



Research paper

Senior emergency nurses' responses to escalations of care for clinical deterioration

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ABSTRACT

Background: Recognising and responding to clinical deterioration is a safety priority. The aim of this study was to determine the frequency, nature, and response of emergency department Nursing Shift Leaders to episodes of escalation of care for patient clinical deterioration.

Methods: A prospective exploratory descriptive design was used. Participants were recruited from the senior nurses at the study site that fulfilled the role of being in charge of the ED. Study data were collected between 29 October and 17 December 2015 across various shifts using an observation tool developed specifically for this study.

Results: This study had three major findings. First, escalation of care for clinically deteriorating patients to the Nursing Shift Leader occurs frequently. There were 37 observed escalations of care, equating to 1.02 episodes per hour. Second, Nursing Shift Leaders rely on clinical emergency nursing skills to recognise, prioritise and respond to escalation of care for clinically deteriorating patients. Finally, the Nursing Shift Leaders' role in responding to escalation of care for clinical deterioration is multifaceted.

Conclusions: The Nursing Shift Leaders' role in responding to escalation of care for clinical deterioration is complex and includes navigation of a multifaceted team environment and logistical challenges unique to the time pressured, unpredictable ED milieu.

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1. Introduction

Adverse events as a result of unrecognised and unreported clinical deterioration can lead to increased morbidity and mortality, therefore it is crucial that clinicians respond to clinical deterioration in a timely manner [1]. Safety systems such as Medical Emergency Teams (METs) have been developed to ensure early and aggressive management of clinical deterioration and reduce the number of associated adverse events [2]. In Australia, recognising and responding to clinical deterioration was one of ten National Safety and Quality Health Service Standards introduced in 2011 with the aim of improving patient safety in acute care hospitals [3].

Not all adverse events are the result of a patient's underlying condition and many in-hospital adverse events worldwide are related to suboptimal patient management [4], patients being

nursed in an area inappropriate for their condition [5] and communication errors [6]. In addition, there is a clear link between nursing leadership and patient safety [4,5,7–10]. The Nursing Shift Leader role in the emergency department (ED) is the highest clinical nursing leadership position in the emergency nursing team and these senior nurses are responsible for the safety of ED patients, staff and visitors as well as ensuring a safe ED environment [11].

1.1. Background

The Nursing Shift Leader role is complex and includes the oversight of admission, transfer and discharge of patients from the ED as well as patient assessment, staff supervision and delegation of care [12]. The ED safety systems such as METs require escalation of care to senior clinicians [13] including the Emergency Physician and the senior nurse in-charge of the shift (Nursing Shift Leader) [14]. The Nursing Shift Leader is pivotal in the management of the ED environment and the allocation and deployment of resources when a patient deteriorates and requires escalation of care, however to date there have been no studies exploring the management

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of clinical deterioration from the perspective of the ED Nursing Shift Leader. This study provides an opportunity to increase our understanding of this crucial role with a view to informing clinical practice, education and policy development and ultimately improving patient outcomes.

2. Methods

The aim of this study was to explore how senior nurses respond to escalations of care for patients (adult and paediatric) who experience clinical deterioration in the ED. The focus of this study was senior nurses working as Nursing Shift Leaders in the ED. The specific research aims were to:

- i) identify the frequency and nature of the involvement of Nursing Shift Leaders in escalations of care for patients experiencing clinical deterioration in the ED; and
- ii) explore how Nursing Shift Leaders respond to escalations of care for deteriorating patients.

At the time of the study, adult and paediatric patient vital signs were documented using track and trigger charts. These charts were designed to reflect three levels of clinical deterioration, each with a specific response: PreMET, MET and cardiac arrest. A summary of the adult criteria is shown in Table 1. For the purposes of this paper, clinical deterioration was defined as when a patient fulfilled one or more parameters that triggered the ED pre Medical Emergency Team (PreMET), or ED Medical Emergency Team (MET). Escalation of care was defined as any report of patient clinical deterioration to the Nursing Shift Leader.

Table 1
ED/SSU Adult observation and response chart (ED ORC) summary.

Criterion	Details
Cardiorespiratory arrest	Code blue: failed MET Cardiac or respiratory arrest
Airway	Absence of normal breathing and no response Stridor/upper airway obstruction or threatened airway
Oxygen saturation	MET: SpO ₂ < 90% at resting state (on oxygen > 4 l/min)
Respiratory rate	PreMET: respiratory rate 25–29 breaths per minute MET: respiratory rate < 10 breaths/min or > 30 breaths/min
Heart rate	PreMET: heart rate < 50 beats/min or ≥ 120 beats/min MET: heart rate < 40 bpm or ≥ 140 bpm or ≥ 120 < 4 h Post-surgery
Blood pressure	PreMET: systolic blood pressure ≥ 200 mmHg MET: Systolic blood pressure < 90 mmHg
AVPU/GCS	PreMET: responds to voice GCS drops by 2 or GCS 10–13 MET: responds to pain or unresponsive GCS drops by 3 or more or is ≤ 9
Blood glucose	PreMET: BGL < 4 or > 20 mmol PreMET: BKL > 0.6 mmol
Non physiological parameters/other	PreMET: seriously abnormal investigation New onset confusion/agitation Chest pain Urine output < 20 ml/hr for 4 consecutive hrs Progressive worsening of existing weakness/speech disturbance Temp ≤ 35.5 or ≥ 38 degrees New unequal or unresponsive pupils MET: breathing difficulty Seizures Nurse concern Failed PreMET

Note: AVPU Alert, Verbal, Pain, Unresponsive; BGL Blood Glucose Level; BKL Blood Ketone Level; GCS Glasgow Coma Scale; SpO₂ peripheral oxygen saturation. Table adapted from ED ORC, (2015).

2.1. Design

A prospective exploratory descriptive design was used to undertake this study. The study data were collected by non-participant observation of the Nursing Shift Leader during escalations of care for clinical deterioration.

2.2. Setting

This study was conducted in the ED at the Northern Hospital, Victoria, Australia. At the time of this study, the ED had 54 treatment spaces and a separate 23 bed short-stay unit, and managed over 70,000 annual attendances, 30% of which were paediatric patients. The average daily attendance was 188 patients (including 32 paediatric patients and 50 ambulance arrivals) every day [15]. Nurse staffing was 24 Registered Nurses (RNs) on a morning shift (including two Nursing Shift Leaders), 24 RNs on an evening shift (including two Nursing Shift Leaders) and 17 RNs on night shift (including one Nursing Shift Leader). The ED had three levels of clinical deterioration, PreMET, MET and cardiac arrest, each with specific escalation of care criteria and an expected response.

2.3. Sample

All RNs who fulfilled the role of being in charge of the ED during specific shifts were eligible for inclusion in the study. There were 37 RNs who met the study inclusion criteria and were invited to participate: 10 RNs participated in the study.

2.4. Data collection

Non-participant structured observation of the Nursing Shift Leader during episodes of escalation of care for clinical deterioration was conducted. Study data were collected by a single researcher [insert initials after review] from the 29 October to 17 December 2015. A specially designed observation tool and follow-up questions were used to facilitate data collection whilst minimising interruptions to the Nursing Shift Leaders. The first part of the data collection tool enabled collection of participant data including:

- age, gender, level of qualification, and years of experience of the Nursing Shift Leader;
- the source of the clinical deterioration escalation;
- the area within the ED from which the escalation originated; and
- the reason for escalation of care.

The second part of the data collection tool included researcher prompts aimed at identifying behaviours including:

- how did Nursing Shift Leaders confirm deterioration;
- if the Nursing Shift Leaders discussed the patient's deteriorating condition with other staff, and if so, with whom and what was discussed; and
- the Nursing Shift Leaders' response to escalations of care for clinical deterioration.

The data collection tool was piloted over five episodes of escalation of care for clinical deterioration and minor adjustments were made prior to data collection. Data collection took place across a variety of shifts (morning, afternoon and night shifts), during which the researcher observed the Nursing Shift Leader for two to four hours. Data were recorded in a written format by one researcher (VLR).

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