both groups of injuries resulted in a fracture. It is only fractures that were analysed further, and there are two reasons for this. First, especially with children, most accidents causing fractures do result in attendance at an A&E department. Second, case definition is usually straightforward and reproducible. Maitra and Sweeney could thus measure injury rates again after the introduction of a local injury prevention programme and have confidence in their evaluation method. The All Wales Injury Surveillance System (AWISS) is a prime example of this method in action.

The difficult question of actual rates of injury per child per hour at school or in public places has not been addressed by this study. First, the study was based at one hospital, and neighbouring A&E department records were not accessed. Complete case ascertainment was therefore not possible—the Northern Region has no equivalent to AWISS. It would also be necessary to quantify the relative amounts of time spent by the study population in the various locations. This is useful for certain specific activities, for example, number of miles cycled per cyclist fatality, but is not required in this setting.

The message from this study is that accidents at school generate a significant number of injuries (567 attendances at the Royal Victoria Infirmary in six months), and that these are significant injuries (127 fractures). Therefore, in Newcastle at least, schools are a suitable target for injury prevention initiatives.

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British poison centres' advice concerning dothiepin overdosage in young children

EDITOR,—Two young children aged 1 year 11 months and 2 years 10 months presented with a history of being found with their mother's 75 mg dothiepin tablets 45 minutes earlier and 24 tablets were missing. Both children were well. The National Poisons Information Service at Guy's and St Thomas' were consulted and advised that the children's stomachs should be washed out under general anaesthetic and repeated doses of activated charcoal be given. This was done and large quantities of chewed tablets were recovered.

In March 1996, a telephone call was made to each of the six British Poisons Centres and up to date advice requested for such cases. The results are shown in table 1. There is agreement that at least one dose of charcoal appropriate for the child's age should be given, but advice concerning gastric lavage and multiple doses of charcoal varied. Activated charcoal has a proven role in reducing absorption of tricyclics.¹ Multiple doses of

charcoal can slightly reduce the half life of tricyclics,² but there is little evidence that they are effective in toxic ingestions of tricyclics. The effectiveness of gastric decontamination in general is questionable³ and dangerous rhythm disturbances can be precipitated by lavage.

Adult series have shown that only 22% of ingested tricyclics were recovered by gastric lavage.⁴ No published data are available on the effectiveness of gastric lavage of tricyclics in children. Therefore it is not surprising that the Poison Centres interpret the limited data on multiple doses of charcoal and lavage in different ways and do not give uniform advice. However, the clinician working in accident and emergency must wonder whether it would be preferable for the Poison Centres to have a consensus of opinion on the management of such cases.

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Homeless people and A&E

EDITOR,—Dr Barnes and his colleagues ought to be congratulated on bringing into focus the A&E care of homeless patients.¹ They conclude that there was no significant increase in the use of A&E services by this group during an eight year period. However, the more important issue here is not the total use of the service by the homeless but the differing pattern of care required by the homeless compared to home based patients.

A study² which compared homeless with home based patients attending the A&E department of a teaching hospital in Tyneside found that these patients were predominantly male, unemployed, and less likely to have a GP, had a history of excessive alcohol consumption and involvement with police, and suffered various acute and chronic/minor medical conditions, many of which could have been dealt with by a GP but which also required short term medical admissions. Psychiatric consultations were common but admission to a psychiatric ward rare.

The problems of the homeless should be addressed not in terms of their numbers but in terms of their differing and complex needs, faced both by the secondary and the primary care sector.

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The authors reply:

We acknowledge the important points made by Mr Maitra.

The complex needs of this disadvantaged group were evident in our sample of A&E attenders on the Wirral and in a similar piece of work undertaken at the Royal Liverpool University Hospital A&E department. We also had direct experience of managing a subgroup of the homeless who presented with psychological problems. They were seen in the A&E department or the psychiatric emergency clinics.

Our study highlighted two important categories of homeless attenders. These were the repeat attenders and the "NAD" group. There was some inevitable overlap between the two categories and they tended to have the most complex needs. However, they were also the least likely to have these needs adequately addressed. They would represent a challenging group for further study.

From a psychiatric perspective, one potential important line of inquiry could be to look at the psychological processes going on during consultations. The powerful thoughts and feelings that are generated in both the professional and patient are likely to have an important bearing on the outcome of the consultation.

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Troponin T in patients with cardiac chest pain

EDITOR,—The use of dry chemistry systems for the rapid measurement of cardiac markers in the diagnosis of myocardial infarction has been advocated.^{1,2} As part of a larger trial we looked at the practicality of using the TropT rapid assay system (Boehringer Mannheim UK, Sussex) in a busy accident and emergency department to assess levels of troponin T. Troponin T is a sensitive and specific marker of myocardial damage.³

The TropT system is designed to be used both in laboratories and in near patient testing situations. It consists of a plastic slide onto which 150 µl of blood are pipetted into an application well and the slide left for 20 minutes. After this time the reading zone is evaluated. A single line indicates a negative result, two lines indicate a positive result. The quoted sensitivity of the slide was < 0.2 ng/ml.

Forty one patients attending accident and emergency with cardiac chest pain suspected of having had a myocardial infarct were assessed using the TropT assay, the manufacturer's instructions being followed in the laboratory. Measurements were made at admission (0 hours), and at 4 and 12 hours after admission.

The following diagnoses were reached in the 41 patients tested: myocardial infarction by WHO criteria (19); angina (10); atrial fibrillation (2); transient ischaemic attacks (1); and non-cardiac chest pain (9).

Thirty nine patients tested negative with the TropT assay on admission and two tested positive

Table 1 Poisons centres management advice

Centre	SWO	Charcoal
No 1	Yes	Single dose
No 2	Yes (within 4 h)	Single dose
No 3	Yes (within 6 h)	Multiple doses
No 4	? (if problems with charcoal)	Single and ? Multiple doses
No 5	No	Single dose
No 6	Only within 1 h	Single dose

(one myocardial infarction; one atrial fibrillation). At four hours postadmission, 14 more patients tested positive (13 myocardial infarction and one angina). At 12 hours postadmission, a further seven patients tested positive (five myocardial infarction and two angina).

Of the 19 patients diagnosed as myocardial infarction, a positive troponin T was only present in one patient on admission, and in 13 patients at four hours postadmission. All patients with myocardial infarction had a positive troponin test at 12 hours postadmission.

The TropT slides may be useful at 12 hours to exclude myocardial injury but do not offer improvements in the diagnosis of myocardial infarction in the first hours after presentation at an accident and emergency department.

Through the trial we made some observations which should be carefully considered when using TropT slides, especially in areas outside the clinical laboratory. (1) A good light source is required to read the slide, as the positive line can often be faint and the stick needs to be carefully assessed. (2) It is essential to ensure that 20 minutes elapse before reading the slide, as samples with levels of troponin T close to the sensitivity of the assay only develop after this time. The negative control line often develops within 10 minutes and this could lead to the stick result being misinterpreted in the absence of careful timing. These factors are likely to lead to problems in busy clinical areas, where necessary care with the timing and interpretation of the result may not always occur. (3) Sample handling is also important, and well mixed blood free from haemolysis is required. Since whole blood is used, haemolysis is only apparent on causing a red/brown colouration of the reading area.

We believe that when designing slide tests for use outside the laboratory, manufacturers should ensure that the strength of signal line for a positive result is clear, especially at low levels of the measured analyte. The strength of the negative control line should be equivalent to the signal line obtained by a weakly positive test and should appear after the assay reaction time has been reached to ensure that slides are not read inappropriately early.

In summary, the use of slide tests appears to be very simple but valid results are only obtained with careful and consistent use. The crucial role of the laboratory in the safe use of glucose meters outside of the laboratory is widely accepted.⁴ When clinicians are evaluating slide based tests for use at the patient's bedside they should seek the advice of their laboratory in the choice, evaluation, and training of staff in the use of these systems. Only with such collaboration will such assay systems lead to improvements in patient care.

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Management of major trauma

EDITOR,—With major trauma comprising 1 per 1000 emergency cases in Britain there is limited opportunity to develop expertise in the management of this condition. Many of these patients arrive at hospital during unsociable hours when accident and emergency (A&E) departments are often staffed by inexperienced junior doctors. To provide effective initial resuscitation there should be instant availability of experienced doctors from A&E, anaesthesia, general surgery, and orthopaedic surgery as required, and adequate radiology facilities including 24 hour computerised tomography. Unfortunately many district general hospitals are unable to provide an appropriate service from these specialties. The problem is compounded by the general apathy to trauma shown by many senior surgeons. While we would agree with Leaman¹ that all hospitals involved in trauma care should submit data to MTOS, we would not expect the results to be encouraging. Recent analysis of data submitted both to MTOS and to the Scottish Trauma Audit Group showed mediocre results, with delays in treatment despite senior staff involvement in initial resuscitation.²

It is obvious that Leaman is not a protagonist of aeromedical helicopter transportation; however, in his local region 22% of the County Air Ambulance missions over the last five years involved interhospital transfers. We suggest this service should continue to be used for transfers involving significant distances, where severe traffic congestion on motorway networks may result in prolonged journeys by land ambulances and for those patients whose clinical condition benefits from this method of transport, for example spinal injuries. The Glasgow Clinical Shock Study Group³ provides the gold standard for interhospital transportation; however, as they point out, the development of an integrated transport system involving experienced doctors is unlikely to become a realistic option in Britain due to the financial implications involved between different hospital trusts.

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Treatment of focal status epilepticus with lignocaine

EDITOR,—We report a patient with status epilepticus with focal seizures following generalised tonic status epilepticus, who was successfully treated with intravenous lignocaine after treatment with diazepam plus phenytoin.

A 68 year old man was admitted with a tonic generalised convulsion. He had a 40 year history of heavy alcohol intake and recurrent minor head traumas, although computerised tomography of the head showed nothing abnormal. Tonic generalised convulsions, each lasting for about one minute, occurred repeatedly. The interval between attacks was

about 15 minutes, during which he was unresponsive to verbal stimuli. Diazepam 10 mg was given intravenously with no effect. Phenytoin 750 mg intravenously was then given and the level of consciousness improved within two hours. However, a right tonic hemiconvulsion persisted, although the interval was prolonged to three to four hours on the day after admission. Despite of the additional administration of 1000 mg of phenytoin intravenously over the following 24 hours, the right tonic hemiconvulsion recurred.

An intravenous bolus of 100 mg lignocaine was therefore given during the attack, and the convulsion completely disappeared within about 30 seconds. The patient was then given a continuous intravenous infusion of lignocaine, 1 mg/min, and oral phenytoin, 300 mg/day. Status epilepticus did not recur. On day 10, the lignocaine was discontinued and convulsions did not recur thereafter. The electroencephalogram on day 12 revealed no epileptic findings.

Currently, lignocaine is considered as the third line agent in the treatment of status epilepticus when first line agents, such as diazepam and phenytoin, and second line agents, such as barbiturates, fail to control seizures.¹ However, the best treatment for focal status epilepticus has not yet been established, although barbiturates, carbamazepine, and phenytoin are recommended.² We gave lignocaine because of the ineffectiveness of the first line agents and the possibility of respiratory suppression by second line agents. A search of the literature revealed one case report of focal status epilepticus treated with lignocaine.³ This report emphasised that lignocaine does not cause sedation and rarely depresses the cardiovascular or respiratory systems when given in therapeutic dosage. The obvious effectiveness of lignocaine in our case suggests that this is a drug of choice in the treatment of status epilepticus with focal seizures.

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Decision support for telephone advice

EDITOR,—We read with interest the paper by Srinivas et al.¹ Since 1993 we have been researching telephone advice in A&E and general practice and have developed approaches to standardising patient assessment and advice. This includes piloting a telephone consultation skills training package and a computer based decision support system.² Our findings, based on an analysis of 340 calls to an A&E department, concur with those of Srinivas et al, with 23% advised to attend A&E, 21% to attend their GP, and 31% given home care advice. We found similar support from the nursing staff using the system. We also found that 53% of callers (n = 81) were aware that the nurse was using a computer, and the majority (75%) believed it to be a good idea to use computers to provide clinical