WELLAIR
It's that important

Northwell Health evaluates WellAir's Novaerus Defend 1050 air cleaning device in a staff breakroom — results showed a substantial reduction in airborne bacterial bioburden

Testing location:

Staff breakroom in North Shore University Hospital, 300 Community Drive, Manhasset, NY 11030.

The first phase of the study (phase I) was completed from November to December 2021, and the second phase of the study (phase II) was completed from February to March 2022.

Defend 1050
Air Cleaning Device

FDA Cleared
Class II Medical Device

Protected by NanoStrike™

PRODUCT BACKGROUND

The Defend 1050 is a free-standing, portable recirculating air cleaning system designed for continuous 24/7 front-line protection in healthcare settings to provide airborne infection control where the risk of Healthcare-Associated Infections (HAIs) and Surgical Site Infections (SSIs) are at their highest.

The Defend 1050 (NV 1050) is an **FDA Cleared Class II Medical Device** that filters out and inactivates airborne viruses and bacteria for medical purposes within large rooms and indoor spaces. The Defend 1050 uses NanoStrike™ Technology combined with a triple-stage medical-grade filter system to provide a combined solution for air disinfection and particle removal. It inactivates aerosolized viruses, bacteria, and fungi and purifies the air of pollen, particulate matter (PM), volatile organic compounds (VOCs), and odors.

The NV 1050 is UL 2998 and CARB validated for zero ozone and UL 867 safety certified.

OBJECTIVE

To test the hypothesis that the use of a portable stand-alone air cleaner in a staff break-room within a hospital environment is effective in reducing airborne bioburden in the environment.

METHODOLOGY

The levels of airborne bioburden were measured by collecting 100 litre air samples on TSA agar plates using an impaction air sampler.

An equal number of test and control samples were taken on different dates. Samples were taken in duplicate. Test and control samples were collected over 18 days each. 72 air samples (on to agar plates) were collected in total during the study. The air samples were analyzed by EMSL lab for bacterial counts and identification of three most prominent species present in each agar plate.

A Defend 1050 was operated at speed 3 in the environment during test sampling. The air cleaner device was turned off during the control sampling days.

RESULTS

There was an overall colony count reduction of 57.5% between control and test samples (p-value 0.053).

Bacterial species identification results reported a total 6 bacterial pathogen species and 21 bacterial opportunistic pathogen species.

A total of 2,670 colony counts of pathogens and opportunistic pathogen species were obtained in control samples. In contrast, a total of 1,000 colony counts were obtained in test samples. Therefore, in the pathogen and opportunistic pathogen count combined we observed a 63% reduction after the use of the Defend 1050.

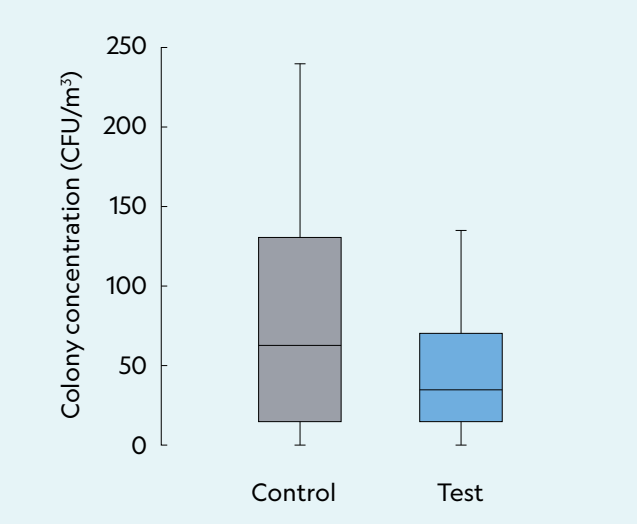

Fig. 1. Box Whisker plot of all control and test data.

CONCLUSIONS AND DISCUSSION

The use of the Defend 1050 portable stand-alone air cleaner in a hospital breakroom has shown substantial reduction in airborne bacterial bioburden overall.

REFERENCES

1. F. Soberon & L. Lawlor, Evaluation of an air cleaner device at a staff breakroom in a hospital environment, July 2022.