Can We Learn about Human and Organisational Factors from Past Blood Transfusion Errors?
Alison Watt 1,2*, Gyuchan Thomas Jun, Patrick Waterson
1Loughborough Design School, Loughborough University, UK;
2Serious Hazards of Transfusion (SHOT), the UK haemovigilance scheme, Manchester, UK

Introduction: Errors in transfusion can cause death or serious harm and must be reported to SHOT in the UK for ongoing learning opportunities. Very little human factors (HF) research has been applied to these errors, so could a retrospective analysis highlight the system failings and facilitate recommendations for safety? Most HF methods are not designed for healthcare systems and have traditionally been used to examine incidents in high reliability organisations (HRO) such as aviation and the nuclear industry, which are not as variable as healthcare.

Methods: Transfusion error reports (n=76) from calendar year 2014 were sub-divided to n=36 errors that led to an incorrect blood component transfusion (IBCT), the most dangerous error that can lead to patient death, and n=40 near miss errors discovered before the transfusion actually took place. These were analysed using seven HF models. The suitability of each HF model/method was ranked against pre-determined criteria using a scoring system: 0 - does not meet the criteria, 1 - barely meets the criteria, 2 - partially meets the criteria or 3 - fully meets the criteria.

Results: There were insufficient details to categorise in 26/76 (34.2%) cases. Results of the remaining 50 are in Figures 1 and 2, grouped by suitability scores.

Discussion: A lack of HF-related information meant 34.2% of cases were unclassifiable and many were categorised as individual error, despite using models that consider external factors in depth, e.g. AcciMap, HFACS and SEIPS 2.0. Complicated models were not well suited to this simple overview and some, such as STAMP, AcciMap, HFACS and FRAM, may be better for a prospective analysis of the whole transfusion process. Overall SEIPS 2.0 scored the highest, but mainly due to its patient safety focus. A weighting to some criteria might improve the distinction between models, but this was difficult in a small sample. It was anticipated that near miss errors would show Safety-II aspects, compared to current reporting that reflects a Safety-I culture, but IBCT reports gave more detailed HF information, probably because the errors can lead to more serious patient outcomes.

Conclusions: The list of HF models/methods has been narrowed for a second study to look at incidents in more depth, which will be subcategorised using more than one category as required, because complex systems can lead to multifaceted errors. Specific HF questions are now being asked in the reporting database to improve the HF information for future studies.

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