

## **Evaluation of the association between use of medical devices and duration of hospitalization with health care associated infections in a tertiary care hospital**

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### **Objectives**

1. To evaluate the association between the use of medical devices and duration of hospitalization which predispose to health care associated infections (HCAIs) in a tertiary care hospital in Sri Lanka.
2. To determine the proportion of health care associated urinary tract infections (UTIs), respiratory tract infections (RTIs) and surgical site infections (SSIs) in a tertiary care hospital in Sri Lanka.
3. To compare the 3 types of health care associated infections with the type of ward, age and sex of patients.

### **Methodology**

Data extraction sheets (study instrument) were filled with information obtained from bed head tickets, and laboratory reports and confirmed by clinicians. Bed head tickets of 423 patients who had stayed more than 48 hours or had been readmitted to the hospital in surgical, medical, pediatric and gynecology wards were studied.

## Results

There was a statistically significant relationship between the proportion of HCAs and usage of medical devices such as ventilators, nebulizers, urinary catheters and central intravenous lines, etc as the chi square test is highly significant ( $\chi^2 = 34.3$ ,  $df = 1$ ,  $p = .000$ ). Further there was a statistical significant relationship between the length of stay in hospital and HCAs. Patients who had acquired HCAs in the health care institution had a mean duration of hospitalization for more than 12 days and patients who had not acquired HCAs had less than 5 days and the p value of the independent sample t test was  $<0.05$ . Out of 423 patients, 71 (16.8%) had been diagnosed as health care associated infected patients by the clinicians. The predominant type of HCAs was RTIs (5.7%) followed by UTIs (5%), SSIs (4%), and other infections (4%). The highest percentage of UTIs were seen in surgical wards (38.1%) whereas RTIs were seen in medical wards (45.8%). Females had presented with higher percentages of SSIs, UTIs, RTIs than male patients. Elderly patients were the most susceptible age group (24.46%).

## Conclusion

There is a significant association between use of medical devices and duration of hospitalisation with development of HCAs.