

PostScript

LETTERS

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Are accident and emergency senior house officers getting slower?

You sometimes hear people saying that senior house officers (SHOs) in emergency departments are not what they used to be.

We studied data collected over a five year period (1996-2001) on the number of patients seen by all SHOs who completed a six month post in our A&E department.

The 118 SHOs (62 male and 56 female) worked a full shift rota averaging 52 hours per week. The influence of the sex of the doctor and their future career plan on the number of patients they saw was also assessed.

The number of patients seen by each SHO in six months ranged from 1069 to 2659 (mean 1774, SD 346). On average the SHOs working between August 1996 and January 1999 saw 154 more patients than those working between February 1999 and July 2001 ($p = 0.015$; unpaired t test). Male SHOs saw on average 217.5 patients (range 1121 to 2659) more than female SHOs (range 1069 to 2644) ($p = 0.001$; unpaired t test). The median number of patients seen by SHOs with a surgical interest was 1831 (interquartile range 1624 to 2024), and by those with a medical one was 1684 (interquartile range 1497 to 1847) ($p = 0.042$; Mann-Whitney U test).

We acknowledge that there have been changes in the delivery of emergency care over the time frame of this study. We did not study the quality of care given by the SHOs and it would be difficult to quantify this. It is possible that the slower SHOs were more thorough but our impression is that some SHOs (male or female) saw a lot of patients with a high standard of care. Our results show that A&E SHOs are seeing fewer patients than they used to. We need to be aware of this and consider the implications for the future of emergency care.

P Gilligan, R N Illingworth

Accident and Emergency Department, St James's University Hospital, Leeds, UK

S Crane

Accident and Emergency Department, York District Hospital, York, UK

D Hegarty

The Avenue Practice, Alwoodley, Leeds, UK

Correspondence to: Dr P Gilligan, Accident and Emergency Department, The Leeds General Infirmary, Leeds, Yorkshire, UK; hegartydeirdre@ireland.com

doi: 10.1136/emj.2004.014787

Comprehensive drug screening

We read with interest the paper by Fabbri *et al* on comprehensive drug screening.¹ We are concerned by the statement that the "Diagnosis was made on the basis of plasma or urine concentrations of drugs or their metabolites in amounts sufficient to explain the presenting symptoms." The presence of drug in a screen should imply neither intoxication nor clinical effect, as drug or metabolite may persist for days after toxicity wanes. This is particularly important because many drugs have unique pharmacokinetics, may induce tolerance, or simply do not follow the traditional dose response curve, making the interpretation of a qualitative drug level unreliable. Additionally, it is unclear from the text how the diagnosis and disposition were defined or proved, as no outcome data were presented. It is unclear that outcomes would be changed by the test results, given the poor intraobserver agreement reported.

Among the substances included in the final analysis, clearly tricyclic antidepressants (TCA) are of greatest concern. However, the electrocardiogram may be a better prognostic indicator of TCA poisoning, and may be a more sensitive indicator of drug presence² than drug concentrations.³ In addition, it is our belief that acetaminophen is the only drug screen that has been shown to have a clinical impact in intentionally self poisoned patients.⁴

The diagnosis and management of the self poisoned patient is centred on a careful history and physical examination. Directed adjuncts such as an ECG and acetaminophen concentration may influence management and disposition. We would caution against the use of broad testing of the self poisoned patient as a guide to medical decision making. Even if this technology was widely available and economically viable, we question its utility as, in most cases, it is unlikely to affect the management of the self poisoned patient.

H A Greller, F Barrueto Jr

New York City Poison Control Center, 455 First Avenue, Room 123, New York, NY 10016, USA

Correspondence to: Dr H A Greller; greller@verizon.net

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What is "relative analgesia"?

I welcome the paper by Frampton *et al* describing their experiences of nurse administered nitrous oxide, which adds further evidence to the literature² supporting this technique as a useful and safe method of easing the suffering of children during their attendance at an emergency department.

I feel that the use of the term "relative analgesia" is somewhat confusing; this is not a term previously encountered in the literature describing sedative/analgesic techniques. The United States guidance (their reference 2) does not use this term when defining sedation levels nor do the current UK^{3,4} and Australasian⁵ guidance and definitions. To introduce a new term may prevent accurate comparisons of techniques in the literature.

I would also welcome description of two other outcomes measures that readers would find important when considering a sedative/analgesic technique: adequacy of sedation and parent/operator satisfaction. The authors do describe 10 cases (4.4%) requiring additional sedation but not whether the remaining children were adequately sedated, or inadequately sedated but the procedure was completed anyway. Nitrous oxide has two useful properties: analgesia and sedation. In the context of this study "relative analgesia" could mean "inadequate analgesia" or "sedation (without analgesia)".

M C Howes

Accident and Emergency Department, Royal Preston Hospital, Preston PR2 9HT, UK; martenhowes@doctors.org.uk

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Authors' reply

Howes' concern about the term "relative analgesia" pertaining to our recent description of nitrous oxide analgesia in children is noted. This is actually a term that has been used to describe nitrous oxide analgesia for many years. It first appeared in the dental literature and was used originally to describe situations where continuous flow/variable concentration nitrous oxide was administered, often via a nasal mask.¹⁻³ Other authors looking at the risk of aspiration using nitrous oxide analgesia used the term "relative

analgesia" when studying 50% nitrous oxide/oxygen (Entonox).^{6,7} The term does not appear to have been used in any of the emergency medicine literature pertaining to nitrous oxide that we have seen.

The term continues to be used in contemporary literature^{8,9} and in 2001 Lahoud *et al*¹⁰ described relative analgesia as having three elements: patient remaining conscious deliver 100% O₂ if needed. Certainly we found in our study that distraction techniques are easily done in conjunction with this method of analgesia and form an important part of it. We have used the term "relative analgesia" in our institution for many years, which is why it was included in our study. The term has also persisted in the name of the equipment used to administer continuous flow/variable concentration with the Quantiflex RA machine originally manufactured by Cyprane, Keighley, England and now by Matrix Medical, New York.

We agree with Howes that there is enough confusion in the semantics of the literature on sedation/analgesic techniques without rejuvenating old terminology. However, perhaps the term "relative analgesia" may be useful in describing analgesia by inhalational techniques alone, which are becoming more common using agents such as nitrous oxide, methoxyflurane, and nitrous oxide/sevoflurane mixtures.¹¹ Nitrous oxide provides analgesia, anxiolysis, and mild amnesia obtained with maintenance of verbal contact and predominantly intact laryngeal reflexes. No other single agent does this.

G J Browne, A Frampton, LT Lam, M G Cooper, L G Lane

Department of Emergency Medicine, The Children's Hospital at Westmead, Sydney, Australia

Correspondence to: Dr G J Browne; garyb@chw.edu.au

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children having dental treatment: a randomised controlled trial. *Anaesthesia* 2002;**57**:446-50.

Climbie Inquiry sets new standards

King and Reid¹ highlight a number of standards relating to child protection procedures within emergency departments. In January 2003, Lord Laming published his report of the Victoria Climbié Inquiry that contains further recommendations regarding healthcare arrangements for children and procedures for investigation of possible deliberate harm. Those relevant to emergency department practice mainly concern administrative standards, such as recording the name of the "primary carer" for each child attending the department and obtaining information on previous attendances at other hospitals when concerns about deliberate harm have been raised. The recommendations have various suggested timescales for implementation ranging from three months to two years from the publication date and we would urge all those involved with child protection to read the report summary (available at <http://www.victoria-climbié-inquiry.org.uk/index.htm>) and check that their practice complies with the recommendations.

J L Louis

Emergency Department, Taunton and Somerset Hospital, UK

S J Bridges

Paediatric Department, Taunton and Somerset Hospital

Correspondence to: Dr J L Louis, Emergency Department, Taunton and Somerset Hospital, Taunton TA1 5DA, UK; jason.louis@tst.nhs.uk

Reference

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Steering wheel spin?

Nigam and Cutter totally fail to present evidence to justify the claim that "Welsh emergency vehicles examined exhibited an unacceptable level of bacterial contamination".¹ What is more, a press release from the editorial team to local newspapers led Madeline Brindley of the *Western Mail* to write, "Dirty ambulances infested with huge amounts of harmful bacteria are carrying seriously ill patients to hospital in Wales, according to a report published today. The new research discovered that even after they have been cleaned, ambulances are still home to "unacceptable" levels of bacteria."²

The authors make no attempt to quantify levels of bacteria for organisms that are expected to be present in an environment occupied by people. Inevitably, steering wheels will be home to *Staphylococcus epidermidis* and viridans group streptococci, as they represent normal skin commensals. *Bacillus sp* are ubiquitous environmental organisms. Similar comments can be levied for all areas sampled throughout the ambulances.

The method used by Nigam and Cutter is suitable for a qualitative assessment and is normally used to identify specific pathogens. The only potential pathogen identified by the study is *Staphylococcus aureus*. A quantitative method should have been used for this type of study, if the conclusions were to be

supported. Quantitative methods, such as those discussed by Roberts *et al*,³ take a measured area of a given surface and allow the number of bacteria to be counted and expressed per square centimetre. Such a technique allows for the assessment of reduction of bacterial load after a cleaning process.

Quite reasonably, the press will pick up on stories such as these when prompted by the editorial team. However, there is a responsibility on the editorial board of journals, their reviewers, and the researchers to ensure that study methods and the review process are rigorous. Only then can proper conclusions be drawn. Without that, fear can be instilled in the patient population and the NHS challenged inappropriately.

M D Simmons

Senior Medical Officer, Welsh Assembly Government, Cathays Park, Cardiff CF10 3NQ, UK; mike.simmons@wales.gsi.gov.uk

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Authors' reply

We fully accept that the methods used were not rigorous enough to accurately quantify numbers of bacteria for any given measured area. However, our work was simply described as a preliminary investigation and this pilot study did identify shortfalls in cleaning practices in use at the time of the study. These included a lack of designated cleaning equipment for ambulances, insufficient time for thorough cleaning, and lack of suitable decontamination processes for medical equipment.

Most organisms identified in the study were unlikely to pose any threat of infection to patients or ambulance personnel. This was clearly stated in our article, but sadly was often ignored in the subsequent press reports, resulting in public concern.

Having identified that there were shortfalls in cleaning practices, action was required. The Welsh Ambulance Trust responded immediately to the results of the study and, supported by one of the authors (JC), took action to improve standards of cleanliness. This included the following:

- The Infection Control Committee and Regional Infection Control Teams continue to monitor cleanliness through regular environmental audits;
- Colour coded cleaning equipment has been introduced to prevent cross contamination during cleaning and standardisation of detergents and disinfectants has been completed;
- All vehicles have now been provided with "spillage kits" to absorb fluid spills;
- A chlorine releasing disinfectant is provided for each vehicle for prompt decontamination of blood and body fluids;

- Significant investment has been made to replace re-usable medical equipment, for example, Entonox masks and suction canisters with disposable alternatives. Disposable covers are provided for laryngoscope blades and single use bougies for intubation have been supplied;
- Infection control training is provided during all patient transport services and emergency technician training courses in which the importance of cleaning is included.

Y Ngam, J Cutter

School of Health Science, University of Wales, Swansea SA2 8PP, UK; y.ngam@swansea.ac.uk

Children and mini-magnets: comments and suggestions

I read with interest "Children and mini-magnets"¹ for I had previously listed similar events.² The authors illustrate the difficulty of separating attracted magnets when avoiding further trauma to the entrapped tissue, as the usual methods—of sliding the magnets apart, or using standard instruments—cannot be used. It is possible to "short out" the effective strength of a magnet (in the same way that the soft iron keeper of a horseshoe magnet greatly diminishes its external attraction) by putting a high permeability material between the poles. One such material is "Permalloy", and pieces and sheet can be formed around a magnet. (McCormick *et al* do not seem to list the magnetisation directions in the shape they encountered, so one cannot make any more specific suggestions.) Permalloy might be available in your friendly neighbourhood physics department. Another technique is to put a third similar magnet against one of the two problem ones.

Here in the USA, powerful magnets are used to hold ear "rings" or ear studs in place. A friend, who has given magnetic jewelled studs as science encouragement to pre-teen girls, has received thanks from their mothers: the mothers emphatically prefer the magnets to pierced ears.

I am curious about the origin of the Sheffield magnets: extremely powerful ones are found in discarded computer hard drives, but they have irregular shapes.

L Finegold

Department of Physics, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104, USA; l@drexel.edu

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Radiology in paediatric cervical spine injury

I read with interest the letter by Smart *et al*¹ regarding the assessment of paediatric cervical spine injuries.

It would certainly appear that many children in their cohort were radiographed unnecessarily according to current guidelines. However, I would hope that the practice in their institution has changed dramatically in the six years since the group attended.

Current guidelines on selection of patients for imaging are based primarily on adults. In

the NEXUS group, only 30 children had a cervical spine injury,² and in the Canadian c-spine group, there were no children at all.³

Extrapolating these results to children who may be distressed or uncooperative should be performed with caution.

The low prevalence of cervical spine injuries in children makes guidelines difficult to create. In an 11 year analysis of the Trauma Audit Network Database, only 239 children (of 19 538 with major trauma) were identified as having a cervical spine fracture and 21 with spinal cord injury without radiological abnormality (unpublished data).

I am concerned that the authors feel that a single lateral projection should be adequate. The evidence for omitting the PEG view is based on small case series⁴ or questionnaires,⁵ and certainly the odontoid synchondrosis should be ossified by the age of 7.

Imaging of the paediatric cervical spine remains a difficult problem. As the authors confirm, there is no substitute for adequate clinical assessment, but where this is not possible, every effort should be made to rule out a potentially devastating injury.

B W Martin

Emergency Department, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, UK; bruce.martin@virgin.net

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Emergency department investigation of deep vein thrombosis

Kilroy *et al* should be commended for highlighting the difficulty of point of care ("near patient") testing in general, and in emergency medicine in particular.¹ They, however, failed to highlight some important points that may have been significant confounding variables in this study. Firstly, the authors quite rightly pointed out the qualitative nature of the SimpliRED D-dimer (DD) assay and the inherent possibility for interobserver variation. Although this is a "simple" assay and comparatively accurate in experienced hands, there is a learning curve in performing and interpreting the results that the authors failed to emphasise. How steep or otherwise was the learning curves of the doctors assessing the SimpliRED test? The robustness of the data would have been improved if interobserver reliability was measured, for example by κ and weighted κ statistics. Secondly, cut off points are critical in diagnostic testing because they determine the assay sensitivity and specificity.² For example, if the DD cut off is set too low, then the test is too sensitive and not specific, so almost everyone ends up being positive

and the test loses meaning. What was the cut off value for DVT diagnosis in this study? Was it based on receiver operator characteristic (ROC) curves (a scientifically valid method of determining diagnostic cut off values)? Differences in cut off values may explain the differences observed in the diagnostic performance of the assay in this study and Wells' original data.³ Finally, to ensure good applicability, when choosing a DD assay it should be verified that the assay has been studied in a patient population similar to that in which it would be used. Did the authors extrapolate a cut off point for DVT diagnosis from the manufacturer of the assay? If so, was their study population similar to that of the manufacturer's?

A Wakai

Department of Emergency Medicine, Beaumont Hospital, Dublin 9, Republic of Ireland; wakai@indigo.ie

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Fractured clavicle and vascular complications

A 55 year old right handed man presented with a three month history of left arm pain and precordial chest discomfort. His symptoms had started three months previously after a heavy game of squash. Three years before the acute episode, he was involved in a motorcycle accident and had sustained a left mid-clavicular fracture.

On clinical examination he was in sinus rhythm and the supine blood pressure was 146/94 mm Hg in the right arm. He had a cold left arm with no recordable blood pressure. The left axillary, brachial, and radial pulses were absent. A bruit was audible over the left subclavian artery. The fasting total cholesterol was 4.4 mmol/l.

The chest radiograph showed non-union and displacement of the fragments of the left clavicle. Three dimensional contrast enhanced magnetic resonance angiography (CE-MRA) showed a small false aneurysm (diameter 1.5 cm) in the mid-portion of the left subclavian artery (see fig 1). In addition there was a stenosis of the left subclavian artery adjacent to the aneurysm with an intraluminal thrombus, immediately distal to the point of stenosis. The aneurysm probably resulted from insult to the subclavian artery by the clavicular fracture and aggravated by squash playing.

Percutaneous balloon angioplasty with stent deployment to the left subclavian artery was attempted. The procedure was complicated by acute thrombosis in situ, requiring intra-arterial thrombolysis with streptokinase. Restoration of blood flow was achieved by a reverse vein graft bypass between thoraco-acromial and brachial arteries.

Injury to the subclavian artery should be considered in all patients who complain of ischaemic symptoms in the arm after clavicular fracture. Furthermore, this case

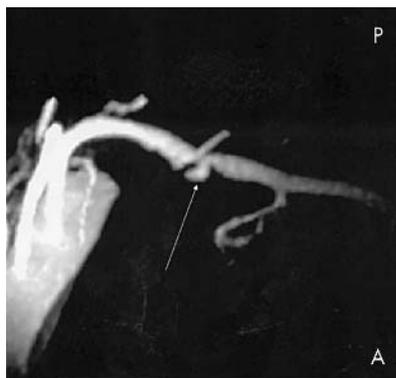


Figure 1 Selected maximum intensity projection of left subclavian artery showing false aneurysm.

highlights the importance of CE-MRA as a quick and accurate non-invasive diagnostic tool in evaluating abnormalities in the peripheral vasculature.

A K J Mandal

Department of Cardiology, Wexham Park Hospital, Slough, Berkshire and Imperial College, London, UK

J Jordaen

Departments of Cardiology and Emergency Medicine, Wexham Park Hospital

C G Missouriis

Department of Cardiology, Wexham Park Hospital and The Royal Brompton Hospital

Correspondence to: Dr A K J Mandal, Department of Cardiology, Wexham Park Hospital, Wexham Street, Slough, Berkshire SL2 4HL, UK; akjm@mac.com

doi: 10.1136/emj.2003.009761

Atypical antipsychotics not recommended for control of agitation in the emergency department

We read with concern the article by Yildiz *et al*, regarding the recommended use of atypical antipsychotics for the control of agitated patients in the emergency department.¹ Our concern rests mainly with the control of agitation secondary to drug ingestion, particularly sympathomimetic drugs of misuse (cocaine, MDMA "ecstasy", and amphetamines), and antidepressants (SSRIs, tricyclic antidepressants, MAOIs).

It can be difficult to distinguish with certainty, the diverse aetiologies of acute confusion/agitation, and therefore the sedative agent of choice should be safe and effective regardless of the cause. In patients presenting with drug induced agitation, or when the aetiology of the agitation is not established (particularly in teenagers and young adults), the use of atypical antipsychotics such as risperidone, ziprasidone, and olanzapine may result in adverse drug reactions including serotonin syndrome, neuroleptic malignant syndrome, QT_c prolongation and subsequent ventricular arrhythmias (including torsades de pointes), arrhythmias without QT_c prolongation, or extrapyramidal features including dystonic reactions.²

In the setting of drug induced agitation, the National Poisons Information Service (London) strongly advocates the use of carefully titrated, lone benzodiazepine sedation.

This is because the benzodiazepines (for example, diazepam, lorazepam, and midazolam) are well tolerated, with a high therapeutic index, and are not implicated in any of the above reactions. They have proved safety and efficacy in animal experiments and widespread clinical use for sympathomimetic drug related agitation.^{3,4} They also possess dose dependent efficacy that is easily titratable, and have established seizure prophylaxis and seizure terminating activity.^{3,4} Benzodiazepines have no arrhythmogenic potential with therapeutic or toxic exposures, and antihypertensive and arrhythmia preventive activity in sympathomimetic drug toxicity, and proved efficacy (in a randomised, double blind, placebo controlled trial) in cocaine associated acute coronary syndromes.⁵

We question why one would want to put an already unstable patient at risk of further harm with the use of potentially dangerous atypical antipsychotics, when an established safe, efficacious, rapidly acting, cheap alternative (benzodiazepines) is readily available?

K R Whelan, P I Dargan, A L Jones

National Poisons Information Service, Guy's and St Thomas' NHS Trust, London, UK

N O'Connor

Emergency Department, St Thomas' Hospital, London, UK

Correspondence to: Dr K Whelan, National Poisons Information Service, Avonley Road, New Cross, London SE15 5ER, UK; kim.whelan@gstt.nhs.uk

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Nothing ever changes...

Readers may be interested in the following abstract from the *Lancet* of October 1869, "The *Lancet* investigation into the administration of the out-patient department of the London hospitals".

On the morning in question, 120 patients were seen and dismissed in an hour and ten minutes, or at the rate of 35 seconds each. Who shall say what mistakes were made? None can tell...they are dismissed with a doubtful dose of physic, ordered almost at random, and poured out of a huge brown jug, as if the main object were to get rid of a set of troublesome customers, rather than to cure their ailments. A physician and surgeon have been appointed to stand inside the doors

of the waiting room. They are to receive and examine the patients as they enter and distribute them amongst the various departments, according to their judgement. They are also authorised "to refuse treatment to any person who appears not to be a fit object of charity." Naturally desirous of gaining all the experience possible, the house-surgeons have been in the habit of keeping all the interesting cases under their own care, and of sending the chronic and incurable to the out-patient room...

There are three articles in all,^{1–3} which make for a fascinating read. If the language used were updated slightly, they could easily have been written 150 years later.

Acknowledgements

I am grateful to Dr Sue Barnes for drawing these articles to my attention.

E Walker

Accident and Emergency Department, Dewsbury Hospital, Halifax Road, Dewsbury, West Yorkshire WF13 4HS, UK; dr.ed@ntlworld.com

doi: 10.1136/emj.2003.005314

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BOOK REVIEWS

The 5 minute toxicology consult for PDA

R C Dart. Lippincott Williams and Wilkins, Philadelphia, 2002. ISBN 0-78173-883-0

Why am I writing a review of an e-book?

PDA's are small but immensely capable mobile computers with greater processing power than the desktop machines of five years ago. These handheld computers have matured from simple address books to devices that can word process, email, run presentations, manage databases, and (this is the best bit) switch on every television in my house.

Their basic memory varies from 8–64 megabytes but this may be expanded into the gigabyte range. This immense memory together with the ultra portability of the PDA's means that they can always be in your pocket offering near infinite text storage. A PDA may be the perfect way to carry your textbooks with you.

This toxicology program is supplied on a CD ROM together with nine other programs all from Lippincott Williams and Wilkins. The CD is compatible with Windows CE/PocketPC and PalmOS operating systems; this review used a Compaq IPAQ running PocketPC. The purchased program is the only one with unlimited access but all the others may be used up to 15 times on a trial basis. As the program is supplied on a CD it must be

downloaded via the computer used to synchronise with the PDA rather than directly to the device. Once the CD is inserted however the installation is straightforward. The entire program is then transferred onto the PDA when it is next connected.

The program must be activated for it to permit unlimited use. This process requires both internet access and some intuition. The 15 item alphanumeric code supplied with the disc must be entered into the Lippincott Williams and Wilkins' web site together with the unique code of the PDA. This generates another code on the web site that then may be used to unlock the program.

Once up and running, its appearance is straightforward. Two narrow icon bars, one at the top of the page and another down the side, leave plenty of space for the text. The text size is alterable from "quite hard to read" to "enormous" and may be made to fit the screen. Using the basic functions fortunately did not require access to the scanty "help files".

Access to the files is either via the main index (including the ICD-9-CM index) or the table of contents (TOC). Using the TOC option is simpler although this has no search option. Topics are divided into "General approach", "Patient presentations with toxicological causes", "Antidotes", and "Chemical and Biological agents".

This is a 4 megabyte text only program. There are lots of entries. Each entry has a similar format, being divided up into "Smart tabs" of Basics, Diagnosis, Treatment, Follow up Indications, Contraindication and Adverse Effects, Dosage and Method of Administration, Pitfalls, and Miscellaneous. Sensibly not all "Smart tabs" are available for each entry. Some differences are seen between this North American e-book and UK practice. These include the recommendation for induced emesis for decontamination or the use of oral N-acetylcysteine in paracetamol poisoning. The vast majority of the text, however, reflects transatlantic agreement.

A facility for written and even spoken notes exists and the entries are cross indexed. If any other LWW programs are on the PDA, these are also cross indexed. There is a "back" button to improve navigation but the lack of a "forwards" option meant I had to sometimes laboriously retrace my steps after using it. The "history" function at least made this process easier.

Unlike written textbooks, free updates are available for one year via the Lippincott Williams and Wilkins' web site after program purchase.

Overall this e-book is easy to use and has a vast amount of comparatively current data on toxicology. Anyone who needs access to poisons information but cannot access Toxbase would benefit from this program. As most A&E departments in the UK have internet access there may be little scope for its use in A&E. However, it may well have a place in the general practitioner's bag, pre-hospital care, or in remote environments.

S Bush

Disaster medicine

D E Horgan, J L Burstein, editors. Lippincott Williams and Wilkins, Philadelphia, 2002, pp 435, \$79.95 (hardback). ISBN 0-78172-625-5

'The world is a dangerous place to live in', say David Hogan and Jonathan Burstein. Today,

it seems that this statement was never as true. The solitude of one's office seems worlds apart from the frenetic troubled Middle East yet never has there been a time when preparedness was so important.

I turned to this book as a timely opportunity to learn from other's experiences and expertise and to cross check my own department's state of readiness to deal with the unexpected. It contains many reports of previous disasters; maritime, terrorist, aviation, radiation and mass gathering disasters for example. However, it is the section on conflict related disasters that seems most appropriate at present. Time has already, perhaps, overtaken the authors and the concern about bioterrorism in particular has become highly pertinent. Transient as they might be, references to the helpful CDC and WHO web sites in this regard would have been a helpful addition as would reference to a number of other pertinent web sites.

The sections are far from comprehensive but are sufficiently stimulating to make the reader search elsewhere for further information. The authors of the various chapters are exclusively American but have successfully resisted the temptation to be parochial in their choice of disasters to illustrate their chapters. Nevertheless the recommended response has a distinctive North American influence centred around an efficient EMS but at the same time a prehospital care system that differs in many ways from the UK and European models.

The chapter authors have evidently been given considerable licence in writing their chapters. This makes for challenging reading. A more uniform approach might facilitate the reader in their quest for information.

The editors propose a clinical approach although the depth of the clinical approach could be greater. For instance drug doses and therapeutics in general are understated. This is apparent for example in the chapter on mass gatherings where a list of the doses and volumes of medications required might be helpful to a reader planning a service for a major gathering.

It seems to me that this is a book more suitable to the practising emergency health care 'planner' rather than the 'provider' as suggested by the editors. For those of us actively engaged in reviewing preparedness for disasters it is a worthwhile text that stimulated me to consider many aspects of my own department's plans. However this is not a text for the provider to turn to on disaster day.

J M Ryan

ACLS for EMT-Basics

M Smith. Jones and Bartlett Publishers, Sudbury, MA, 2003, \$31.95 (paperback), pp 120. ISBN 0-7637-1505-0

In the UK, most ambulances are staffed with one technician and one paramedic—a skill mix that results in particular challenges when managing cardiac arrests. British emergency medical technicians (EMTs) are routinely taught to support paramedic activities and a chapter of their Basic Training Manual is devoted to this topic.¹ The review book therefore has the potential to provide additional in depth information for UK EMTs and others working alongside Advanced Life Support colleagues.

The book encompasses airway management, emergency cardiac care, abnormal ECG

recognition, defibrillation and pacing, pharmacology of cardiac emergency drugs, special resuscitation situations, legal issues, and stress. It is attractive and includes plenty of pictures, sidebars, and a comprehensive index. Moreover, it minimises the risk of appearing daunting to its proposed audience of EMTs in basic or continuing training, as it is no thicker than the average Sunday newspaper supplement.

The author has clearly struggled with considerations about what material to incorporate, but unfortunately has not resolved this issue consistently. For example, the airway chapter describes basic manoeuvres and adjuncts in great detail but does not mention the recovery position. Endotracheal intubation is described at length, but intermediate adjuncts such as the Combitube are ignored. There is no explanation of how devices for confirming endotracheal tube placement are used; positioning of defibrillation pads/paddles and energy level selection are not described; the pathophysiology of angina is described but that of myocardial infarction is not; neither aspirin nor thrombolytic agents are mentioned in the pharmacology chapter; and tPA is identified as a treatment of stroke but not of myocardial infarction. The limited number of arrhythmias accompanied by illustrations suggests the text is unlikely to facilitate the recognition of abnormal ECGs.

The language used is an odd mixture of patronising simplicity ("Lidocaine is used to lessen the pain of an irritable, hurting heart") and potentially impenetrable medical jargon (the terms "half-life" and "fibrillation threshold" are mentioned but not explained). Confusingly, the text alternates between the perspective of an EMT observing a paramedic and that of a paramedic undertaking a procedure. This risks leaving readers with the inappropriate impression that it is, for example, an EMT's responsibility to correct intubation of the oesophagus.

The book contains important errors. It implies that the earlobes are level with the angle of the jaw; that crystalloids remain within the vascular compartment; that selection of the correct diameter of nasopharyngeal airway should be based on the patient's sex; and that "an unrecognised oesophageal [ET] tube still works to isolate the lungs". An ECG purporting to show a prolonged p-r interval is printed in reverse, rendering it useless.

Sentence construction often renders the text difficult to read and introduces the potential for some entertaining misunderstandings. For example, "Automated implantable cardiac defibrillators usually are placed into patients with a history of a near-death experience" and "The [defibrillation] current is delivered through the pads or paddles of the machine while on the patient's chest".

Some ambulance technicians may feel that this book should be subtitled "EMTs are capable of much more than carrying the paramedic's kit". As such, it has the potential to fulfil an important unmet need. Sadly, it fails to do so through poor attention to detail and a lack of consistency in the level of clinical information it seeks to deliver to its target audience.

M Woollard

Reference

- 1 Institute of Health Care and Development. Ambulance service basic training manual. Bristol: IHCD, 1999.