

Impact of specialised paediatric retrieval teams

A regionally based retrieval service is warranted

EDITOR.—Joseph Britto and colleagues' study has an inherent flaw because it used a scoring system that has not been validated for use more frequently than at 24 hour intervals.¹ Nevertheless, we agree with the authors' view that critically ill children can be transferred by specialist paediatric retrieval teams with minimal morbidity and mortality. We carried out a prospective audit of 302 retrievals over 27 months, which showed only two critical incidents, both of which were detected and successfully managed by our team. Over the same period 180 patients were transferred by referring hospitals, with substantially more critical incidents during the transfer. These transfers involved a wide range of conditions for which intensive care was required (table).

Diagnostic categories for patients transferred by different teams. Figures are numbers (percentages)

Diagnostic categories	Transfers by Great Ormond Street (n=302)	Transfer by local team (n=180)
Respiratory	142 (47)	74 (41)
Sepsis syndrome	71 (24)	14 (8)
Neurological	36 (12)	40 (22)
Trauma	15 (5)	20 (11)
Other	38 (13)	32 (18)

In the commentary accompanying the paper Stuart Logan makes an evidence based evaluation of specialist paediatric retrieval teams and concludes, on the basis of only two studies, that the magnitude of the benefits is unreliable. Unfortunately, he fails to discuss other published evidence on the effectiveness of paediatric and neonatal retrieval^{2,3} and the similarities between the two processes. We agree with the practice of medicine supported by evidence and have contributed to the Cochrane Collaboration's initiative in intensive care. Randomised trials to evaluate paediatric retrieval would, however, be impractical and unethical.

A recent editorial⁴ contained a quotation stating that evidence based medicine "builds upon, rather than disparages or neglects, the evidence gained from good clinical skills and sound clinical experience." The reduction in adverse events during transfer is clear to all who are clinically involved in neonatal and paediatric transfers. In our experience, children are admitted to paediatric intensive care units because referring clinicians recognise that subsequent management is beyond their resources or capabilities in terms of facilities, support services, or experience. Such children are invariably the sickest in their ward, but they might be transferred inappropriately by inexperienced members of staff so as not to deplete local acute medical cover.

It is clear to clinicians that regional paediatric intensive care and specialist retrieval teams are needed. Their performance must be continually evaluated, but development must not be hindered for want of large randomised studies. Though agreeing that practice should be driven by evidence, we would not want to overlook a commonsense

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approach in which a sick child at risk of complications is transferred by skilled staff. Surely there remains a sound argument for a regionally based retrieval service.

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- 1 Britto J, Nadel S, Maconochie I, Levin M, Habibi P. Morbidity and severity of illness during interhospital transfer: impact of a specialised paediatric retrieval team. *BMJ* 1995;311:836-9. [With commentary by S Logan.] (30 September.)
- 2 Macnab A. Optimal escort for interhospital transport of pediatric emergencies. *J Trauma* 1991;31:205-9.
- 3 Hood J, Cross A, Hulka B, Lawson E. Effectiveness of the neonatal transport team. *Crit Care Med* 1983;11:419-23.
- 4 Evidence based medicine, in its place [editorial]. *Lancet* 1995; 346:785.

Comparison of teams is difficult

EDITOR.—Joseph Britto and colleagues' study of a paediatric retrieval team¹ closely mirrors a descriptive study performed by the specialist transport team based in our hospital's adult intensive care unit.² We agree with Stuart Logan, who says in his commentary on Britto and colleagues' paper that randomised controlled trials comparing specialist with non-specialist transfer are problematic and that evaluation of the introduction of specialist retrieval teams by the use of scoring systems should provide firmer evidence of their benefit.¹ We write to emphasise the practical difficulties of using the current scoring systems and, specifically, the problems of using them to compare different retrieval teams.

Britto and colleagues found an increase in thera-

peutic interventions during stabilisation by their retrieval team, as shown by an increase in the score obtained with the therapeutic intervention scoring system (TISS). In our study we calculated TISS scores for the 24 hours that preceded the arrival of the transport team and for the 24 hours that ended when stabilisation for transfer was complete. Britto and colleagues seem to have calculated TISS scores for successive 24 hour periods. The second score (TISS after retrieval) may therefore have included interventions performed after admission to the intensive care unit, which might increase the score. When the two teams are compared our Glasgow team (TISS score rising from 21 to 23) seems to have intervened less during retrieval than Britto and colleagues' team (TISS score rising from 18 to 30), but this difference may be more apparent than real. Neither study defined the period during which the scores were calculated sufficiently rigorously to allow valid comparison of the teams.

Similar caveats apply to the use of scores of severity of illness during the transfer of sick patients. In routine intensive care practice these scores are calculated from values obtained during the first 24 hours of intensive care. They can be used to describe the rapid physiological changes seen during retrieval of a sick patient only if they are substantially modified. Individual transport teams have modified them in different ways, making comparison impossible.

If Logan's aim of evaluating and comparing newly established retrieval teams is to be realised then details of scoring—specifically, the periods in which scoring is done and any modifications—must be more explicit. Without consensus on these details, scoring systems will not provide the clear evidence of benefit that could illuminate policy-making.

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- 1 Britto J, Nadel S, Maconochie I, Levin M, Habibi P. Morbidity and severity of illness during interhospital transfer: impact of a specialised paediatric retrieval team. *BMJ* 1995;311:836-9. [With commentary by S Logan.] (30 September.)

- 2 Runcie CJ, Reeve WR, Wallace PGM. Preparation of the critically ill for interhospital transfer. *Anaesthesia* 1992;47: 327-31.

Criteria indicating physiological morbidity were too non-specific

EDITOR.—We were interested to read Joseph Britto and colleagues' paper on the morbidity and severity of illness during interhospital transfer by a specialist paediatric retrieval team.¹ It is now generally accepted that critically ill children should be cared for in a specialist paediatric intensive care setting.² To minimise morbidity and mortality the patients should probably be transferred to such a unit by specially trained teams.

Britto and colleagues' group undoubtedly provides excellent care during transfer, as is shown by the scores for the paediatric risk of mortality before and after transfer. However, although the criteria of physiological morbidity quoted in the paper—for example, cardiac arrest, respiratory arrest, the loss of brainstem reflexes, and a score of < 7 on the Glasgow coma scale—may be appropriate to audit