

# Salama Pathogen Management Solutions

Your Providers for  
Sustainable Pathogen  
Management





# Applying Lessons Learned in Risk Management

- Salama LLC is dedicated to providing sustainable pathogen management solutions to support hospitals and Ambulatory Surgical Centers (ASCs) to take the next step in infection prevention.
- Healthcare-associated infections (HAIs) are healthcare complications linked with high morbidity and mortality.
- Each year, about 1 in 25 U.S. hospital patients is diagnosed with at least one infection related to hospital care alone; additional infections occur in other healthcare settings.
- Many HAIs are caused by the most severe and urgent antibiotic-resistant (AR) bacteria and may lead to sepsis or death.
- Most air purification technologies in hospitals are HVAC-based and focus on Cubic-Feet per minute or Air changes per hour.
- Add-on technologies (UVC lighting and Bipolar Ionization) are being touted as productive, but don't work as desired and are considered harmful, inefficient, or ineffective.
- The technology we most often employ, ActivePure, is active rather than passive.



# Applying Lessons Learned in Risk Management

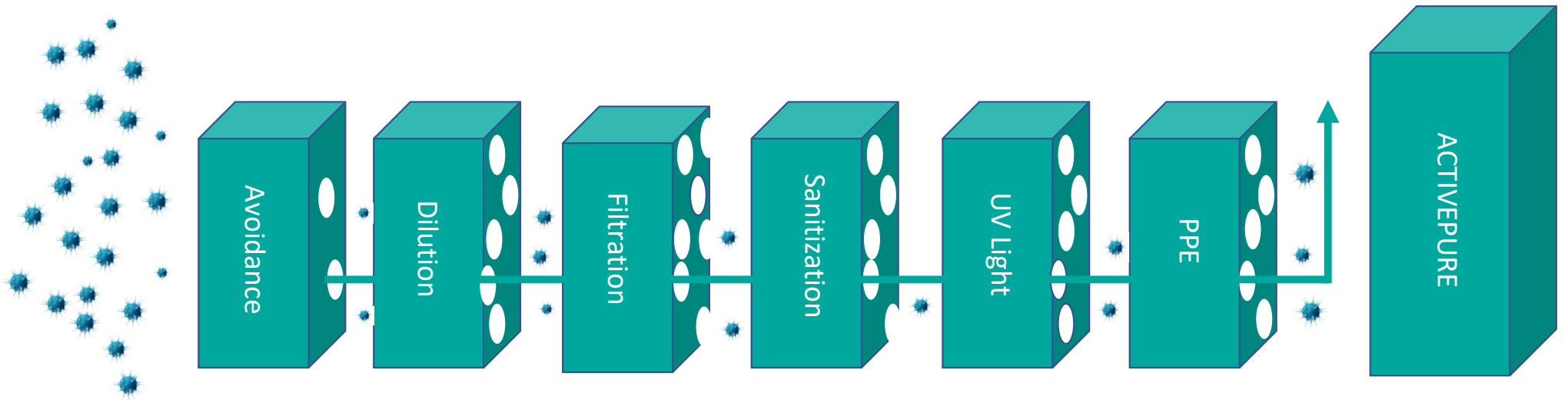
- It creates molecules introduced into an environment where patients and employees live and work.
- These molecules will neutralize the surface and airborne pathogens 24/7/365. We have a wealth of laboratory and real-world test results that we are only too happy to share with you that support our claims.
- The technology is Photocatalytic Oxidation (PCO) which scientists at NASA Research Partnership Center created in the mid-1990s to reduce Volatile Organic Compounds (VOCs) on the International Space Station.
- ActivePure has continuously improved and upgraded the technology.
- Today's patented ActivePure Technology is Advanced Active Photocatalytic Oxidation (AAPC.)
- ActivePure purifies the air, but it is not a standard air purifier.
- ActivePure is an active surface and air disinfection technology that creates proactive protective molecules which fill the space.
- Instead of waiting for harmful pathogens to enter our unit and filter it, we continuously fill the targeted space with molecules, whether a pathogen is present or not.

## Our Healthcare Initiative - Bringing effective tools to the healthcare industry to combat HAI's, bacterial contamination and cross-contamination.

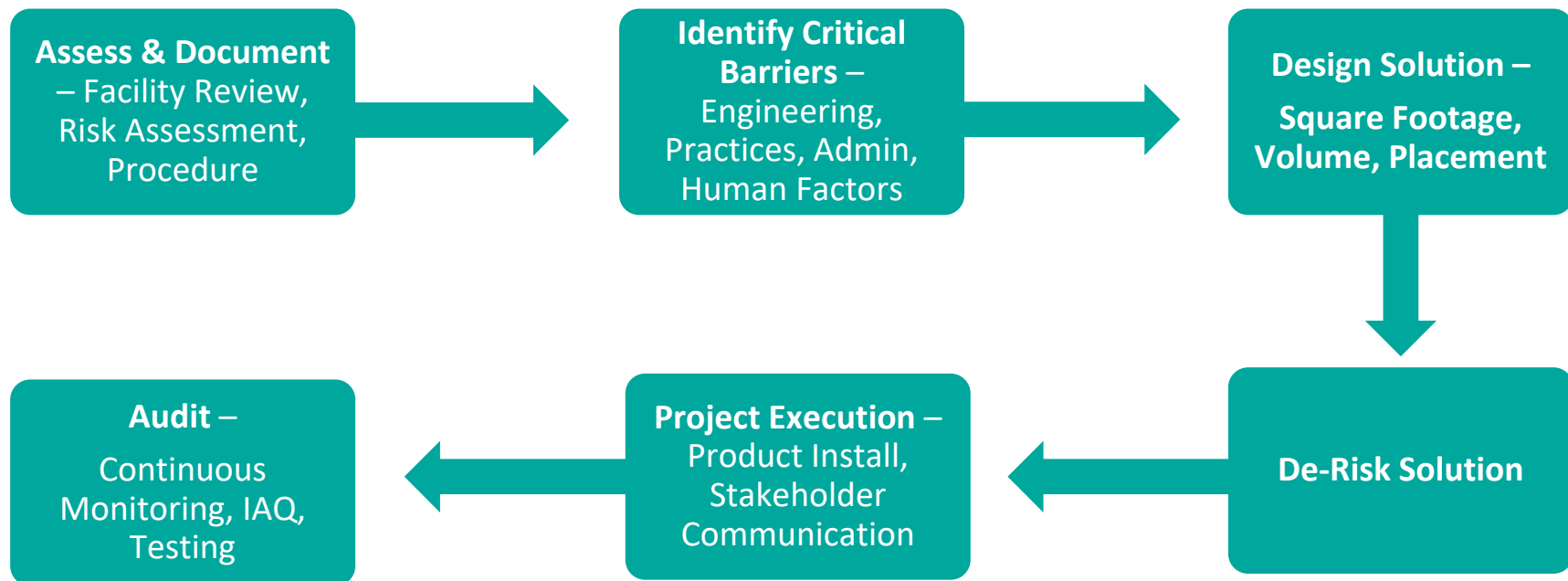
- Salama LLC is dedicated to providing sustainable pathogen management solutions to assist hospitals and Ambulatory Surgical Centers (ASCs) take the next step in infection prevention.
- Healthcare-associated infections (HAIs) are healthcare complications linked with high morbidity and mortality. Each year, about 1 in 25 U.S. hospital patients is diagnosed with at least one infection related to hospital care alone; additional infections occur in other healthcare settings. Many HAIs are caused by the most severe and urgent antibiotic-resistant (AR) bacteria and may lead to sepsis or death.
- Most air purification technologies in hospitals are HVAC-based and focus on Cubic-Feet per minute or Air changes per hour. Add-on technologies (UVC lighting and BiPolar Ionization) are being touted as productive, but either don't work or are downright harmful. These slow technologies do not effectively address the new threats that disproportionately target healthcare.
- The technology we most often employ, ActivePure, is active rather than passive. It creates a supercharged particle that is introduced into an environment where patients and employees live and work. This particle will neutralize the surface and airborne pathogens 24/7/365. We have a wealth of laboratory and real-world test results that we are only too happy to share with you that support our claims.



## Not All Barriers are Equal – Defense in Depth

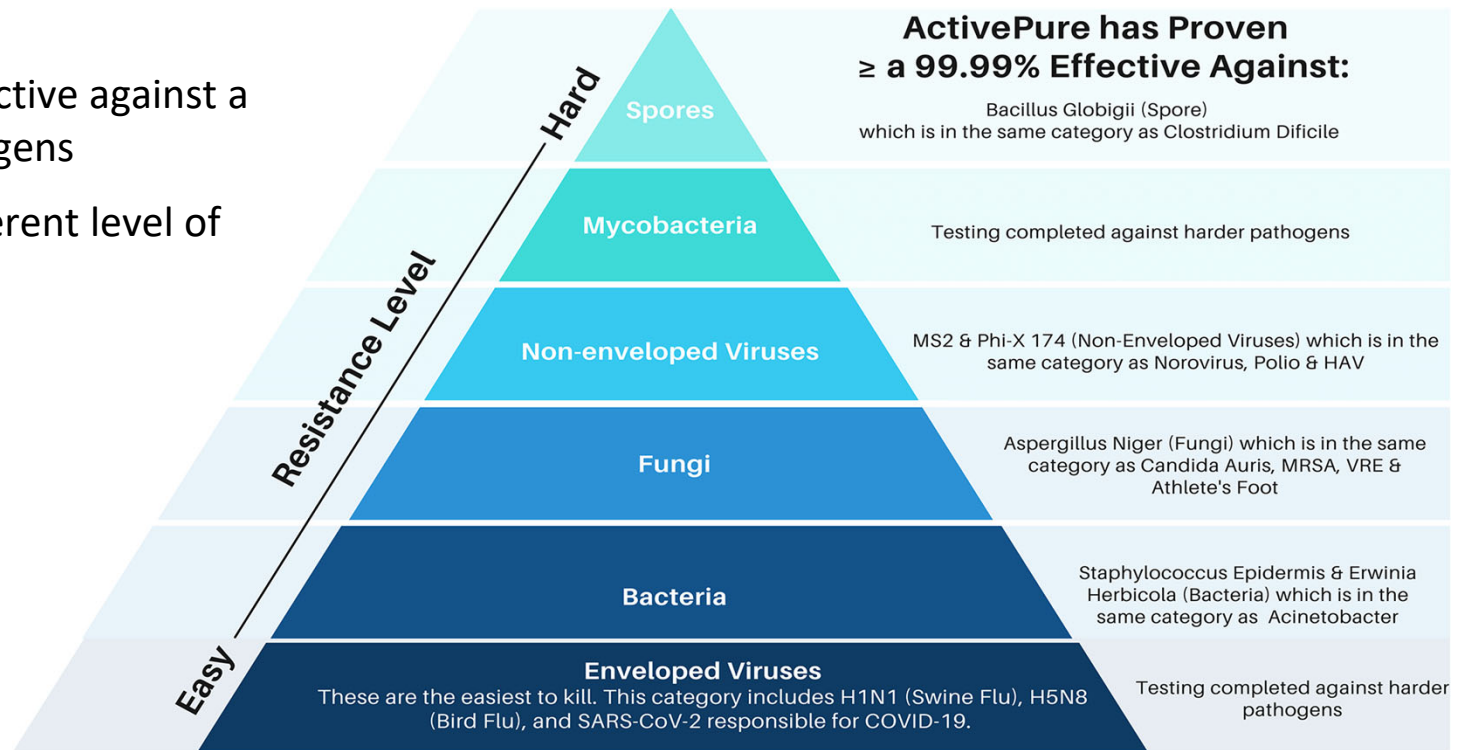


## Our Approach to Pathogen Management



# Hierarchy of Pathogens

- ActivePure is proven effective against a broad spectrum of pathogens
- Each pathogen has a different level of resistance



## ActivePure Tested Against:

- SARS-CoV-2  
(the virus that causes COVID-19)
- Staphylococcus aureus
- Aspergillus niger endospores  
(toxic black mold surrogate)
- H1N1 Influenza (Swine Flu)
- H5N8 Influenza (Bird Flu)
- MRSA
- Bacillus globigii  
(C. difficile & anthrax surrogate)
- MS2 Bacteriophage – RNA Virus
- PhiX-174 - DNA Virus
- *Erwinia herbicola* (Gram -)
- *Listeria monocytogenes*
- Murine norovirus
- *E. coli*
- *Botrytis cinerea* (fungus)
- *Salmonella enterica* (bacteria)
- *Sclerotinia sclerotiorum* (fungus)
- *Legionella pneumophila* (bacteria)
- *Aspergillus versicolor* (fungus)
- *Clostridium difficile* (endospore)
- Volatile Organic Chemicals (VOCs)\*



## Recent 3-Month Study in a Hospital ICU



- ICU faced ventilation challenges due to COVID-19 patients
- Concerns of an increase in Healthcare-Associated Infections (HAIs)
- Facility had been using a UV disinfection device

### RESULTS- End of Original 2- Month Trial

- 96.19% statistically significant reduction in total aerobic counts for bacteria and 98.94% for fungi
- 96% reduction in total test sites with >500 CFUs of bacteria on surfaces
- 85% reduction in airborne bacteria count
- 73.3% reduction of pathogens (MRSA) on surfaces
- 100% Statistically significant reduction in HAIs (MRSA associated) rate

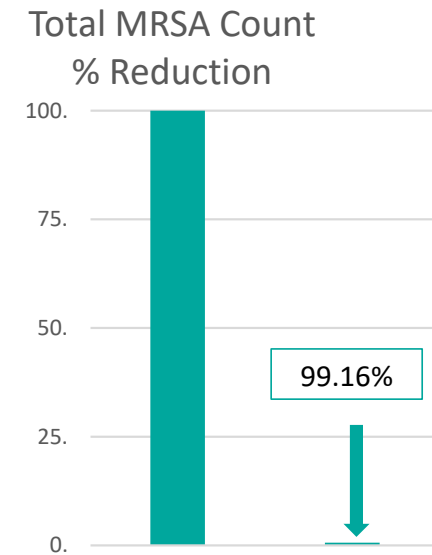
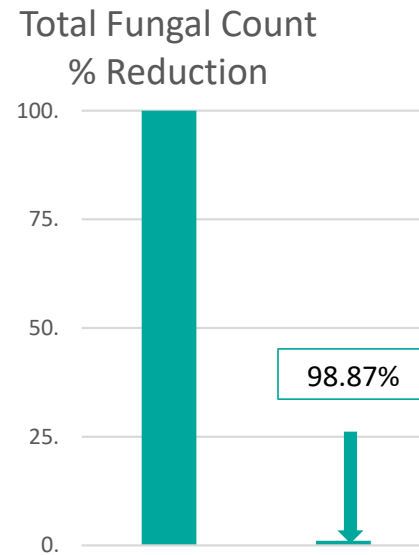
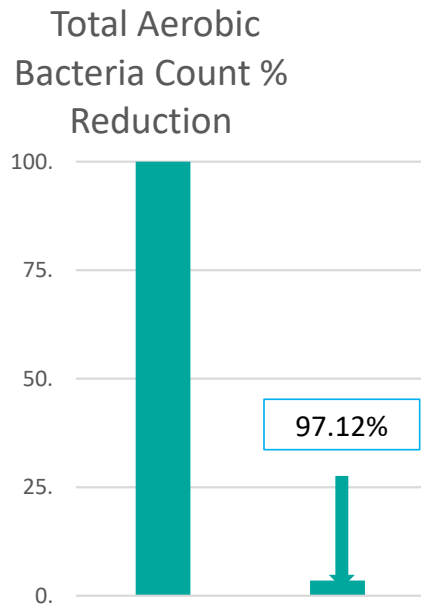
### SECONDARY GOAL - Remove UV Device for Month 3

- 96.01% statistically significant reduction for bacteria between the first and third tests.
- 96.83% for fungi between the first and third tests.
- 95.87% reduction of MRSA between the first and third tests.
- Achieved a 98% reduction where >500 CFUs of bacteria on surfaces between the first and last test.

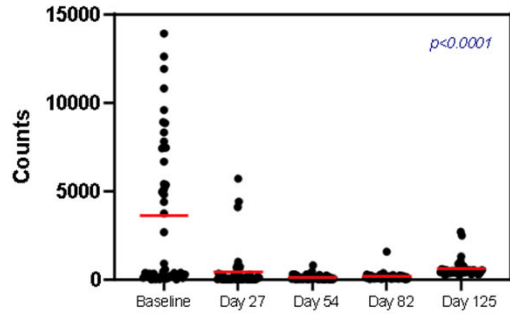
### SUMMARY

- Hospital extended the test after two months to evaluate the potential to eliminate their expensive UV device
- Overall microbial burden has been significantly reduced from baseline despite the uptick in patient census and acuity due to the burden of COVID-19 patients from the baseline period
- Statistically significant decrease in MRSA HAI rates in the trial period compared to a similar period a year ago
- Statistically significant decrease in *C. difficile* HAI rates in the trial period compared to a similar period a year ago
- ActivePure devices add a significant force multiplying effect in supporting existing practices in Hospitals.

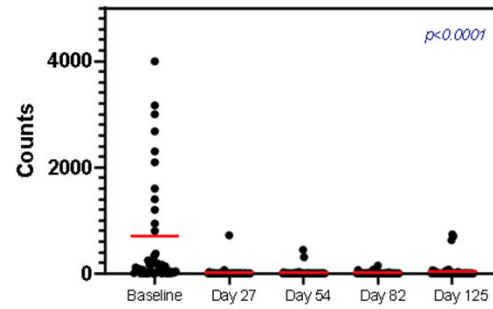
## ICU – Surfaces - First and Last Test Result Comparison



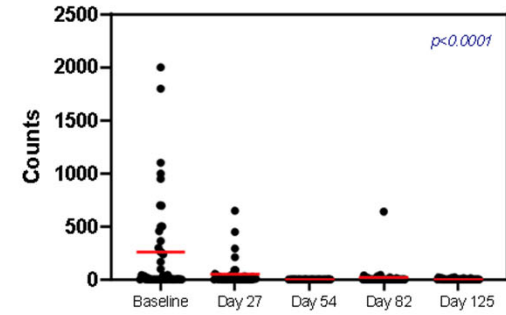
**Total Aerobic Count**



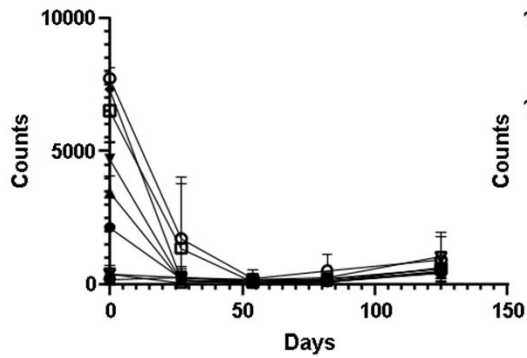
**Total Fungal Count**



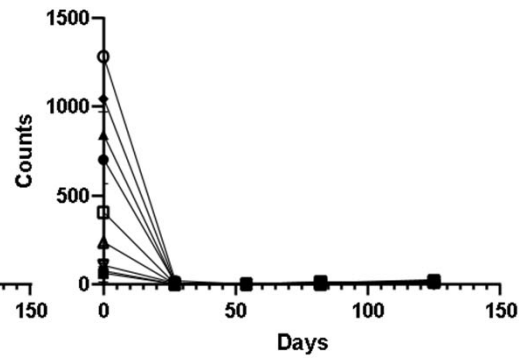
**Total MRSA Count**



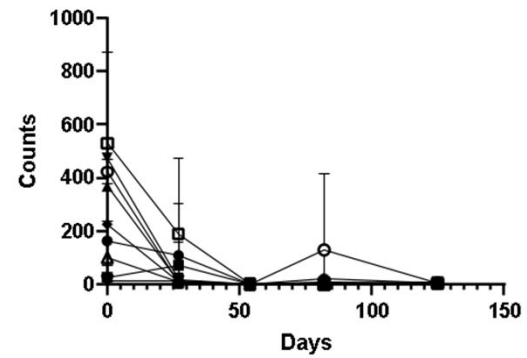
**Total Aerobic Count**



**Total Fungal Count**



**Total MRSA Count**

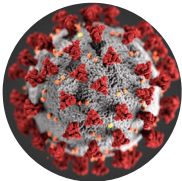


- Rm 265
- Rm 267
- ▲ Rm 271
- ▼ Rm 263
- ◆ Rm 261
- Rm 278
- Rm 273
- △ Nurse Station 1
- ▽ Nurse Station 2

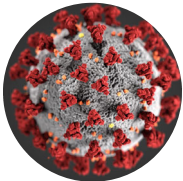
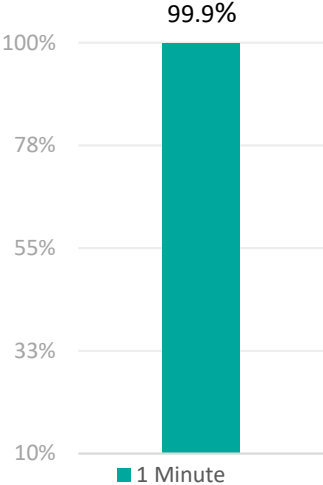
# Laboratory Testing Data



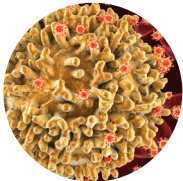
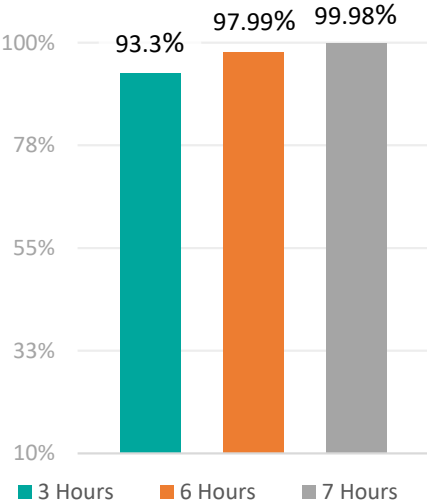
# Device Testing Against SARS-CoV-2 & RNA/DNA Viruses



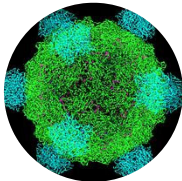
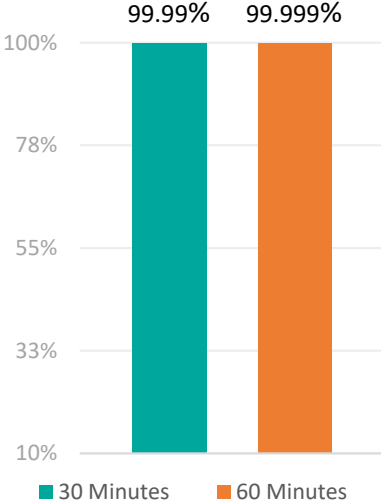
SARS-CoV-2 Airborne



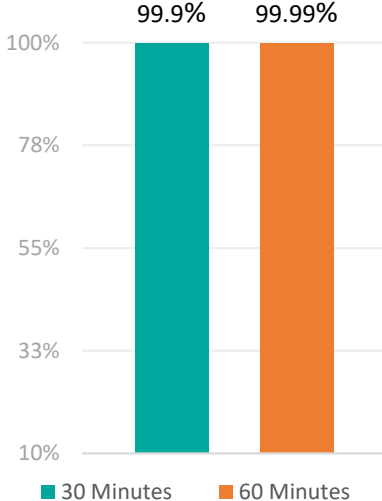
SARS-CoV-2 Surface



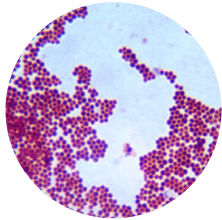
RNA & DNA virus Airborne



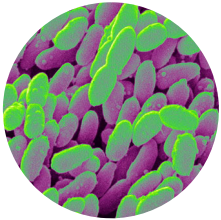
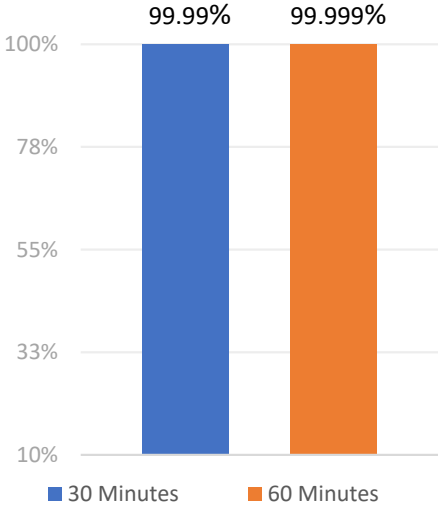
PHI-X174 Bacteriophage  
DNA virus Airborne



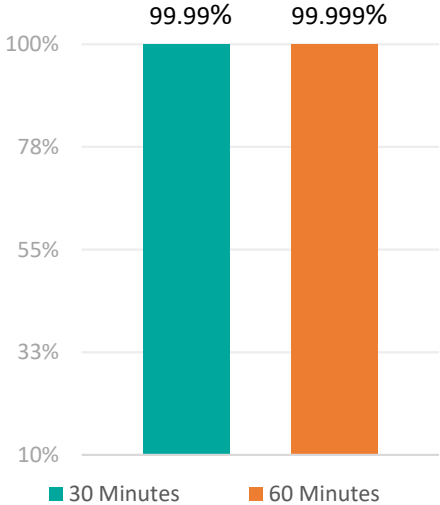
# Device Testing Against Bacteria



Staphylococcus Epidermis  
Bacteria - Airborne



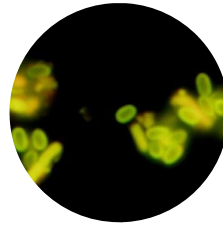
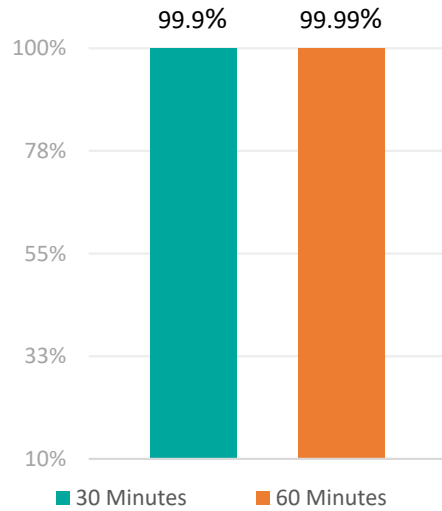
Erwinia Herbicol Bacteria -  
Airborne



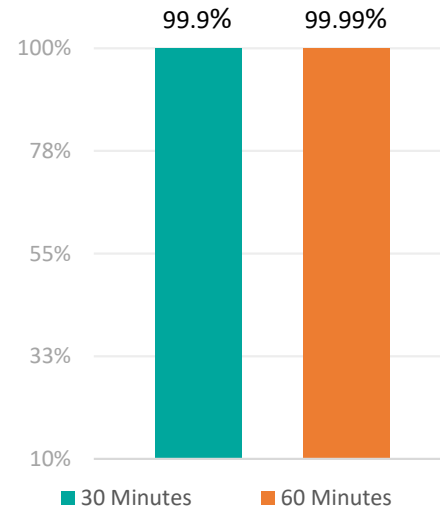
# Device Testing Against Molds



Aspergillus Niger - Airborne



Bacillus Globigii - Airborne





## Why Use Our Solution?

- 1) 25 years of Serious Incident and Fatality reduction experience
- 2) We address the pathogen (hazard) and the failure mode (threat) to mitigate the consequence
- 3) Documented impact against reducing pathogens in indoor spaces deactivating pathogens in the air, commonly touched surfaces, and floors
- 4) We treat your entire exposure, People, Assets, Environment, and Reputation
- 5) Our engineered products are backed by science and demonstrate real work application
- 6) We manage your change in collaboration. We educate and train your staff as well as strategic stakeholders
- 7) We can test our solution in your facility and create a benchmark for future testing

