

PP 15: Pathogenic bacteria in theatre shoes and outdoor shoes

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Objectives: To assess the degree of bacterial contamination in theatre shoes at the beginning and end of a working day, and to compare the results with outdoor shoes.

Method: The study was conducted in the general surgical theatres of the National Hospital of Sri Lanka. Outdoor shoes and theatre shoes at the beginning and end of the working day were selected by random sampling and swabbed for microbiological assessment. Bacterial contamination of outdoor shoes (n=51) and of theatre shoes at the beginning (n=51) and end (n=50) of the working day were compared.

Results: The outdoor shoes had the greatest bacterial contamination with 51/51 (100%) showing heavy contamination versus only 9/51 (18%) and 27/50 (54%) showing more than scanty growth for theatre shoes at the beginning and end of the working day respectively (p < 0.0001). Theatre shoes became more contaminated by the end of the day and became progressively more contaminated throughout the week.

48/51(94%) outdoor shoes were positive for at least two species of bacteria while theatre shoes in the morning and evening had only 16/51 (20%) and 31/50 (42%) with more than one species respectively. *Bacillus sp.* made up the majority of isolates. Coliforms, including *Escherichia coli*, and *Staphylococcus aureus* were the commonest pathogens isolated in both shoe types. *Pseudomonas* and *Acinetobacter* were isolated only from theatre boots albeit in small numbers.

Conclusions: Dedicated theatre shoes are significantly less contaminated than outdoor shoes. Contamination levels increase during the course of the day and throughout the week.