Errors Related to Information Technology (IT) n=213

15

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Definition

This chapter includes 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.

Summary

The number of reports related to IT is stable. In 2018 there were 213 (201 excluding anti-D immunoglobulin (Ig) errors) cases included in this chapter drawn from the primary reporting categories as shown in Table 15.1 and these are categorised in Table 15.2 (available on the SHOT website) according to the errors and the reason for the error based on the reporter's classification and the author's interpretation of the report.

Primary reporting category	Number of cases
Incorrect blood component transfused-wrong component transfused (IBCT-WCT)	24
IBCT-specific requirements not met (IBCT-SRNM)	101
Right blood right patient (RBRP)	35
Avoidable, delayed and under or overtransfusion (ADU)	18
Handling and storage errors (HSE)	23
Total	201
Anti-D Ig	12
Total including anti-D Ig	**213**

Table 15.1: Source of cases containing errors related to information technology

Deaths n=0

There were no transfusion-related deaths that involved IT errors.

Major morbidity n=1

A woman of childbearing potential was sensitised to the Kell antigen because K-negative blood was not selected probably because a warning flag was not heeded.

In addition a female sickle cell disease (SCD) patient in her 20s was given antigen-positive blood with the potential for sensitisation because the historical record on Specialist Services electronic reporting using Sunquest's Integrated Clinical Environment (SP-ICE) was not consulted.

The majority of cases were associated with no harm with only five cases resulting in minor morbidity.

Errors related to flags alerts and warnings and electronic issue are summarised below because the cases are drawn from a variety of chapters.

Further details of the IT-related reports can be found in the supplementary information on the SHOT website www.shotuk.org.

IT flags, alerts and warnings n=98

This was the largest category of IT-related errors, as has been noted in previous years. In 29 cases the LIMS or electronic blood management system (EBMS) had a flag set but it was not heeded. In 38 cases the flag had not been updated or removed in error and in a further 31 cases no flag had been set or the LIMS was not able to flag the specific requirement. The cases are included in the relevant chapters.

Learning points

- With increasing use of electronic patient records and electronic prescription of both blood components and chemotherapy, the possibility of synchronising specific requirements related to treatment should be considered. This would mean that flags, alerts and warnings present on one system could be transferred electronically to another system without the need for completion of additional specific requirements documentation
- Several reporters suggested that a national register of specific requirements (like Specialist Services electronic reporting using Sunquest's Integrated Clinical Environment (SP-ICE)) could be considered to support shared-care patients

Recommendation

- The laboratory information management system (LIMS) should be used to its full functionality including the use of flags and alerts and warnings to ensure that specific requirements are met and blood issued is compatible

Action: Transfusion Laboratory Managers

Electronic issue (EI) n=18

There were 18 cases where blood was issued electronically but the patient was not eligible because they did not meet the criteria, and 2 of these were in the RBRP category. In 1 of these cases a remote issue refrigerator allowed release of the unit despite the wrong date of birth on the LIMS.

In 16 cases that should have had serological crossmatches, 4 were in patients following recent solid organ transplant and should have been flagged as ineligible for EI.

Case 15.1: Electronic issue of granulocytes to a patient with red cell antibodies

Buffy coats were required for a patient with acute myeloid leukaemia (AML) with a red cell antibody, but the red-cell rich component was issued electronically rather than serologically crossmatched. Granulocytes are infrequently used and therefore unfamiliar to many laboratory staff. LIMS control of EI eligibility may not cover non-red cell components and therefore it is important to include this in the standard operating procedure for buffy coat and granulocyte issue.