

Meeting the challenges of Acute Care Quality Indicators

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Key Learning Points

- Importance of comparison of AMU standards of Care against RCP UK Consensus 2008 and Quality of Acute Care Indicators.
- Variability of Waiting Times for assessment on AMU during daytime and out-of-hours period.
- Impact of triage systems on patient care in AMU.

Abstract

The Royal College of Physicians and Society of Acute Medicine have proposed the introduction of Acute Care Quality Indicators. These include the need for rapid initial patient assessment and instigation of a management plan.¹ Reductions in junior doctor working hours may impact on our ability to meet these standards. We present the result of a service review of 297 consecutive admissions to a large acute medical unit. This has identified a marked dichotomy between waiting times during daytime and out-of-hours, despite appropriate response to initial triage. We conclude that further service redevelopment is required to reach the standards proposed in the current Acute Care Quality Indicators.

Introduction

The Royal College of Physicians of Edinburgh (RCPE) Consensus Statement in 2008 proposed the development of Nationally defined standards of care on the Acute Medical Unit (AMU).¹ The Society for Acute Medicine has subsequently adopted a number of Quality Indicators for Acute Medicine as

summarized in Figure 1. These will allow AMUs to benchmark their performance against that of other units and act as a catalyst to promote improved care.

The introduction of the European Union Working Time Directive in 2003 led to a significant shift in junior doctor working patterns, posing a challenge for adequate medical staffing levels within the AMU, especially overnight.² This may result in marked variation in waiting times for assessment on AMU between day-time and out-of-hours periods. In response to this challenge we have developed a local triage model based on the patient's early warning score (EWS) at the point of arrival on AMU. Triage categories are colour-coded as 'green', 'amber' or 'red'. (see Figure 2). The current local standard requires all patients to have medical review and management plan implemented within 2 hours of admission to AMU; all 'amber' triage category patients to be seen within 30 minutes of admission; and all 'red' triage category patients to be seen within 5 minutes of admission.

1. Patients should be assessed by a competent decision-maker within 30 minutes of in-hospital referral to an acute medical team from the emergency department or on arrival at an Acute Medical Unit if directly referred.
2. A treatment and investigation plan should be formulated within 60 minutes of arrival on AMU.
3. Patients to be seen and management plan reviewed within 12 hours, but preferably sooner, by the admitting consultant physician.
4. Patients to have an Early Warning Score (EWS) system recorded at point of entry to care.
5. Patients to have regular early warning score undertaken, preferably as part of their routine, physiological recording (TPR chart) with locally defined response systems.
6. Single sex accommodation to be provided except when within monitoring areas (when clinical severity of the condition outweighs this).
7. Regular monitoring of key performance indicators in acute care.
8. The initial assessment, investigation and treatment of all patients presenting in an unscheduled manner should be consistent with the 'four hour standard' regardless of their place of treatment (ED, AMU or joint early care unit).
9. NHS boards have policies and guidance in place to ensure the timely undertaking of investigations appropriate to unscheduled care patients.

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Figure 1. RCPE Consensus Statement on Acute Care: Performance Indicators.¹

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EWS Score	3	2	1	0	1	2	3
Temperature (°C)	<35		35.1-36	36.1-38		>38.1	
Systolic BP (mmHg)	<80	81-90	91-100	101-179		180-199	>200
Heart Rate (bpm)	<40		41-50	51-100	101-110	111-129	>130
Respiratory Rate (per min)	<8			9-14	15-20	21-29	>30
SpO2 (%)		<88	<92			>40% inspired Oxygen	>10 litres inspired Oxygen

EWS 0-1 = 'Green'; EWS 2-3 = 'Amber'; EWS >3 = 'red'.

Figure 2. Local Early Warning Score Criteria .

We conducted a service review to assess whether further restructuring of junior doctor shift patterns may be required. In addition, we sought to evaluate whether the time from admission to assessment by a member of the medical team met the proposed local or National standards.

Method

This prospective service evaluation was conducted over 7 consecutive days in late 2010. During this time period 297 patients were admitted to the AMU; 276 patients were included in the study, with insufficient data being available for analysis of the remaining 21 patients. Data collected included age and gender of patient, date and time of admission, triage category at admission and time of first medical review. The data were collected using a standardised proforma and analysed using Microsoft Excel.

Results

The mean age of patients included in the study was 62.7 years (range 18-94 years) with 154 male and 122 female patients. The mean waiting time for medical assessment for all patients was 102 minutes (median 85 minutes, range 0-320 minutes). 178 patients were admitted during daytime hours (0900-1900 hrs) and 98 patients admitted out-of-hours (1900-0900hrs). For daytime hours, this equates to 0.4 patients per junior doctor per hour, where as during the out-of-hours period, this equates to 0.8 patients per junior doctor per hour. Mean waiting times for medical assessment related to time of arrival are shown in Figure 3 and number of patients admitted during each hour period shown in Figure 4.

Further analysis based on triage category showed that the overall mean waiting time was 118 minutes (range 20-320) for

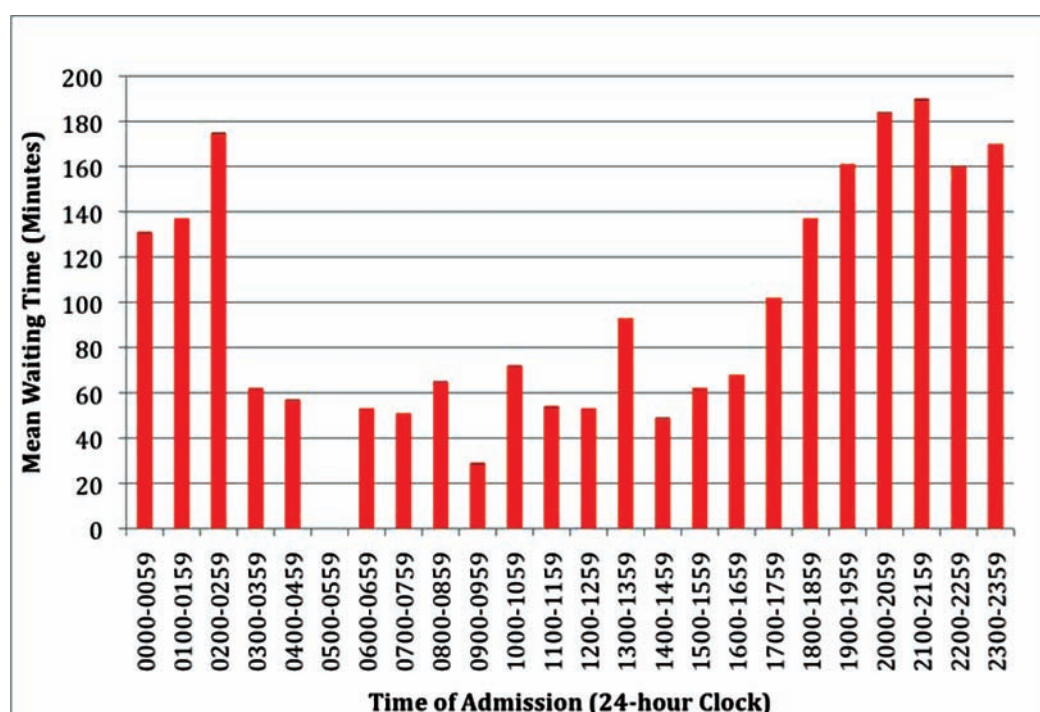


Figure 3. Mean waiting times in the AMU relative to time of admission (n=276).



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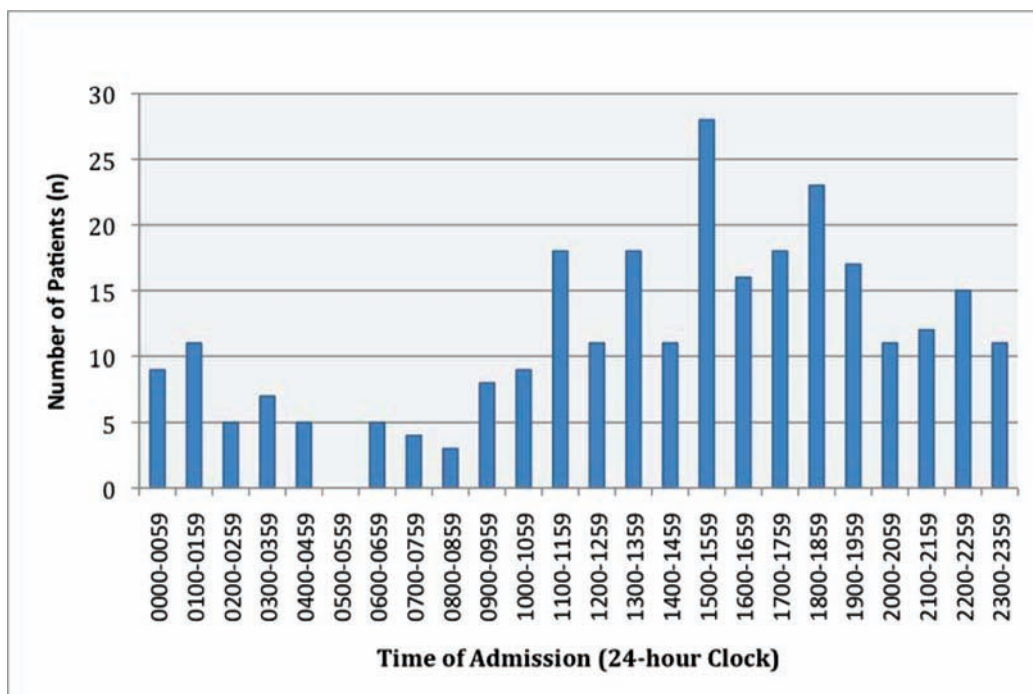


Figure 4. Number of patients (n=276) admitted per hour to AMU.

'green' triage category patients (n=212), 38 minutes (range 5-110 minutes) for 'amber' patients (n=62) and 0 minutes (range 0 minutes) for 'red' patients (n=2). The mean waiting time for all patients (n=178) during the daytime hours (0900-1900) was 72 minutes with 63% of patients being seen within the given time period as per triage category. For those admitted overnight (1901-0859) (n=98) the mean waiting time was 122 minutes with 52% of patients seen within the recommended time period as per triage category.

Overall, 57% of all patients were seen within the accepted guideline for each triage category. Of the green

triage category (n=212) 62% were seen within the recommended 2 hours of admission to the AMU; 45% of 'amber' patients (n=62) were seen within the recommended 30 minutes; and 100% of 'red' patients (n=2) were seen within 5 minutes of admission. However, fewer patients were seen within the recommended triage times during the overnight period (see Figure 5, p=0.037).

Overall, for all evaluable patients during the study period, 11% were seen by a doctor within 30 minutes and 39% within 60 minutes of admission to AMU.

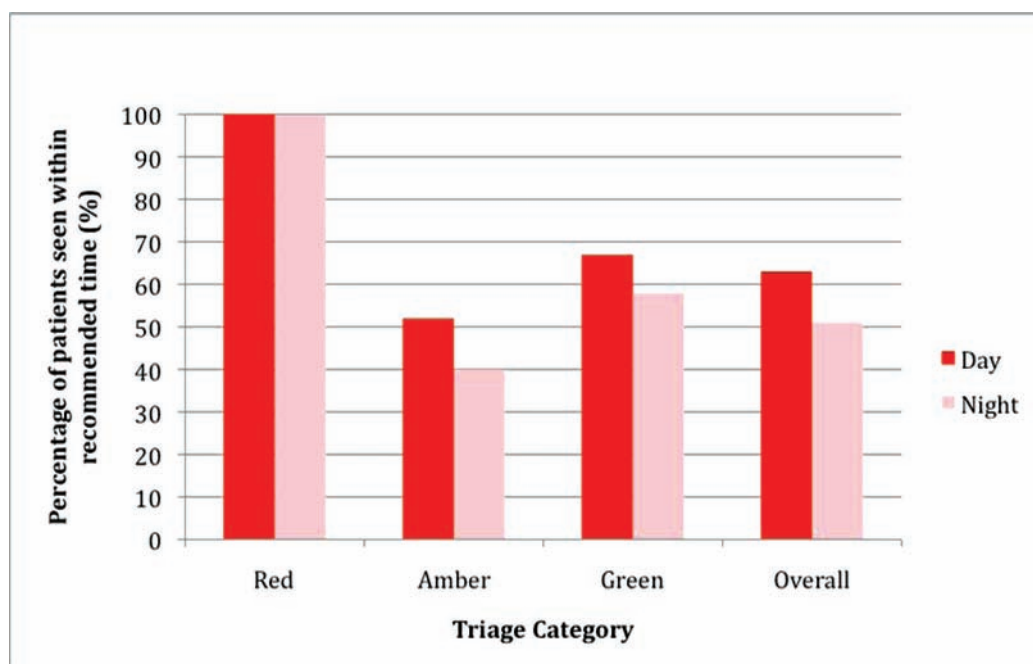


Figure 5. Percentage of patients seen within each triage category, comparing day and night shifts.



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Discussion

Our data shows appropriate variation in mean waiting times for medical assessment according to different triage categories, with shorter waiting times for patients in higher urgency triage categories. However, most of the patients in our study were not seen by a member of the medical staff within the time stipulated by our local targets. Furthermore only a small proportion (11%) would have been seen by a junior doctor within 30 minutes of arrival, as is proposed in the Acute Care Quality Indicators. Currently the guidance does not provide a clear definition of a 'competent clinical decision maker'. It could be argued that the initial assessment conducted by a senior nurse at the point of arrival on the AMU may have fulfilled many of the requirements of this process. Although 'time to triage' was not measured as part of this study, standard local practice is for the senior nurse to assess every patient immediately on arrival to AMU. The senior nurse is also in the best position to decide where to place each patient on the unit, depending on acuity of illness, need for monitoring, risk of falls etc. Further development of skills in the assessment of patients by nursing staff on the AMU may help to fulfil this quality standard.

The Quality Indicators also require that a 'treatment and investigation' plan is instigated within 60 minutes of the patient's arrival. This will usually require that the patient has been 'clerked' by a member of the medical team. Our data suggest that this may be difficult to achieve for all patients, particularly at night; overall <40% of patients had been clerked within 60 minutes.

Current practice frequently involves delegation of initial clerking to the most junior members of medical staff. This may further delay instigation of a management plan. Earlier involvement of the duty consultant, or other

senior decision maker, could improve patient care and help to ensure that the management plan is initiated within the proposed time period. This has significant implications for senior medical staffing on the acute medical unit during the whole 24 hour, 7 day period.

Previous studies have shown that the introduction of the European Union Working Time Directive has had a significant effect on service provision and junior doctor education throughout the UK.² Our data confirms the marked difference between waiting times for medical assessment when comparing patients admitted during daytime hours and during the out-of-hours period. This is likely to be true in other AMUs and could be attributed to the reduced numbers of junior doctors working during the out-of-hours period, paralleled by reduced presence of senior medical staff overnight. In light of the results of this service review, we have restructured both junior doctor working patterns and senior doctor availability within our unit, with reduced numbers of junior doctors in the morning, staggered start times across the day with the greatest concentration of junior staff matching the early afternoon peak in admissions, plus extended consultant presence into the evening.

The Acute Care Quality Indicators recommend a standardised target for time to assessment and implementation of a management plan. These Performance Indicators provide a bench mark against which individual AMUs can assess and compare their performance. We recommend that this target is graded according to clinical need, based on the initial assessment on arrival on AMU. This will ensure that timely care is delivered according to clinical need, particularly during the out-of-hours period when resources are more stretched.

References

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