

LETTERS TO THE EDITOR

The immediate impact of the availability of general practitioner services on emergency department presentations

EDITOR,—Emergency departments in NSW have been collecting computerised data about the patients they see using the Emergency Department Information System since 1994.¹ It is possible to use these data to investigate the extent to which the availability of general practitioner services varies with the rate of primary care presentations to NSW emergency departments. It might be expected that emergency departments would see more primary care patients on weekdays that were public holidays than weekdays that were not, because general practices are usually closed on public holidays. In Australia primary care patients have been defined by the National Health Strategy as those who could be managed by a well equipped general practitioner in their surgery. The National Health Strategy operationalised this as patients in triage categories 4 and 5, the less acute categories.² This approach has been used in this study.

To test this hypothesis logistic regression analyses were used to compare the number of patients seen on weekdays that were public holidays with those seen on weekdays that were not public holidays, controlling for the triage category of the patient, the day of the week, the month of the year and the year and clustering on the hospital from which the data were obtained. Data from patients in triage categories 4 and 5 were analysed separately from those in triage categories 1 and 2 because it might be argued that any differences detected arose from changes in patient behaviour because of the public holiday rather than differences in the availability of general practice services. It would not be expected that the availability of general practice services make any difference to the number of patients seen in triage categories 1 and 2 because these patients have major illnesses that need urgent treatment to prevent serious sequelae and consequently are unlikely to seek care from a general practitioner.

Data were available from over 1.8 million encounters on ordinary weekdays and 93 397 encounters on public holiday weekdays with patients in triage categories 4 and 5 and 158 335 encounters on ordinary weekdays and 6357 encounters on public holiday weekdays with patients in triage categories 1 and 2. No difference was detected between the number of patients in triage categories 1 and 2 seen on public holidays to those seen on working days ($p=0.709$, OR=0.998, 95% CI 0.986, 1.010), however there was a small but significant increase in the number of patients seen in triage categories 4 and 5 ($p<0.0005$, OR=1.0199, 95% CI 1.013, 1.027). The sample size used to look for a difference in the number of patients in triage categories 1 and 2 had 99.99% power to detect a difference of the size detected for patients in triage categories 4 and 5.

Findings in Australia suggest that either patients do not perceive emergency departments and GPs to be close substitutes and/or

that general practice patients are able to defer their requirements for primary care services until they can receive these from a GP. Is this a common experience in other countries?

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The assistance of the NSW Department of Health in providing these data is gratefully acknowledged.

- 1 NSW Health Department. *The EDIS Report*. Sydney: NSW Health Department, 1997.
- 2 National Health Strategy. *A study of hospital outpatient and emergency department services*. Background paper no 10. Canberra: Australian Modern Times Pty Ltd, 1992.

Pain management

EDITOR,—I read with interest the paper by Kelly¹ on a "process approach" to pain management that outlined some change strategies for a pain protocol implementation. It was unfortunate that the journal did not include a copy of the tritreated IV narcotic policy for readers to assess separately. Novel approaches to improving pain management are always welcome and the author clearly illustrates the failure in emergency departments 10 years ago to provide adequate analgesia. It is interesting to note that despite the stated successful implementation of the policy, 10% (5 of 50 who received narcotic analgesia in 1997) of patients still had at least one dose of analgesia intramuscularly.

Many of the processes described in this paper are based on subjective assessment rather than any more robust analyses. The rationale for using a nursing led process seems to have been justified because "it was felt" that they would provide more formal review and assessment, rather than any evidence that the emergency department doctors were unable to do so. In addition the conclusions that practice has changed permanently seems to be attributed to the "example of senior staff" and that the policy is now "everyday practice" with no supporting evidence.

The author has used a χ^2 test to illustrate that over time the outcome of the process has changed—that is, more patients now receive intravenous rather than intramuscular narcotics. As there is no temporally related control group the obvious bias of temporality has been ignored. It may well be that clinical practice has changed in the study emergency department and other departments over time, this secular trend is not necessarily related to the implementation of a local pain policy. Thus, the author's conclusion that a "major and sustained change to analgesia ordering" is attributable to the described process approach lacks validity.

Bias in the matching of subjects has not been fully resolved. While the author states that the two groups are comparable for age and sex no supportive data are provided. The author states that the reason only one patient had a fracture of the tibia in 1993 and 21 in 1997 is "attributable to chance". Simple analysis of difference of proportions would show that the probability of such an event occurring is very unlikely ($p<0.0001$, standard normal deviate -6.03). Although a χ^2 test on table 1 supports the author ($p=0.0001$, $df=3$, $\chi^2=20.88$) for no difference in the overall fracture type, between the study periods.

The author has described some important aspects of departmental change management

in relation to analgesia policy. However, the author has failed to prove that the implementation of such a policy has influenced the outcome of this process.

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- 1 Kelly AM. A process approach to improving pain management in the emergency department: development and evaluation. *J Accid Emerg Med* 2000;17:185-7.

Author's reply

EDITOR,—I thank Dr Leman for his thoughtful letter but am disappointed that he seems to have missed the important message of this paper—that pain management can be improved by innovative process change.

Dr Leman makes several points that I will answer in turn. The process of developing a pain management policy required the emergency department (ED) team to take an honest look at our work practices and environment. It was the team's assessment that, in our ED, members of the nursing staff had more regular contact with patients as part of scheduled observation that forms part of the nursing process. Doctors, on the other hand, had less regular contact and were often occupied with other duties. While it would have been possible to have doctors perform the review and augmentation role, it would have meant a major change in work practice and thus was less likely to be successful. The issue is not one of who performs which steps in the pain management process, rather that all steps are performed consistently in a way that fits well with established work practices. Different departments may well adopt different strategies to achieve this end.

The question of a control group for comparison was carefully considered at the time the process change was being developed. We had considered investigating time to analgesia between a group treated by the protocol and one that was not, but this was considered unethical in light of our knowledge that previous practices were ineffective. I agree that there may well have been gradual change in analgesia practice between the time periods studied, however the magnitude of change shown in this study is large and is as impressive for patients treated for other painful conditions, such as renal colic.¹

The question of bias in the matching of subjects is well made. The study aimed to compare two groups with long bone fractures and it was this larger group rather than specific fracture subgroups that was sampled, giving a reasonable match for overall fracture type between the periods as Dr Leman agrees. Only on subgroup analysis was the mismatch for tibial fracture identified—a chance finding appropriately acknowledged.

That some patients were treated outside the protocol is almost inevitable! For this fracture group the rate of non-compliance (that is, giving intramuscular analgesia) was 5% of patients (8% of those receiving analgesia) and for a renal colic group, it was 3% of patients treated.¹ This rate is low compared with other studies that have investigated adherence to protocols in acute medicine.^{2,3}

My aim in reporting the Western Hospital experience in developing a new process for managing pain was to demonstrate that a commitment to improving patient care, an open and honest appraisal of the barriers and a flexible approach to solutions can result in

innovative and effective treatment strategies. That said, the specific solutions may well be (appropriately) different in different environments reflecting different staff mix or work practices.

Copies of the protocol are available on request from the correspondence address given in the paper.

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- 1 Kelly AM. Nurse-managed analgesia for renal colic pain in the emergency department. *Australian Health Review* 2000;23:185-9.
- 2 Bezerra JA, Stathos TH, Duncan B, et al. Treatment of infants with acute diarrhea: what's recommended and what's practiced. *Pediatrics* 1992;90:1-4.
- 3 Grunfeld A, Beveridge RC, Berkowitz J, et al. Management of acute asthma in Canada: an assessment of emergency physician behaviour. *J Emerg Med* 1997;15:547-56.

Open chest cardiac compression

EDITOR,—I really wonder about the value of Dr Calinas-Correia's¹ article on thoracotomy and internal cardiac massage for non-shockable arrested patients. It seems to me that the study only proved the futility of attempting resuscitation this way on these patients. Thoracotomy and internal cardiac massage have a place in the moribund patient with a tamponade and/or penetrating heart wound but this is gung-ho in asystole. The ALS algorithm of early BLS and early ALS must remain the mainstay of attempts to salvage these patients with their universally poor prognosis.

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- 1 Calinas-Correia J, Phair I. Physiological variables during open chest cardiopulmonary resuscitation: results from a small series. *J Accid Emerg Med* 2000;17:201-4.

Authors' reply

EDITOR,—Dr Kennedy seems satisfied with what he describes as the "universally poor prognosis" of patients in non-shockable cardiac arrest, and clearly defends the unquestioned maintenance of the management that achieves that same outlook. The rationale for investigating open chest cardiac massage has been presented within the paper. The indications Dr Kennedy recognises are just some of those accepted by those investigating cardiopulmonary resuscitation.¹⁻³ Our study presents seven patients, and to take it as proof of efficacy or futility is obviously inappropriate. However, the presentation of data collected under a realistic scenario of cardiopulmonary resuscitation is important to allow the discussion regarding the feasibility and usefulness of further research. What remains of foremost importance is that no study showed worse outcomes with thoracotomy than with closed chest compressions in this group of patients, in fact the results have been slightly better with open chest cardiac massage, even if the significance is far from established.⁴⁻¹³ Therefore, the use of thoracotomy remains a matter for further investigation, and a priori dismissive verdict seems more of an aesthetic nature than evidence based. The very short times from thoracotomy to ROSC in three of seven patients that we present should encourage further research, as they corroborate the

experimental data on the better coronary perfusion obtained with this technique.^{5,6}

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- 1 Safar P, Bircher NG. *Cardiopulmonary cerebral resuscitation*. 3rd ed. London: WB Saunders, 1988:212-19.
- 2 European Resuscitation Council. *Guidelines for resuscitation*. Antwerp: European Resuscitation Council, 1996.
- 3 Resuscitation Council (UK). *Advanced Life Support Course—provider manual*. 3rd ed. London: Resuscitation Council (UK), 1998.
- 4 Rubertsson S, Grenvik A, Wiklund L. Blood flow and perfusion pressure during open-chest versus closed-chest cardiopulmonary resuscitation in pigs. *Crit Care Med* 1995;23:715-25.
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- 8 Hachimi-Idrissi S, Leeman J, Hubloue Y, et al. Open chest cardio-pulmonary resuscitation in out-of-hospital arrest. *Resuscitation* 1997;35:151-6.
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- 10 Bircher NG, Safar P. Comparison of standard and "new" closed-chest CPR and open-chest CPR in dogs. *Crit Care Med* 1981;9:384-5.
- 11 Alifimoff JK, Safar P, Bircher NG. Opening the chest to keep the brain alive in prolonged cardiopulmonary resuscitation. *Pre-Hosp Disaster Med* 1985;1:233-6.
- 12 Bircher NG, Safar P. Cerebral preservation during cardiopulmonary resuscitation. *Crit Care Med* 1985;13:185-90.
- 13 Tisherman SA, Vandevelde K, Safar P. Future directions for resuscitation research—V. *Resuscitation* 1997;34:281-93.

thin and this is acknowledged by the editors in the preface. The result is a comprehensive textbook covering most areas of current emergency medicine practice with recent references for further reading

The text is easy to follow as each subject is set out following a template of: Essentials, Introduction, Clinical features, Differential diagnosis, Investigations, Management, Prognosis, Disposition, Controversies and Conclusion. This means that for trainees reading the book as part of their emergency medicine study each chapter follows a prescriptive style and the multiple authorship provides credibility rather than confusion. In my view the three column page layout allows for easy scanning of the material without the feeling of "information overload".

The contents are listed in a sensible order dealing with Resuscitation and Trauma first—followed by Cardiovascular, Respiratory, Digestive systems, and so on. There are full chapters on Eye, Dental ENT, Obstetrics and Gynaecology and Psychiatric Emergencies as well as Crisis intervention. Ultrasound in emergency medicine is given a chapter of its own in keeping with the interest in emergency ultrasound in Australasia. Various legal and administrative issues are dealt with providing information on an area often neglected in emergency medicine training. Environmental hazards are covered from heat related illness to altitude illness. The final chapter deals comprehensively with the management of a wide range of toxins and drugs in overdose.

The result is a pleasing textbook full of up to date information that will be as useful to the specialist as it is to the trainee.

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Neurologic catastrophes in the emergency department. By E F M Wijidicks (Pp 266; £42.50). Butterworths Heinemann, 2000. ISBN 0-7506-7055-X.

Neurology is not generally perceived as one of the more glamorous medical specialties. This textbook has an upbeat approach. In the preface, the author borrows the now ubiquitous "golden hour" concept for acute neurology.

The text is said to be "brief to facilitate reading" and "is intended to reflect the train of thought and action in the emergency department". Compared with the average neurological textbook it may be brief but it would not be recognised as such by most emergency physicians.

The book is divided into two sections. The first covers conditions affecting the neuroaxis and the second, neurological disorders attributable to specific causes. Detailed descriptions of a number of neurological conditions and their aetiology are provided. The usual neurological emergencies are included, for example, status epilepticus and aneurysmal subarachnoid haemorrhage. In addition rather less obvious emergencies such as acute obstructive hydrocephalus and acute white matter disease are also discussed. The chapter on altered arousal and coma contains an exhaustive list of the major causes of coma, some of these conditions are unlikely to form part of a differential diagnosis formulated in the emergency department. However, the detail contained within the sections on examination of the patient in coma and the assessment of patients with acute unilateral masses re-

BOOK REVIEWS

Textbook of adult emergency medicine. Edited by P Cameron, G Jelinek, A-M Kelly, L Murray, J Heyworth. (Pp 757; £39.95). Churchill Livingstone, 2000. ISBN 0-443-06280-3.

This is a major new textbook of emergency medicine first published in 2000.

The contributors read like a "Who's who" of emergency medicine in Australasia—with a few contributions from North America and UK.

The book is primarily aimed at the emergency medicine trainee—although the wide authorship has allowed the text to become a "snap shot" of current Australasian emergency medicine practice.

The editorial board has adopted a consensus style and approach to the material published. Accordingly extreme views and minority opinion have been excluded. Obviously in order to keep the book to a manageable size certain topics have been kept brief on the premise that these areas are already covered in established texts. The management of trauma is the area most noticeably

minded me of a number of long forgotten clinical signs. In many chapters there is a brief but detailed and informative review of anatomy and pathophysiology.

Many of the investigations, for example, EEG, SPECT suggested in other chapters might be problematic to arrange in the average emergency department. "I want a SPECT stat".

In parts the clinical practice described does not follow current UK practice (or even standard clinical practice of 10 years ago). For example, it is implied that the administration of antibiotics in bacterial meningitis be delayed until CT/MRI and lumbar puncture have been performed.

The book is unlikely to be used "acutely" on a daily or weekly basis. I suspect this book is akin to an interview suit, something to be dragged out on rare, special and stressful occasions. It will prove a useful reference book for those reviewing cases, those on a neurosciences secondment or doctors preparing for examination. What were those five causes of upgoing plantars and absent ankle jerks again?

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A-Z of medical writing. By T Albert. (Pp 145; £14.95). BMJ Books. ISBN 0-727-91487-1.

The late great Ernie Wise was the perfect example of an author so dazzled by the brilliance of the plays what he wrote that he was blind to the inherent flaws. Unfortunately, such delusions of literary grandeur are not unique and some authors seem to have difficulty in accepting that we are not all imbued with natural skills in the art of writing. Indeed, Richard Asher, regarded by many as the doyen of medical writing, prepared draft after draft of his articles before allowing them to proceed.

In this superb book by Tim Albert, there are fascinating and invaluable insights into the creative process. The style is hugely accessible and entertaining. One of the major highlights is official permission at last to boldly split infinitives!

The author writes with over 10 years experience of working with doctors to sort out a wide range of writing problems, noting that doctors have usually had no formal training in writing since they were 16, and are expected to publish in high status journals if they are to advance in their careers.

There are a large number of topics arranged alphabetically from abbreviations (for some reason Aardvark is overlooked) to zzzz. The book is intended to be dipped into for morsels as required including top tips on preparing your CV, writing style, scientific papers, references, press releases, posters, newsletters and even obituaries. The previously mysterious world of writing terminology is unveiled with explanations of IMRAD, salami publication, peer review and the impact factor. The sections on how to deal with rejection and editor (dealing successfully with) were particularly useful for this author.

For anyone considering dipping a toe into the literary pool or those who are already out of their depth, this book is an absolutely invaluable aid.

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The management of head injuries—a practical guide for the emergency room. 2nd edition. By D Currie, E Ritchie, S Scott. (Pp 196; £26.95). Oxford University Press, 2000. ISBN 0-192-63078-4.

In this second edition David Currie, a Scottish neurosurgeon, has been joined by two anaesthetists to provide a handy guide for the management of patients with head injuries aimed at junior doctors and nurses working in the emergency room and ward setting. A welcome addition is the excellent chapter on the disturbed patient, which will be appreciated by nurses on wards that are often under staffed. Advice with which most A&E specialists would agree includes "observation should ideally be undertaken on a neurosurgery ward".

There could be more detail on the practical issues of how the "frontline" staff can safely and efficiently sort out difficult patients with complex problems. When they arrive in A&E, patients rarely have "isolated head injury" stamped on their foreheads yet I believe this is the way neurosurgeons would like to receive them. The management of potential alcohol withdrawal deserves more than a mention.

I am concerned about the use of a contraction of the 15 point GCS score to a total of 14—this could create confusion in clinical discussions if the score is used without clarifying the denominator, for example, GCS < 8 instead of < 9 is given as the criterion for intubation and ventilation. The importance of describing the levels of the three responses and avoiding numbers should be emphasised.

It is good that ATLS principles are espoused and there is an expanded chapter on cervical spine injuries but the inappropriate term "traction" is still used rather than "in line immobilisation". Scalp "lacerations" should be differentiated from "incised wounds"—an important clue to the likely mechanism. Some typographical errors and mislabelling are retained and, in my copy, the clarity of some photographs has deteriorated compared with first edition.

Possibly because of the timing of this edition, it excludes the guidelines for the initial management of head injuries by the Society of British Neurological Surgeons (1998), which, for example, recommend computed tomography within four hours for GCS 15 patients with skull fracture.

This book about a common A&E presentation is written mainly for A&E staff by non-A&E specialists. To justify its title there needs to be a greater focus on what really happens in the emergency room everyday and an

up to date view of what we should be doing in the future.

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ABSTRACT

The following was omitted from the abstracts published in the November 2000 issue of the journal for the Millennium Scientific Meeting hosted by the Faculty of Accident and Emergency Medicine.

Minor injury services—the present state

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Introduction—There are no studies describing the present systems of care in minor injury units. BAEM has recently issued a position statement but it is not known how many units adhere to this.

Methods—Postal questionnaire to all minor injury services in the UK.

Results—There was a 65% response rate. Units described themselves as minor injury services (52%), injury and illness services (24%). Eight per cent receive all local 999 ambulances but 24% receive none. The distance from the A&E department was under 10 miles for 9% of units. Only half are open 24 hours per day although most are open seven days a week. GPs are the main provider (49%); with ENP the main provider in 27%. Only 15% had doctors permanently based in the unit and 50% had nurses permanently based in the department. Only 4% of nurses rotated with A&E. Over half did not have staff with ALS on duty at all times. They had high review rates.

Conclusions—Structure and staffing are highly variable. Most do not conform to BAEM guidelines. Optimal configuration is not known. More A&E input may be beneficial. Full report available at www.emerg-uk.com on reports page.

Funding—Department of Health A&E Modernisation Programme.

NOTICE

1st Kuopio Conference.
"E-Health"—The use of information technology and telematics in emergency management and education

23–25 August 2001, Kuopio, Finland *Further details:* Conference Secretariat, University of Kuopio, Department of Health Policy and Management, PO Box 1627 FIN-70211 Kuopio, Finland (tel: + 358 17 163 631, fax: + 358 17 162 999, e-mail: aapo.immonen@uku.fi).