Preface

Although the Handbook of Transfusion Medicine has reached a fifth edition, its purpose remains the same – to help the many staff involved in the transfusion chain to give the right blood to the right patient at the right time (and, hopefully, for the right reason). Transfusion is a complex process that requires everyone, from senior doctors to porters and telephonists, to understand the vital role they play in safely delivering this key component of modern medicine. Training and appropriate technological and managerial support for staff is essential, and e-learning systems such as http://www.learnbloodtransfusion.org.uk are freely available. However, SHOT (Serious Hazards of Transfusion) annual reports highlight the importance of a poor knowledge of transfusion science and clinical guidelines as a cause of inappropriate and unnecessary transfusions. The handbook attempts to summarise current knowledge and best clinical practice. Wherever possible it draws upon evidence-based guidelines, especially those produced by the British Committee for Standards in Haematology (BCSH). Each chapter is now preceded by a short list of ‘Essentials’ – key facts extracted from the text.

We have much to congratulate ourselves about. Haemovigilance data from SHOT show that blood transfusion in the UK is very safe, with a risk of death of around 3 in 1 000 000 components issued. Transfusion-transmitted infections are now rare events. Lessons from blood transfusion about the importance of patient identification have improved many other areas of medical practice. But not all is well. Six of the nine deaths associated with transfusion in 2012 were linked to transfusion-associated circulatory overload (TACO), emphasising the importance of careful clinical assessment and monitoring. More than half of serious transfusion incidents are still caused by human error, especially in the identification of patients at sampling and transfusion, and each incident is accompanied by 100 near-miss events. Training and competency assessment of practitioners has been only partially effective and innovative solutions such as the use of bedside barcode scanners or transfusion checklists are slowly entering practice.

Most UK regions have seen a significant reduction in the use of red cells over the last decade, especially in surgery, but requests for platelet and plasma components continue to rise. Audits show significant variation in transfusion practice between clinical teams and poor compliance with clinical guidelines. Changing clinical behaviour is difficult, but IT-based clinician decision support systems, linked to guidelines, have real potential to improve prescribing of blood components. As we move from eminence-based to evidence-based medicine, good clinical research will be an important tool in effecting change. Since the last edition of the handbook in 2007, there has been an encouraging growth in high-quality research in transfusion medicine, including large randomised controlled trials with major implications for the safe and effective care of patients. These include the seminal CRASH-2 trial showing the benefit of a cheap and readily available antifibrinolytic treatment (tranexamic acid) in reducing mortality in major traumatic haemorrhage and studies confirming the safety of restrictive red cell transfusion policies in many surgical and critical care patients. High-quality systematic reviews of clinical trials in transfusion therapy are an increasingly valuable resource. Everyone involved in transfusion has a role in identifying clinically important questions that could be answered by further research.

Paul Glaziou, professor of evidence-based medicine at Bond University in Australia, talks about the ‘hyperactive therapeutic reflex’ of clinicians and the importance of ‘treating the patient, not the label’.
Furthermore, people increasingly want to be involved in decisions about their treatment. In transfusion medicine there is a growing emphasis on careful clinical assessment, rather than a blind reliance on laboratory tests, in making the decision to transfuse and using clinically relevant, patient-centred endpoints to assess the benefits of the transfusion. For example, reducing fatigue and improving health-related quality of life in elderly transfusion-dependent patients is more important than achieving an arbitrary target Hb level. Importantly, although guidelines outline the best evidence on which to base local policies they must always be interpreted in the light of the individual clinical situation.

Other major changes since the last edition of the handbook include:

- Reduced concern that a major epidemic of variant Creutzfeldt–Jakob disease (vCJD) will occur, although many precautions, such as the importation of all manufactured plasma products and fresh frozen plasma for patients born after 1 January 1996, remain in place. No practical vCJD screening test for blood donations has been developed.
- All UK countries have now introduced automated pre-release bacterial screening of platelet components, although the incidence of bacterial transmission had already fallen significantly following better donor arm cleaning and diversion of the first 20–30 mL of each donation.
- Implementation of the Blood Safety and Quality Regulations 2005 (BSQR) has led to the development (and inspection) of comprehensive quality systems in hospital transfusion services and the reporting of serious adverse events and reactions to the Medicines and Healthcare Products Regulatory Agency (MHRA). MHRA now works very closely with the SHOT haemovigilance scheme with the objective of improving patient safety.

Having edited this fifth edition of the handbook, I am increasingly impressed by the achievements, and fortitude, of my predecessor Dr Brian McClelland in taking the first four through to publication. Colleagues from many disciplines have kindly contributed to or reviewed sections of the handbook (see Appendix 2) but the responsibility for any of the inevitable errors and omissions is mine alone. I would like to thank the members of the JPAC Standing Advisory Committee on Clinical Transfusion Medicine for their support and advice. A special word of thanks is due to Caroline Smith for her skill and good humour in organising so many aspects of the publication process and ensuring I met (most of) the deadlines.

As well as the printed edition, the handbook will also be published in PDF and web versions that can be accessed through http://www.transfusionguidelines.org.uk. As important new information emerges, or corrections and amendments to the text are required, these will be published in the electronic versions. Transfusion medicine is changing quickly and it is important to use the up-to-date versions of evidence-based guidelines. Links to key guidelines and other online publications are inserted in the text and a list of key references and useful sources of information are given in Appendix 1.

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