



# Halo Disinfection System<sup>®</sup>

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

- HaloMist<sup>™</sup> All Purpose Disinfectant
- HaloFogger<sup>®</sup> Dry-Mist Dispensing Devices

## Safety Net Sales Meeting

December 2018

# Most Effective, Most Affordable

- Halosil International, Inc. pioneered the concept of whole-room surface disinfection using “dry mist” hydrogen peroxide fogging.
- In 2013 the Halo Disinfection System® met the rigorous efficacy and safety requirements of the U.S. to receive the EPA’s first registration of a 99.9999% (6-log) kill of *C. difficile* spores in an entire room using fogging.
- HaloMist™ Disinfectant, applied with the HaloFogger®, eliminates a broad spectrum of pathogens that cause infection and disease including spores, bacteria, viruses, and fungi.
- HaloMist disinfectant is EPA registered to use as both a “dry mist” fogging solution and as a wet sprayed anti-microbial disinfectant and fungicide.
- Priced far below comparable whole-room technologies, the Halo Disinfection System is the most effective and affordable whole-room surface disinfection system on the market today.

## Key Facts for *C. difficile*

### ***C. diff* continues to be the infection that challenges acute and longterm care facilities more than any other infectious disease<sup>1</sup>**

- The average cost for CDI case management was \$42,316 and average CDI-attributable costs per case was \$21,448 (in 2015 US dollars).
  - 90% CI: \$39,886 - \$44,765 and 90% CI: \$21,152 - \$21,744, respectively
- Hospital-onset CDI-attributable cost per case was \$34,157 which was 1.5 times the cost of community-onset CDI at \$20,095
  - 90% CI: \$33,134 - \$35,180 and 90% CI: \$4,991 - \$35,204, respectively
- The average length of stay (LOS) for CDI inpatient treatment was 11.1 days, and incremental LOS was 9.7 days
  - 90% CI: 8.7 – 13.6 and 90% CI: 9.6 – 9.8, respectively

<sup>1</sup> “Cost of hospital management of Clostridium difficile infection in United States—a meta-analysis and modelling study”  
Shanshan Zhang, et al. BMC Infectious Disease, 2016; 16(1): 447

## Key Facts for *C. difficile* (Cont'd)

- Total annual CDI-attributable cost in the US is estimated \$6.3 Billion<sup>1</sup>

*Range: \$1.9–\$7.0 billion*

- Total annual CDI hospital management required nearly 2.4 Million<sup>1</sup> days of inpatient stay

*Represents about 2 Million incremental days of stay for healthcare acquired *C. diff**

- 29,000 individuals in the U.S. die from healthcare acquired *C. diff* annually

*Represents about 35-40% of all HAI deaths in the U.S.*

The Hospital ROI: For every *C. diff* HAI that is avoided, \$34,000 of potentially unreimbursed care is also avoided, and the bed is freed up almost 10 days earlier

<sup>1</sup> “Cost of hospital management of Clostridium difficile infection in United States—a meta-analysis and modelling study”  
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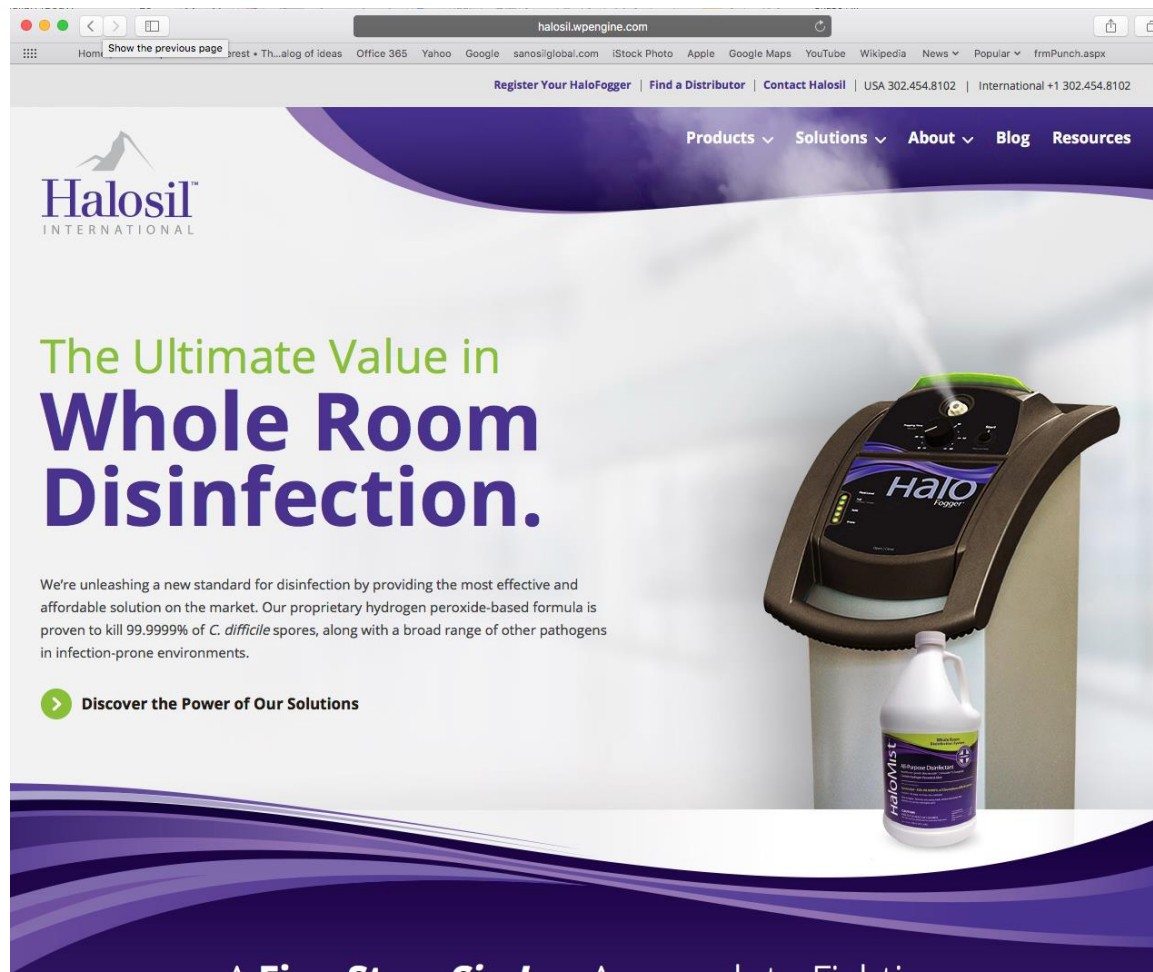
# Competition for “Dry Mist” Customers

## What Other “Dry Mist” Product has a Whole Room *C. diff* Kill Claim?

- TOMI Steramist only competitor with real fogging claims:
  - Tomi Environmental - \$60,000 (vs HDS \$10,000 - \$15,000); heavy maintenance required
  - Tomi Surface -\$16,000 – handheld, does **not** have a *C. diff* claim and must **wet all surfaces** to get any claim.
- Curoxide - EPA registered disinfectant with two fogging claims:
  - For a 99.9% (3 log) kill of Pseudomonas and Staphylococcus aureus.
- Clorox 360 - No *C. diff* kill claim.
  - Glorified electrostatic sprayer technology = spray, not whole room claims.

# What's New at Halosil?

- **Website** – Redesigned website will be launched in December, 2018  
Can view it at <http://halosil.wpengine.com/> until it is “live”



# New Product Development at Halosil?

- **Digital Timer on HaloFogger**
  - The timer facilitates more accurate control of the fogging time.
  - The digital timer is mechanically superior to the analog potentiometer.
  - The design is sleeker.
- **Inline Filter added to Internal Pump Assembly**
  - Prevents MOST clogging issues
- **New Compressor Dampener material**
  - In response to issues with dampener pads “melting”
- *All new production HaloFoggers will have these latest upgrades. All orders fulfilled with analog units until current inventory is exhausted.*
- **ATI Hydrogen Peroxide Meter**
  - Private labeled meter for H<sub>2</sub>O<sub>2</sub> vapor level – “HaloSense”
  - Easier and safer to operate

# HaloSense™ Hydrogen Peroxide Meter

## Included in kit:

- HaloSense Portable H<sub>2</sub>O<sub>2</sub> Meter
- Two D-cell NiMH Batteries
- Sampling Wand
- Sensor Keeper
- Flow Meter
- Storage Case
- USB Cable
- Universal Battery Charger





# Introduced 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
- HaloLog is standard on all new production HaloFoggers.



# Introduced the HaloPortal™

Permanently installed nozzle assembly for HaloFogger® FLX and EXT models



Halosil initiated the “**Penn State Project**” – many questions are still open. However, the findings point to a very strong effect of humidity control on both efficacy and turnaround time.

- Beginning relative humidity must be below 50% to achieve the efficacy claims.
- Lower beginning humidity promotes the evaporation of the HaloMist droplets and will lead to higher gas concentrations, which makes the product more efficacious.
- Rapidly decreasing the humidity inside of the room after fogging will drastically cut down decomposition time. The faster that humidity is lowered, the faster hydrogen peroxide will break down.

# Dehumidification and the Halosil Power Module *(Cont'd)*

- A standard dehumidifier must become an integral part of the HDS.
- The Power Module will power the dehumidifier until the room is below 50% relative humidity. Then the HaloFogger is started (which will automatically turn off the dehumidifier) manually.
- Once the HaloFogger stops dispensing, the Power Module will automatically power up the de-humidifier to expedite the decomposition.
- The effect of the standard dehumidifier is such that it can be started right away without affecting efficacy. (This is how we tested for the EPA)

# Premier GPO

- Halosil's contract with Premier is about to enter the second of its three years
- Contracted Pricing for Premier Member Hospitals, LTC facilities and other healthcare entities is almost always higher than Halosil's "U.S. Reference Price", but you control prices lower than the Contracted Pricing levels.
- **Knowing whether facilities you're about to pursue are Premier Members is VERY IMPORTANT!!**
  - *Your costs can change when selling to them due to Premier fees and, in some cases, marginal revenue sharing with Halosil.*
- We have not yet seen any specific marketing plans by our distributors towards Premier Members even though the HDS is just one of two "Premier approved" true whole room disinfection systems (there are also two UV system vendors)

# Account Registration Program

- Protects your efforts to sell Halosil products throughout the sales cycle
  - During prospecting and demo stage
  - During any RFQ process
  
- Assists Ron with providing Halosil with the required monthly “Sales Forecast”
  
- Provides Halosil with a window into Distributor sales activity and pipeline

# Halo Disinfection System - Success Stories

## OSF – Peoria, Illinois



### **Background:**

600 bed hospital with significant CDI population

A high Hospital-Acquired Condition (HAC) score was being penalized by CMS - ***\$2M not reimbursed***

### **The Sale:**

Began with the CEO

Bought 6 HaloFoggers, use 5, one is a spare

# Halo Disinfection System – Success Stories

## OSF – Peoria, Illinois



OSF Saint Francis Medical Center C. diff Data				
Fiscal Year (Oct-Sept)	2015	2016	2017	2018 (Only 11 months)
Hospital Onset C. diff Rate	10.40	11.28	12.31	9.75
Hospital Onset- Number of Cases	--	184	216	163

EVS averages 25 Halos uses per week. Using in C. diff occupied rooms upon transfer or discharge of patient

**“We see the Halo as a very critical part of a bundled approach to C. diff reduction along with our Ministry wide C. diff playbook efforts.”**

- Susan A. Simoncini, BSN, RN, CIC



- When Beebe began researching the use of whole room disinfection in 2016, an inter-disciplinary team was addressing the *C. difficile* rates at Beebe. At that time Beebe's rates were 3-times the national average as reported on the CMS website. Currently, the SIR rate of *C. difficile* for Beebe is at 0.85, a rate that is well below the CMS target rate of 1.

**“There are several initiatives that have helped Beebe in achieving this milestone and I am a convinced the use of the Halo System has been a major contributor.”**

*Tim Gwaltney, EVS Director*

- Beebe will implement Halo Disinfection System® in 5 ORs in new outpatient surgery center using the HaloPortal™.

# Halo Disinfection System – Success Stories

## DaVinci Surgical Robotics



- Da Vinci Surgical System is a **robotic surgical system made by the American company Intuitive Surgical.**
- Da Vinci has purchased 30 Halo Disinfection Systems® for use in nationwide surgical training centers where training is done on swine.

### **Your Opportunity:**

Hospitals and Surgical Centers with da Vinci or other surgical robots!

The Most Effective,  
the Most Affordable...

Questions?

Thank you!

