

White Paper: The Role of KLEAN in Combating Healthcare-Associated Infections (HAIs)

Executive Summary

Healthcare-Associated Infections (HAIs) remain a critical challenge for hospitals and clinics worldwide, leading to increased patient morbidity, extended hospital stays, and rising healthcare costs. Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridioides difficile* (C. diff) are two of the most prevalent and difficult-to-manage infections in healthcare settings.

KLEAN's Mission is to minimize infection risk by eradicating, preventing, and controlling the spread of Bacteria and Fungi. KLEAN reduces/eliminates HAIs thus saving lives, improving patients/employee's health while improving financial performance by reducing insurance claims while reducing the need for some medications, labor, and supplies.

The Challenge of Healthcare-Associated Infections

MRSA - According to a John Hopkins May 2019 Study *Staphylococcus aureus* bloodstream infections are responsible for 36,000 US deaths annually. MRSA is known for its antibiotic resistance, making it particularly dangerous in hospital settings.

C. diff - According to the same John Hopkins May 2019 Study C. diff is responsible for 37,000 US deaths annually and most occur within 30 days of diagnosis. C. diff infections often result from prolonged antibiotic use, leading to severe diarrhea and colitis.

Candida Auris (Fungus/Yeast)

The CDC has issued a warning regarding a difficult-to-treat multi-drug-resistant fungus that has spread throughout U.S. hospitals & nursing homes. In findings researchers said the fungus, *Candida auris* (C. auris), has gotten even more dangerous, identifying instances where it was immune to all existing medications and is associated with high mortality. C. auris can survive for months on surfaces and some common disinfectants do not work. The CDC stated that the fungus C. auris is becoming a dangerous public health care threat. The CDC further stated that 30% to 60% of infected people have died from C. auris. It can spread from person to person, or from interactions with contaminated surfaces.

Challenges (*Fear Factor*):

Reducing HAI cases like MRSA and *Clostridioides difficile* (C. diff), is one of the biggest challenges for healthcare organizations. HAIs negatively impact patient health, re-admission rates and associated costs, patient satisfaction scores, a hospital's reputation, and reviews easily available to the public.

- Infection prevention hinges on the battle against invisible microbes
- There has been nothing more destructive to humanity than infection.
- Scientists (9.29.22) are beginning to identify links between 35 types of **cancer and fungi**.
- There was 14% increase in MRSA bacteremia between 2020 and 2021 due to Covid focus.
- **Persistence of clinically relevant bacteria on dry inanimate surfaces. KLEAN tested, effective for >90 days.**
 - C.diff - 5 months
 - Escherichia coli - 1.5 hours → 16 months
 - Pseudomonas aeruginosa - 6 hours → 16 months
 - Salmonella typhimurium - 10 days → 4.2 years
 - Staphylococcus aureus, including MRSA - 7 days → 7 months.

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- Superbugs are on the rise as disinfectants have reached their evolutionary peak of potency.
- Lawyers are beginning to look around for their next big payday which could be HAI-related litigation.
- Antibacterial, Antifungal & Antimicrobial drugs are part of the problem as they are becoming resistant due to overuse. WHO reports Drug-resistant bacterial infections are estimated to directly cause 1.27 million deaths globally and contribute to approximately 4.95 million deaths every year?

Solution - KLEAN has the long-term HAI Solution Today! KLEAN's Mission is to minimize infection risk by eradicating, preventing, and controlling the spread of Bacteria and Fungi. Reduced HAIs frees up beds & staff ensuring a safe environment for patients and employees. A safe, clean hospital environment is critical to quality of care, patient experience, and employee morale. KLEAN has a statistically proven solution that reduces infections while decreasing costs associated with HAIs.

Conclusion

KLEAN represents a transformative advancement in the fight against HAIs. Its proven efficacy, safety profile, and cost-effectiveness make it an indispensable tool for hospitals aiming to protect patients, improve outcomes, and reduce operational costs. By adopting KLEAN, healthcare facilities can take a proactive stance against MRSA, C. diff, and other dangerous pathogens, fostering a safer environment for both patients and staff.

Efficacy	Products simplicity - Effective against surface contaminants Complete coverage including hard-to-reach areas. Minimum, 90-day surface protection - Consistent repeatable results
Safety	First line of defense - Safe to use in occupied spaces Minimal disruption during treatments - No odors, chemicals, or solvents Once dry, reduces risk of cross and recontamination
Cost	Pricing is by the square foot treated. Price drops on larger projects Healthcare requires quarterly treatments, Office buildings semi-annually. No additional costs between treatments if normal cleaning protocols followed
Benefits / ROI	KLEAN performs treatments. Minimal support required by customer. ROI-Saves lives, improves health, financial performance, and reputation. Reduces the use of antibiotics

For more information on KLEAN's products and case studies, please contact KLEAN's project management team John Minyard email John@fantailservices.com or call 559.410.1933 or visit their website: thekleancompany.com