



VARIDYN

REDUCE

Pathogens in Surgical Suites

Surgical Site Case Study



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Pushing back UV-C disinfection boundaries in the fight to reduce the presence of pathogens in surgical suites

The annual statistics of Surgical Site Infection in the USA alone:



Welcome to Operating Suite A...

at a leading UK Hospital and next generation robotic disinfection solutions

On Sunday, December 15th, 2019, something previously unimaginable in the world of disinfection happened – **the disinfection of an entire suite of 17 rooms, including corridors**. The disinfection comprised of 60 separate disinfection positions (see disinfection map on page 4). **Disinfection was completed in under 2 hours and involved less than 10 minutes of manual labor**. The suite in question is made up of a shared recovery area and four individual operating suite units, each with its anesthetic room, scrub room, and prep room.

Assurance.

Delivered Quick, Efficient and Easy.

The issues of shadow and distance must always be considered when applying UV-C light as a disinfectant.

Depending on the situation and time available...

Suite staff can select the type of disinfection on the robot's tablet (see image below). Disinfection types that were available to the operator in the surgical suite are as follows:

Operating Suite A complete

(robot disinfects entire Suite, positions 1-60 in approx 2 hours)

Individual Operating Suite Routine

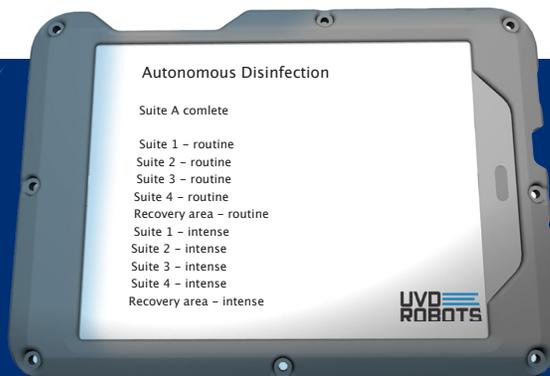
for example Suite 1 (robot disinfects a single suite unit, in this case, positions 1-12 in less than 10 minutes, recommended for between procedures)

Individual Operating Suite Intense

for example Suite 1 (robot disinfects a single suite unit, in this case, positions 1-12 in approx 60 minutes. Recommended after confirmed cases of infection)

To summarize, the introduction of UVD Robots into this suite has illustrated just how state-of-the-art robotic technology can drastically increase the coverage of automated disinfection procedures within a suite setting.

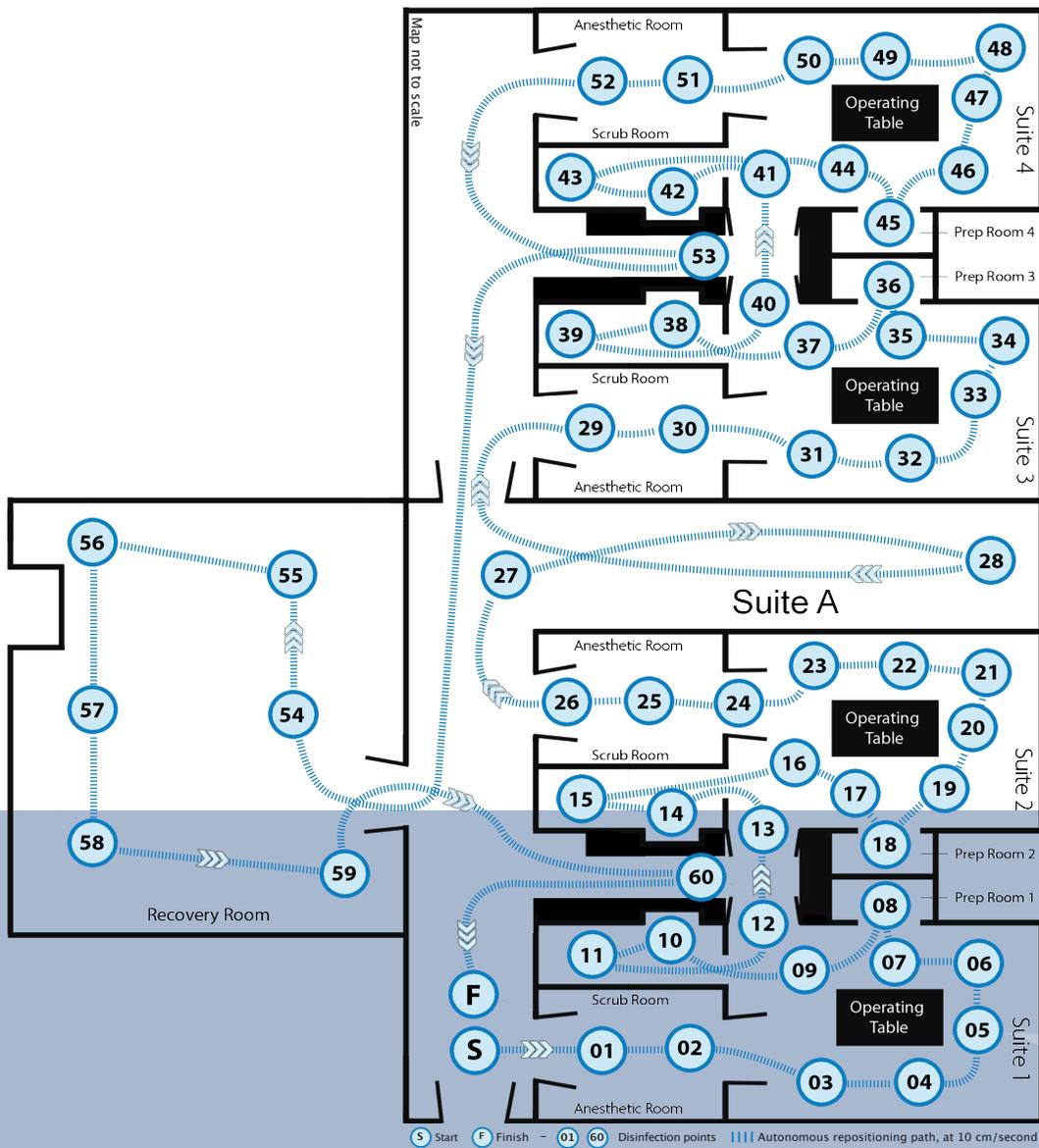
For the first time in history, suite personnel can routinely disinfect between procedures, as well as carry out a daily yet thorough disinfection of the complete suite. All this in less than 2 hours using minimal labor resources.



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We accomplished all 60 disinfection points, while disinfecting between each disinfection point.

Simplified UVD Robot Map of Suite A Including All Disinfection Positions

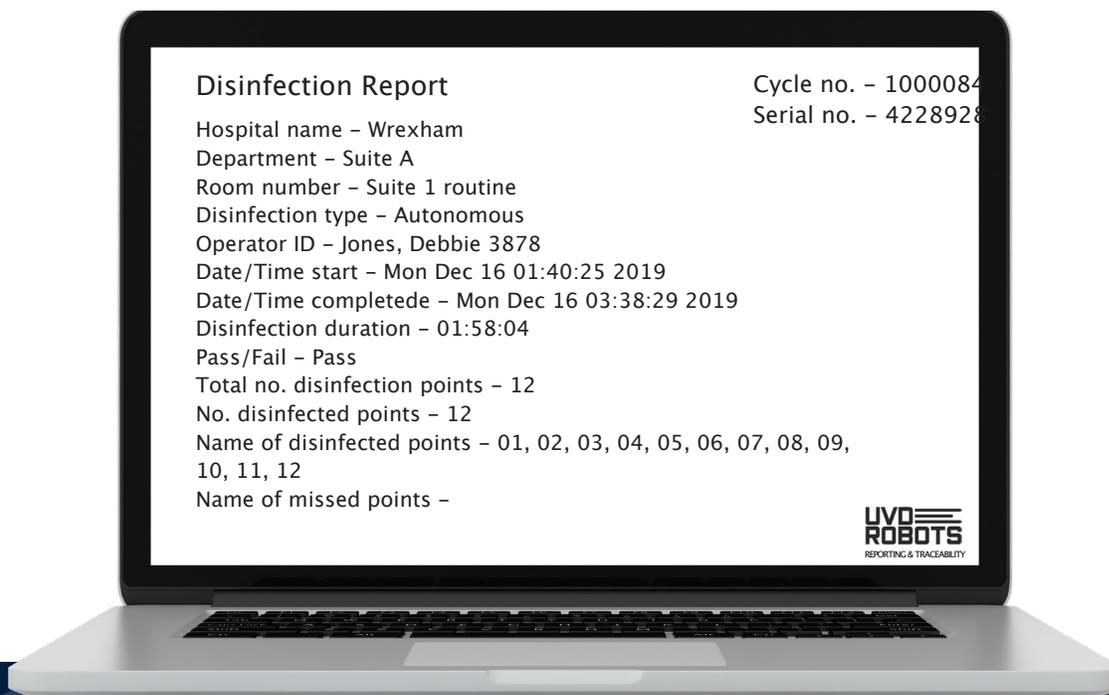


The UVD Robot does one thing and does it well. It even reports on missed points!

Reporting & Traceability

A major advantage of using robotic technology over manual disinfection systems is traceability. The UVD Robot will repeat the validated room disinfection precisely time and time again. If it does not, it will deliver a fail report. Other automated devices cannot reproduce the same level of accountability due to the human factor in positioning the device.

A disinfection report is created automatically after every cycle and emailed to the responsible recipient. These reports can be archived and accessed at any time in the future.



“For me, UVD Robots are amazing and should be one of the seven cleaning wonders of the world. The UVD Robot will revolutionize preventative cleaning within a healthcare setting. We’ve just not had any similar piece of equipment that has so much flexibility to go and decontaminate such large areas.”

— — **Paul Clarke**

Head of Facilities Management Services at a leading UK Hospital

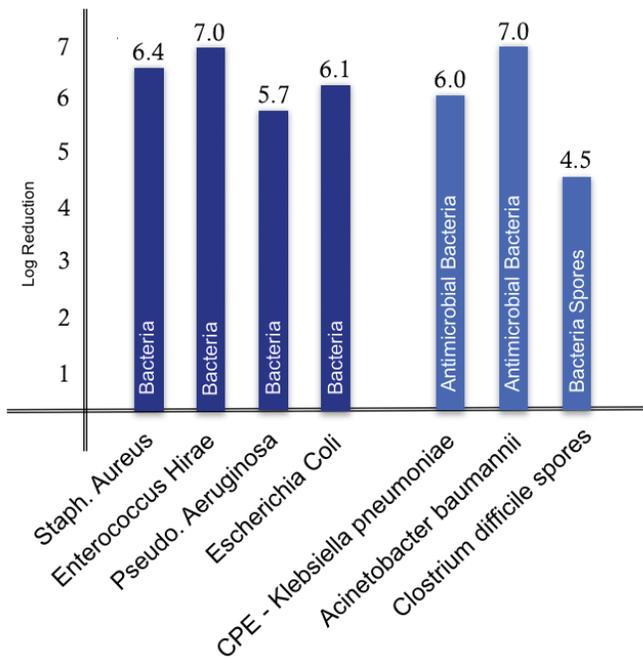


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Conclusive Results

Independent accredited third party testing in both The UK and in Denmark proves the UVD Robot reduces pathogenic microorganisms by as much as 99.99999% (see Fig. 2). Yellow UV-C dosimeters used at the hospital to measure UV-C radiation levels confirm without any doubt, the UVD Robot's ability to autonomously reposition itself multiple times and to disinfect during repositioning are critical factors in achieving the highest possible level of disinfection. The dosimeters react to the accumulated amount of UV-C they have been exposed to. The pink color (below) indicates 2-3 times the dosage required to reduce CPE/CRE, VRE, E.Coli and MRSA, etc. by 99.9999%.

Fig. 2. Overview of 3rd party test results



Pictures below shows dosimeter results:

- A. Operating table head end
- B. Floor
- C. All surfaces of suite lighting handgrip



Tested as per standard NBT 72-281



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IERA AWARD.
Innovation and Entrepreneurship in Robotics and Automation

Independently tested & validated

