

Improved Control of Microbial Exposure Hazards in Hospitals:

- Using an alkoxy silane-coupling agent reacted to a quaternized amine. Plueddemann was able to covalently link this novel antimicrobial directly to surface molecules.
- Speier and Malek (1) were able to demonstrate the antibacterial, antifungal, antiviral, anti-algal, and anti-protozoal activity of this surface bonded agent against a broad spectrum of microorganisms, even after repeated washings.
- Since antimicrobial activity does not involve release of the material and the material remains present at the same concentration, Gettings (3) was able to show that **resistance and adaptation do not occur**. This not only extends the predicted activity of the agent, **but minimizes the possibility of cross-linked antibiotic resistance, as well**.
- Since the antimicrobial remains chemically bonded to the surface molecules, there is a **low potential for irritational, toxic, or other human exposure consequences**.
- The modification of interior surfaces with a bound antimicrobial agent could prevent the development of microbial reservoirs in a building.
- Despite high efficiency air filtration and widespread use of a chlorine-based disinfectant fog throughout the building and its ventilation system, large number of fungi and bacteria were retrieved from the air in all areas of the hospital prior to treatment.
- Pre-treatment samplings were performed at cart height (30") with the Andersen sampler at 200 sites. The first post-treatment samplings were performed at cart height at 643 sites.
 - Pre-treatment retrievals were in a range of 721 – 2,800 CFU's/m³. Of the 209 sample sites, 122 (58%) sites produced 2,800 CFU's/m³, the upper detection limit of the sampler.
 - Post-treatment sampling during the seven months following restoration of the building produced an average of 4.1 CFU's/m³ at 643 sites. Retrievals were in a range of 0-25 CFU's/m³. Of the sample sites, 289 sites (45%) produced 0 CFU's/m³; an additional 231 sites (36%) produced retrievals in the range of 1-5 CFU's/m³.
 - The second post-treatment sampling were performed one year later (1991) at 82 sites randomly selected by floor. The sampling produced retrievals in a range of 0-9 CFU's/m³, with an average retrieval of 0.8 CFU's/m³. 40 sites (48%) produced 0 CFU's.
 - The final post-treatment samplings were performed two years later (1992) at 86 sites randomly selected by floor. The sampling produced retrievals in a range of 0-4.7 CFU's/m³, with an average retrieval of 0.4 CFU's/m³. 56 sites (65%) produced 0 CFU's.
 - Each of the 24 Bone Marrow Transplant patient rooms were negative for microorganisms during all of the post-treatment samplings.

www.HealthCareSynergy.com

More than Just Software