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PROVISION OF TRAUMA TEAMS IN SCOTLAND: A NATIONAL SURVEY

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ABSTRACT

Background and Aims: Trauma is still the leading cause of mortality in the first four decades of life. Despite multiple reports on how trauma care could be improved in the UK, treatment has been shown to be inconsistent and of poor quality. Trauma teams have been shown to have a positive effect on outcome. We aimed to determine the prevalence of trauma teams in Scotland. **Methods:** We performed a telephone survey of 24 hospitals with Emergency Departments and spoke to the senior clinician regarding provision of trauma teams. **Results:** 5 (21%) of the hospitals questioned had trauma teams. The most common reasons for not having one were: no problem with current system 8 (44%) and inability to include senior enough staff on the team 6 (24%). **Conclusions:** There are few trauma teams in Scottish acute hospitals. There was little enthusiasm for introducing them for a variety of reasons. Local evidence of benefit is likely needed before their adoption becomes widespread.

It has been estimated that there are between 10000-10600 trauma patients in the UK each year¹ and their management has been shown to be inconsistent and of a variable quality². Trauma remains the leading cause of death in the first four decades of life^{3,4} and has a high socioeconomic burden given that for each death there are 2 severely injured or permanently disabled trauma victims⁴.

Organised trauma centres have previously been shown to reduce trauma related mortality⁵⁻⁷ and the benefits of trauma teams are well described^{8,9}. Reports from respected medical bodies (RCS, NCEPOD) called for a formal team to be available in all hospitals receiving major trauma. Scotland, however, has significant differences from the rest of the UK. Whilst most of the population live in urban conurbations, the remainder reside over a wide geographic area that is difficult to reach. This demographic has been shown to alter both the pattern of trauma injury and the times taken to travel to hospital¹⁰.

The aim of this survey was to determine the provision of trauma teams in Scottish hospitals receiving major trauma and the reasons for their absence, if any.

METHODS

This audit did not require ethical approval. During March 2008, we contacted those hospitals with emergency medicine, anaesthesia, general surgery and orthopaedic surgery departments (n=24) that could receive major trauma. Each doctor was asked the questions detailed in the questionnaire (fig 1). Any answers which differed from the set responses were noted.

RESULTS

In 21 out of 24 hospitals we spoke to an Emergency Medicine Consultant. In the remaining 3 departments the grade of seniority was a senior Specialist Registrar (n=1), a staff grade (n=1) and an SHO (n=1). The latter department is unique in that there is no permanent consultant emergency physician, however, its rural location necessitates receiving trauma from mountain rescue services.

Of the 24 hospitals contacted, only 5 (21%) had formalised trauma teams and these were in District General Hospitals. The team consisted of a middle grade or Consultant emergency physician, anaesthetic and orthopaedic registrars and 4 out of 5 teams included a general surgeon. Two had formal protocol driven criteria for paging the trauma team on arrival of the patient. One activated the team on the information given by, or at the request of, the Scottish Ambulance Service. The remainder left it to the discretion of the doctor dealing with the trauma. Four out of the five hospitals with trauma teams had a helipad.

Nineteen (80%) acute hospitals did not have formal trauma teams. One hospital is planning to introduce a trauma team in the next year and whilst one hospital said it would 'possibly' introduce a trauma team in the next year, this was classified as a 'No' in the analysis. Eight of the nineteen hospitals (36%) felt that trauma teams were unnecessary as the emergency department staff could identify any staff that were needed and call them at the appropriate stage.

Six (24%) of the hospitals cited staffing problems as a reason for not having a formalised trauma team or felt that there would insufficient seniority in the teams to make them beneficial. One hospital had previously had such a trauma team but had to discontinue the team, as certain specialties would not reliably attend trauma calls.

Results	n	%
What type of Hospital?		
Teaching	7	29%
District General	17	71%
Do You Have A Helipad?		
No	11	46%
Do you Have a Trauma Team?		
Yes	5	21%
Do you criteria for calling?		
Yes	2	40%
No	3	60%
Who Are On the Team?		
A&E Middle Grade/Consultant?	5	100%
Anaesthetics	5	100%
Orthopaedics	5	100%
General Surgery	4	80%
Other (labs/x-ray)	1	20%
No	19	79%
Plan to Introduce in Next Year?		
Yes	1	5%
No	18	95%
Reasons for not introducing a trauma team		
Emergency department have no problems currently	8	44%
Speciality Rotas' Unable to Support a Trauma Team	4	22%
Not Enough Staff	2	11%
Trauma By-Passes	2	11%
Lack of Support from Specialties	1	6%
Trauma Teams do not work	1	6%

One hospital stated that trauma teams 'do not work'. These results are shown across in table 1. Figures 1 and two show pattern of trauma team provision and reasons for their absence, respectively (Table 1: main results)

Figure 1. Provision of trauma teams.

Figure 2. Reasons for lack of trauma team

DISCUSSION

Our Survey showed that few hospitals in Scotland have a formal trauma team with very few having plans to instigate them. Many hospitals felt their current system worked well and had no difficulties in contacting other acute specialities. The UK Trauma Audit and Research Network (UK TARN) data has shown, however, that median time to theatre was 161 minutes from emergency call and 115 minutes from arrival in the Emergency Department¹¹. A delay of over two hours is associated with increased mortality¹² however trauma teams have been shown to reduce time to theatre¹³ and have mortality benefits^{8,9}.

Ongoing blood loss¹⁴ and increasing time to laparotomy¹² have been associated with increased mortality thus any trauma team must consist of personnel with the experience to be able to make quick and reliable decisions regarding theatre. In many hospitals it is this lack of senior personnel that is cited as a stumbling block to the introduction of trauma teams. This situation is likely to worsen given the introduction of the EWTD and Hospital at Night.

The presence of trauma teams in district general hospitals may result from their rural location and admission of more serious road traffic accidents¹⁰ or it may reflect smaller, more closely knit working relationships.

CONCLUSION

The perception of the dubious validity of trauma teams as well as the difficulty in finding doctors of appropriate seniority to staff them suggests that any increase in the provision of trauma teams in Scotland is likely to be a slow process. The prevalence of these teams will only increase if it becomes a government priority, there is local evidence to show improved outcome or there is economic benefit.

Competing interests:

None declared

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REFERENCES

1. Better care of the Severely Injured. A Joint Report from the Royal College of Surgeons of England and the British Orthopaedic Association. July 2000
2. **Anderson ID**, Woodford M, Donbal FT, Irving M. Retrospective study of 1000 deaths from injury in England and Wales. *BMJ* 1989; **296**: 1305-8
3. **Lecky F**, Woodford M, Yates D W: Trends in trauma care in England and Wales 1989-97. *The Lancet* 2000; **355**:1771-75
4. Trauma, Who Cares? A Report of the National Enquiry into Patient Outcome and Death. 2007
5. **Nathens AB**, Jurkovich GJ, Rivara FP, Maler, RV. Effectiveness of State Trauma Systems in Reducing Injury Related Mortality: a National Evaluation. *J. Trauma* 2000; **48**(1): 25-33
6. **MacKenzie EJ**, Rivara FP, Jurkovich J, Nathens AB, Avery B, Frey KP, Egleston BL, Salkever DS, Scharfstein DO. A National Evaluation of the Effect of Trauma Center Care on Mortality. *N Engl J Med* 2006; **354**(4): 366-78
7. **Nathens AB**, Avery B, Jurkovich GJ, Cummings P, Rivara FP, Maier RV. The Effect of Organized Systems of Trauma Care on Motor Vehicle Crash Mortality. *JAMA* 2000; **283**(15): 1990-94
8. **Sakellariou A**, McDonald PJ, Lane RHS, The Trauma Team Concept and its Implementation in a District General Hospital *Ann. R Coll. Surg. Engl* 1995; **77**: 45-52
9. **Petrie D**, Lane P, Stewart TC. An Evaluation of Patient Outcomes comparing Trauma team activated versus trauma team not activated using TRISS Analysis. Trauma and Injury Severity Score. *J. Trauma* 1996; **41**:870-3
10. **McGuffie AC**, Graham CA, Beard D, Wilkie SC. Scottish Urban versus Rural Trauma Outcome Study. *J.Trauma* 2005; **59**(3): 632-8.
11. **Henderson KIM**, Coats TJ, Hassan TB, Brohi K. Audit of time to Emergency Trauma Laparotomy. *Br J. Surg* 2000; **87**:472-76
12. **Copes WS**, Staz CF, Konvolinka CW, Sacco WJ, American College of Surgeons Audit Filters: Associations with Patient Outcome and resource Utilization. *J. Trauma* 1995; **38**:432-8
13. **Dodek P**, Herrick R, Phang PT. Initial management of trauma by a trauma team: effect on timeliness of care in a teaching hospital. *American Journal of Medical Quality*. 2000;**15**(1):3-8
14. **Cayten CG**, Stahl WM, Agarwal N, Murphy JG. Analysis of preventable deaths b Mechanism of Injury among 13 500 Trauma Admissions. *Ann Surg* 1991; **214**: 510-20

APPENDIX 1-QUESTIONNAIRE

Questionnaire

1. What type of hospital are you?

DGH / Teaching

2. Do you have a helipad?

Yes / No

3. Do you have a trauma team?

If yes

(i) *Who do you have on your team?*

a. A&E

b. Anaesthetics

c. Orthopaedics

d. General Surgery

e. Medicine

f. Other (specify)

(ii) *Do you have a criterion for calling the team? (if so what?)*

If no

(i) *Do you plan to introduce one in the next year?*

(ii) *If not then what is the reason for not having one?*

a. Not necessary as current system adequate

b. Lack of specialty support

c. Do not believe in trauma teams

d. Other (specify)