report can be negative: first the search strategy may be poorly documented secondly no research may have been published. In the latter case this may be because the research question is novel or because the question being asked has been considered not worth answering.

We therefore attempted to ensure that the search strategies used are highly sensitive (particularly in the case of negative BETs), but recognises the limitations of Medicine. We believe that by only seeking to answer questions that arise in clinical practice we avoid questions that are not worth answering. Thus negative BETs should identify novel research questions or highlight areas of clinical uncertainty.

It is therefore disappointing to see these negative BETS labelled as unhelpful, potentially misleading, or as a cause for misunderstanding. Rather they offer an opportunity for re-examining our ideas about the treatment of these conditions, and allow us to decide whether well designed studies that really answer the questions posed are needed.

Management of minor head injuries by non-specialists

EDITOR.—The management of patients with a minor head injury (MHI)—that is a Glasgow coma scale score of 13–15—once the decision has been made to admit him, is relatively simple and straightforward. The value of having neurosurgical specialist input could be looked upon as a luxury. In Nottingham there is a co-located accident and emergency (A&E) department with a regional neurosurgical unit. It is often the case that the A&E beds for observation become full and the local arrange-ments have to be made to admit the patient under their care. The use of this resource for this condition has been ques-tioned and a retrospective review of patients with a MHI admitted to this hospital was undertaken to determine the actual involve-ment of neurosurgery in the management of these cases in a typical teaching hospital.

For the calendar year of 1996, 618 adults (>16 years of age) were admitted with a diagnosis of MHI for observation, of whom 89 (14.4%) were referred to the regional neurosurgical unit (M:F = 63:26; 70.8%:29.2%). Thirty-seven (42%) had other injuries, some of which would require admission. In any case, for example maxillofacial or spinal fracture in eight (9%), their MHI being truly minor.

The A&E referral was made because no A&E beds in 47 (53%) was, for “social reasons” in four (4%), and in two (2%) was because they had been under a neurosur-gon some time previously for totally unrelated conditions. Only two of 24 (8%) patients who had a computed tomography during their admission had anything abnormal detected, neither of whom needed any intervention beyond simple observation.

The same survey carried out in the same hospital in 1992 revealed, using a randomly acquired sample of 90 patients with MHI, that eight (9%) were referred to the regional neurosurgical unit, none of whom needed any active intervention.

One of the authors (NB) carried out a similar review of patients admitted under general surgeons with MHI for the year 1991 in a different large general hospital with a co-located A&E department (at that time a trial trauma centre) and subregional neuro- surgical unit. Of 53 patients admitted with MHI only four (7.5%) required a neurosurgi-cal opinion and none required active interven-tion.

These three temporally separate studies in two different, but similar, hospitals found a total of 761 patients admitted with MHI, none of whom required neurosurgery. It is our con-tention that no patients with MHI need be admitted under the care of neurosurgeons in this country and that patients who need specialist neurosurgical input can be identified by neurological observations in a non-specialist setting and referred for advice or action accordingly.

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Visual assessment of blood loss by accident and emergency staff

EDITOR.—Birkinshaw et al have recently demon-strated that in reconstructed scenarios using manikins, 80% of estimates of blood loss by paramedics and technicians were under-estimates, and for a blood loss of 3 litres the mean underestimate was 60%.1 It is also important that staff in the accident and emer-gency (A&E) department can assess blood loss that is continuing within the department and also assess loss in clothing as it is removed, as is stressed in Advanced Trauma Life Support courses.2

We undertook a study whereby a measured volume (450 ml) of expired human whole blood was spilt over some clothing on a non-absorbent surface. After five minutes this scene was photographed. The photograph was then sent to the A&E department and they were asked to estimate the volume of blood shown in the photograph. Forty A&E nurses and 13 senior house officers (SHOs) were surveyed. Their estimates of blood loss are shown in table 1.

This demonstrates that staff in A&E show a wide variation in the accuracy of their estima-tions of blood loss and it is not reliable for clinical decision making. In contrast to the pre-hospital study, A&E staff appear to overestimate blood loss. None of the staff had ever been shown pictures of measured blood loss as part of their training. There is a need to train A&E staff in the assessment of external blood loss.

Table 1 A&E staff’s estimate of volume of a measured 450 ml blood loss

<table>
<thead>
<tr>
<th>No surveyed</th>
<th>Mean</th>
<th>Maximum</th>
<th>Minimum</th>
<th>1st quartile</th>
<th>3rd quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>40</td>
<td>577.6</td>
<td>3000</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>SHO</td>
<td>18</td>
<td>633.9</td>
<td>2500</td>
<td>50</td>
<td>250</td>
</tr>
</tbody>
</table>

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Transtracheal jet ventilation and the completely obstructed airway: incorporating an active expiratory phase.

G Kessell

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