

ambulance and out again at the neurosurgical unit, where the patient can be transferred to the computed tomography table and then on to a bed or operating table. A fully equipped dedicated transfer trolley should be kept in every major accident department, with its equipment running off the ambulance power during transfer.

A very small proportion of seriously head injured patients travel to the neurosurgical unit by air for reasons of distance, terrain, or traffic. Noise and lack of space are even more obvious, and oxygen tension can be considerably lowered during flight unless supplemental oxygen is given.

THE HANDOVER

The escorts must be able to give the neurosurgical staff an accurate description of all injuries, the trends in conscious level and neurological signs since injury or admission, and the drugs and intravenous fluids given. They should not leave until this has been done. The neurosurgical team may need further information later and must know who to contact. All medical and nursing clinical notes, observation charts, drug prescription sheets, and x ray films and scans should be left with the neurosurgical team. There are obvious advantages to having observation charts and case records standardised throughout a region.

THE AFTERMATH OF TRANSFER: IDENTIFYING AND SOLVING PROBLEMS

Identifying and overcoming problems in resuscitation and transfer is difficult, but must be done if standards are to rise. Recent studies from the south of England have confirmed that many hospitals cannot supply invasive blood pressure monitoring (77%), pulse oximetry (54%), or even a portable ventilator (30%) for transfer; and that many head injured patients arrive at the neurosurgical unit in hypovolaemic shock from missed and untreated extracranial injuries or from gagging on an endotracheal tube because of poor use of relaxant or sedative drugs.²³⁻²⁵ We can and must do better than this.

Neurosurgeons have a special responsibility for helping to educate and train the junior medical and nursing staff in their referring hospitals, who usually bear the brunt of initial trauma care and who change often. It is good practice for the neurosurgical team to complete a short form after every transfer and return it quickly to the doctors and nurses who treated and escorted the patient, highlighting any concerns thought to stem from the transfer itself or from management at the referring hospital. By the same token, the referring team and escorts should tell the neurosurgical unit about problems they perceive with individual transfers and handovers. Experienced clinicians from both hospitals should audit each case where a problem is raised by either side, to agree ways of avoiding these in future. In this way the locally agreed protocols for referral and transfer can be constantly refined.

Feedback must be even handed; a safe transfer should attract thanks from the neurosurgical team, as an important contribution to the care of the patient. Indeed, it is particularly important that all comments

should be constructive and educational; negative remarks or vague criticisms of the work of others simply engender hostility and make it more difficult to agree that a problem has occurred and how it can be prevented in the future. Every effort must be made to reinforce the message that the referring and recipient doctors and nurses are not in competition with each other but form one team whose sole purpose is to help the patient.

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Correction

ABC of one to seven: Audit in primary care paediatrics

Two author's errors occurred in this article by L Peter (3 July, pp 51-3), both in the section headed "Sample size for audit (rule of thumb)." Firstly, Oxfordshire Medical Audit Advisory Group should have been credited as the source of this section of the article and the accompanying graph. Secondly, the last two numbers on the x axis of the graph should be 3000 and 5000, not 1200 and 1400.