Background

- High-intensity narrow-spectrum light (HINSL) has been shown to inactivate a wide range of bacterial pathogens by the photoexcitation mechanism.
- Our pilot study aims to investigate the impact of the application of a 405-nanometer HINSL (Indigo-Clean™) in the reduction of Staphylococcus species in two Medical Intensive Care Unit (MICU) suites at our institution.

Methods

- Twenty contact surfaces were sampled from each of the two MICU suites.
- MICU suite 1 dimensions: 11'2" x 12'6"; ceiling height 9'1".
- MICU suite 2 dimensions: 10'8" x 13'2"; ceiling height 9'2".
- One or two samples of 60 cm² were obtained from each site using moistened swabs.
- Samples were taken at 7:00 AM, 3 days per week for 4 weeks with a total of 105 samples per week obtained from each suite.

Results

- 840 plates were analyzed over the 4-week period yielding a cumulative total of 3479 CSS.
- In week 1, 2456 CSS were identified (HINSL-Off).
- In week 2, the number of CSS decreased to 275 CSS and equaled to an 88.8% reduction.
- In week 3, the number of CSS decreased to 14 CSS and equaled to a 99.4% reduction.
- In week 4, 1234 CSS were identified (HINSL-Off).
- There was an increase from 14 CSS in week 3 to 1234 CSS in week 4, amounting to an 8714% increase in CSS (HINSL-Off).

Conclusion

- Terminal cleaning of hospital suites is an accepted method to prevent hospital-acquired infections.
- Our study revalidates that the use of HINSL as a complimentary cleaning protocol may aid in the environmental decontamination of Staphylococcus species.
- Robust studies are needed to demonstrate clinical impact on hospital-acquired infection rates with the implementation of this novel technology.

Acknowledgements

Indigo-Clean™
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References