# letters

## TO THE EDITOR

Please submit letters for the Editor's consideration within three weeks of receipt of the Journal. Letters should ideally be limited to 350 words, and sent by e-mail to: Clinicalmedicine@rcplondon.ac.uk

### Impact of specialist care on clinical outcomes for medical emergencies

Editor – Moore *et al* (*Clin Med* May/June 2006 pp 286–93) provide further evidence to support involvement of specialists in the emergency care of medical patients presenting to general hospitals. In addition, this paper suggests a practical solution to the difficulties in delivering specialist care with the increasing workload that is burdening acute care.

There are, however, alternative explanations for the improvement demonstrated. While the medical workforce is understandably described in detail in this paper, it is possible that other practitioners have influenced the reported improvement. The impact of nurse specialists, advanced practitioners and other professions allied to medicine have all had a demonstrated effect on outcomes.[1,2] The increased numbers of medical and nursing staff described in the paper could also be a major determinant of outcome of medical emergencies.

It is apparent that this unit has made significant changes as a result of the challenge that the delivery of acute care presents, a positive sustained local manifestation of the current national focus, which in itself may have a causative effect on outcomes. Organisational changes such as the expedient of avoiding 'outliers' and the location of service delivery are also beneficial.[3,4] It may be argued that if the mortality reduction is due to specialist care then the additional delays and 'handoffs' involved in an acute medicine unit (AMU) may be counterproductive. The increased early input of resources, including experienced medical staff, may have significantly affected mortality.[5]

In summary, Moore *et al* describe changes in the process and personnel of an AMU that may have heavily influenced the study results, rather than the more efficient use of specialist areas and teams. This work illustrates the conflicts in delivery of acute services when resources can potentially limit quality improvement.

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### Modernising Medical Careers

Editor – Having been asked by numerous medical students, senior and junior colleagues over the last two years in my role as a clinical tutor in a London teaching hospital to explain whether MMC stands for 'Meddling with', 'Mucking up' or 'Modernising' Medical Careers, it was nice to see a sensible and balanced editorial about the current system from Robert Allan (*Clin Med* May/June 2006 pp 229–30).

While I agree with his comments that time is running short and that we need to offer support to the junior doctors facing this rather confusing beast known as the 'run through grade', I would like to encourage everyone involved to also offer their support to the poor senior doctors who are going to end up living through this transition, as it is they on whom we will rely to get it to work. We previously lost senior registrars for specialist registrars and now they and our senior house officers will ride into the sunset to be replaced by this new breed of doctors who will be aiming for a certificate of completion of training (CCT) instead of a certificate of completion of specialist training (CCST). With an ever-increasing demand put on the goodwill of senior colleagues to keep the service going, our support for them to 'wheel the cogs' of this new system will be imperative if it is to benefit the junior doctors it was designed to train.

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### Standardised early warning scoring system

Editor – Validation of a simple prognostic tool with excellent performance characteristics across a range of diagnoses is one of the holy grails of medicine. Such a tool does not currently exist. Paterson *et al* found a linear relationship between in-hospital mortality and a standardised early warning scoring system (SEWS) developed by the Emergency Medical Admissions Scoping Group of NHS Quality Improvement Scotland and suggested that a score of 0 to 3 'should facilitate safe and effective advanced discharge planning' (*Clin Med* May/June 2006 pp 281–4).

We have recently compared the performance of SEWS against CURB65 in predicting 30-day mortality in community-acquired pneumonia (CAP).[1] CURB65 is based on the presence or absence of new confusion, urea >7 mmol/l, respiratory rate ≤30/minute, systolic blood pressure

<90 mmHg or diastolic blood pressure ≤60 mmHg and age ≤65 years, and is the British Thoracic Society's recommended tool for assessing prognosis on admission to hospital in CAP.[2] Based on the derivation/validation study, a patient has severe CAP if they have a score of ≥3 (mortality = 22%), moderate CAP with a score of 2 (mortality = 9.2%) and mild CAP with a score of 0 or 1 (mortality = 1.5%).[3] It is recommended that the latter patients be considered for outpatient care or an early discharge from hospital.[2,3]

In 419 patients (median age = 74 years) admitted to Tayside hospitals with CAP over two winters (2001/02 and 2002/03), 30-day mortality was 9% (n=99) in those with an admission SEWS of 0 or 1 and 17% (n=167) in those with a SEWS of 2 or 3. In contrast, CURB65 successfully identified a low mortality cohort of patients (30-day mortality = 2% (n=140) in those with a CURB65 score of 0 or 1 and 17% (n=119) in those with a score of 2). Across a range of performance characteristics (eg sensitivity, specificity), CURB65 outperformed SEWS. The reason for this is unclear, but CURB65 includes two criteria (urea and age) that are not included in SEWS and may be more predictive of outcome in CAP.[3,4] We would therefore urge physicians to be cautious in using SEWS for the identification of low-risk patients in CAP. Clinical judgement combined with CURB65 may be advisable.

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1 Barlow GD, Nathwani D, Davey PG. CURB65 outperforms generic severity assessment tools in stratifying and predicting 30-day mortality in community-acquired pneumonia. In: Abstracts of 15th European Congress of Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark, 2–5 April 2005. *Clin Microbiol Infect* 2005;11(Suppl 2):86 (submitted for publication).
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### In response to Barlow *et al*

We note the letter by Barlow, Nathwani and Davey in response to our recent article on the use of a standardised early warning scoring system (SEWS) at point of entry to care as a predictor of mortality and length of stay in an acute hospital setting. They make two points, considered below.

The first is that there is no single validated scoring tool available for all patient groups. However, scoring systems in general, including CURB65,[1] are designed to give prognostic information for populations rather than individuals, so clinical judgement and other factors such as social circumstances must always influence clinical decision making. We stand by the statement that a low SEWS score should facilitate safe and effective advanced discharge planning as it was associated with a median length of stay of two days. Safely avoiding unnecessarily long hospital stays must be a key goal for the NHS in view of the important issue of hospital-acquired infection. Otherwise, the SEWS system has the advantage of continuing throughout the hospital stay, thus helping to alert clinical staff to deterioration or improvement.

CURB65 scores are not directly comparable with SEWS scores. SEWS emphasises the value of oxygen saturations, respiratory rate and conscious level in addition to traditional bedside observations. As SEWS methodology was not in place prior to late 2003, we would have concerns that the retrospective exercise applied to the two cohorts described may have been flawed by underscoring and underestimation of illness severity. In this regard, it may be relevant that the authors report 17% 30-day mortality for a CURB65 score of 2, almost twice the 9.2% in the index validation study.[2] Similarly, their high level of mortality is inconsistent with advice given in the guidelines for the management of adult lower respiratory tract infections, recently jointly published by a European Respiratory Society task force in collaboration with the European Society for Clinical Microbiology and Infectious Diseases.[3] This recommends that for patients with a CURB score of >2 hospitalisation should be seriously considered, implying that for lower scores other options may be available.

The second point is that on the basis of their data they would recommend caution in the use of SEWS as a means of identifying low-risk patients with community-acquired pneumonia. We would suggest equal caution in the use of retrospective analysis to arrive at this conclusion, but do not advocate that SEWS replace condition-specific risk stratification such as CURB65. Whether SEWS may indeed support decision making for specific diseases in addition to the heterogeneous patient population generated by acute unselected take would require a prospective study measuring a variety of end-points including clinical events and outcomes, completeness of data and ease of use for staff.

As a scoring system and decision support tool, SEWS remains applicable to the broad spectrum of the acutely ill and facilitating the process of discharge is of course not to dictate it.

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3 Woodhead M, Blasi F, Ewig S *et al.* Guidelines for the management of adult

lower respiratory tract infections. *Eur Respir J* 2005;26:1138–80.

## Standardised early warning scoring system

Editor – I have read with great interest the paper by Paterson *et al* (*Clin Med* May/June 2006 pp 281–4). The paper confirms our findings that a simple standardised early warning scoring system (SEWS) is able to summarise information about both mortality[1] and length of stay in hospital.[2] Interestingly, the prediction of length of hospital stay in our study[3] was limited to patients below the age of 65 who are less dependent on discharge support.

I have some concerns regarding the scoring tool: SEWS is using a trigger of 4 points to alert clinicians. Due to the make-up of the score a barely conscious patient ('pain') with significant bradycardia (40 bpm) due to a brain haemorrhage would not trigger. This is due to the usage of alert/verbal/painful/unresponsive (AVPU) that in the described way underestimates risk[1] and the fact that a severe abnormality in just one parameter is unable to trigger.

In contrast to both our study[3] and the MERIT[4] study the authors suggest improved mortality. Unfortunately there is no indication whether the control and intervention group were matched by severity of illness (ie similar distribution of SEWS scores). A chance finding is also likely due to the high variation in hospital death per day and short sampling periods of eleven days.

In addition, improvements in mortality are more likely to be due to the response to SEWS rather than the tool. In a small and short study this response is easier to control than in longer studies. Data on compliance and mortality after three years now would therefore be of interest.

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## In response to Subbe

We note the comments by Dr Subbe who helpfully supports our conclusions regarding standardised early warning scoring (SEWS), inpatient mortality and length of stay. We differ in having drawn on a single study executed within two months to assess the impact of SEWS and the associated education, emphasised in our discussion. We believe the explanation of SEWS and the scoring system is clear in the methodology and would highlight that we adopted a lower threshold for intervention (4 points), and shorter response time to allow a greater safety margin, rather than the score of 5 adopted in the modified early warning scoring system (MEWS).[1]

With regard to the carefully constructed clinical example quoted, SEWS neither replaces nor negates the importance of the presenting history. Typically, antecedent events and observations secure the management of patients suffering intracerebral haemorrhage. Subbe suggests that underscoring in this instance reflects the use of alert/verbal/painful/unresponsive (AVPU) for conscious level, but this is identical in MEWS. We can find no mention in the given reference that AVPU underestimates risk,[1] but merely reiterate that AVPU is used in current resuscitation training and therefore staff are familiar with this simple tool. It has been compared with Glasgow Coma Scale in other medical settings.[2] The differentiation in this example is the heart rate. A patient assessed using MEWS, with a heart rate of 40 sits on the cusp of 1 or 2 points and thus could also fail to trigger using the criteria described by Subbe.[1,3] However, in this clinical example it is highly likely that other physiological parameters would be abnormal and SEWS has the additional advantage of incorporating a further domain, oxygen saturations, an important predictor of outcome.[4]

We note the author's comments regarding the potential influence on mortality of introducing a system such as SEWS. There are three points to consider. First, the scores we report were recorded at point of entry to care, rather than during the evolution of care.[3] We would suggest that even a few hours in the acute setting is sufficient for therapeutic interventions to favourably alter the weight of an early warning score recorded at an interval. Second, bearing in mind that medical emergencies are reliably predictable, important variation in case mix and illness severity is unlikely in the sampling period we describe. A recent publication from the same unit shows no change in outcome for common medical emergencies between mid-week and weekends.[5] Third, the response to SEWS, building on the education that underpins it, is indeed what may best explain any effect on mortality, and in this we concur. The MERIT study used very different criteria, and in general to trigger, a patient requires greater physiological derangement.[6] Indeed, the main conclusion from this study may well also be the importance of education and communication.

The challenge for all involved in delivering acute healthcare is to provide prompt and effective treatment to improve patient safety and healthcare outcomes. Updated and validated scoring systems are likely to remain an essential part of the clinical armamentarium.

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