

Breakthrough in the abatement of hospital bacteria!

Lokeren (Belgium) – A large scale clinical trial at the City Hospital of Lokeren demonstrates that a new generation of cleaning products efficiently controls multiple hospital bacteria. On average, 80% less MRSA and other pathogens were measured during several months of trial. These new cleaning products offer a sustainable alternative to resistance inducing disinfectants.

By means of a 6 month clinical trial, collaboration between the City Hospital of Lokeren, Ghent University and the company Chrisal SA, (specializing in microbiological cleaning), has led to a breakthrough in the abatement of hospital bacteria. During this trial, a new generation of cleaning products, based on probiotic bacteria, was assessed to provide a solution to the immense problem of bacterial resistance to chemical cleaning and disinfection products.

Beyond antibiotic resistance

In recent years, governments have rightfully launched campaigns to discourage the use of antibiotics. The resistance among pathogens against these agents has increased to dramatic proportions; turning numerous infections into nearly untreatable diseases. Equally serious is the resistance these same pathogens have gained against the currently used cleaning products and disinfectants. These agents can be considered as 'antibiotics for the environment', just as 'true' antibiotics are intended for patients. Resistance against these disinfectants imposes serious problems linked to keeping a patient's environment healthy in order to prevent diseases from spreading.

Microbial management

The intention of the performed clinical trial was to evaluate the new concept of microbial management. This means turning away from general and unconditional sterility, and instead, creating a stable and safe microbial environment. Disinfection can be limited to situations in which it is absolutely necessary and reasonable. The use of microbial management will lower the biocidal pressure on pathogens which will result in less resistance among these organisms, subsequently leading to more efficient disinfectant application when needed.

Pro-biotic cleaning

In order to realize the concept of microbial management, Chrisal has developed a set of new cleaning products, PIP Healthcare, in which PIP stands for Pro-biotics In Progress. These products contain probiotic bacteria that consume all remaining soil during and after cleaning; thereby preventing any pathogen from re-colonizing the cleaned surfaces. For several months a clinical trial was performed at the city hospital of Lokeren in order to validate these products. All microbial analyses were carried out by the Laboratory of Microbial Ecology and Technology of Prof. Willy Verstraete (Ghent University) and a certified independent biological sampling company; Avecom. This clinical trail was approved by the ethics committee and resulted in some remarkable findings.

When taking regular, brand name, chemical cleaning/disinfection as control, PIP Healthcare cleaning had the following effect:

- Total number of bacteria remains equal
- Number of coliform bacteria (indicator hygiene) : Down 50%
- Number of MRSA bacteria: Down 80%
- Number of Clostridium bacteria: Down 90%

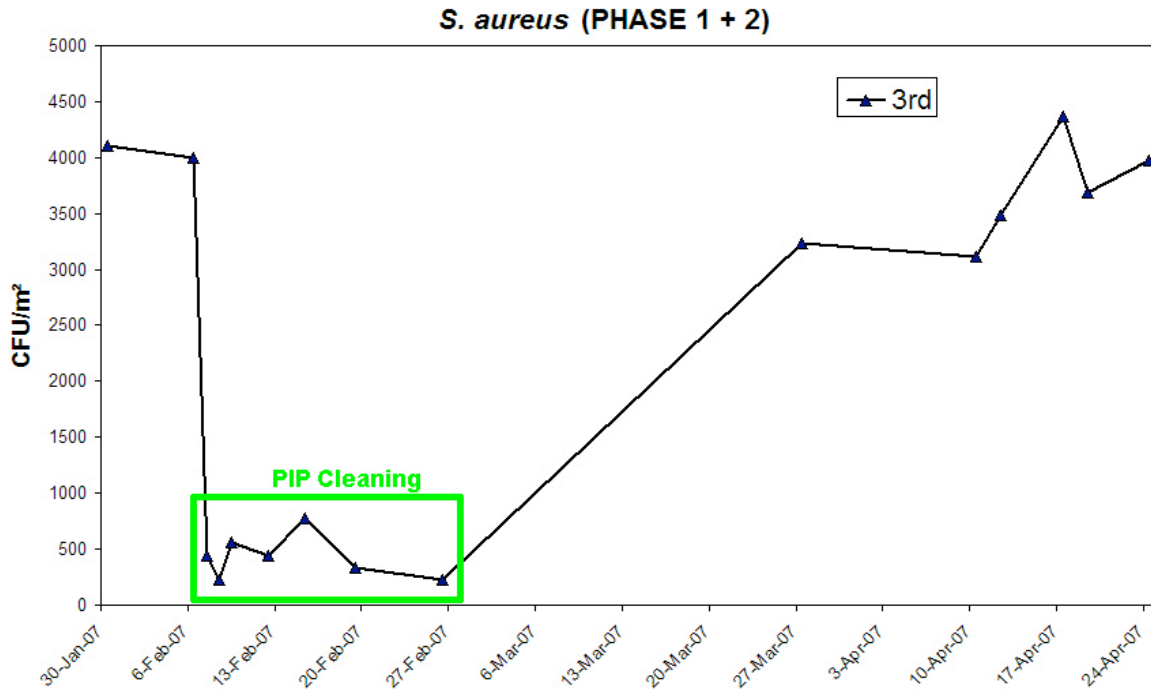
From these results it is clear that cleaning with the new generation of pro-biotic cleaning products leads to a microbiota in the environment that remains equal in size, but containing a much lower percentage of pathogens. The pro-biotic PIP bacteria replace the pathogens and create a stable and healthy microbial environment in the hospital.

Conclusion

The results obtained in the course of this clinical trail demonstrate that a new generation of pro-biotic cleaning products is capable of providing a sustainable solution to the current resistance induced by chemical cleaning and disinfection agents. A wise microbial management allows us to live in harmony with a stable and healthy microbial community, in which sterility is only necessary in a very limited number of situations.

Figures:

1. This illustration shows the number of colony forming units per square meter of Staphylococcus Aureus (MRSA) on the third floor of the hospital between January 30th and April 24th of 2007; during the clinical trial. As shown in the green frame, the floor was maintained with PIP Healthcare products. The rest of the time, regular, brand name chemical cleaning and disinfection were done. The ending of cleaning with PIP Healthcare products on February 27th resulted in the dramatic return of the MRSA bacterial colonies to a more infectious level.



2. This is a comparison of the Staphylococcus Aureus (MRSA) count in the central hall of the first floor (control floor with chemical cleaning and disinfection) and of the third floor (PIP Healthcare cleaning). Day 1 shows MRSA count just before the start of the study with PIP cleaning. Despite the less favourable starting position, the 3rd floor; with PIP cleaning, dramatically demonstrates a superior management of the MRSA counts.

