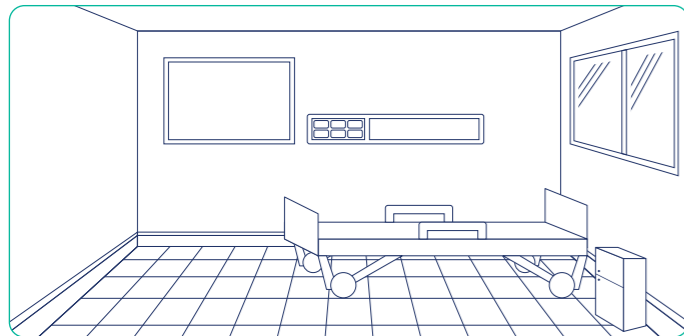

Contaminated Area

Microorganisms can grow rapidly in hospital rooms, on different surfaces and in difficult to reach areas.

Every Surface

ProXcide® System has patented technology that modulates the fan speed in a randomised pattern - disrupting set airflow patterns - so allowing HPV to be evenly distributed to every part of the room ensuring successful decontamination on every surface.

Decontaminated Area

Entire room has been decontaminated and is now safe for re-entry. An automated digital report validates that efficacy parameters have been met.

Every Time

ProXcide® System provides a fast 2 hour 15 minutes decontamination process time that includes the deactivation phase*

- One-touch technology means no user input is required, reducing the possibility of user error.
- A fast decontamination process means that the treated room is more quickly available for use, improving workflow.
- Each successful decontamination cycle is validated with an automated digital report, emailed to you.

1

Use your Operator card to begin the process - using one-touch technology

2

ProXcide® System assesses the environment and carries out the process

Process Complete

3

ProXcide® System has assessed the environment and deemed the process complete

Benefits To You

 EFFICACY with a unique HPV decontamination process that adapts to every room's requirements

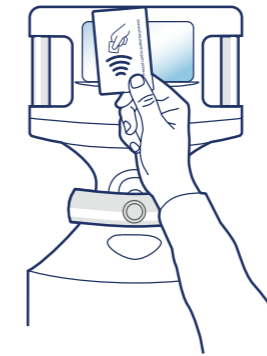 **SAFETY** with intelligent one-touch technology and automated reporting to validate every decontamination process

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*Based on 25,000 'real world' ProXcide® System Decontamination Cycles that have taken place over a year.

ProXcide® System compared with other HPV Decontamination Devices

Hydrogen Peroxide Vapour (HPV) Technology does not work in the same way in different devices and is even more different than devices using Aerosolised Hydrogen Peroxide (aHP) Vapour Technology.

ProXcide® System uses a combination of patents that include Ultrasonic Vaporisation Technology and Randomised Air Flow Patterns to aerosolise microscopic particles of ProXcin® (7.9% hydrogen peroxide solution) into the entire treatment space.

ProXcide® System's combined patents in Ultrasonic Vaporisation Technology and Randomised Air Flow Patterns deliver the best outcomes for decontamination compared to other typical HPV and aHP technologies.

| ProXcide® System | Typical HPV Technology | Typical aHP Technology |
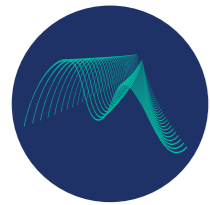
Ultrasonic

ProXcide® System uses high frequency ultrasonic sound waves that are used to create tiny, mobile particles of hydrogen peroxide which the fans disperse into the entire treatment space using random air flow patterns.

Safer Process –
▪ No heat or pressure required.
▪ High efficacy achieved with low concentration (7.9%) hydrogen peroxide solution.

Flash Heat

Typical HPV Technology uses hotplate technology where hydrogen peroxide solution is vaporised by placing onto very high temperature hotplates. This vapour is typically dispersed into the room using separate aeration units.

Potential Challenges –
▪ Safe handling of high concentration (35%) hydrogen peroxide solution.
▪ Unclear on the HPV concentration delivered into the room as hydrogen peroxide loses concentration when heated to high temperatures.
▪ Space and plug socket issues when placing additional aeration devices in a small room.

Aerosol
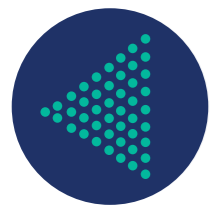
Aerosol Technology requires a propellant to put pressure behind the hydrogen peroxide solution and force it through a nozzle to become a vapour. Dispersal of vapour is limited and is likely to require multiple cycles for one room.

Potential Challenges –
▪ No guaranteed efficacy data.
▪ Requires high level of operator intervention.
▪ Time-consuming process.
▪ Optional remote programming increases risk of early re-entry into treated room.
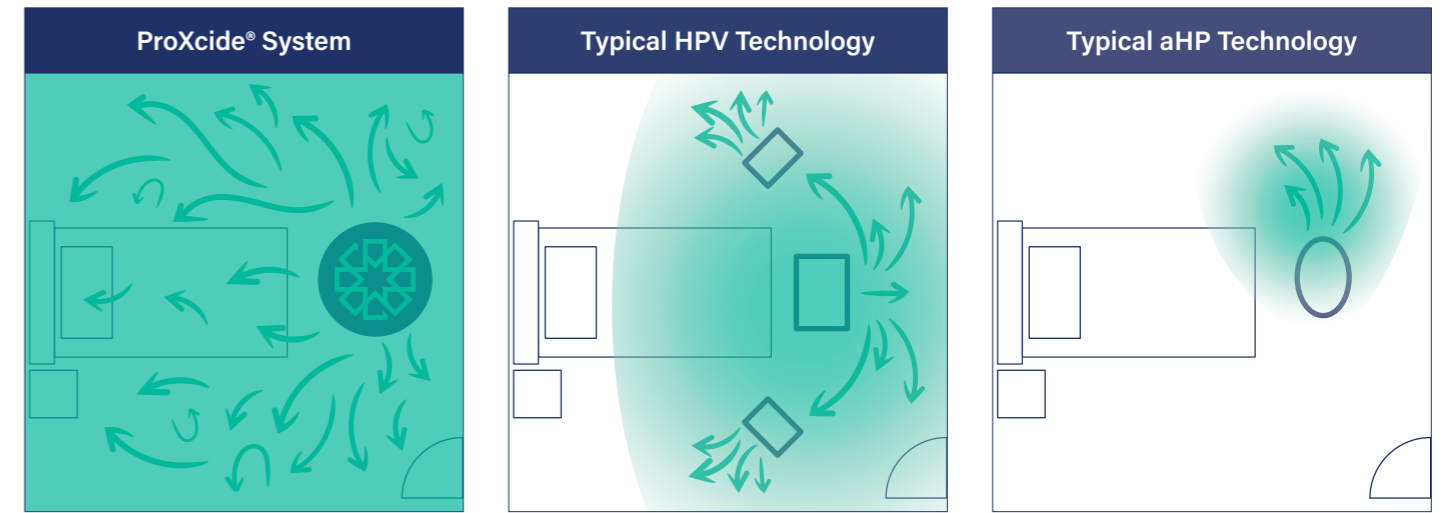
	ProXcide® System	Other Typical HPV Device	Typical aHP Device
Technology	HPV	HPV	aHP
Hydrogen Peroxide Concentration	7.9%	35%	6% – 12%
Log-6 Kill Validation	✓	X	X
Constantly Monitors Room Conditions	✓	X	X
Maintains Correct Volume of HPV During Dwell Phase	✓	X	X
HPV Vapour Reaches Every Part of the Room	✓	X	X
Automated One-Touch Decontamination Process	✓	X	X
Easy and Safe – No Operator Input Required	✓	X	X
Process Report Emailed	✓	X	X
Compact Design	✓	X	✓

" The ProXcide® System gives us the best combination of effectiveness, rapidity and ease of use available on the market.

Housekeeping Manager,
The Royal Wolverhampton Hospitals
NHS Trust

Improving cleaning practices and driving down hospital acquired infection is not for the faint-hearted, but we're working with Inivos to develop some excellent protocols and systems to support this.

University College London Hospitals

Collaborative Partnership

Inivos is passionate about providing a safe environment for patients, staff and visitors in healthcare facilities. We work with all key stakeholders to understand their needs and that of the healthcare facility so that we can develop practical solutions to the challenges you face. As a result, our products and services are trusted by over 50% of NHS Trusts.

Dedicated expertise from Inivos to support you with decontamination solutions

- **Key Account Managers** - our dedicated sales team can use their expertise to help find decontamination solutions for any challenging infection control issues your hospital is facing. They can also support you by connecting you with other NHS Organisations that have won the battle against a particular infection.
- **Customer Support** – we have a dedicated customer services team to answer any questions on our products and services.
- **Mobile Service Technicians** – our qualified technicians can provide your hospital staff with the training needed to use your Inivos products. They can also be on-site to resolve any technical issues that may arise. Inivos are proud of our 24-Hour Support where our qualified technicians can be on-site for emergencies within 8 hours.

Purchase and rental options to meet your budgets

- Whatever your budget or staff constraints, Inivos can provide you with solutions to support your cleaning and decontamination processes. These include:
  - Direct Purchases
  - Purchased through NHS Supply Chain
  - Rental Agreements
  - Service Level Agreements