



Evaluation of critical care nurses' adherence to the principles of infection prevention and control when providing respiratory care to ventilated ICU patients.

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**Background:** Micro-aspiration of oropharyngeal secretions and cross contamination from clinicians' hands and clothing have been identified as two key sources of infection in intubated patients. Prevention of micro-aspiration by oral decontamination, strict maintenance of ETT cuff pressures and strict adherence to IPC may help decrease the rate of VAP and VAB in ICU patients.

**Aim** The aim of this study was to explore critical care nurses' knowledge of and adherence to the principles of IPC when providing care to intubated patients.

**Methods:** A multiple methods research project was undertaken across four major metropolitan ICUs (2 private and 2 public) involving three phases: (i) staff survey, (ii) observational audit and (iii) chart audit.

**Analysis:** Results were analysed using descriptive statistics, differences between groups were compared using chi square tests.

**Results:** Respiratory care provision of 26 nurses was observed (average duration of 4 hours), 36 chart audits were completed and 45 critical nurses returned the survey.

**Mouth Care.** The majority of ICU nurses thought that mouth care should be performed at least 2 hourly for all intubated patients (Fig 2). Only 6 (35%) episodes of mouth care for general medical patients were observed. The patient chart audit showed that at least one episode of mouth care in a 24 hour period was documented for 14 (61%) of general medical vs 4 (29%) surgical patients, p = .057. The average frequency of mouth care for medical ICU patients was 2.2 (SD 1.3) / 12 hours vs 1.5 /12 hours (SD 0.70) for surgical patients, p > .05.

**Endotracheal extubation**

Prevention of micro aspiration of upper airway micro-organisms is an important aspect of the extubation procedure. Planned endotracheal extubation was observed for 5 patients. Staff washed their hands prior to the procedure for 2 (40%) of patients. Oropharyngeal suctioning was performed for 4 (80%) of patients prior to ETT extubation and 3 (60%) patients following extubation

(Fig. 1).

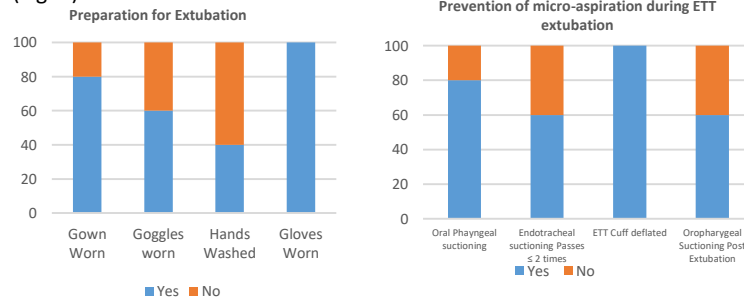


Figure 1 Adherence to IPC and micro-aspiration prevention during ETT extubation

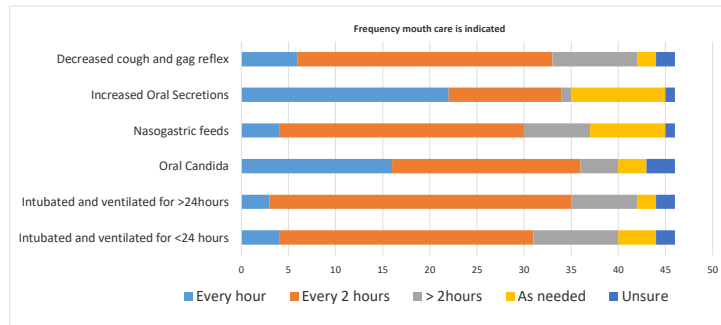


Figure 2 ICU Nurses views on how frequently mouth care should be performed

**Implementation of VAP prevention strategies**

Amongst general ICU patients 89% were positioned with the head of the bed 30 degrees In (67%) of cardiac surgery patients the head of bed was not raised within 30 minutes of return to ICU from theatre (Fig. 3). When providing general respiratory care

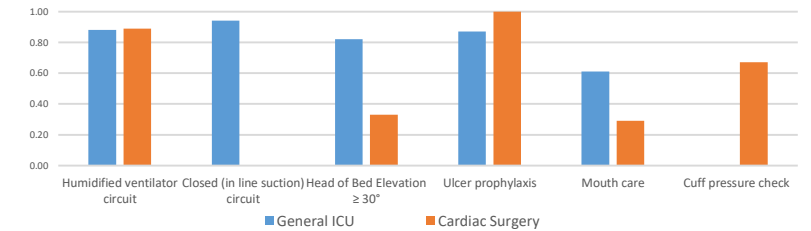


Figure 3 Implementation of VAP prevention strategies

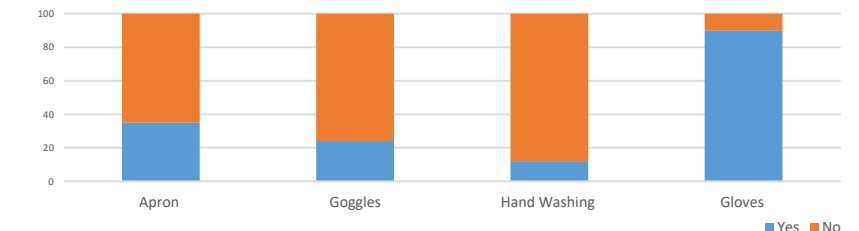


Figure 4 Adherence to IPC when providing general respiratory care

**Conclusion:** Variability in nurses' adherence to evidence-based practices was found on survey, practice and interview. Gaps were identified in the implementation of strategies such as regular mouth care, cuff pressure checks and oropharyngeal suctioning that prevent micro-aspiration of upper airway secretions and colonisation of the lower airway with new pathogens. Measures to assist staff to improve respiratory care to prevent HAI are required, with acknowledgement of high levels of adherence in specific aspects of care.