

## **DioProtection in application**

“Maximum safety“

**A field study in a retirement home chain in Hamburg (Germany) gives evidence about the DioProtection hygiene optimization.**

In Germany, about 1.5 million patients become infected annually with bacteria and virus in hospitals, clinics, retirement homes and similar facilities. For an estimated number of about 40.000 affected people, the infection results in death. Retirement and nursing homes have especially come into focus on research and practice as older people are exposed to higher infection risks. The elderly are often weakened by age-related diseases and sensitivities; their immune system is limited, their skin has lost its normal protective function, the wound healing is more difficult, diseases are accompanied by significantly more complications. Antibiotics do not help anymore because pathogens have become multi-resistant. The most well-known multi-resistant bacteria called Staphylococcus aureus (MRSA) is being transmitted through colonization of skin and wounds as well as droplet infection in the nose, throat and intestines. Infections are generally being fostered by inadequate hygiene awareness of the affected people as well as their nursing staff. External cleaning personnel often lacks awareness of possible health risks from killer viruses. The deadly danger of pathogens lurks at every doorknob, every bedstead or coat, in wet cells and of course on medical equipment. Doctors are already talking about a "health disaster" as a single micro-organism may increase up to 100 million organisms in a relatively short time under favorable circumstances. And it is very difficult to get rid of them. The order of the day would therefore be a reliable hygiene management in order to protect the elderly, their visitors and the nursing staff. But this claim is usually synonymous with additional costs for more qualified personnel. This is a vicious circle because elderly and nursing homes currently do not have any bigger financial margins. And once patients are diagnosed with an infection, the economic consequences will be dramatic.

**More hygiene without increasing costs – is that even possible?**

The Diop GmbH & Co. KG has now taken up the challenge and developed an effective system against pathogens of all kinds. This development also takes economic requirements as well as safety factors into account. With their long established, eco-friendly DioProtection system originally coming from the dental branch, even hard to reach places can be decontaminated through aerosol disinfection. The efficacy of DioProtection has been confirmed in a nursing home in Hamburg (Germany) by leading German microbiologists in an impressive way. The bacterial colonization in 25 areas could be reduced through Diosol by over 90 percent. With this new measure, DIOP closes the hygiene chain. So far, the manual scrubbing and wiping disinfection of surfaces and devices as well as the regular hand disinfection have been the two main hygiene criteria.

DioProtection consists of an aerosol generator nebulizing the antimicrobial, biocompatible disinfectant Diosol in a fully-automated way (also produced by DIOP). It is all about a hydrogen peroxide based mist whose efficacy is being enhanced by silver ions. CEO of Diop, Horst Schütz says: “Our process represents a new way of room and surface disinfection which offers an intensive, sustainable and certifiable protection against infection risks with minimum manpower.” DioProtection is already tested in rescue services, ambulances, medical practices, clinics, ambulatory surgery centers, building services, pharmacies, ventilation systems – so wherever there is a risk or presence of contamination and therefore high

demands on preventive as well as sustainable hygiene are required in order to avoid infections and diseases.

A field study to improve quality hygiene was carried out in “Amarita Seniorenpark” in Hamburg (Germany), a short-term care facility for older people. The key decision that had to be taken here was whether DioProtection could really achieve an improvement in hygiene or not. The evaluated results were unambiguously positive: In conjunction with the approach of scrubbing and wiping the premises treated with DioProtection were decontaminated to a far greater extent. Not less important in this case are the questions of practicability, tolerability and cost effectiveness. Another clear finding could be stated:

Distinct advantages over the usual established procedures (which cannot be considered satisfactory in terms of optimal hygiene due to personally justified deficiencies). In the field study it was assumed that residents frequently change their places. Therefore, the danger of pathogen proliferation during the caregiving period is tremendous. Therefore data points were purposefully determined in rooms, bathrooms, shelves and cabinets. These measuring points were examined through imitation tests (counting the number of pathogens) before and after nebulization with Diosol. Responsible for the monitoring of the investigation was the “Deutsche Beratungszentrum für Hygiene (BZH / Freiburg)” represented by Dr. Winfried Ebner (Infectiologist and Specialist for Hygiene and Environmental Medicine) on the one hand. On the other hand the study was monitored by PD Dr. A. Schwarzkopf, medical specialist for microbiology and infectious epidemiology as well as publicly appointed and sworn expert for hospital hygiene. The field study provided evidence that various bacteria and spores in 25 rooms were largely eliminated. On average, a disinfection efficacy of 75.54% was realized. The number of replication-competent microorganisms was thereby reduced significantly compared to the usual wipe technique. The nebulized locations or objects were transformed in a state that largely excludes any infection risks. It was also shown that DioProtection operated with minimum manpower. The DioProtection system can be used after a one hour course of instruction. A much more significant topic is the cost discussion or the financial factor. The Hygiene Institute Schubert (Murnau, Germany) comes to the following conclusion here:

“When the decontamination process is complete, one can no longer argue to disinfect without the DiosolGenerator and Diosol. This becomes clear when comparing the costs of disinfection in relation to the achieved level of safety and the cost savings because of a prevented outbreak.”

[www.diopgmbh.com](http://www.diopgmbh.com)

**The conclusion of the DioProtection field study in Hamburg:**

- Maximum hygienic safety with low costs and a savings potential
- Durable, secure and easy to handle system
- The ready-to-use disinfectants are biocompatible and 99.9 percent biodegradable
- Disinfection without any residues (after nebulization wiping of surfaces is not required)
- After quickly breaking down into water vapor and oxygen the disinfectants do not constitute a burden for people

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