Dr. Dao Scientific Clinical Report

Title: Prevalence of Methicillin-Resistant Staphylococcus aureus (MRSA) and Clostridium difficile (C. diff) on Shoe soles, and Effect of their Exposure to the GEMS's PathO_3Gen Footwear Sanitizing Station, formerly SoleMate Sanitizing Device (SSD)

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Methods:

- Swab samples were collected on the left shoe soleof randomly selected participants at a hospital by the rolling swab method at six sites: 3 before exposure to the GEM's SoleMate Sanitizing Device (SSD), and 3 after 8 sec-exposure.

- Each sample was collected from a 2.8cm^2 circular area with a swab dipped in PBS, and transported in a transport tube without medium to the participating laboratories.

Results:

The results obtained are in agreement with the microbicidal activity of the PathO_3Gen Footwear Sanitizing Station, formerly GEMS SSD, that was established under controlled conditions in research laboratories at USF by the plate assay as well as shoe sole contamination assay on a variety of pathogenic microbes, including bacteria and fungi. Over 99.9% of these microorganisms were killed within a range of 4-8 sec exposure time.

- Analysis of the data obtained in both the MRSA and the C. diff studies showed that there were much lower numbers of CFUs in the Footwear Sanitizing Station, formerly GEM's SSD-exposed shoe soles compared to the unexposed ones.

- Comparable results were obtained in the number of contaminated shoe soles: 35/45 shoe soles that contained MRSA (77.7%), and 34/45 shoe soles that contained C. diff (75.5%).

- Analysis of the samples collected from shoe soles that have been exposed to PathO_3Gen Footwear Sanitizing Station, formerly GEMS SSD, showed that there was a significant decrease in the number of contaminated shoe soles, from 35 to 5 in the MRSA study, and from 34 to 6 in the C. diff study.

- Comparative analysis of the total number of colonies in the unexposed samples vs the total number of colonies in the PathO_3Gen Footwear Sanitizing Station, formerly GEMS SSD-exposed samples showed a much lower proportion of CFUs in the PathO_3Gen Footwear Sanitizing Station, formerly GEM's SSD-exposed samples: Over 99.59% in MRSA CFUs, and by 97.5% in C. diff CFUs.

Discussion:

HAIs are a problem that are impacting patients (both morbidity and mortality) harming and killing patients and costing hospitals money. PathO_3Gen FSS is a proven technology that Kills 99.9% of

Methicillin-resistant Staphylococcus aureus (MRSA) and Clostridium difficile (C. diff) – including spores and reduces the microbial load in a healthcare facility that can lead to the spread of HAIs. When incorporated into a comprehensive infection control program, the PathO_3Gen Solutions FSS may help reduce the risk of HAIs.