the UK for either the initial resuscitation or the ongoing treatment of major trauma patients.

Trauma patients make significant demands on blood bank stocks. Homologous blood transfusion is not entirely without risks, e.g. transmission of infection and both haemolytic and non-haemolytic transfusion reactions. Cross-matching of blood takes at least 45 min in most centres and transfusion of group specific blood in life-threatening circumstances is known to be associated with an increased risk of adverse reactions. It is therefore surprising that greater use of autotransfusion has not been made in such patients.

A review of the recent American literature confirms the use of autotransfusion in trauma centres there. Its use is still evolving in terms of determining which patients are most likely to benefit. A study in Denver, Colorado\(^3\) concluded that age, injury mechanism and the presence of shock were not predictors of usefulness, but that an initial haematocrit <35% and a requirement >21 colloid for initial resuscitation did indicate a potential role.

General agreement seems to exist that autotransfusion has a place in the management of traumatic haemothorax. A study in 1987 from Paris\(^4\) highlighted the successful use of autotransfusion in the pre-hospital care of 18 patients with life-threatening haemothorax, drained via a standard chest drain. They received an average of approximately 41 of autotransfused blood. Thirteen survived to undergo successful thoracic surgery. Such treatment should not be beyond the skills of any flying squad or major accident and emergency department and the minimal delay in attaching the autotransfusion system to the chest drain need not delay definitive surgery. It may be a life-saving measure for the few patients requiring transfer to a regional thoracic unit, when it may not be possible to wait for homologous blood to be cross-matched.

There is clearly a role for autotransfusion in the management of major trauma. The extent of that role is still being evaluated in the USA, and no doubt will broaden with experience and improved technology. However, the only way for us to define its role in major injury in the UK is to start using it in this context and audit the results.

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The management of chest pain in the accident and emergency department

A number of studies have highlighted deficiencies in the initial management of acute myocardial infarction in accident and emergency (A&E) departments. Marked delays in the ‘door-to-needle’ times for thrombolysis have been noted. This initial management in the A&E department is instrumental in minimizing these delays.

Johnson & Williams’ comment on the delay in their A&E department of five patients who underwent thrombolysis. They infer that in at least two patients there were sizeable delays on critical care unit (CCU) before thrombolysis was administered. They also felt that the Leicester group had not addressed this aspect of the problem.\(^2\)

In December 1991 and January 1992, a departmental repeat audit on the management of acute cardiac pain in A&E was carried out at the Leicester Royal Infirmary. Out of 67 patients, 17 received thrombolysis. The A&E senior house officer (SHO) on average spent 25 min before referring the patient to the CCU senior house officer. Some 9 min was spent waiting for him/her to arrive. It took a further 32 min on average before the patient was transferred to CCU and then some 33 min before he/she received thrombolysis. A total mean time of 99 min.

The results, presented at a joint A&E and CCU meeting were felt to be very poor.

A more formal refinement of the ‘fast tracking’ in A&E was produced and the CCU staff discussed ways of reducing the substantial delays on their unit. Since then, initial figures show that the times have in most cases been halved. A programme of more frequent re-evaluation has been set up and the results will be published at a later date.

Audits, their results, conclusions and recommendations are easily forgotten in the hospital environ-
Suturing of skin wounds: a pilot study

Suturing of skin wounds is one of the most common procedures performed in the accident and emergency (A&E) department. It is most often performed by inexperienced junior doctors, and the wound is often in a cosmetically or functionally important area such as the face or hand.

Attention has been given in the past to the need to instruct doctors in suture techniques. Additionally advice about the type of suture material to use is a standard part of most teaching. It is also common surgical practice to discard bent or damaged needles as they cause more tissue trauma in their passage, and may adversely affect wound healing.

Much effort has been made by the manufacturers of sutures to improve the strength and quality of their needles, but we have been unable to find any information regarding the use of these needles in clinical practice.

We would like to report the findings of a pilot study using one manufacturer's needles. As part of our regular teaching session for new senior house officers (SHOs) at Glasgow Royal Infirmary, we asked the participating junior and senior medical staff to assess three different needles. Each needle was presented blind to the assessor, who then repaired a wound in one of four fresh pigs trotters, all from the same animal. Each needle was then given scores, by visual analogue scales, for resistance to bend, ability to penetrate tissue repeatedly, and stability in the needle holder. Finally a crude score out of ten was recorded.

Twelve assessors participated in this trial. The three needles were a slim bladed needle designed for plastic surgery, a standard reverse cutting needle, and a square bodied strengthened needle (‘p’ needle). All three needles were produced by the same company (Ethicon Ltd, Edinburgh, UK), were similarly packaged, of the same length and curvature, and were attached to identical 4/0 monofilament nylon.

Analysis of the results showed that there was no discernable difference in the visual analogue scores for penetration of tissue and stability in the needle holder. Whilst there was no significant difference there was a definite trend to score the slim bladed needle as having less resistance to bend, and an equally definite trend towards the ‘p’ needle having the most resistance to bending (Table 1).

The overall scores given to the needles showed a distinct operator preference for the ‘p’ and reverse cutting needles. The most significant result however, was that 9 out of 10 of the slim bladed needles, and 7 of 9 reverse cutting needles were bent during use, compared with 2 of 10 ‘p’ needles.

If the recommendation not to use damaged needles is followed it is likely that some four times the number of reverse cutting needles would be used compared with the strengthened ‘p’ needle. The ‘p’ needle is more expensive, costing approximately a third more than the conventional needle. However, a reduction in the order of 4 to 1 in the number of needles used would more than compensate this extra unit outlay and help to avoid any compromise of wound healing caused by a damaged needle.

Whilst our study is small it does suggest that we should give more consideration to the needle types available to junior doctors in the A&E department.

Table 1. Bending characteristics of needles

<table>
<thead>
<tr>
<th></th>
<th>Slim blade</th>
<th>‘p’</th>
<th>rev. cutting</th>
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<tbody>
<tr>
<td>Average score</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>of resistance to bend</td>
<td>6.03</td>
<td>9.55</td>
<td>7.86</td>
</tr>
<tr>
<td>Actual number bent</td>
<td>9/10</td>
<td>2/10</td>
<td>7/9</td>
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