13 Errors Related to Information Technology (IT) n=200

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Definition:

This chapter covers transfusion adverse events that relate to laboratory information management systems (LIMS) as well as other information technology (IT) systems and related equipment used in the delivery of hospital transfusion services.

Cases selected include events where IT systems may have caused or contributed to the errors reported, where IT systems have been used incorrectly and also includes cases where IT systems could have prevented errors but were not used. Where the corrective and preventive action suggested by hospitals in response to errors included IT solutions, these have been included.

Overview

This report highlights the small number of situations where IT systems have not been used correctly or have not performed as expected. By understanding what can go wrong, users of IT systems that support transfusion practice can be aware of potential problems so that the specification, configuration, implementation and testing of IT systems is optimised, thereby improving patient safety. A summary of these errors can be found in the supplementary information on the SHOT website (www.shotuk.org) and the detail and some examples can be found in the individual chapters.

While electronic and automated systems should be easy to use, and have the general aim of simplifying transfusion practice, the importance of adequate and timely training of all staff in their correct use is of paramount importance. As has been stated before, IT systems support clinical and laboratory transfusion practice, but do not replace the knowledge of safe transfusion practice.

The importance of IT systems in supporting safe transfusion practice should not be underestimated. It is no longer possible to operate a transfusion laboratory without a LIMS. Full automation with a bidirectional interface and electronic issue of blood are standards expected by the UK Transfusion Laboratory Collaborative (UKTLC) (Chaffe et al. 2014).

Likewise, vein-to-vein electronic blood management systems (EBMS) have successfully delivered safer and more efficient transfusion practice across a variety of clinical settings. EBMS are of proven value and should be considered in all settings where transfusion takes place. The UKTLC standards also recommend 'It is expected that where remote issue of components is being considered as part of service delivery, consideration will also be given to installing complete blood tracking (vein-to-vein) as an integral feature of this development' (Chaffe et al. 2014).

The 2015 National Institute for Health and Care Excellence (NICE) guidelines on blood transfusion addressed the clinical and cost effectiveness of electronic identification systems (EIS) and clinical decision support systems using computerised physician order entry (CPOE) in the blood transfusion setting. EIS at the point of blood sampling, blood collection and blood administration promote safety by reducing human error and one of the recommendations was that 'Hospitals should consider using electronic patient identification systems to improve the safety and efficiency of the blood transfusion process' (NICE 2015). In respect of CPOE the evidence was not strong enough to make a recommendation and further research was advised on this topic.

Some UK hospitals, notably the Oxford University Hospitals National Health Service (NHS) Trust, have successfully implemented vein-to-vein EBMS and have benefited from improved safety and efficiency

(Staves et al. 2008, Hibbs et al. 2014, Murphy et al. 2012). Both EIS and CPOE are used in the wider clinical setting and where they are implemented, transfusion functionality should be considered in scope. In a British Medical Journal (BMJ) article summarising the NICE guidelines the authors comment that the implementation of electronic patient identification systems to improve the safety and efficiency of routine transfusion practice will cost money but bring substantial savings in nursing and laboratory staff time and reduced red blood cell unit wastage. They recommend that 'Organisations should identify local barriers to implementation and develop action plans for overcoming them' (Padhi et al. 2015).

Recommendation

- All available information technology (IT) systems to support transfusion practice should be considered and these systems implemented to their full functionality. Electronic blood management systems should be considered in all clinical settings where transfusion takes place. This is no longer an innovative approach to safe transfusion practice, it is the standard that all should aim for

Action: Hospital Chief Executives, Hospital Risk Managers and Hospital Transfusion Teams

References

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