**EXCESSIVE SUPPLEMENTAL OXYGEN DELIVERY TO MECHANICALLY VENTILATED PATIENTS IS BASED ON UNIT CULTURE**

**Introduction:** Supplemental oxygen is widely used in critically-ill patients, however excessive exposure to inhaled oxygen may be associated with adverse outcomes. Despite these findings current practice in the Intensive Care Unit (ICU) appears to be relatively liberal.

**Study objectives:** The purpose of this study was to: (i) evaluate the incidence of hyperoxia in a regional ICU, and (ii) explore clinicians’ response to hyperoxia and decision-making when managing supplemental oxygen.

**Methods:** A thee stage multiple methods observational study; (1) retrospective medical record audit, (2) cross-sectional survey of ICU clinicians,and(3) focus groups with critical care nurses.Descriptive statistics were used to summarise the key outcomes of the medical record audit and staff survey data. The proportion of hyperoxia, severity of hyperoxia and adjustment of FiO2 (fraction of inspired oxygen) are summarised in 6-hour time periods. Thematic analysis was used to analyse the focus group and staff survey qualitative data.

**Results:** The medical records of 100 mechanically ventilated patients showed that 80% of patients had some level of hyperoxia during the first three days of intubation; mild (53%), moderate (12%) or severe (16%). Survey data showed that staff acknowledged the problem of excessive oxygen exposure. Two major themes emerged from the focus groups and staff survey; (1) decision-making is based on unit culture, and (2) the process of weaning is driven by multi-disciplinary team collaboration.

**Conclusions:** Short-term mild hyperoxia on low levels of FiO2 was common with limited adjustment of FiO2 by ICU clinicians. Clinicians used elevated levels of FiO2 as the key indicator to wean supplemental oxygen rather than physiological parameters. Given the findings of a relatively liberal oxygenation approach, and the acknowledgement by participants that exposure to excess supplemental oxygen is potentially harmful, it appears that staff would be receptive to evaluating the use of a conservative oxygenation protocol.