

## **Evaluating The Link Between The Presence Of Potentially Pathogenic Organisms And Biomedical Waste Management Practices Among Health Care Workers In A Tertiary Care Hospital**

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### **Introduction**

Mismanagement of hospital waste has the potential to cause healthcare facility associated infections, and can often be traced to inadequate training and awareness among healthcare workers (HCWs).

### **Methods**

Hand imprints and nasal swabs of 100 HCWs, of various categories, were cultured. Culture isolates were identified by standard bacteriological methods. Participants were made to fill questionnaires regarding their practices towards the waste management. Swab samples were taken from the bins present in different departments from where the samples of the study subjects were taken. Observational checklist was used for the assessment of performance and facilities available in departments associated with hospital waste management.

### **Results**

Doctors had maximum knowledge about hospital waste management, (mean score 13.15) while safai karamcharis had least (7.35). Only 45% safai karamcharis were trained in healthcare waste management practices, in comparison to doctors, (60%). All categories of HCWs had favourable attitude. Mean attitude score was 8.34. Major pathogens isolated

from hand imprints were Methicilin sensitive Staphylococcus aureus (MSSA) (46%), Methicilin resistant Staphylococcus aureus (MRSA) (25%), Klebsiella (26%), Pseudomonas (13%), Acinetobacter (4%) and Enterobacter (1%). Major pathogens isolated from nasal swabs were MSSA(73%), MRSA(25%), Klebsiella (14%), Streptococcus (6%) and Pseudomonas (1%). This can be linked to the inadequacy of wearing masks (27%). It can also be linked to the pathogens isolated from hand imprints since similar pathogens were isolated both from hand imprints and nasal swabs. Major pathogens isolated from the bins of different departments were Staphylococcus aureus, Acinetobacter, Klebsiella, Enterobacter, and Pseudomonas. These were identical to the pathogens isolated from the hand imprints and nasal swabs of the study subjects working there. Data collected from the observation check list showed presence of adequate amount of facilities for the proper hospital waste management.

### **Conclusion**

Improper waste management can be linked to a high level of ignorance amongst HCWs due to which, there is an increased risk of HAI. The presence of a similar pattern of potentially pathogenic organisms from the hands and nasal cavities of HCWs, as isolated from the bins seems to be a definite cause for concern.