

Halo Disinfection System[®]

A Superior Choice in Surface Disinfection
Featuring No-Touch Whole Room Disinfection

- HaloMist[™] Disinfectant Fogging Solution
- HaloFogger[®] Dry-Mist Dispensing Devices
- HaloSpray[™] Multi-Purpose Surface Disinfectant

Halo Disinfection System Executive Summary

The Halo Disinfection System is the most efficacious and economical system for whole-room surface disinfection!

HaloFogger® Hands-Free, Dry-Mist Dispensing Device

It delivers an aerosolized dry-mist of concentrated Halo™ Disinfectant to every exposed surface within a room, disinfecting not just the primary or “high touch” surfaces but also into nooks, crevices and corners that sprays, wipes and UV can’t reach. It reduces the cross contamination associated with using a rag, wipe or sponge.



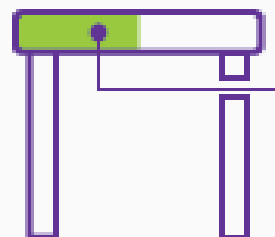
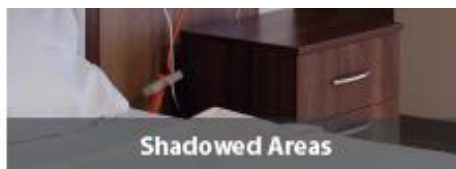
Markets Served

- Hospitals
- Clinics & Surgical Centers
- Clinical & Specialty Testing Laboratories
- Long Term Care & Assisted Living
- Compounding Pharmacies
- Prisons/Correctional Facilities
- Life Sciences & Medical Research Labs
- Veterinary Medicine
- Schools, Universities & Athletic Programs
- Daycare Facilities
- Commercial Buildings & Residences

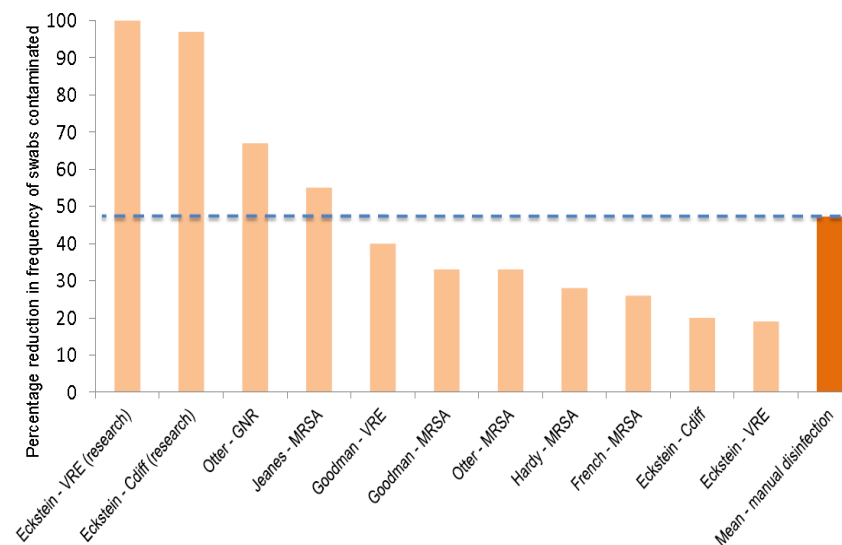
Infections in Hospitals – The Problem

- 1 in 25 people admitted to a hospital will get an hospital acquired infection (HAI).
- According to the CDC, at least 10% of those admitted to the hospital that get an HAI will die.
- Less than 15% of the 5,600+ hospitals today use anything other than spray and wipe disinfectants.
- In 2015 there were 721 hospitals that were fined for hospital acquired conditions, primarily HAIs.
- An HAI average cost is \$22,500 and adds an additional 3-5 days to LOS.
- A 25 bed hospital unit (1,125 admissions per year) will, on average, have 45 HAIs/yr. costing \$891,000.
- LTC is responsible for between 1 and 4 million infections and 380,000 deaths each year.

Conventional Terminal Cleaning - Ineffective



Experts believe that **only 50 percent** of surfaces are disinfected during **manual cleaning and disinfection processes.**²



Length of time pathogens can survive

| Organism | Survival time |
|--|------------------------------------|
| <i>Clostridium difficile</i> (spores) | 5 months |
| <i>Acinetobacter</i> spp. | 3 days to 5 months |
| <i>Enterococcus</i> spp. including VRE | 5 days – 4 months |
| <i>Pseudomonas aeruginosa</i> | 6 hours – 16 months |
| <i>Klebsiella</i> spp. | 2 hours to > 30 months |
| <i>Staphylococcus aureus</i> , inc. MRSA | 7 days – 7 months |
| Norovirus (and feline calicivirus) | 8 hours to > 2 weeks ¹ |
| SARS Coronavirus | 72 hours to >28 days ² |
| Influenza | Hours to several days ³ |

Introducing a Unique Solution *that Works*

The Halo Disinfection System®

A family of unique products designed to deliver infection-reducing results safely at a cost lower than other surface disinfection technologies.

Hardware

HaloFogger®

aHP Dispensing Devices



Disinfectant

HaloMist™

Disinfectant Fogging Solution



HaloSpray™

All-Purpose Surface Disinfectant



Halosil FAQs

What makes Halosil different?

- **Effective** - HaloMist was the first aerosolized hydrogen peroxide disinfectant the EPA approved for fogging with a 99.9999% kill of *C. diff* spores in a whole room.
- **Affordable** – Halo Disinfection System cost is often under \$10,000. Consumable costs are usually about \$20 per treated patient room.
- Halosil disinfectants are **ready-to-use** hydrogen peroxide and ionic silver formulas.
- Halosil disinfectants are **odorless** and are bleach, ethanol and PAA free. They are also non-corrosive and **safe for use around electronic equipment**.
- Halosil's unique, stabilized formula delivers exceptional **2-year storage stability**.
- Halosil's **5% H₂O₂ formula** is toxicity rated as a **III (mild)** eye irritant, and a **IV (innocuous)** oral, dermal, and inhalation irritant.

Halosil Product Information

EPA Definitions

Sporicide

A sporicide is an antimicrobial “pesticide” that destroys or eliminates essentially all forms of microbial life in the inanimate environment, including 99.9999% of bacterial spores. The FDA term “sterilant” is deemed to be synonymous with the EPA’s “sporicide”, but such products are intended for different purposes. Since sterilization includes eradication of all living microorganisms, such claims are intrinsically related to protection of human health.

Disinfectant

A chemical that destroys vegetative forms of harmful microorganisms but does not ordinarily kill bacterial spores. Test results must show at least a 4-log kill of each test organism. (A Disinfectant Cleaner must also work in the presences of 5% artificial soil.)

Sanitizer

EPA considers an antimicrobial to be a hard-surface sanitizer when it reduces but does not eliminate all the microorganisms on a treated surface. To be a registered sanitizer, the test results for a product must show a reduction of 99.9% in the number of each test microorganism.

Cleaner

A substance or mixture of substances (such as chemical or biological substances) that is intended to clean away or remove inanimate material from a surface, water or air, and that makes no pesticidal kill claims.

Halosil Product Information

Implications of Log Reductions

Sporicide/Sterilant

For every **ONE MILLION** pathogens in an environment, a sporicide will leave **ONE** alive or active, on average.

Disinfectant

A disinfectant will, on average, leave **ONE HUNDRED times as many** pathogens alive in that environment.

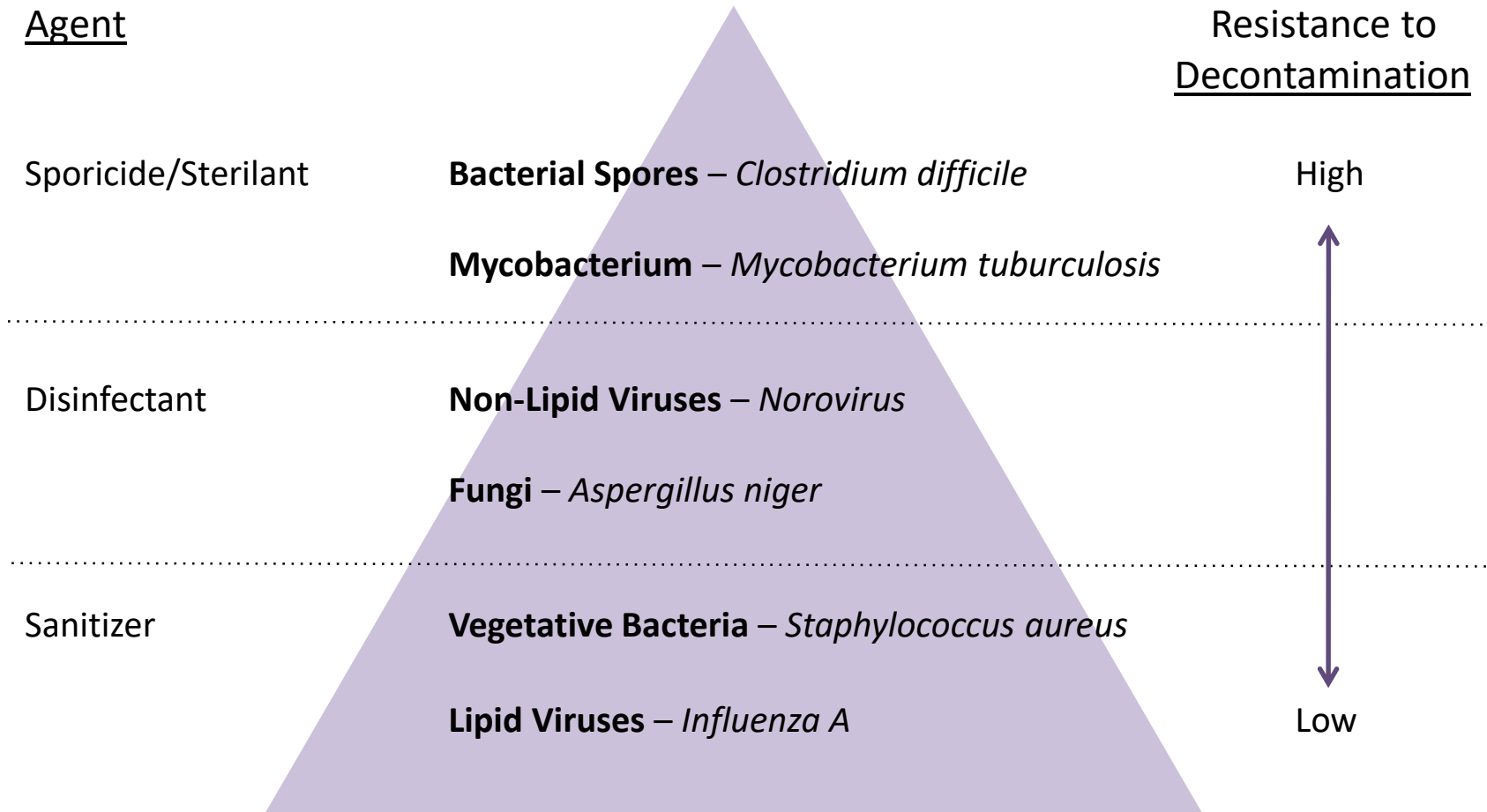
Sanitizer

A sanitizer will leave **ONE THOUSAND times as many** alive as would a sporicide in that environment.

And in “Real Life”...

In “real life”, cleaning and manual disinfection with highly effective sporicidal or disinfectant sprays and wipes will eliminate less than 50% of the pathogens in a room, leaving **FIVE HUNDRED THOUSAND times as many** pathogens alive or active in that environment.

Hierarchy of Efficacy



This hierarchy considers broad classifications of microbial categories. It is considered a rough guide to general susceptibility of microorganisms to anti-microbial agents.

Halosil Product Information

What Halosil kills – EPA Label

Bacteria

Escherichia coli

Enterobacter aerogenes

Pseudomonas aeruginosa

Salmonella enterica

Staphylococcus aureus

Staphylococcus aureus – MRSA

Proteus mirabilis

Clostridium difficile (C-diff)

Mold

Trichophyton mentagrophytes

Aspergillus niger

Viruses

Human immunodeficiency virus type 1 (HIV-1)

Influenza A virus Hong Kong (flu virus)

Avian influenza A (H5N1) virus (flu virus)

Rhinovirus type 37

Swine influenza A (H1N1)

Feline calicivirus

Minute virus of mice (MVM)

Norovirus (feline calicivirus surrogate)

Non-Label EPA Claims

Ebola, Enterovirus D86, Candida auris



ALL US EPA approved GLP tests

HaloMist™ Disinfectant Fogging Solution

EPA Reg. No. **84526-6**

First EPA registered ***fogging*** formula
for whole-room disinfection.

HaloMist is an EPA-validated, proprietary hydrogen peroxide-based disinfectant for use on hard, pre-cleaned, non-porous, non-food contact surfaces. HaloMist is approved for use in whole-room surface disinfection procedures using HaloFogger. HaloMist is a healthcare-grade, ready-to-use formula that's been proven to reduce environmental infections rates.

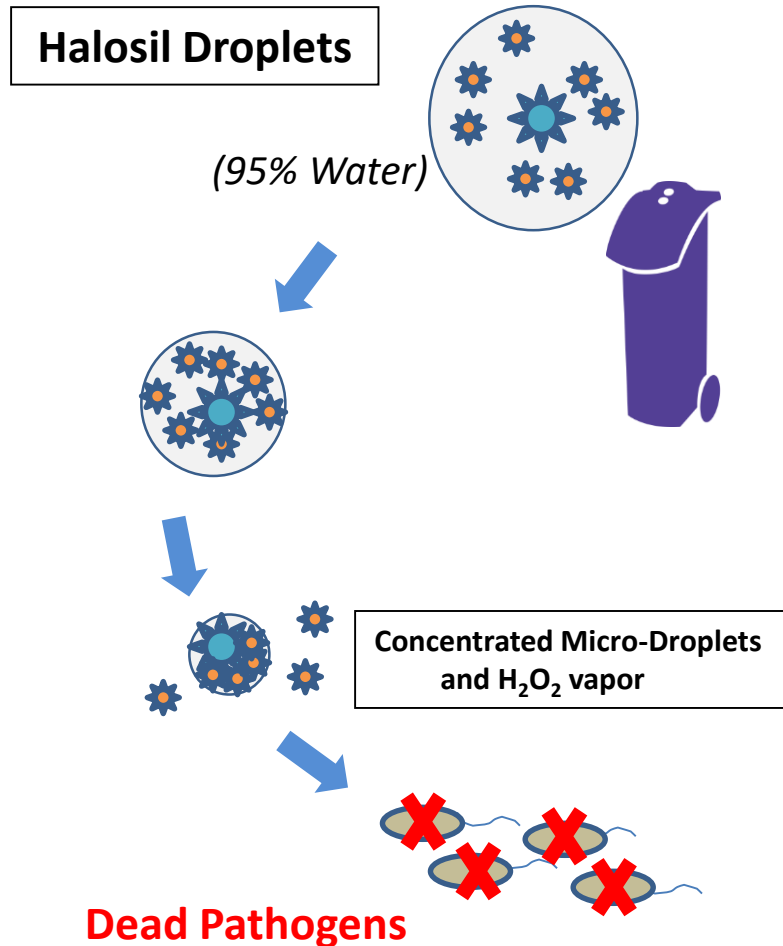
Update: HaloMist now combines the original efficacy claims of both HaloMist and HaloSpray, supporting a broad array of kill claims. The EPA-approved amendment also increases the use sites for HaloMist.

EPA Validated to kill 99.9999% (6-log) of *C. diff* spores in an entire room



Halosil Product Information

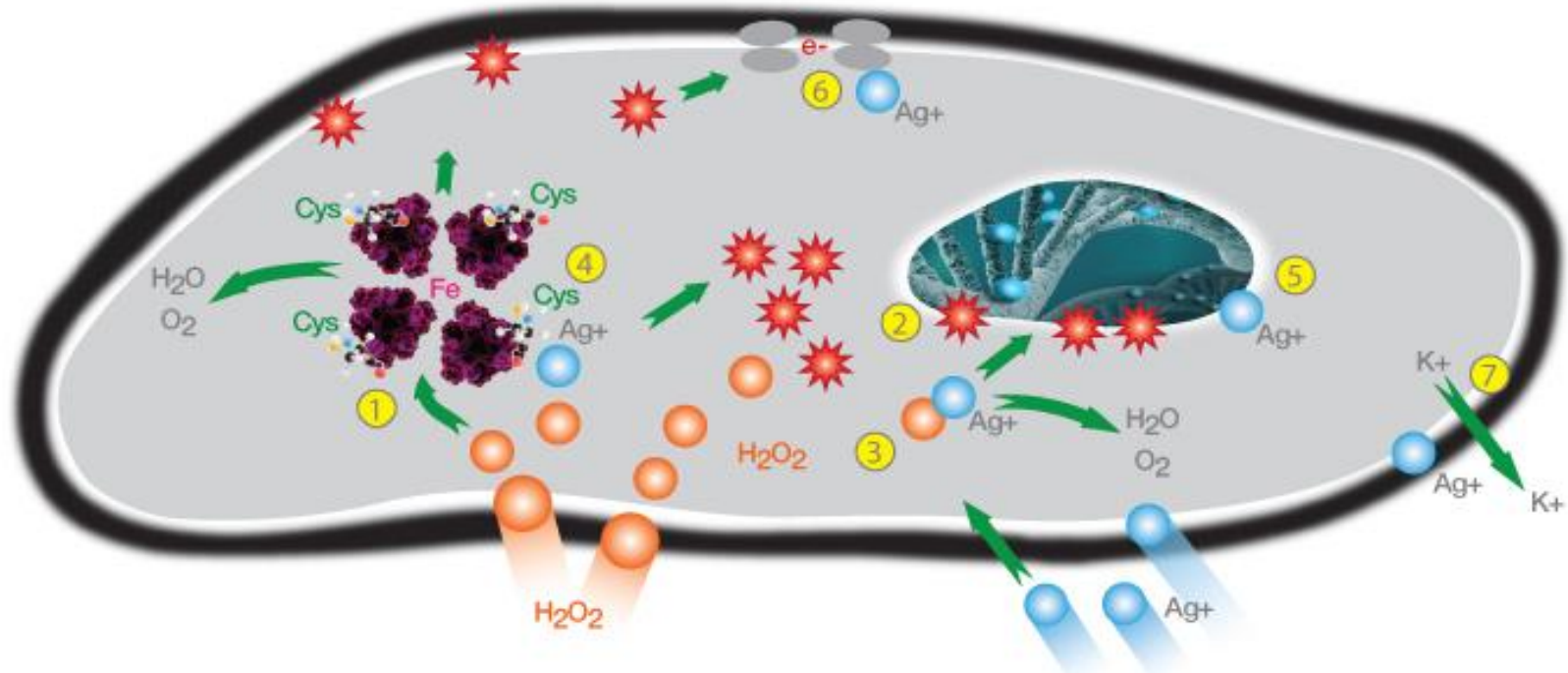
Why fog instead of spray?



Evaporation = Vapor & Concentration


- The evaporation of water from the droplet in air concentrates the solution;
- The evaporation of H_2O_2 creates a pathogen-killing vapor;
- The micro-droplets float all over the room, disinfecting all available surfaces;
- The smaller the micro-droplet size, the more surface area is covered;
- The twin killing mechanisms produce the highest efficacy of any whole-room disinfection system.

How Does Halosil Chemistry Work?



Multiple Pathogen Killing Mechanisms

H₂O₂ Mechanisms

- ① Attack of metalloenzymes (Fe) and subsequent creation of ROS (Reactive Oxygen Species) 
- ② ROS can cause breaks in DNA and further oxidation of enzymes
- ③ H₂O₂ can react with free Ag⁺ to form ROS

Ag⁺ Mechanisms

- ④ Attack of cysteine protein residues at thiol groups in O₂, creating ROS
- ⑤ DNA binding and inhibition of replication
- ⑥ Respiratory chain disturbance
- ⑦ Membrane permeability-Potassium release disturbing ionic balance

The HaloFogger® - 'Dry-Mist' Dispensing Device

- Three Models available – STD, FLX and EXT designations
- 110V and 220V versions in production for global use

| HaloFogger STD (Standard) | HaloFogger FLX | HaloFogger EXT |
|--|--|--|
| 60-minute Timer High Fluid Output = 1.7 oz /minute Spaces up to 10,500 ft ³ | 60-minute Timer High Fluid Output = 1.7 oz /minute Spaces up to 10,500 ft ³ | 30-minute Timer Low Fluid Output = 0.85 oz / minute Spaces up to 2,250 ft ³ |
| | Hose Length: 12' | 5' |



Introducing HaloLog™

Data Logging Capability for HaloFoggers

- Download and view time-stamped record for treatment cycles, room and operator identifiers, and session notes
- View total hours of HaloFogger use
- E-mail data file and edit in Excel
- Requires Apple iOS device
- Available early summer 2017



Introducing the HaloPortal™

Permanently installed nozzle assembly for HaloFogger FLX and EXT



- Pennsylvania Hospital, a 496 bed urban teaching hospital, reduced hospital-acquired *C. Difficile* rate 66% from a better-than-industry-average of 4.9 new cases per 10,000 inpatient days to only 1.65 new cases.
- ROI produced greater than \$10 savings for every \$1 spent (using industry-low estimates for *C. diff* costs per case).
- Earned Penn Health's Quality and Patient Safety Award.
- For the first time, Pennsylvania Hospital had two-of-three months with zero new cases of *C. Difficile*

Result: Over a 66% reduction in New *C. Diff* Cases

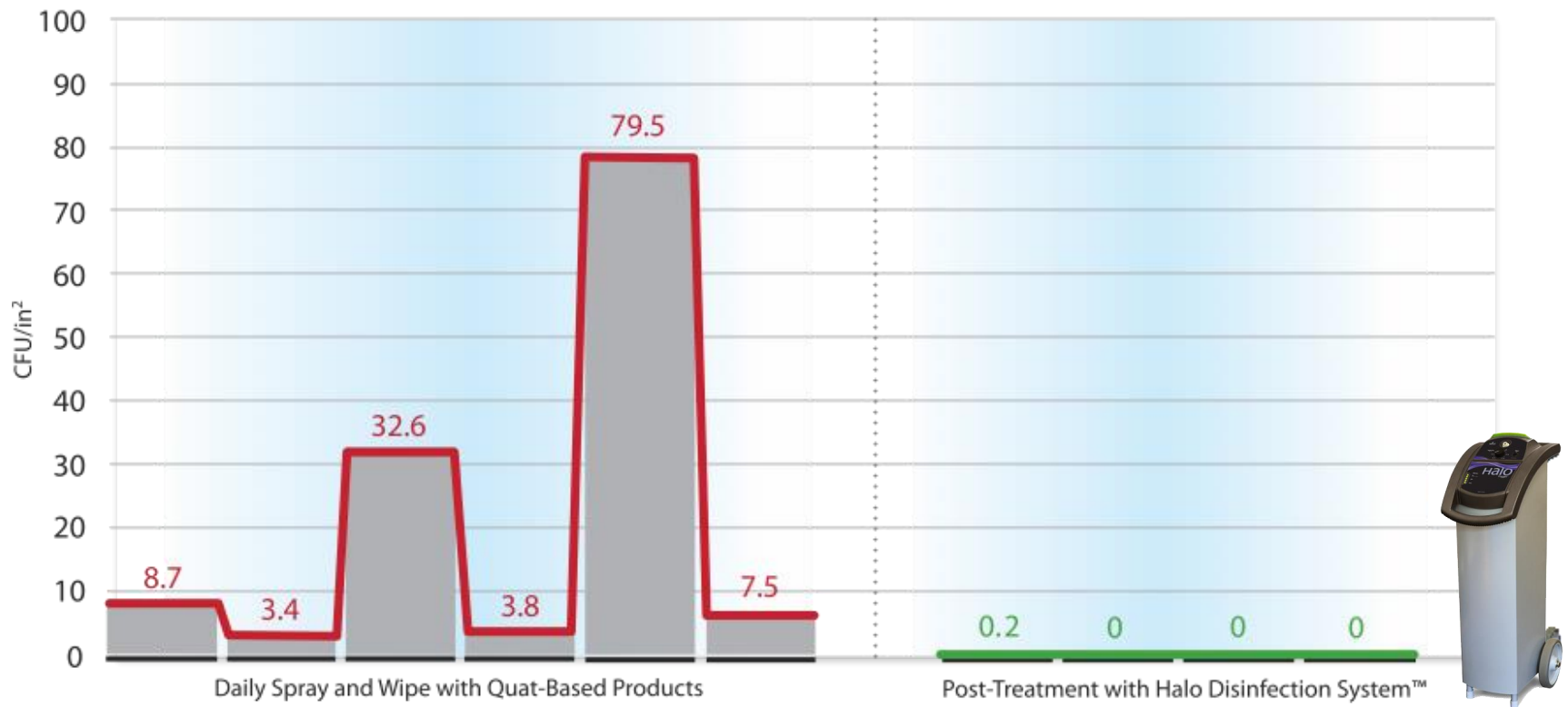
- Southwestern Vermont Medical Center, a 99-bed regional hospital, evaluated several UV systems and the Halo Disinfection System.
- Pre-Halo *C. Diff* Rate: 13.62 new cases per 10,000 inpatient days
- Halo Use Period: *C. Diff* Rate drops to 3.73 new cases per 10,000 inpatient days
- Hospital re-admission rates for *C. Diff* related cases or anti-biotic resistant HAIs dropped to zero during a more than 120 day period.

Result: *C. Diff* new case rate was reduced by over 65% - at a time when hospitals nationally reduced rates by only 2% (CDC).

Field Data:

CDC File - Study Performed at Southwestern Vermont Medical Center

Centers for Disease Control and Prevention (CDC) Field Study
**Reduction in Bioburden After Adoption of
Aerosolized Hydrogen Peroxide Whole Room Disinfection**



Source: CDC Field Study, Determining the Bioburden of Multi-Drug Resistant Organisms on Environmental Surfaces in Healthcare Facilities, Phase2, 2nd Report, June 2013.

Advantages of Fogging

SAFE

- Safe for patients and staff
- Non-corrosive and biodegradable, excellent material compatibility, safe for use around computers and sensitive electronics

EFFECTIVE

- Repeatable and reliable efficacy of a sporicidal product
- Coverage that gets into ordinarily hard to reach and/or overlooked places
- Improved control over quantity of dispensed disinfectant with no potential for cross-contamination

AFFORDABLE

- Low capital and consumable cost
- Reduced labor – No touch automated system that is simple to operate, portable and easily stored.

UV for Disinfection is Complex and Higher Cost

UV

PROS

- Perception of faster room turnover

- **Line-of-Sight-Issues** – Surface must be 'seen' to be effectively treated; surface reflection and mirrors are used to reach out-of-sight surfaces which can impact efficacy due to diffuse reaction (loss of light intensity)
- **Distance to Surface Issues** – Surfaces further from light source require longer exposure times for effective treatment

CONS

- **Potential Surface Damage** – The closer the surface, the greater the risk for some materials to be damaged (equipment 'sunburn') from exposure to UV light
- **Higher Capital Cost** – To purchase and maintain, on average, UV lights cost 5-10X more than the Halo Disinfection System®
- **Reliability and Consistency** – UV bulb condition impacts efficacy; degrade with use and must be replaced frequently, and no method exists to immediately confirm light reached a particular surface in lethal dose
- **Not Accountable** – UV not regulated by government for efficacy claims; even so, they seldom claim to kill C. diff spores in their marketing





- 2-Year Protocol Development, Testing & Validation Process;
- Each test used 64 Biological Indicators for each of *C-Difficile* spores, *S. Aureus*, and *Pseudomonas* (192 BIs per test);
- Test repeated 3 times at an independent GLP lab, with 3 different HaloMist shelf-life ages and dilutions, for a total of 576 BI coupons;
- BIs were placed throughout the three dimensions of the test room: high on walls, under items, in drawer spaces, etc..

RESULT: Success!

No Growth on any of the (576) Biological Indicators

Room Fogging Protocol

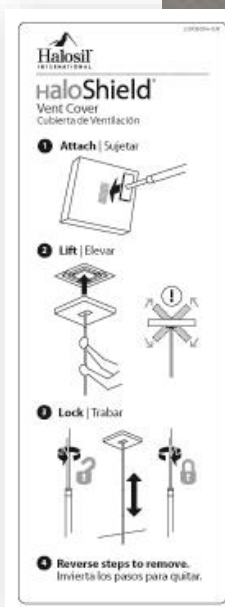
| Step | Task | Notes |
|------|---|--|
| 1 | Pre-Clean Room | Rooms should be pre-cleaned and surfaces dry |
| 2 | Prep Room | Seal & Cover vents, HVAC off, cover smoke alarms |
| 3 | Measure Room | $L \times W \times H = \text{ft}^3 / \text{m}^3$ |
| 4 | Prep Fogger | Position, Set time and check fluid level |
| 5 | Press START | 30 second count begins |
| 6 | Exit Room | Close , seal and placard door |
| 7 | Wait required time prior to re-entry | OSHA = at or below 1 ppm |
| 8 | Open room, uncover vents | Remove smoke alarm cover, HVAC on |

Room Prep

For Ceiling Vents

HaloShield® Vent & Smoke Detector Covers

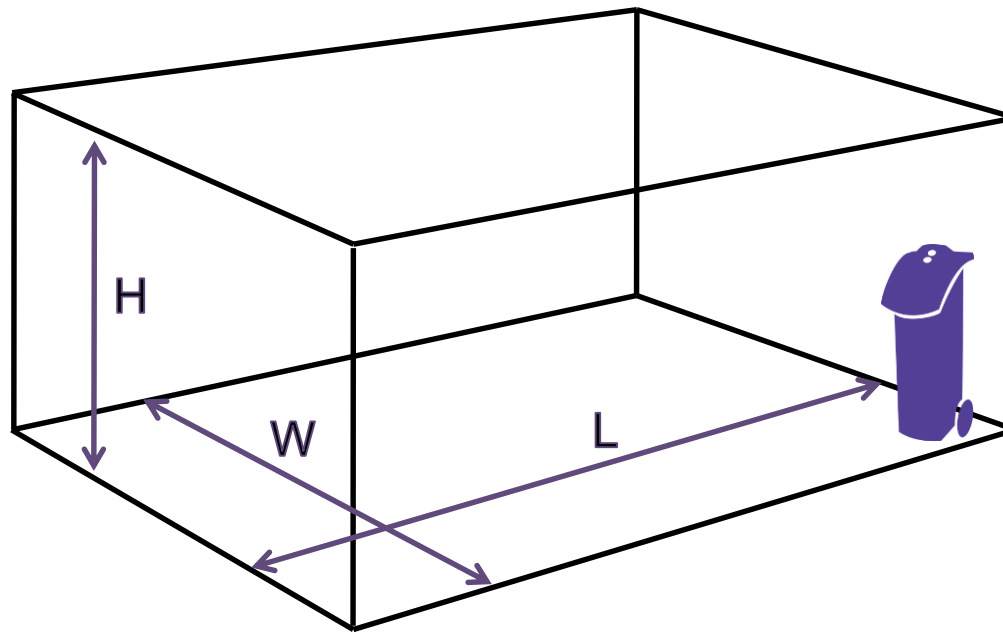
- *No ladder required to cover ceiling vents*
- *Safe and easy-to-install from floor by one person*
- *Reusable*



Measure Room

$$L \times W \times H = \text{ft}^3 / \text{m}^3$$

Measure the length, width and height of the room you plan on treating. Round up to the nearest cubic foot or meter. The Measurements will determine the final room size and recommended fogging time with the HaloFogger®.



Easy-to Use Reference

HaloFogger® Quick Chart

The instructional quick chart, found on the rear panel of every HaloFogger, is an easy-to-follow reminder of the steps to safely operate the Halo.

For detailed information, refer to the HaloFogger User Manual and/or Protocol Manual for the disinfectant product being dispensed.

Only Halo Disinfectant products can be used in the HaloFogger

Quick Instructions | Instrucciones Rápidas

Consult product specific user manual for detailed instructions and warning information.
Consulte el manual de usuario del producto para obtener instrucciones detalladas e información de advertencia.

- 1 Calculate Room Size**
Calcular Tamaño de la Habitación

 $L \times W \times H = \text{ft}^3/\text{m}^3$
- 2 Determine Fog Time**
Determinar el Tiempo de Nebulización
- 3 Set Timer**
Establecer el Tiempo
- 4 Plug in HaloFogger**
Conectar el nebulizador
- 5 Check/Fill Disinfectant**
Chequear/Llenar Desinfectante
- 6 Press and Hold Start Button**
Mantener Pulsado el Botón Start
- 7 Leave Room**
Dejar el Espacio
- 8 Post Sign**
Poner un Letrero

Fog Times for dispensing Sanosil HaloMist™:

Consult HaloFogger™/Sanosil HaloMist User Manual for detailed instructions and warning information.

Tiempos de Nebulizar para dispensar Sanosil HaloMist™:

Consulte el Manual de Usuario del HaloFogger/Sanosil HaloMist para obtener instrucciones detalladas e información de advertencia.

| ft ³ | m ³ | Fog Time Tiempo de nebulización |
|-----------------|----------------|------------------------------------|
| 400 - 1,800 | 11 - 50 | 10 minutes |
| 1,800 - 2,600 | 50 - 75 | 15 |
| 2,600 - 3,660 | 75 - 104 | 20 |

Room Re-Entry
Consult HaloFogger User Manual for room re-entry procedure.

Treated room can be reoccupied one hour after H2O2 concentration level is at or below 1 ppm.

Reingreso a la Habitación

Consulte el Manual de Usuario para el procedimiento de reingreso a la habitación.

La habitación tratada puede ser reocupada una hora después que el nivel de concentración del H2O2 se encuentre en o por debajo de 1 ppm.

Fog Times for dispensing HaloSpray™:

Consult HaloFogger™/HaloSpray User Manual for detailed instructions and warning information.

Tiempos de Nebulizar para dispensar Sanosil HaloSpray™:

Consulte el Manual de Usuario del HaloFogger/Sanosil HaloSpray para obtener instrucciones detalladas e información de advertencia.

| ft ³ | m ³ | Fog Time Tiempo de nebulización |
|-----------------|----------------|------------------------------------|
| 400 - 1,800 | 11 - 50 | 10 minutes |
| 1,800 - 2,600 | 50 - 75 | 15 |
| 2,600 - 3,500 | 75 - 100 | 20 |
| 3,500 - 4,400 | 100 - 125 | 25 |
| 4,400 - 5,200 | 125 - 150 | 30 |
| 5,200 - 6,100 | 150 - 175 | 35 |
| 6,100 - 7,000 | 175 - 200 | 40 |
| 7,000 - 7,900 | 200 - 225 | 45 |
| 7,900 - 8,800 | 225 - 250 | 50 |
| 8,800 - 9,600 | 250 - 275 | 55 |
| 9,600 - 10,500 | 275 - 300 | 60 |

Room Re-Entry
Consult HaloFogger User Manual for room re-entry procedure.

Do not allow reoccupation of the treated space until H2O2 exposure level is below 1 ppm.

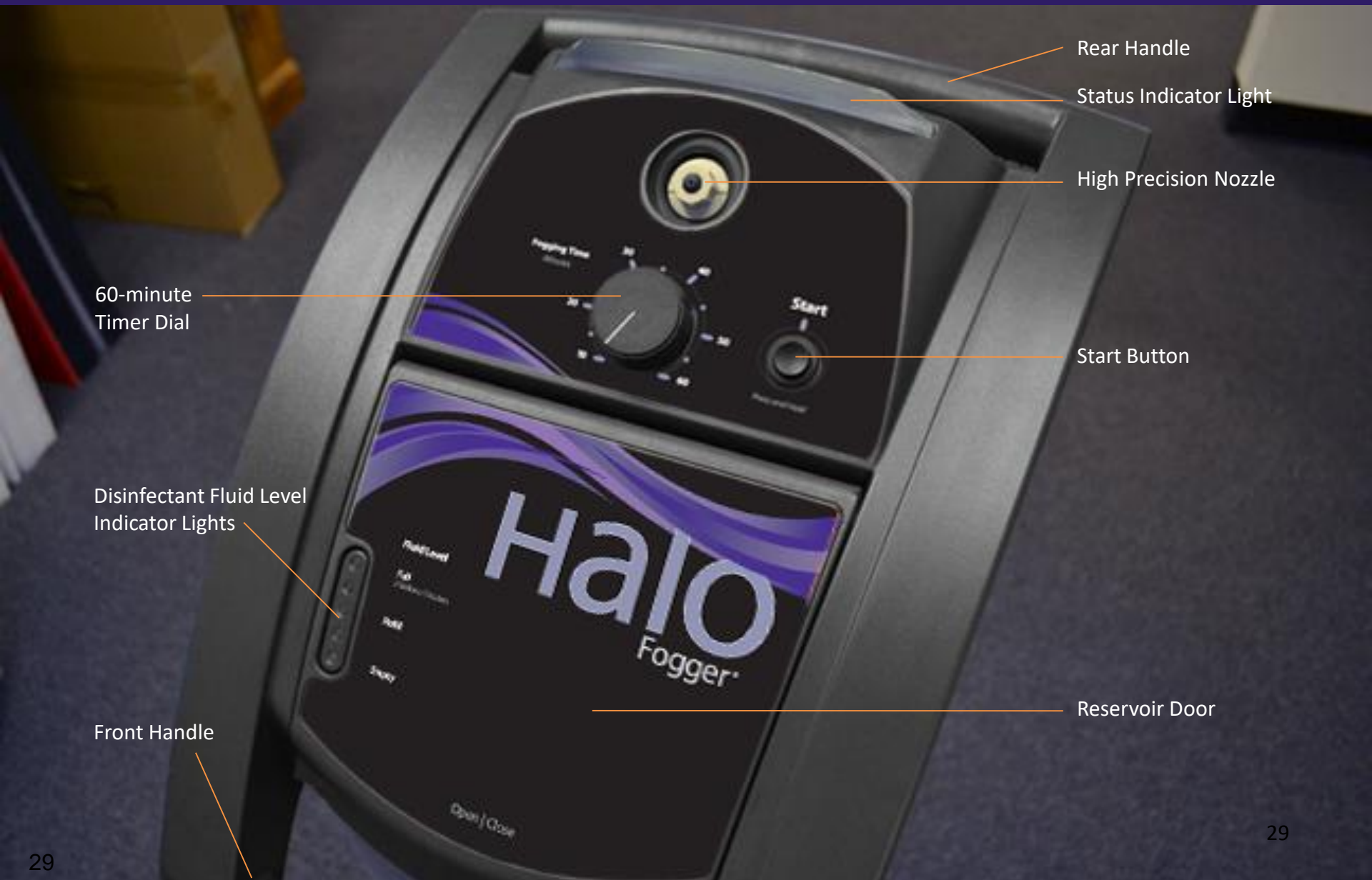
Reingreso a la Habitación

Consulte el Manual de Usuario para el procedimiento de reingreso a la habitación.

No permita reocupación del espacio tratado hasta que el nivel de exposición de H2O2 esté por debajo de 1 ppm.

LHPSOC-1908

HaloFogger® STD (Standard) User Interface



Rear Handle

Status Indicator Light

High Precision Nozzle

60-minute
Timer Dial

Start Button

Disinfectant Fluid Level
Indicator Lights

Reservoir Door

Front Handle

HaloFogger® EXT User Interface



Status Indicator Light

High Precision Nozzle
and flexible mounting
arm assembly

Precision Couplings for
Air and Fluid connections

30-minute
Timer Dial

Start Button

Prep HaloFogger®

Set fogging time and check fluid levels

With room size established, set fogging time to correct recommended dispensing time found on chart on the back of the fogger. **DO NOT** set time for longer than recommended time.



Quick Instructions | Instrucciones Rápidas

Consult product specific user manual for detailed instructions and warning information.
Consulte manual de usuario específico para obtener instrucciones detalladas y advertencias de advertencia.

- 1 Calculate Room Size**
Calcular Tamaño de la Habitación
 $L \times W \times H = ft^3/m^3$
- 2 Determine Fog Time**
Determinar el Tiempo de Nebulización
- 3 Set Timer**
Establecer el Tiempo
- 4 Plug in HaloFogger**
Conectar el nebulizador
- 5 Press and Hold Start Button**
Presionar y Mantener el Botón Start
- 6 Leave Room**
Salir el Espacio
- 7 Post Sign**
Poner un Letrero

Fog Times for dispensing Sanoel HaloMist™
Consulte el Manual de Usuario del HaloFogger/Sanoel HaloMist para obtener instrucciones detalladas e información de advertencia.

| ft ³ | m ³ | Fog Time (minutes) | Room Re-Entry | Reingreso a la Habitación |
|-----------------|----------------|--------------------|--|---|
| 400 - 1,800 | 11 - 50 | 10 | Consult the Manual de Usuario del HaloFogger para obtener instrucciones detalladas e información de advertencia. | Consulte el Manual de Usuario para obtener instrucciones detalladas e información de advertencia. |
| 1,800 - 2,400 | 50 - 75 | 15 | | |
| 2,400 - 3,600 | 75 - 100 | 20 | | |

Fog Times for dispensing Sanoel HaloSpray™
Consulte el Manual de Usuario del HaloFogger/Sanoel HaloSpray para obtener instrucciones detalladas e información de advertencia.

| ft ³ | m ³ | Fog Time (minutes) | Room Re-Entry | Reingreso a la Habitación |
|-----------------|----------------|--------------------|--|---|
| 400 - 1,800 | 11 - 50 | 10 | Consult the Manual de Usuario del HaloFogger para obtener instrucciones detalladas e información de advertencia. | Consulte el Manual de Usuario para obtener instrucciones detalladas e información de advertencia. |
| 1,800 - 2,400 | 50 - 75 | 15 | | |
| 2,400 - 3,600 | 75 - 100 | 20 | | |
| 3,600 - 4,400 | 100 - 125 | 25 | | |
| 4,400 - 5,200 | 125 - 150 | 30 | | |
| 5,200 - 6,100 | 150 - 175 | 35 | | |
| 6,100 - 7,000 | 175 - 200 | 40 | | |
| 7,000 - 7,900 | 200 - 225 | 45 | | |
| 7,900 - 8,800 | 225 - 250 | 50 | | |
| 8,800 - 9,600 | 250 - 275 | 55 | | |
| 9,600 - 10,500 | 275 - 300 | 60 | | |

Plug unit into wall and check the fluid level indicator to make sure the unit is full with 2 gallons of disinfectant.

If unit is not full, wear PPE and carefully add disinfectant until full.

All 5 Level Indicator lights should turn green.



Press Start

Press and hold for 2-3 seconds

Steady green light will begin to flash red. This indicates a 30-second countdown has begun. Leave room immediately.



Exit & Seal Room

Close door after exit

Seal doors edges with tape (wide Painter's tape works well.)



CAUTION/PRECAUCION

DO NOT ENTER/NO ENTRAR

Room Fogging in Progress

Treatment Date / Start Time:

Estimated Room Re-entry Time*:

(*Refer to Section 5 of the Halo Fogger User Manual to determine room re-entry time.)



www.halosil.com

Photocopy and post outside of room being treated.

HaloFogger®

Easy Troubleshooting - Nozzle

- The nozzle is the first thing to check if dispensing appears to fall off or if the floor in front of the HaloFogger is covered with visible droplets.
- The HaloFogger User Manual outlines steps for cleaning the nozzle.



Maintenance

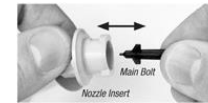
Nozzle Cleaning and Alignment

To keep your HaloFogger® working at optimum performance, it is recommended that you clean the nozzle on a regular basis (example: clean nozzle once-a-week if fogger is used once-a-day or more.)

Step 1. Before performing any maintenance to the HaloFogger, disconnect the power cord from the electrical outlet.



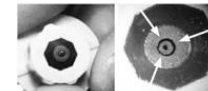
Step 2. **Remove Nozzle.** Using adjustable pliers, gently squeeze nozzle (DO NOT crush) then carefully turn nozzle counter-clockwise 90° and remove.



Step 3. **Separate Parts.** Remove Main Bolt from Nozzle Insert. Soak both parts in soap and water. Rinse parts thoroughly with water.



Step 4. **Reassemble Nozzle.** Carefully insert the Main Bolt back into the Nozzle Insert. Make sure the "wings" on the Main Bolt nest into the slots down inside the Nozzle Insert.



IMPORTANT - Position Main Bolt so a uniform gap surrounds the nozzle tip.



Step 5. Carefully **reinstall the nozzle into the Halo**, turning nozzle clockwise 90° to lock into place. Test Halo for straightness of nozzle stream.

Storage and Disposal

HaloFogger®

Storage: Store in a safe, dry location. Do not place anything on top of the device. Store in an upright position. Keep the refill door closed.

Do not allow Halo Disinfectant to be stored in the HaloFogger for longer than one year.

Disposal: Electrical and electronic devices may not be disposed of with domestic waste. This product is in accordance with the law "waste electrical and electronic equipment" (WEEE).

Please contact your local representative for more information.

Specifications for HaloFogger

Mechanical

| | |
|--------|--------------------------------|
| Height | 40.0" (101.5 cm) |
| Width | 13.25" (33.5 cm) |
| Depth | 18.5" (47 cm) |
| Weight | Approximately 50 lbs (22.5 kg) |

Electrical

| | |
|--------------------|--|
| Power Requirements | North American Version: 110V International Version: 220V |
| Certification | MET UL 969, MET CE |
| Fuse | 10 amps, 250 volt, slow acting, 5 x 20mm |
| Electrical Rating | 4 amps, 115 volt, 60 Hz (220 volt, 50 Hz for the 220V Fogger) |

Performance

| | |
|-----------------|------------------------------|
| Volumes treated | 400 - 10,000 ft ³ |
|-----------------|------------------------------|

Funnel Cleaning

The fluid funnel inside the HaloFogger should be checked for debris on a regular basis. Visually inspect the funnel. If any debris is present, wipe with a clean towel dampened with water.

Ensure that the funnel screen is in place.

Halosil + Safety

Personal Protective Equipment (PPE)

- **Halo™ Disinfectants** contain 5% hydrogen peroxide and is a mild eye and lung irritant. It can cause temporary skin discoloration. Personal protective equipment (PPE) including chemical splash goggles and gloves should be worn for protection.
- OSHA regulations require SCBA for H₂O₂ levels over 50 ppm in the air.
- *Consult section 8 of the Halo Disinfectant SDS Sheets for more information.*



Which room do you want to be admitted into?

Manual Disinfection



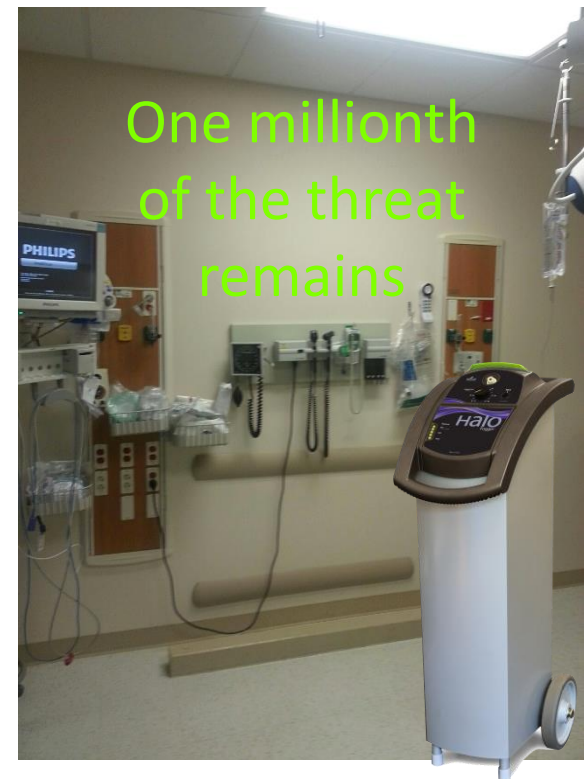
>50 - 60% of pathogens remain

UV Treatment



2-3 log kill

Halo Disinfection System®



6-log kill

*In a UV procedure, you would not have the EVS person doing a manual wipe/mop disinfection process thru the whole room, that's the purpose of a "no touch" technology. They would typically do a gross contaminate clean, then a UV treatment.

The Most Effective, the Most Affordable...



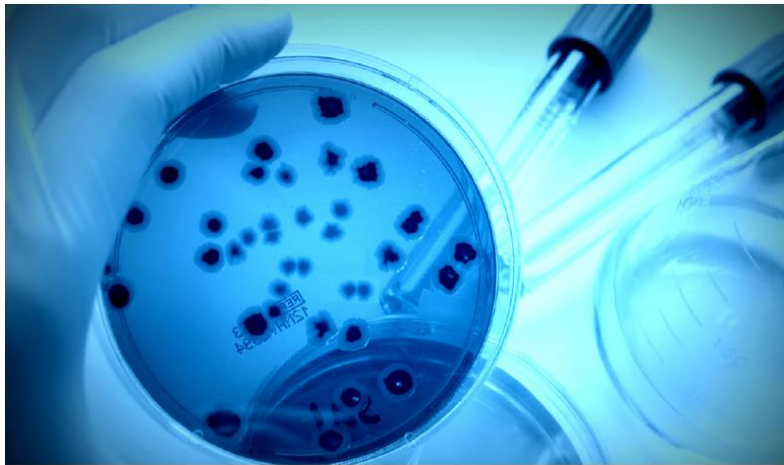


Addressing Cross Contamination with Handheld Devices



April | 2017

Small Device Cross Contamination



Separating Myth from Reality: Cleaning and Disinfecting Mobile Devices

HOW YOUR MOBILE DEVICES AFFECT THE 21ST CENTURY HEALTHCARE ENVIRONMENT

BY DARREL HICKS, A NATIONALLY-RECOGNIZED EXPERT IN INFECTION CONTROL

Child Health Patient Safety Organization
Patient Safety Action Alert
April 2017



Take Action to Reduce Risk of Similar Harm

**Disinfection of Clinicians' Personal Medical Devices to
Prevent the Spread of Organisms**

**What can I do with
this alert?**

- Forward to the recommended target audiences for evaluation.

Target Audiences

- Infection Prevention and Control
- Nursing Leaders
- Medical Leaders
- Clinical Leaders
- Patient Safety
- Emergency/Urgent Care
- Specialty Care Services
- Quality Improvement
- Legal/Risk Management
- Clinical Educators
- Organizational Leaders
- Ambulatory Care
- Primary Care



Mobile Technology Disinfection: Contaminated Devices Pose Threat to Patients

INFECTION CONTROL TODAY - FEBRUARY 17, 2017

Common Phone Pathogens



Apples Future Plans in Hospitals

03.18.17 | INNOVATION AGENTS

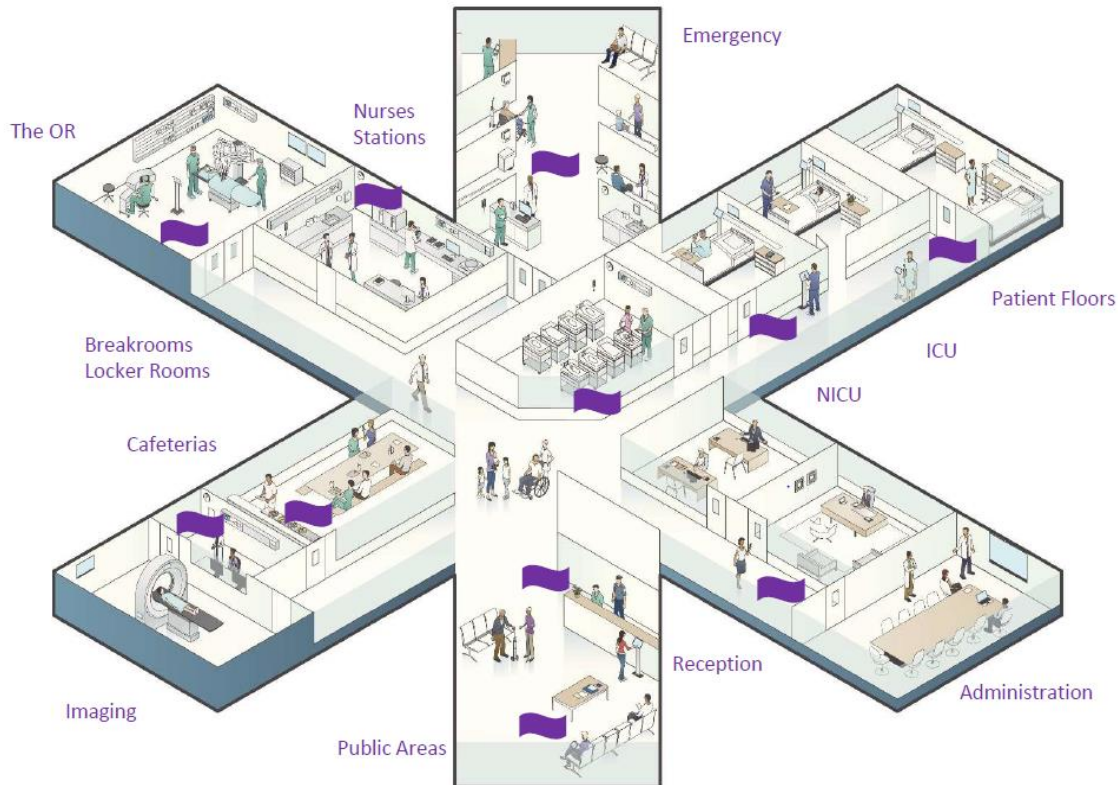
iPads In Every Hospital: Apple's Plan To Crack The \$3 Trillion Health Care Sector

Meanwhile, rumor has it Apple is gearing up to release a new version of its iPad, which plays a vital role in its enterprise health efforts.



1/5 Garry James is awaiting a new heart. PHOTOS: COURTESY OF CEDARS-SINAI MEDICAL CENTER

Where & What Should We Disinfect?



- iPads
- Mobile Phones
- Tablets
- Stethoscopes
- Glucometers
- Otoscopes
- Oximeter Sensors
- Employee Badges
- Key Boards

Developed by a Recognized Leader

Dr. Wayne Clark

PHD's in electrical engineering, plasma physics and nuclear engineering

Dr. Wayne Clark, a recognized expert in germicidal UV applications, developed the KR615 specifically to address the spread of infection in healthcare environments.

Dr. Clark holds multiple patents and has been contracted by the Department of Advanced Research Projects Agency (DARPA) for the Pentagon's Immune Building program to address threats of bio-terrorism in air handlers.



Technology: Advanced UV Systems (AUVS)

- The AUVS patented technology and design is based on an innovative UV enhancement or “**photon multiplication**” technology that permits the use of relatively low power UV sources to achieve high microbial kill levels. This technology permits the creation of very intense, highly uniform UV doses without increasing the input power. The approach is analogous to that of a microwave or a laser cavity, a photon trap.
- Reflective cavity technology is designed to assure that UV energy reflects to every location in the cavity from every direction. No shadows and equal kill anywhere within the chamber.
- Provides over a ≥ 4.5 log kill in 45 seconds for C-Diff Spores



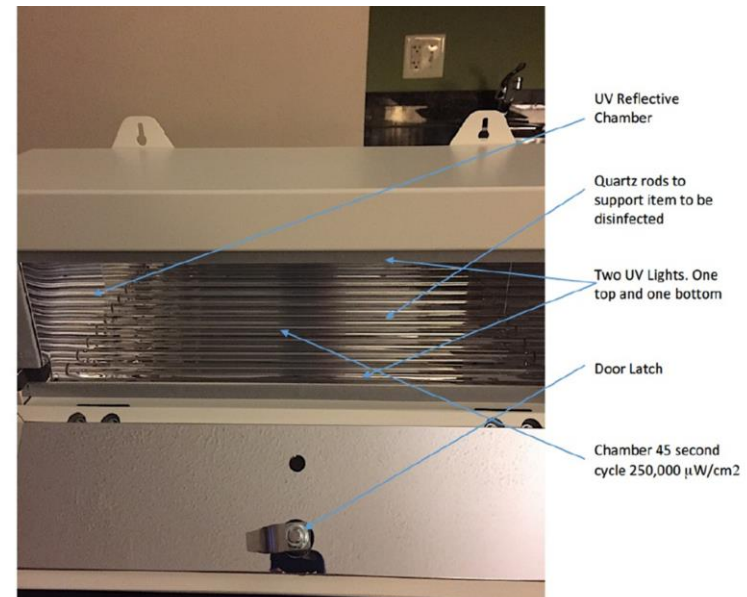
Product Information

Specifications:

- Size 20" wide x 10" deep x 9 ¾" tall weighs 9 lbs.
- UV bulbs last 16,000 lab hours over 20 years if you use it 40 times per day
- UL listed, bio-testing at FDA consulting lab
- 110 volt, ac current, normal power
- 55 second decontamination cycle
- 45 second cycle 250,000 $\mu\text{W}/\text{cm}^2$

Warranty:

- Two year parts and labor
- 7 year UV Bulbs



AUVS KR615 Germicidal Enclosure:

- Significant economic and environmental advantage over C-Diff wipes
- Much safer for user compared to chemical wipes, no residual issues related to bleach-based wipes
- Does not damage expensive and sensitive medical devices
- Low acquisition cost providing the ability to standardize throughout the facility.
- Significant pathogen kill in less than a minute according to FDA consulting independent lab testing. ≥ 4.5 Log for Clostridium Difficile Spores in 45 seconds
- ECRI Institute gave top rating AUVS KR615 Countertop Germicidal Enclosure

Value

- Necessary part of hand hygiene program
- Fill gaps in current infection prevention protocols
- Provides an environmentally friendly alternative, no waste
- Decontaminates staff personal items prior to going home
- Positive impact on incidence of hospital acquired infections
- Insulate hospital from lost revenue reimbursement



AUVS
ADVANCED ULTRA-VIOLET SYSTEMS

Safety Net



Solutions that save lives.




Halosil™
INTERNATIONAL

AUVS
ADVANCED ULTRA-VIOLET SYSTEMS