

CONCLUSION

The results suggest that a system of dispensing full courses of antibiotics out of hours should be introduced to all A&E departments. This would have therapeutic advantages to the patient without cost increases to the purchasers. Where starter packs are used, the size of the supply should take account of pharmacy opening hours and hospital holidays.

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Appendix

Breakdown of cost of full antibiotic course prescribed out of hours

(A) Current costs	
Three day starter pack dispensed from A&E*	£272.74
Follow on prescription	
(a) Hospital (194/232 patients [83.7%] compliance)	£80.05
(b) GP (81/176 patients [46%] compliance)	
Prescription cost (81 × £1.35)	£109.35
Container cost (81 × 5.8p)	£4.69
Drug cost [‡]	£55.90
GP time [‡] (81 × £5.60)	£453.60
TOTAL GP COSTS	£623.54
TOTAL COSTS FOR STARTER PACK SYSTEM (two months)	£976.33
TOTAL ANNUAL COSTS	£5858
(B) Estimated savings	
Average cost per patient to provide extra two days of antibiotics*	£1.04
Extra cost during two months of study period (437 patients)	£454.48
EXTRA ANNUAL COSTS	£2726.88
ESTIMATED ANNUAL SAVING (£5858-£2727)	£3131

* Costs calculated by hospital pharmacy using record of antibiotics actually prescribed.

‡ Estimate of cost of appointment calculated by Pharmaceutical Adviser of Sunderland Health Commission (personal communication).

Violence and Verbal Abuse against Accident and Emergency Staff

A one day conference for doctors and nurses in Accident and Emergency

Thursday 22 May 1997

Royal College of Physicians, 11 St Andrew's Place, Regent's Park, London NW1.

For further details, contact:

Mrs J Broomfield, British Association for Accident and Emergency Medicine,
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Doctors £50 Nurses £30

addition, the foreign body reaction can lead to oesophageal strictures. For these reasons and also for the comfort of the patient prompt removal of the coin is advised.

Different methods have been described for removing coins and other blunt foreign bodies,³⁻⁶ the most commonly reported being the use of a rigid endoscope for extraction. The patient requires sedation or a general anaesthetic and therefore a short inpatient stay. Flexible endoscopy can also be used, and for coins lodged in the distal third of the oesophagus, some clinicians advocate the use of bougies to push the coin past the diaphragmatic narrowing and into the stomach. There have been no complications documented once the coin has reached the stomach.

Use of a Foley catheter to extract blunt foreign bodies such as coins, buttons, and cylindrical objects has been well documented since the 1960s.⁷ The method can be performed under fluoroscopic control or blind as we have described above. The advantages are that it avoids the use of any anaesthetic agents and there is no need for hospital admission. Provided that the patient has no respiratory or oesophageal disease, the success rates of catheter extraction and endoscopic extraction are similar for coins ingested within 24 hours.⁸ However, risks of Foley catheter extraction have been highlighted; these include compromising the airway, missing underlying oesophageal disease, and leaving behind a second undetected foreign body.⁹ However, a survey of 1512 cases of Foley catheter extraction involved no deaths and only one case of laryngospasm.⁹ The use of fluoroscopic guidance is suggested if attempting this procedure.⁹ The small risks outlined above highlight the need for caution when attempting the procedure in the accident and emergency depart-

ment and for this reason we advocate the presence of a clinician familiar with paediatric airway management.

Reports on Foley catheter extraction of foreign bodies vary slightly in their methods. Some clinicians have described feeding the catheter through the nose with varying amounts of air introduced into the balloon.^{5,7,10,11} Our own practice has been to introduce the catheter orally, which reduces the risk of obstructing the nasopharynx with the foreign body and also reduces the risk of localised trauma leading to epistaxis. There appears to be no consensus about the volume of air necessary to inflate the balloon, and in most reports trial and error is suggested, since the aim is to dilate the oesophagus and thus release the foreign body so it falls onto the balloon and can be lifted out without causing trauma. Occasionally the coin may be dislodged into the stomach in this way.

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Referees for the Journal of Accident & Emergency Medicine

All papers submitted for publication in the Journal of Accident & Emergency Medicine undergo peer review. As a result of the continuing rise in the number of papers received the Journal seeks additional referees.

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JOURNAL SCAN

Edited by James Wardrope, associate editor
 This scan coordinated by Katherine Lendrum

The effect of a rigid collar on intracranial pressure

G Davies, C Deakin, A Wilson

Injury 1996;27:647-9

Overview—Rigid cervical collars are an essential piece of equipment in the resuscitation of injured patients and are widely accepted as protective. The authors of this paper suggest that cervical collars raise intracranial pressure in head injured patients and thus are potentially harmful.

Design—This was a crossover cohort study. The aim was to measure changes in intracranial pressure in patients who require spinal immobilisation. Intracranial pressure (ICP) and other variables were measured before, during, and after a Stifnek collar was applied.

Patients—The study group consisted of 19 injured patients who had worn a Stifnek cervical collar before arrival at hospital and who subsequently required ICP monitoring. Each patient acted as their own "control", with measurements taken before application and after removal being compared to those taken with the collar in place. No further patient details, such as age or type of injury, are given.

Methods—The variables measured included ICP, mean arterial blood pressure, heart rate, and central venous pressure. The fitting of the collar was standardised by one operator fitting every patient's collar according to the manufacturer's guidelines. Three sets of measurements were taken: 20 minutes before collar application, with the collar in place 20 minutes after application, and 20 minutes after removal. The change in intracranial pressure was defined as the difference between the ICP with the collar on and the mean of the ICP before and after application. A paired Student's *t* test was used for statistical analysis. The *P* value for statistical significance is not stated.

Results and analysis—In the 19 patients studied there was a mean rise in ICP of 4.5 mm Hg (SD 4.1 mm Hg). The change in ICP with and without the collar was found to be statistically

significant ($P < 0.001$). Readings before the collar was fitted and after it was removed are said to be not significantly different, but the *P* value is given as < 0.04 . (This must be a misprint or an error.) Paired analysis of heart rate, central venous pressure, and mean arterial pressure with and without the collar showed no statistically significant change.

Conclusions and extrapolation—The authors postulate that the observed rise in ICP is due to mechanical disturbance of venous drainage from the skull vault by the collar and illustrate this by reference to two separate patient groups identified by results. In one group ICP essentially did not change (mean 1.6 mm Hg) and these were patients with a base of skull fracture and a central venous catheter. Patients without these characteristics had a mean rise in ICP of 8.25 mm Hg. It is suggested that the presence of the fracture and of a central catheter improve skull venous drainage and reduce mechanical obstruction to flow, and therefore ICP rises are not marked. They call for the a review of the design of the current Stifnek collar and that the effect of spinal immobilisation devices on ICP should be evaluated. The authors recognise that there may be undefined anatomical and physiological differences in their study patients which explain the findings.

Critique—The study continues a theme found by other small studies and case reports. Lumbar intrathecal pressure rises with the application of a collar.¹ Different collars exert different pressures on the neck like tourniquets, and may increase ICP through compression of the jugular bulb.² Several points in the *methods* could have made the study more rigorous. The collar application and tightness of fit were left to the judgement of a single individual. There is major scope for the introduction of uncontrolled variables in both position and pressure applied. The authors found that in those patients with a central venous catheter the ICP did not rise, and suggested that this was because the cannula kept the vein

patent. Surely the mere presence of a large cannula site in the neck is going to interfere with the fit and tightness of the collar? Measurements of the variables were not blind, which introduces the possibility of bias. In a previous study blinding was achieved by screening the neck so that the collar was not visible and changing the sequence of collar on or off to introduce randomisation.¹ Changes in cerebral perfusion pressure are not discussed, and this may be a more clinically relevant end point. The *results* show some minor errors (for example, the number of patients with CVP plus the number without CVP adds up to 18 rather than 19). The ICP readings before application and after removal were said not to be significantly different although the *P* value is stated as < 0.04 . Although 10 patients had increases in ICP of more than 2 mm Hg, nine had no such changes. In the *conclusions* the authors call for major changes in current routine care of the injured patient. They may be correct, but surely other variables need to be excluded before radical steps are taken? However, the study does draw attention to a potential hazard of this type of cervical collar and more work is needed to accurately define the causes and remedies to these important observations.

1 Raphael JH, Chotai R. Effects of the cervical collar on cerebrospinal fluid pressure. *Anaesthesia* 1994;49:437-9.

2 Ferguson J, Mardel SN, Beattie TF, Wytch R. Cervical collars: a potential risk to the head injured patient. *Injury* 1993;24:454-6.

A questionnaire survey of resuscitation equipment carried by general practitioners and their initial management of ventricular fibrillation

R J West, N Penfold

British Journal of General Practice 1997;47:37-40

A postal questionnaire was sent to 175 GPs six months after they had received guidelines on the early management of myocardial infarction. The questions included aspects of recognition and treatment of ventricular fibrillation. Sixty per cent replied. The results

showed that 41.9% of GPs had read the European Resuscitation guidelines; 71.4% had an adult resuscitator and 60% had intubation equipment, but only 35.2% could give oxygen before an ambulance arrived; most carried adrenaline and atropine, although often only a single 1 mg dose of each; 8.6% carried sodium bicarbonate; only 34.7% carried a defibrillator on call and most of these had no integral monitor screen. Most (90.5%) could recognise ventricular fibrillation, and overall 71.5% of doctors would have given some treatment consistent with the first two stages of the VF algorithm, although only 16.2% gave completely correct answers. Others did not know or gave an incorrect number of joules. Numbers of correct answers fell at each stage of the algorithm. There was no difference between the knowledge of GPs possessing MRCP and those with MRCGP, although neither examinations specifically test advanced life support; 13.3% had attended an advanced life support course but unfortunately no data are presented to say whether this specific group did better, which would have made the concluding argument that all GPs should have documented evidence of competence in advanced life support skills more powerful.

Editorial comment—Similar results to previous hospital based studies showing poor recall of detail of resuscitation protocols.

Primary anterior dislocation of the shoulder in young patients.

A 10 year prospective study

L Hovelius, B G Augustini, O H Fredin, O Johansson, R Norlin, J Thorling

Journal of Bone and Joint Surgery 1996;78A:1677-84

This Swedish multicentre prospective study randomly assigned 257 dislocated shoulders to two treatment groups and studied them at two, five, and now 10 years. The planned treatment groups were strapping the arm to the torso for three to four weeks or using a sling until the shoulder was comfortable. A third group was subsequently defined as those who did not comply or needed operative treatment. Eighty per cent of the dislocations occurred in men, most often in association with sport (57% in those younger than 30 years of age). Only 10 patients were lost to follow up at 10 years. Patients were interviewed, examined, and had x rays of both shoulders. Fifty two per cent of shoulders had never redislocated, 4% had had one recurrence, and 23% had operative treatment for recurrent dislocations. The remaining 20% were recurrent dislocat-

tions managed conservatively; 22% of shoulders that were recurrent dislocators at two and five years had not had any further dislocation. The type of initial treatment had no effect on recurrence rate. Surprisingly few of the shoulders had developed an arthropathy: 11% had mild arthropathy as defined by small osteophytes on follow up x rays and 9% had moderate or severe arthropathy. On review of original x rays, 54% had a Hill-Sachs lesion of the posterior humeral head and this was associated with a significantly worse prognosis.

Effectiveness of bicycle safety helmets in preventing serious facial injury

D C Thompson, M E Nunn, R S Thompson, P Rivara

Journal of the American Medical Association 1996;276:1974-5

This paper presents a subset of data from a large (3390 cyclists) case-control study of head injuries in bicyclists.¹ The case-control study is reported in the same issue of *JAMA* and shows that helmets are protective and reduce risk of any head injury by 69% and severe head injury by 74%; 29% of 757 patients with head injuries wore a helmet, compared to 56% of 2633 non-head-injured cyclists. Seven hundred patients with serious facial injuries were studied. Helmet use in patients receiving significant injuries to the upper, middle, and lower thirds of the face were compared with rates of helmet use to groups with no facial injuries. Those wearing helmets were significantly less likely to have a serious injury to the upper third (adjusted odds ratio 0.36) or middle third of the face (adjusted odds ratio 0.35). There were no significant reduction in injuries to the lower third of the face (adjusted odds ratio 0.88)

Editorial comment—Why do some people still argue that there is no evidence that wearing cycle helmets reduces the probability of serious injury?

¹ Thompson DC, Rivara FP, Thompson RS. Effectiveness of bicycle safety helmets in preventing head injuries. *JAMA* 1996;276:1968-73.

A prediction rule to identify low risk patients with community acquired pneumonia

M J Fine, T E Auble, D M Yealy, B H Hanusa, L A Weissfeld, D E Singer, C M Coley, T J Marrie, W N Kapoor

New England Journal of Medicine 1997;336:243-50

A prediction rule was derived by analysing data on 14 199 adult patients with community acquired pneumonia. They were placed into five

classes with increasing risk of death within 30 days. This was then validated on a large number of inpatients retrospectively and 2287 patients in the prospective pneumonia PORT study (Patient Outcomes Research Team). The prediction rule stratified individuals into the five risk groups in two steps. The lowest risk group (group 1) included patients under 50 years of age, with no pre-existing disease and none of the following abnormal physical signs: respiratory rate > 30/min, temperature < 35°C or > 40°C, pulse > 125/min, systolic blood pressure < 90 mm Hg, altered mental state). Groups 2-5 were defined by a fairly complex scoring system which required x rays and blood tests. By using the rule they estimated a reduction of 31% in patients requiring traditional inpatient care, although patients in the middle of the five classes may need a brief inpatient stay or 24 hour intravenous antibiotics at home; 0.1% of patients in the lowest risk class died and the authors suggest modifications for future validation.

Editorial comment—A good "evidence base" for the outpatient treatment of community acquired pneumonia in low risk individuals. This group appears relatively easy to define but common sense is needed to make the application of these guidelines safe.

Vertical deceleration injuries: a comparative study of the injury patterns of 101 patients after accidental and intentional falls

D Richter, M P Hahn, P A W Ostermann, A Ekkernkamp, G Muhr

Injury 1996;27:655-9

This German study compared accidental falls to those occurring as part of a suicide attempt. Suicide jumps occur all year round in patients with a psychiatric history, who usually jump out of a window. Suicide patients spend significantly longer in intensive care and hospital. Accidental falls occur from the same heights in spring and summer. The most common injuries were fractures of the thoracolumbar spine and in 95.5% of thoracic injuries the 12th thoracic vertebra was fractured. Cervical spine injuries occurred in only 6.9% of survivors. Half of spinal injuries were associated with neurological defects. Other injuries occurred at metaphyses and epiphyses of wrists, elbows and ankles. Suicidal patients had more injuries of different body areas and more neurological deficits. Don't jump!

Editorial comment—The concentration of spinal injuries around the thoracolumbar junction is yet another reminder to ask for spinal radiographs

centred over the injured area. Routine "lumbar spine" and/or "thoracic spine" requests may miss such injuries. If the clinical signs are maximal around the thoraco-lumbar area, request radiographs centred on the area of maximum clinical signs (for example, "spine T6-L4", or which levels are appropriate).

Reviews: Supplement to *Lancet* December 21-28, 1996

Lancet 1996;348(suppl II):1-27

This contains updates on all that is exciting or new within different specialties, from anaesthesia to tropical medicine, nutrition to orthopaedics. Each article ends with five key references for 1996. The article on emergency medicine by Marie Kuhn, Adelaide, refers among other things to new techniques to aid the diagnosis of the acute myocardial infarction, active compression-decompression CPR, CPAP in pulmonary oedema, cost saving plans, and ultrasound in emergency medicine. The numerous references quoted on each page may be useful to many.

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BOOK REVIEWS

ABC of Spinal Cord Injury. By David Grundy and Andrew Swain (Pp 64; £12.95.) London: BMJ Publishing Group, 1996. ISBN 0 7279 1049 3.

This is the third edition of a book first published in 1986. It addresses the management of spinal cord injury in 14 chapters, progressing from "at the scene" to "later management and complications". Each chapter contains clear line drawings, photographs, tables, and diagnostic images to clarify and expand the text.

This small book is lucid and efficient in explaining the key points at each stage in the care of the patient with an injured spinal cord. It contains specific chapters on medical management, nursing, physiotherapy, occupational therapy, and the social needs of the patients and their families. This is both the strength and weakness of the book—for while it is an excellent primer for any health care professional wishing to learn about spinal injury, its simultaneous breadth but lack of depth ensures that the interested reader will need to search elsewhere for greater detail (the provision of a suggested reading list does assist this). More specifically, while the whole book is of interest, only the first five chapters are of

direct relevance to the investigation and treatment of the spinally injured patient in the A&E department.

Certain aspects of spinal cord injury have been omitted. In particular I would like to have seen a chapter dealing with the prevention of cord injury, which could usefully have complimented the brief section dealing with the epidemiology of spinal cord trauma. Similarly further references could have been made to the patient who is the victim of both spinal trauma and other injuries—highlighting the need for a high index of suspicion and a management plan that minimises the risk of further injury to the spinal cord.

Overall the book fits the "ABC" format well and I would commend it to anyone who deals with the victims of spinal cord injury.

C MANN
Plymouth

Emergency Triage. By Kevin Mackway-Jones. (Pp 156; £12.95.) London: BMJ Publishing Group, 1997. ISBN 0 7279 1126 0.

I really enjoyed reading this book. Part of that enjoyment came from realising how short it was. Having started on page 1, I got to page 36 (there are 156 pages) and found that the rest of the book was essentially given over to flow charts for an array of presenting complaints.

It is a book for medical and nursing staff and has been written by an interdisciplinary group. On the first page, there is a statement of the five initial aims for the group when it was established in November 1994. These were the development of a common nomenclature, common definitions, a robust triage methodology, a training package, and an audit guide for triage.

The book follows close on the heels of the nationally recommended triage guidelines, and will provide a tremendous boost to negotiations with purchasers who wish to ensure a uniform approach. Its central thrust is to provide an approach to triage which is capable of being audited, yet still requires professional expertise to execute. The authors acknowledge that training for triage requires pattern recognition and deduction, and as such is fairly sophisticated. Professionals from both nursing and medical disciplines will immediately appreciate this.

This approach should not be confused with an algorithmic basis for solving the patient's problem and it is designed simply to take the presenting complaint and make priorities based on observations and questions. I was heartened to read that the prioritisation process takes account of the patient's pain level.

On the downside, there are no references given, even when references are quoted, such as in the second chapter. The book does not deal with how the triage process can integrate early clinical care decisions, such as the need for immediate x ray, and I was surprised to see that there is very little discussion given to the automatic prioritisation of children, although the subject is mentioned very briefly in the fifth chapter. There is no mention whatsoever of other aspects of the process of triaging, such as establishing target times, but this is probably outside the scope of the book, which is focused on the decision making process and methodology.

I would have liked to have seen comments concerning the use of information technology

to supplement the decision making process, but again this is probably more process orientated than the authors have wished. The authors have succeeded in meeting the first three of their five aims, and I now wonder whether there is scope for a further manual dealing more specifically with training and audit.

This is an excellent book. It makes a very valuable contribution to the national understanding of emergency triage and I would hope that it would be embraced by both medical and nursing professions as a guide and way forward.

J SLOAN
Leeds

Case Studies in Emergency Medicine.

By Howard A Freed, Dan Mayer, and Frederic W Platt. (Pp 406; £35.00.)

Edinburgh: Churchill Livingstone, 1996.

ISBN 0 316 29470 5.

Are you a fan of *Casualty*? Do you ever miss an episode of *ER*? Then this American text may be a book for you. It is a collection of 106 real cases which have presented to an emergency department. Each case is presented with a history, some clinical findings, and the results of some investigations. There are three questions at the end of the presentation which should by now have had you guessing what the punch lines will be. There then follows a discussion of the case, which invariably revolves around the more appropriate investigations and treatments required.

The cases represent a wide spectrum of clinical problems including medical, surgical, trauma, gynaecology, paediatrics, and psychiatry. They are randomly presented, as one might encounter working in an emergency department. There is a three page explanation of abbreviations at the beginning of the book which introduces the United Kingdom based physician to new terms such as 2-PAM for "pralidoxine" or RMA for "refusal of medical attention". Nevertheless I found all the abbreviations somewhat irritating.

The nomenclature of drugs is very American and requires a knowledge of the common US terminology for drugs, although usually the generic name is given in addition to the common trade name. Clinical practice varies also. Take the asthma scenario, for instance, where the patient is a 23 year old man who becomes wheezy after being arrested by the police. His respiratory rate is 20, his pulse rate 90, and he has bilateral musical wheezes in his chest. He gets oxygen at 5 litres per minute through nasal prongs, an infusion of 500 mg of aminophylline over two hours, and is returned to jail. Needless to say he gets worse and returns. And how many cases do we see where a patient places a firecracker in his anus and lights it?

Overall this book is a collection of semisenior emergency medicine cases randomly arranged as they would present to an American emergency department. I do not feel that it approaches the cases in sufficient depth to provide authoritative comments. A book for friends and family, perhaps, to let them know what happens in A&E but not for emergency physicians.

J RYAN
Brighton

water, and protection from the environment. Medical care at most shelter facilities is usually limited to a "basic" level and sheltered persons are responsible for their own basic care and hygiene. The rise in the mean age of the US population and the changing health care environment has resulted in a change in the way health care is delivered. More persons reside in nursing homes or other domiciliary care facilities and increasing numbers of patients receive complex medical care at home, including intravenous therapy and home oxygen or ventilators. Conventional disaster shelters lack the necessary supplies and personnel to care for these "special needs", patients who are defined as those who need intermediate or skilled nursing care for management of chronic or acute diseases. Previously, such patients were evacuated to a hospital until the disaster was over. Current use of this approach would quickly overwhelm those medical facilities that have survived the disaster and deplete resources needed to care for victims of acute injuries and illness. We have developed a systematic programme to address the care of "special needs" populations in a disaster. A unique aspect of this programme is that it unites both emergency response agencies and private sector providers (nursing homes, home care, and medical sup-

ply companies) in a coordinated response to address the needs of this population. Identification of those populations at risk, resources in the community, and coordination of response are reviewed. Guidelines for implementation of such a programme will be presented.

Effect of a large sports tournament on A&E attendances

M W Cooke^{1,2}, Euro 96 Study Group of A&E Departments, S Wilson², T Allen²
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Before the Euro96 football championships there was much discussion in the medical press of the effects of the multicentre tournament on A&E attendances. A&E departments were concerned about the increased workload with no increase in funding. It was postulated that centres near stadia may see an increase in workload both from match violence and from the temporary increased local population.

Aim—To determine any changes in attendances at A&E departments related to Euro96 match dates and during the tournaments. To

determine if changes occurred at A&E departments close to match stadia and/or distant from them.

Methods—Analysis of attendance figures for three weeks preceding the tournament and during the tournament. Attendance in this study was defined as total new attendances to A&E, excluding GP admission referrals. The relation between daily attendance rates and local matches was assessed by use of a generalised linear model, while taking into account the underlying trends in attendance rates including the usual variability observed by day of the week.

Results—No association was shown between number of attendances at A&E, either near to or distant from matches. The occurrence of home nation (England or Scotland) matches had no correlation with attendance numbers. The only independent predictor of variation observed was day of the week, as has been previously noted.

Conclusions—These results do not support the hypothesis that large sports tournaments increase the number of A&E attenders. Although there are attenders from the matches and increased population, these maybe compensated for by local people remaining at home and therefore not suffering so many accidents and injuries. Further work is needed to analyse whether there is a change in case mix.

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decision support. These results provide further evidence of both professional and public support for this approach.

As Srinivas *et al* point out, the weakness in telephone consultation lies in the area of history taking. It is in this area of patient assessment where decision support is of greatest value. For the record of the consultation to be of most use, particularly if litigation were to arise, it would seem highly desirable to have a complete record of the questions asked and the responses given. Provisional analysis of research that we are undertaking using simulation of calls has identified that nursing staff form a hypothesis as to the nature of the patient's problem early in the consultation.

This is then followed by a process of backward reasoning, gathering evidence to support the hypothesis rather than forward reasoning from symptoms to hypothesis. The approach to the assessment is related to the complexity of the task—the more complex the assessment, the less systematic the approach.³ If decision support in telephone consultation is to be of value it should delay the hypothesis generation and promote forward reasoning; it should also be designed to help the user to structure more complex consultations. Decision support systems need to be developed to enable this, while being sufficiently user friendly to be acceptable to staff.

R CROUCH

J DALE

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- 3 Corcoran SA. Task complexity and nursing expertise as factors in decision making. *Nursing Res* 1986;35:107-12.

Correction

An uncorrected scanning error occurred in the title of the abstract "Prehospital diazepam: an audit of use" in the last issue (volume 14, page 126), where "adult" was printed instead of "audit". Also the name of one of the authors (H Cosgrove) was omitted. The authors have informed us of an error in their analyses, which means that the data presented are incorrect, though the conclusions are unaltered. We understand that they will be submitting a definitive paper on this subject to the journal. This will be peer reviewed in the usual way.

Trauma Care (UK) 1st Biennial Conference

"Total Trauma Care"

Harrogate International Centre

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This conference and future conferences will promote integration of trauma care by establishing "Total Trauma Care". The conference will provide access to relevant advances and current thinking in all aspects of trauma. Trauma care professionals are all aware of the advances being made in their respective areas of involvement with the trauma victim and the conference will recognise those parts of the chain of care which, often repeatedly, break down. The conference will allow both local and national professional groups to work together on an equal basis, through a common doctrine, to a single goal. Professionals attending the conference can then understand the whole chain of care concept, with a view to reducing morbidity and mortality associated with trauma.

Details available from Total Trauma Care, c/o Conference Secretariat, Index Communications Meeting Services, Crown House, 28 Winchester Road, Romsey, Hampshire SO51 8AA. Tel: 01794 511331/511332; fax: 01794 511455.