

# Healthcare Associated Infections >

## INTRODUCTION

It is an unfortunate fact that hospitals and healthcare facilities are a breeding ground for infections. As they are already coping with existing health conditions, patients are highly susceptible to additional disease. Even diseases that would be considered minor in healthy people can become critical in those who are immune compromised, in critical care, or recovering from surgery. For example, patients who acquire infections from surgery are 60% more likely to require readmission to intensive care and are twice as likely to die. According to the US Centers for Disease Control and Prevention, these infections cost the healthcare industry more than \$30 billion annually.



## HEALTHCARE CHALLENGE

Cleanliness and hygiene are important in any public place, but in hospitals and places of care it is critical as the spread of germs endangers individuals who are already at risk. **Healthcare-Acquired Infections (HAIs)**, also known as nosocomial infections, are those acquired while patients are receiving care for medical or surgical conditions. Unfortunately, HAIs are not uncommon: approximately 1 in 25 people admitted to a hospital in the United States will suffer a health care-associated infection.

Hand hygiene is still the primary method of preventing cross-contamination, but hospitals are looking at other ways to lower HAI rates. Technology is playing a greater role.

- Automated disinfection systems such as UV and white light
- Sensors to monitor hand cleaning activity and filters

- Voice activated equipment and monitors
- Additional non touch equipment and door openings
- BMS management and improved control of airflow, temperature, and humidity
- Use of robots
- Antimicrobial surfaces

US research<sup>1</sup> reported in 2020 showed a 36% decline in HAIs that had antimicrobial surface coating in both patient rooms and common areas. Additionally, the total bacterial colony forming units at the hospitals declined by 79% and 75%, respectively; the percentages of clinically relevant pathogens also declined significantly for both hospitals.

## ANTIMICROBIAL SOLUTIONS

Antimicrobial products can be defined as substances that works to destroy or inhibit the growth and reproduction of bacteria, viruses, microbes and mold. The main classes of antimicrobial agents are 1) disinfectants (such as UV light and bleach), which kill a wide range of microbes on non-living surfaces to prevent the spread of illness; 2) antiseptics (which are applied to living tissue and help reduce infection during surgery); and 3) antibiotics (which destroy microorganisms within the body).

The fourth class focuses on everyday products that can be protected using integrated antimicrobial technology. Unlike disinfectants, which provide a limited residual activity, this type of antimicrobial technology works to continuously reduce the number of microbes on a treated product throughout its expected lifecycle.

## What is antimicrobial technology?

Products offering antimicrobial capabilities have an additive included that contains an appropriately registered antimicrobial agent. Integrated at the manufacturing stage, it provides around-the-clock protection from the growth of microbes. These antimicrobial additives will remain present and active for the expected lifetime of a product.

## How does the technology work?

Antimicrobial technology typically contains one of four active ingredients:

- Silver ion antimicrobials: suitable for a wide range of materials and applications, including medical coatings, plastics, and food-contact products
- Zinc antimicrobials: a broad spectrum antimicrobial that is commonly favored for its antifungal properties
- Copper antimicrobials: a preservative and popular for medical products and surfaces
- Organic active ingredients such as Quaternary Ammonium Compounds (QUATs) and fungicides (Thiabendazole).

## Are antimicrobials all the same?

Though they all influence microbes, the way they function is not always the same.

- Protein damage to microbes causes the failure of essential functions such as energy production
- Disrupting the microbe's membrane causes potentially catastrophic structural failure
- Increasing levels of reactive oxygen causes damage to the microbe
- Disrupting the genetic material of bacteria blocks its ability to replicate
- Preventing the formation of biofilms, making bacteria easier to kill and less dangerous.

## Technology benefits

Products and solutions with antimicrobial technology help prevent the proliferation of product-damaging microbes that can shorten its lifespan. Stain and odor-causing microbes are also reduced, ensuring the product remains fresher and cleaner in between cleaning. Importantly, continued washing of products does not remove the antimicrobial additive technology and it will continually inhibit potentially harmful microbes that contact the surface of the product.

- Significantly reduce bacteria – in some cases by up to 99.99%
- Proven against mold
- Effective against viruses
- Fewer microbes - Reduced cross-contamination

- Extended product functional lifetime - protection against microbial colonization and material degradation.

Tackling HAI is a critical concern for all healthcare facilities. A multifaceted approach which combines cleaning and sanitation best practice, building environment management and advanced antimicrobial technology is vital to improve patient outcomes and reduce repeat hospitalizations.

Source:

<sup>1</sup> <https://academic.oup.com/cid/article/71/8/1807/5610270>



*Medical grade Category 6A patch cord with antimicrobial technology.*



*Antimicrobial Contura wall plate.*

[www.molex.com/markets/healthcare/](http://www.molex.com/markets/healthcare/)