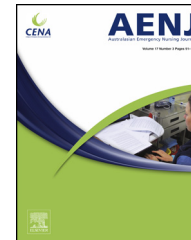




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RESEARCH PAPER

Unreported clinical deterioration in emergency department patients: A point prevalence study



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KEYWORDS

Emergency medicine;
Emergency nursing;
Patient safety;
Risk management;
Deteriorating patient;
Rapid response system

Summary

Background: Formal processes for recognising and responding to deteriorating emergency department (ED) patients are variable despite features of the ED context that may increase the risk of unrecognised or unreported clinical deterioration. The aim of this study was to determine the frequency and nature of unreported clinical deterioration in emergency care.

Methods: A prospective, exploratory descriptive design was used. Data were collected during nine point prevalence surveys (PPS) from 1 May to 30 June 2009 at an urban district hospital in Melbourne Australia. Patients present in ED cubicles during the PPS ($n = 186$) were included in the study.

Results: Unreported clinical deterioration occurred in 12.9% of patients ($n = 24/186$). Unreported clinical deterioration was more common when: (i) patients aged ≥ 65 years comprised $>50\%$ of patients within the ED; (ii) occupancy of the resuscitation, monitored or general adult cubicles was $>50\%$; and (iii) the proportion of patients requiring treatment within 30 min (Australasian Triage Category 1, 2 or 3) was $\leq 50\%$ of the total ED population.

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Conclusions: Unreported clinical deterioration is an important quality indicator of emergency care. The effect of the collective ED patient group on the frequency and nature of adverse events for individual ED patients is poorly understood and warrants further investigation.
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What is known

- Physiological abnormalities are known antecedents to in-hospital adverse events such as unplanned intensive care admission and cardiac arrest.
- Formal processes for recognising and responding to deteriorating patients are well established in the ward areas of most major Australian hospitals.
- Formal systems for systems for recognising and responding to deteriorating patients in Australian emergency departments are less well developed.

What this paper adds?

- This study adds to the body of knowledge related to the frequency and nature of deterioration in emergency department patients.
- This is the first Australian study to explore relationships between patient characteristics (age, clinical urgency) and emergency department characteristics (occupancy, staffing), and the frequency and nature of unreported clinical deterioration in emergency department patients.
- Unreported clinical deterioration was more common when there were high proportions of older patients in the emergency department, when emergency department occupancy was high, and when the proportion of high acuity patients was reduced.

Introduction

The majority of patients who suffer in-hospital adverse events with high risk of death (e.g. cardiac arrest or unplanned intensive care unit admission) have clearly abnormal physiological signs in the hours before these events, and there is a well-documented relationship between abnormal vital signs and mortality.^{1–8} Timely recognition of, and response to, deteriorating patients improves patient outcomes and decreases the incidence of high mortality adverse events such as cardiac arrest and unplanned intensive care unit admission.^{9–11} Although the majority of studies to date have been situated in inpatient ward areas, it is logical to extrapolate that emergency department (ED) patients with abnormal vital signs are also at high risk of adverse events. Formal processes for recognising and responding to deteriorating patients are well established in the ward areas of most major Australian hospitals and, the Medical Emergency Team (MET) is the predominant model of rapid response that brings critical care equipment and expertise to the bedside of deteriorating patients.¹² However, formal systems

for recognising and responding to deteriorating patients in emergency departments are less well developed^{13,14} despite more than 6.7 million emergency department attendances per year.¹⁵

One example of a formal ED specific rapid response system for recognising and responding to deteriorating patients is that published by Considine et al.¹⁴ This system comprises clinical instability criteria aimed at increasing the recognition of deteriorating patients and an escalation protocol aimed at enabling a consistent and timely response to deteriorating patients by senior ED clinicians.¹⁴ Evaluation of the uptake of this ED rapid response system in an urban district hospital in Melbourne, Australia showed that the system was activated in 1.5% of ED patients, and the most common reasons for system activation were hypotension (27.7%) and tachycardia (23.7%).¹⁴ The majority of system activations were by emergency nurses (93.1%) and the median time between documenting physiological abnormalities and system activation was 5 min.¹⁴ A limitation of this study was that only patients in whom the ED rapid response system was activated were included in the study; the number of patients who met the clinical instability criteria and in whom the system was not activated remains unknown.¹⁴

Emergency nurses are also primarily responsible for physiological assessment and ongoing surveillance for the patient's entire ED episode of care. Further, it is a core emergency nursing responsibility to engage in advanced health assessment and initiate investigations and interventions within their scope of practice, before the patient has been assessed by medical staff. Emergency nurses are therefore well placed to recognise and respond to deteriorating patients. However, there are several features unique to the ED context, that may increase the risk of unrecognised, unreported and/or under-treated clinical deterioration. Emergency nurses provide care for undiagnosed and undifferentiated patients of all age groups, many of whom have nonspecific complaints and the majority of whom are unknown to clinicians.^{13,16} The ED environment is time pressured with frequent interruptions and, at times, an unpredictable workload that when combined, result in high levels of decision density, high cognitive load, and decision making under conditions of uncertainty.^{13,16}

Aim

The aim of this study was to determine the frequency and nature of unreported clinical deterioration in emergency care. For the purpose of this study, an unreported clinical deterioration was defined as documentation of one or more physiological parameters within the ED clinical instability criteria and no documentation of escalation to the nurse in charge or emergency physician. A secondary aim of the study was to explore whether there were relationships between ED patient characteristics (age, clinical urgency) and ED

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