

# Assessing the potential for major trauma transfusion guidelines in the UK

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► Appendix 1 is published online only at <http://emj.bmj.com/content/vol25/issue3>

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## ABSTRACT

**Background:** Major trauma patients are invariably received in the emergency department by a combination of emergency department and trauma team staff. The initial assessment is largely protocol led, using Advanced Trauma Life Support (ATLS) guidelines. The task of ordering and prescribing blood products often falls to the more junior members of this team.

**Aim:** The aim of this postal questionnaire survey was to quantify the use of transfusion guidelines for major trauma in the UK and to assess whether generic national guidelines might be beneficial.

**Methods:** A questionnaire was sent to all major emergency departments in the UK with an attendance >50 000 patients per year (total = 167). A reminder was sent to all non-responders. Each trust was asked whether guidelines are used; which blood products are specified; how useful they consider them to be; and how well they are adhered to.

**Results:** 109 questionnaires (65%) were returned, of which only 17 (16%) currently use major trauma transfusion guidelines. While few trusts currently use guidelines, those being used were found to be very similar. Each trust was asked how useful their guidelines are, using a linear score of 0 to 5 (mean score 3.7). Those without guidelines were asked how useful they thought major trauma guidelines would be (mean score 3.3).

**Conclusion:** The appropriate ordering and use of blood products has major clinical and cost implications. Few trusts currently have guidelines for major trauma despite being enthusiastic regarding their use. The authors propose there is now a role for national major trauma transfusion guidelines within the UK.

Major trauma patients comprise a vulnerable group, often requiring rapid treatment plans despite invariably having complex medical demands. Their optimal transfusion requirements have been the topic of much recent research and debate, particularly relating to the use of individual blood products. To date, this work has not been combined to produce generic national guidelines.

The aim of this postal questionnaire study was to quantify the proportion of major emergency departments in the UK using trauma transfusion guidelines and consider whether the introduction of generic national major trauma transfusion guidelines could be beneficial.

## BACKGROUND

In the UK, major trauma patients are invariably received in the resuscitation area by a combination of emergency department and trauma team staff. The initial assessment of such patients is largely protocol led using Advanced Trauma Life Support (ATLS) guidelines<sup>1</sup> under the direction of the team

leader; usually a consultant or registrar. However, the task of ordering and prescribing blood products often falls to the junior members of this team. It can prove difficult to determine who requires transfusion, which products they require, and when these should be administered. Until recently, few recommendations have been available to assist clinicians in this decision process; as a result the appropriate ordering of blood products can be highly variable.

Blood products are a limited commodity, reliant on public donation, and need to be used effectively to avoid wastage. Rationalising transfusion for major trauma patients is an area with great scope for improvement.<sup>2</sup> The clinical evidence is now accumulating for the provision of individual blood products for trauma patients,<sup>3–4</sup> providing guidance for their optimal use and the timings for individual blood product administration.

Trauma care has evolved dramatically in recent years. In terms of bleeding, the greatest priorities are the identification and control of haemorrhage, restoring adequate tissue perfusion and the prevention of subsequent coagulopathy.<sup>1–5–7</sup> The Multidisciplinary Task Force for Advanced Bleeding Care in Trauma published their initial European guidelines in 2007.<sup>8</sup>

The implementation of specific clinical guidelines is becoming increasingly popular throughout medical practice as an effective means of applying evidence based medicine and optimal patient care during daily medical practice.<sup>9</sup>

## METHOD

In the summer of 2006 a questionnaire (appendix 1) was sent to all major emergency departments in the UK with an attendance >50 000 patients per year,<sup>10</sup> addressed to the emergency department consultant in charge. Each was asked whether major trauma transfusion guidelines were used by their trust. Major haemorrhage guidelines alone were specified as insufficient. Following an initial postal round, the questionnaire was sent a second time to all non-responders.

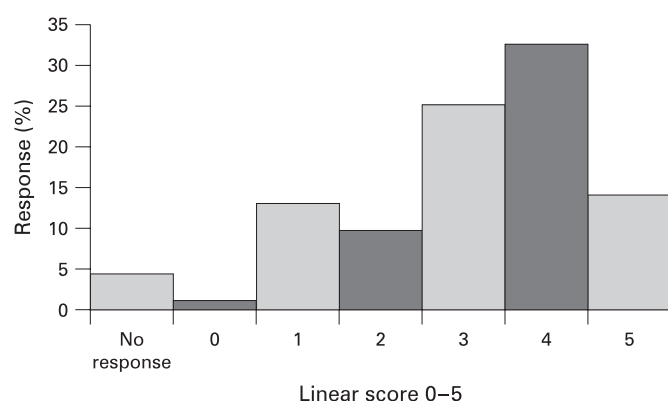
Those using clinical guidelines were asked:

- Which blood products they included, how useful they were, and how well they were adhered to.
- Which blood products were specified within their major trauma transfusion guidelines, using a tick box scheme, and a copy of the guidelines was requested.

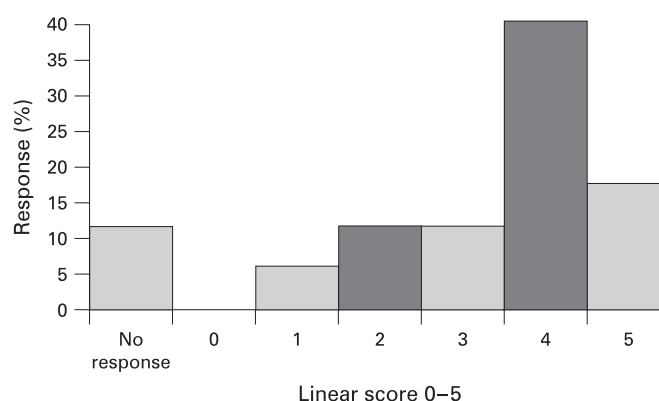
Those without clinical guidelines were asked how useful such guidelines would be.

## RESULTS

A total of 111 (66%) of the 169 hospital trusts responded, of which one questionnaire was inadequately completed and one hospital had closed.

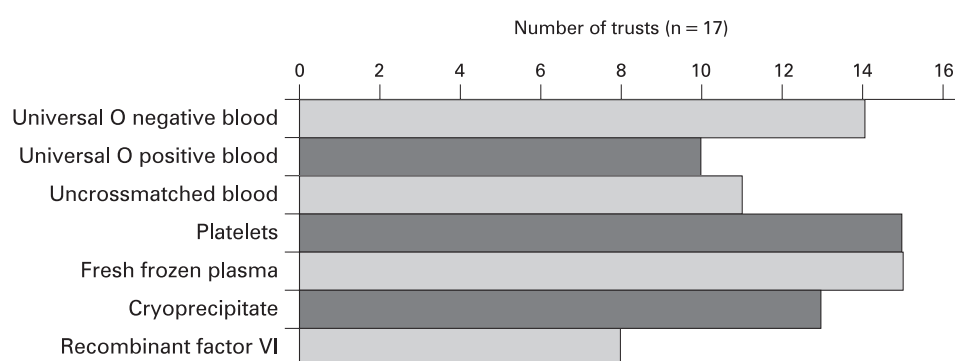


**Figure 1** Centres without guidelines were asked: “How useful do you think major trauma guidelines would be?” A scale of 0 (not useful) to 5 (very useful) was given.



**Figure 2** Centres using guidelines were asked: “How useful are the major trauma transfusion guidelines that you use?” A scale of 0 (not useful) to 5 (very useful) was given.

**Figure 3** “Which of the following blood products do you specify in your guidelines?”



Seventeen (16%) of these trusts do use transfusion guidelines, of which nine returned a copy of their guidelines with the questionnaire.

Centres without guidelines were asked how useful clinical guidelines could be for major trauma, on a linear score of 0 (not useful) to 5 (very useful) (mean score 3.3) (fig 1).

Those trusts using clinical guidelines were asked how useful their guidelines are (mean score 3.7) (fig 2).

Each trust was asked which blood products they specify within their guidelines (fig 3). Guidance on the use of uncrossmatched blood and recombinant factor VII was found to be absent from many of these trust guidelines.

The overall adherence to these individual trust guidelines was found to be 76%.

## DISCUSSION

Few trusts are currently following major trauma transfusion guidelines despite being enthusiastic regarding their use. The quantity of recent work in this field makes it very difficult for trusts to maintain up-to-date guidelines. Efforts to develop individual clinical guidelines require a massive duplication of the same work by trusts throughout the UK.

Trusts using clinical guidelines report a good adherence rate (76%), demonstrating that the uptake of guidelines can be high when supported by individual trusts. Those using guidelines appear to be using relatively similar clinical guidelines, although often out of date.

Regional variations in guidelines can lead to confusion and a reduction in the overall adherence to trust guidelines, exacerbated by the frequent rotation of inexperienced junior medical staff.

The authors propose that there is now a role for national major trauma transfusion guidelines. Individual trusts could utilise national guidelines when generating their local protocols.

National guidelines would ensure optimal patient transfusion and continuity of provision among junior staff.

## CONCLUSION

A large amount of recent literature has been written with a view to developing “best practice” for blood product prescribing in major trauma. At a trust level it is difficult to digest and disseminate these recommendations to junior staff and ensure their implementation.

The development of national major trauma transfusion guidelines would enable this knowledge to be translated into routine optimal patient care throughout the UK.

**Competing interests:** None.

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## TRANSFUSION GUIDELINES FOR MAJOR TRAUMA PATIENTS

During the London Trauma Conference May 2006 the question was posed as to what proportion of trusts had guidelines for transfusion for trauma patients.

Approximately 50% of those attending did have guidelines. Our trust does not and at times this can lead to suboptimal use of transfusion products. Our aim is ascertain the proportion of trusts in the UK using guidelines for trauma transfusion and what these guidelines are.

Please complete the following boxes and return in the envelope provided.

- Does your hospital have guidelines for transfusing in major trauma?  
(Massive transfusion guidelines alone are not sufficient.)

Y/ N
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- **If NO**, how useful do you think they would be?

N/A	0	1	2	3	4	5
	Not Useful				Very Useful	

- **If YES**, do these include the use of:

- Universal blood (O **negative**)?
- Universal blood (O **positive**)?
- Uncrossmatched group specific blood?
- Platelets?
- FFP?
- Cryoprecipitate?
- Recombinant Factor VIIa (NovoSeven)?
- Others (please specify)
- How useful are the guidelines you use?

Y/ N
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Y/ N
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Y/ N
------

Y/ N
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Y/ N
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Y/ N
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Y/ N
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N/A	0	1	2	3	4	5
	Not Useful				Very Useful	

- How often are these guidelines adhered to?

NEVER	20%	40%	60%	80%	100%
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- Is there anyone else in your trust we should speak to regarding trauma transfusion?

**PLEASE ENCLOSE A COPY OF ANY GUIDELINES YOU HAVE.**

Many thanks for your time.

Dr's Richard Westerman and Kelly Davey  
Senior House Officers