

# Massive transfusion: the incidence, cause, blood component use and survival in the South West region

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## South West Regional Transfusion Committee

### Introduction

There has been raised awareness regarding the management of massive haemorrhage, culminating in the publication of the AAGBI safety guideline on the Management of Massive Haemorrhage in November 2010. In September 2010 the South West Regional Transfusion Committee (RTC) conducted a baseline survey to assess the incidence, cause, blood component use and survival associated with this situation in the South West region.

### Method

This survey was retrospective over a 12 month period and included all massive transfusion episodes which used 8 or more units of red blood cells (rbcs) within a 24 hour period. Survival at day 7 was used as an outcome. The survey also looked at the policies for the provision of blood components in the management of massive haemorrhage.

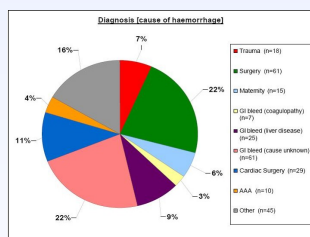
### Results

- 71% (12/17) of NHS trusts in the region responded
- 277 massive transfusion episodes were reported

Using information on the catchment areas for participating trusts the incidence was calculated at 1 in 15700 of the population.

### Reason for transfusion

The main reason for massive transfusion was gastrointestinal haemorrhage (34%), followed by surgery (22%) and obstetric haemorrhage (11%). Trauma represented only a small percentage (7%) of the reported cases.



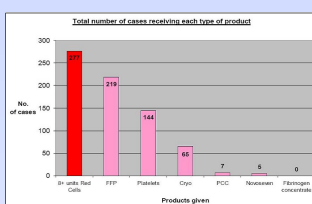
The majority of episodes of haemorrhage requiring massive transfusion were initiated in A&E (32%), on the wards (27%) or in theatres (25%).

### Organisational data

Just 58% (7/12) of trusts had a massive haemorrhage policy incorporating a trigger phrase for provision of an agreed number of components. The proportions of units of **rbcs : fresh frozen plasma (FFP)** issued immediately ranged from **1:0** to **1:1**. Only 1 policy included immediate use of platelets.

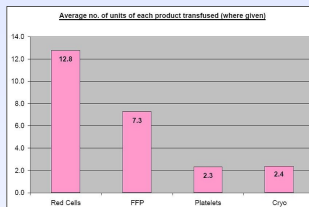
### Component usage

- In only 79% of massive transfusion episodes was FFP given.



The mean number of rbcs given per episode was 12.8 (range: 8 - 100). Where FFP was given, the mean number of units transfused was 7.3 (range: 1 - 48).

- 52% of episodes received platelets
- 24% received cryoprecipitate



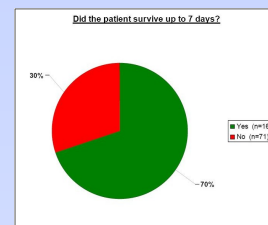
There were 24 episodes where > 20 units of rbcs were given, and 2 episodes where > 28 units were given (n= 32 & 100). In 13 episodes > 12 units of FFP were given, and in 5 episodes > 16 units were given (n= 20, 20, 24, 29, & 48).

The ratio of rbcs : FFP given was  $\geq 2:1$  in 53% of episodes,  $<2:1$  to  $\geq 1.5:1$  in 22%, and  $<1.5:1$  in 25%.

1.	178 patients received FFP, of which 126 (70.8%) survived to day 7;
	57 patients did not receive FFP, of which 38 (66.7%) survived to day 7.
1.1.	95 patients received RBC:FFP in a proportion $\geq 2:1$ , 66 (69.5%) survived to day 7.
1.2.	39 patients received RBC:FFP in a proportion $<2:1$ and $\geq 1.5:1$ , 31 (79.5%) survived to day 7.
1.3.	37 patients received RBC:FFP in a proportion $<1.5:1$ and $\geq 1:1$ , 25 (67.6%) survived to day 7.
1.4.	6 patients received RBC:FFP in a proportion $<1:1$ and $>1:2$ , 4 (66.7%) survived to day 7.
1.5.	1 patient received RBC:FFP in a proportion of 1:2 and did not survive to day 7.
2.	101 patients received FFP + Platelets, 63 (62.4%) survived to day 7;
	5 patients received Platelets but no FFP, 3 (37.5%) survived to day 7.

### Survival to day 7

Survival information was provided in 85% (235/277) of reported episodes, of which 70% survived to day 7.



Survival rate varied between hospitals with a range of 52% to 89%.



There was no association between survival and either FFP use or the ratio of rbcs to FFP.

### Summary

This survey only captured those patients who survived long enough to receive 8 or more units of rbcs and therefore could have underestimated the incidence of massive haemorrhage.

Following the publication of the AAGBI guidelines, recommendations from this survey and the addition of examples of hospital massive haemorrhage guidelines on the South West RTC website, it is anticipated that all trusts will develop a massive haemorrhage guideline. This should include earlier use of FFP.

A further regional survey is planned to assess changes in the management of massive haemorrhage.

The full report for this survey can be accessed at:

[http://www.transfusionsguidelines.org.uk/docs/pdfs/rtc-sw\\_audit\\_massive\\_tx.pdf](http://www.transfusionsguidelines.org.uk/docs/pdfs/rtc-sw_audit_massive_tx.pdf)

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