We are particularly paper. Although optimal in measure to these the authors extricate treatment. greater administration of activated ingestion above). The paper by was more was not a of critically the spine and retain that of the spine and for their hospital. We wonder what extrication setting, main and immobilisation. The board's function was used for a plan of action, for providing information from the study. This database, compiled from clinical notes, reveals that of the 658 patients with a trauma score greater than 15, only 51 patients were recorded as trapped and undergoing extrication (personal communication).

If thought necessary, a single ambulance crew could transfer a patient from a spinal board simply by use of a scoop stretcher placed between the patient and the board and then lowered onto a vacuum mattress. This, however, would be time consuming and probably not warranted; it would add time to the overall process on scene.

As covered in our paper, the spinal board is not an ideal surface. The spine is not flat! The neck is extended on the board; it causes patients without spinal injury pain and discomfort; it causes pressure sores in those patients with (often irreversible) spinal injury, who may stay on the board until they arrive at a spinal centre. Patients are left on the board longer than necessary in caution about causing or extending an injury. This is usually until a radiological series is performed. These X-rays may also be needed because of pain caused by lying on a board, which cannot be differentiated from significant trauma. We do not think that in most settings rapid removal from the board takes place, and many casualty departments own boards to continue this type of spinal immobilisation.

Although we do not expect change in practice from our paper we wish to highlight the above points and agree with Dr Carney's suggestion that spinal boards should only be used for the short periods of transfer to hospital from the scene of the accident.

Support surfaces

Editor,—I was concerned to read the paper by P W Main and M E Lovell entitled "A review of seven support surfaces with emphasis on their protection of the spinaly injured". I would not in any way doubt their findings on the pressure problems related to the use of long spinal boards. Unfortunately, however, they seem to have missed the whole point of the use of spine boards in the prehospital care of critically injured patients. Although the spine board may provide a surface for in-line immobilisation of the spine, its primary function is in the road traffic accident setting, where it is used to extricate patients from vehicles and for their subsequent transportation to hospital.

The spine board is the only tool that can be used to slide a patient with a serious injury from a vehicle with safe in-line minimal immobilisation of the spine and retain that immobilisation on route to hospital. With the use of a board for both rearward and side extrication from a vehicle, the patient can be extricated with support to the whole spine safely from virtually any vehicle accident. The board's construction, specifically designed with a slippery surface to slide patients from the wrecks, has many advantages in prehospital care as an extrication device. This is not possible with a vacuum mattress or scoop types of stretcher or, in fact, any other type of stretcher currently available.

The patient on extrication is immediately immobilised with head and neck restraint and four body straps and transferred to an ambulance trolley. The patient is then transported on the board during the short transfer to hospital, where, again, the advantage of being on a board is obvious. In the case of a multiple injury patient, rapid transfer from an ambulance to hospital trolley is essential and this is facilitated by rapid transfer on the spine board, again with a patient fully immobilised. The hospital staff, once appraised of the mechanism of injury and apparent injuries to the patient, can decide whether to maintain the patient on the board or transfer them with an appropriate spinal lift to a vacuum mattress.

If a vacuum mattress is available on all front line ambulances, a single ambulance crew would not be able to transfer a patient, once extricated from a wreckage, from a spine board to a vacuum mattress. The vacuum mattress, therefore, although an ideal A&E department and secondary transfer tool, has a number of practical limitations in its prehospital use as a primary stretcher. The spine board certainly does have its limitations, with pressure area problems if patients are left on the board for long periods of time, but its value as an extrication device, enabling extrication with in-line spinal immobilisation for transfer to hospital, cannot be overemphasised.

This paper clearly emphasises the potential hazards of a spine board to a patient, with defined spinal column injury, but one must remember that the majority of patients are placed on a board with only suspected injury, because of their injury pattern or injury mechanism that is thought to be of no risk. The safe extrication of a patient from the wreckage is almost certainly of more importance to the integrity of a damaged spinal column than a smaller risk of pressure area problems in the short transfer time to hospital.

C J Carnie Director of Operations Staffordshire Ambulance Service NHS Trust

The authors reply

Thank you for the opportunity to answer Dr Carney's paper. We would value any debate of this most important subject.

We disagree that the long spinal board's and main and most used function is in the extrication process. The spinal board, as we know, is used when spinal injury is suspected, including motorcycle accidents, falls from heights, pedestrian accidents, traffic accidents, etc. We wonder what percentage of calls that an ambulance crew attends and where a spinal board is used are for extrication. We suspect that it is few. It would be helpful if such information were collected, since no direct figures are available. We are grateful to Mr DA Boot (Mersey Trauma Outcome Study) for providing information from the study. This database, compiled from clinical notes, reveals that of the 658 patients with a trauma score greater than 15, only 51 patients were recorded as trapped and undergoing extrication (personal communication).

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