

# South West Regional Transfusion Committee

## Joint Project with CliniSys® to develop Electronic Blood Use Analysis Data



### Blood and Transplant

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Introduction

*‘A novel method of data analysis for utilization of red blood cell transfusion’* published by Frank *et al.* 2013 described an electronic method of displaying red cell transfusion episodes with haemoglobin (Hb) results. The pre-transfusion Hb represented the ‘trigger’ and the post-transfusion Hb the ‘target’. The mean Hb results were presented by specialty, and surgeon/physician.

The South West Regional Transfusion Committee were keen to replicate this analysis in hospitals in the region; however it was recognised that while data on both Hb and blood component issues were readily available, linking these data sets was too labour intensive for routine use using the current laboratory information management systems (LIMS) available.

Results

So far pre- and post-red cell transfusion Hb results have been combined electronically by specialty using data from a pilot hospital. See table 1.

Table 1

|                              |    |     |     | Restrictive Hb Trigger |     |   | Restrictive Hb Target |     |     |      |      |    |     |
|------------------------------|----|-----|-----|------------------------|-----|---|-----------------------|-----|-----|------|------|----|-----|
| Oncology<br>n = 1,236        |    | 6.3 |     |                        |     |   |                       |     |     | 10.3 |      |    |     |
|                              |    |     |     |                        |     |   |                       |     |     |      |      |    |     |
| Paediatrics<br>n = 2,456     |    |     |     |                        | 7.6 |   |                       | 9.5 |     |      |      |    |     |
|                              |    |     |     |                        |     |   |                       |     |     |      |      |    |     |
| Urology<br>n = 3,651         |    |     |     | 7.4                    |     |   | 8.8                   |     |     |      |      |    |     |
|                              |    |     |     |                        |     |   |                       |     |     |      |      |    |     |
| Cardiac Surgery<br>n = 2,719 |    |     | 6.8 |                        |     |   |                       |     | 9.7 |      |      |    |     |
|                              |    |     |     |                        |     |   |                       |     |     |      |      |    |     |
|                              | <6 | 6   | 6.5 | 7                      | 7.5 | 8 | 8.5                   | 9   | 9.5 | 10   | 10.5 | 11 | >11 |

Methods

CliniSys® is the major LIMS provider in the South West region. They were therefore approached to develop an electronic solution.

A project group was formed, which included a Consultant Haematologist, a Patient Blood Management Practitioner, two Transfusion Laboratory Managers and three representatives from CliniSys®.

The data was agreed to be analysed as follows:

- The patient number (hospital/NHS) would be used as the common identifier between the two data sets
- Transfusion would be viewed in episodes rather than individual units (one episode may be one, two or three or more units)
- The nearest chronological Hb either side of the transfusion episode would be used as the pre- and post-transfusion Hb
- Patients who had only a pre- or a post-transfusion Hb would be included in the analysis.

Discussion

The initial concept of electronically combining Hb results with transfusion episodes has been achieved. This is planned to be available for validation in the pilot hospital in October 2014.

We plan to expand the functionality of this system to allow other parameters to be analysed such as platelet transfusions with platelet counts.

These results can be bench-marked against national guidelines for transfusion and ‘performance’ of specialties compared between hospitals.

Conclusion

Patient Blood Management requires the comprehensive collection and analysis of blood use data to audit against guidelines. This project should enable this requirement using an automated, labour efficient mechanism.

We urge other LIMS suppliers to develop a similar automated system so that all hospitals can benefit.

Project group

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Reference:

Frank SM, Lesar LM, Rothschild JA, Dackiw EA, Savage WJ and Ness PM. 2013. *A novel method of data analysis for utilization of red blood cell transfusion.* Transfusion: 53 (12), 3052-9.