

**Emergency nurses' practices in assessing,
monitoring and managing continuous
intravenous sedation for critically ill adult
patients.**

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Certificate of Original Authorship

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student:

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Acknowledgement

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This dissertation carries one name, but it is the work of many.

Table of Contents

Certificate of Original Authorship	i
Acknowledgement.....	ii
List of Abbreviations.....	vi
Anthology of Publications.....	viii
Abstract	ix
CHAPTER 1: Introduction	1
1.1 Introduction	1
1.2 Summary	4
CHAPTER 2: Literature Review	5
2.1 Introduction	5
2.2 Australian Emergency Departments: a historical perspective	7
2.3 The resuscitation emergency nurse and managing the critically ill patient	10
2.4 Sedation tools used to assess the critically ill patient	18
2.5 Pharmacological interventions used to sedate the critically ill patient	23
2.6 Sedation policies and guidelines for nurses	25
2.7 Summary	26
CHAPTER 3: Methodology	28
3.1 Introduction	28
3.2 Mixed Methods	28
3.3 Mixed Methods Data Integration and Analysis	36
3.4 Summary	38
CHAPTER 4: Methods.....	39
4.1 Introduction	39
4.2 Phase 1: retrospective medical record audit.....	39
4.3 Phase 2: semi-structured interviews.....	47
4.4 Data storage and management	57
4.5 Integration and mixed methods data analysis of qualitative and quantitative data	59

4.6 Rigour of the study	60
4.7 Ethical considerations	65
4.8 Summary	65
CHAPTER 5: Results Phase 1	67
5.1 Introduction	67
5.2 Demographics	67
5.3 Thematic findings.....	76
5.4 Summary	86
CHAPTER 6: Results Phase 2	88
6.1 Introduction	88
6.2 Participant demographics	88
6.3 Thematic findings.....	89
6.4 Summary	110
CHAPTER 7: Discussion.....	112
7.1 Introduction	112
7.2 Implications for clinical practice, education, future research and policy	124
7.3 Conclusion.....	128
CHAPTER 8: References	130
APPENDIX 1: Methodological evaluation of observational sedation- scoring tools	150
APPENDIX 2: Summary of nursing positions and definitions	164
APPENDIX 3: Documentation audit tool.....	167
APPENDIX 4: Site specific approval to conduct	168
APPENDIX 5: Study poster	169
APPENDIX 6: Participant information sheet	170
APPENDIX 7: Participant consent form.....	172
APPENDIX 8: Revocation of consent form.....	173
APPENDIX 9: Interview schedule	174

List of Tables

Table 1: Number of patient presentations to public hospital EDs between 2008 and 2012	8
Table 2: Australasia Triage Scale and response times	9
Table 3: Number of patient presentations between 2008 and 2012 by ATS category.....	10
Table 4: Monitoring guidelines for levels of sedation.....	12
Table 5: Example of data segmentation, coding data and theming	57
Table 6: Critically ill patients admitted to the ICU from ED	68
Table 7: Summary of medical diagnosis by ICD-9 classification for sedated and non-sedation patient groups admitted from ED to the ICU.....	69
Table 8: Summary of physiological observations taken immediately prior to patient rapid sequence of intubation and sedation.	71
Table 9: Demographic characteristics of interview participants.	89
Table 10: Visual cues described by participants to identify critically ill sedated patients experiencing pain or agitation.	104

List of Figures

Figure 1: Search results	6
Figure 2: Sequential explanatory mixed methods design.....	34
Figure 3: Phase 1 site resuscitation bay layout with line-of-sight from main work area.....	40
Figure 4: Phase 2 site resuscitation bay layout with line-of-sight from centre doorway.....	48
Figure 5: Frequency and types of patient physiological parameters assessed by emergency nurses from commencement of continuous intravenous sedation up to ICU admission.....	75

List of Abbreviations

ABC	Airway, Breathing, Circulation
Abx	Antibiotics
ATS	Australasian Triage Scale
BIS	Bispectral Index
BP	Blood Pressure
BPM	Beats Per Minute
CDA	Central District Ambulance
CNC	Clinical Nurse Consultant
CNE	Clinical Nurse Educator
CNS	Clinical Nurse Specialist
CNUM	Clinical Nurse Unit Manager
ED	Emergency Department
ENA	Emergency Nurse Association
ETCO ₂	End-Tidal Carbon Dioxide
FiO ₂	Fraction of Inspired Oxygen
GCS	Glasgow Coma Score
H ₂ O	Water
HREC	Human Research Ethics Committee
ICU	Intensive Care Unit
LMR	Limb Motor Response
LOC	Level Of Consciousness
LOS	Length Of Stay
MAAS	The Motor Activity Assessment Scale
MAP	Mean Arterial Pressure
mg	Milligram
mls	Millilitres
MO	Medical Officer
MVR	Mechanical Ventilation Rate
NE	Nurse Educator
NM	Nurse Manager

NSR	Normal Sinus Rhythm
PEEP	Peek End-Expiration Pressure
PIVC	Peripheral Intravenous Catheter
PSc	Pain Score
RASS	The Richmond Agitation and Sedation Scale
RN	Registered Nurse
RR	Respiratory Rate
RSI	Rapid Sequence Intubation
RSS	Ramsey Sedation Scale
SAS	Sedation-Agitation Scale
SBP	Systolic Blood Pressure
SIMV	Synchronised Intermittent Mandatory Ventilation
SpO ₂	Saturation of Peripheral Oxygen
TISS-28	Therapeutic Intervention Scoring System-28
USA	United States of America
°C	Degrees Centigrade

Anthology of Publications

Publications

Varndell, W., Fry, M. & Elliott, D. 2011, 'Emergency nurses' practices in assessing and monitoring continual intravenous sedation for critically ill adult patients: a retrospective audit' (Abstract) *Australasian Emergency Nursing Journal*, vol. 14, no. S1, pp. 15-16.

Abstract

Background: Between 2008 and 2012, the number of critically ill patients presenting to public Emergency Departments (EDs) in Australia increased by 34% (ATS 1 & 2, n=156,490); far higher than any other patient group. ED nurses are increasingly relied upon to assess and manage critically ill patients, some of whom require continuous intravenous sedation. While ‘balancing’ this sedation is a highly complex activity within a time-sensitive and highly pressured environment, there is little evidence within international literature relating to how ED nurses manage continuous intravenous sedation for the critically ill.

Aims: The aim of this study was to explore emergency nurses’ practices in assessing, monitoring and managing continuous intravenous sedation for critically ill adult patients.

Method: A two-phase sequential explanatory mixed methods study design incorporated a retrospective chart audit and semi-structured interviews.

Ethical Approval

Ethical approval was obtained from university and health institutional ethics committees. Written informed consent was obtained from each participant prior to the commencement of data collection. All data were de-identified and anonymised. All data were stored in accordance with university and health institutional policies.

Results: In Phase 1, the 12-month chart audit identified 55 patients received ongoing intravenous sedation within the ED. Median ED length of stay was 3.4 hours (range 0.8-11.3hrs), 59% were aged under 65 years and 68% male. Nursing documentation demonstrated that over 60% of patient assessments had respiratory rate, oxygen saturation, heart rate and blood pressure assessed hourly. Conversely, levels of consciousness, pain and end-tidal carbon dioxide were recorded in less than 10% of cases. Adverse events were documented in 21% of cases, with the majority drug administration related (16%).

In Phase 2, 15 semi-structured interviews were conducted. Participants were predominantly female (n=12, 80%) and clinical nurse specialists (n=8, 53%) with at least 7 years (range 3-20 years) experience in the resuscitation area. The qualitative analysis yielded five themes: ‘becoming the resuscitation nurse’, how ED nurses transition into the resuscitation area; ‘the basics’, which outlined the knowledge, skills and expertise required as the resuscitation nurse; ‘becoming confident as the resuscitation nurse’, gaining confidence as the resuscitation nurse; ‘communicating about continuous sedation’ in the ED, how physicians and resuscitation nurses shared information about the use and titration of continuous intravenous sedation; ‘visual cues’, which outlined how nurses were prompted by the patient to alter sedation, and ‘the vanishing act’, the resuscitation nurse on their own.

Conclusion: The study identified that the emergency nurse was responsible for the continuity of patient care, and optimisation of sedation and pain control for critically ill sedated patients. Emergency nursing practice often occurs in geographical isolation due to geographical layout of the resuscitation area and workload demands. While managing continuous intravenous sedation for critically ill patients in the ED was common, training, communication between medical staff and the resuscitation nurses about sedation was inadequate. Methods used to assess patients’ needs of sedation, including pain relief, were poor. There is a need to develop Australian guidelines to assist emergency nurses in assessing, monitoring and titrating sedation for the critically ill patient. By using guidelines, the safety and effectiveness of continuous intravenous sedation for the critically ill adult patient in ED is dependent on the skill, knowledge and decision-making abilities of the nurse if adverse events are to be minimised and safety and comfort enhanced.