The role of the transfusion practitioner as a specialist in transfusion medicine

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Transfusion is a very complex process involving many disciplines, all of whom work to ensure patients receive safe and appropriate blood transfusions. In the beginning there were two main teams that focused on blood transfusion; the Blood Bank and the patient's clinical team. Both had their own areas of expertise but had very different priorities and approaches. Transfusion Medicine has evolved over the years, beyond just the transfusing of blood and blood components, and now requires expertise in patient blood management (PBM), haemovigilance, patient safety, blood stocks inventory management and appropriate use of blood. From this the role of the Transfusion Practitioner was developed. The Transfusion Practitioner role has now evolved to a multi-faceted, highly specialised role, involved in all parts of the transfusion processes & they are regarded as a driving force for change; bridging the gap between the laboratory and clinical arenas.

The Transfusion Practitioner's role, known as a TP, is an umbrella term that includes Transfusion Nurses, Transfusion Safety Officers, Haemovigilance Officers, Patient Blood Management Practitioners and Patient Blood Management Officers. They come from a number of different healthcare backgrounds although predominantly nursing or biomedical scientists (National Transfusion Practitioner Survey of England and North Wales 2011) and are regarded as a vital link between the different teams involved in the transfusion system including the laboratory, wards, nursing staff, medical teams and support staff.

Skills that are seen as fundamental for a TP from any healthcare background include clinical expertise and experience, sound technical knowledge, excellent communication skills, confidence and being able to work effectively with a multidisciplinary team.

The varied activities of the TP include all or some of the following; transfusion education to clinical colleagues, providing transfusion information for patients and families, risk management including the writing, implementing, updating and monitoring local policies and procedures, monitoring and providing feedback on activities related to compliance with best practice guidelines including audit activities, transfusion incident management including investigation, haemovigilance follow-up and reporting activities, managing appropriate use of blood and blood inventory, and being a driving force for PBM (patient blood management) strategies. The following give an overview of some of the activities undertaken by the Transfusion Practitioner.

Transfusion Practitioners and haemovigilance
Haemovigilance is the set of surveillance procedures covering the entire blood transfusion chain, from the donation and processing of blood and its components, through to their provision and transfusion to patients, and including their follow-up.

It includes the monitoring, reporting, investigation and analysis of adverse events related to the donation, processing and transfusion of blood, and taking action to prevent their occurrence or recurrence. The reporting systems play a fundamental role in enhancing patient safety by learning from failures and then putting in place system changes to prevent them in future (WHO 2015).

The TP involvement in haemovigilance (mainly within the hospital setting), includes the investigation and reporting of transfusion reactions and adverse events internally and externally (to national haemovigilance schemes). By conducting process reviews and communicating directly with the relevant colleagues and patients, the TP can provide essential details that are needed to complete investigations. This information assists with the final conclusion and recommendations for future transfusion plans for the patient, or the implementation of corrective and preventative measures.

Within the UK, the haemovigilance scheme SHOT (Serious Hazards of Transfusion) has been established for 20 years, and is now an integral part of the transfusion landscape. By collecting information on reactions and adverse events and publishing annual reports, SHOT data provides the Transfusion Practitioner with a resource for educating clinical colleagues on transfusion safety and recommendations for best practice.

Transfusion Practitioners and patient blood management
When PBM was launched in the UK, the role of the TP was identified as part of the structure required to drive it forward (National Blood Transfusion Committee (NBTC) Patient Blood Management 2014) and although it could be argued that PBM was already part of the existing roles and responsibilities of a TP, it demonstrated how crucial their contribution was to its success.

The Australian NBA acknowledged that *'The operational and cultural change required to implement best practice clinical measures at a health provider level are significant and sometimes require complex changes in business process and clinical practice'*. The NBA PBM implementation strategy stresses the importance of using a multimodal, collaborative approach to implement PBM (National Blood Authority 2017-2021). The TP is recognised as a key member and resource within these multidisciplinary teams (Bielby *et al*. 2018a). One characteristic critical to all PBM programmes is the "buy in" from all involved across the clinical spectrum and Freedman (2016) outlines the TP as an enabler, engaging all involved including the patients. They are seen as the conduit for information, able to pull together resources, provide education, undertake reviews, collect data and evaluate outcomes.

The Transfusion Practitioner and appropriate transfusion
Freedman (2016) describes blood transfusion as one of the five most overused procedures, with much of it being inappropriate use, and very variable in and between organisations. The TP can support improved practice by applying strategies such as targeted education for the appropriate clinical groups, highlighting and promoting national recommendations and undertaking regular review audits of appropriateness of blood use.

An example is the development of a single unit transfusion policy whereby the TP can undertake the promotion and review of the single unit strategy. The UK Patient Blood Management (PBM) recommendations (2014) (National Institute for Health and Care Excellence 2014) *'Transfuse one dose of blood component at a time e.g. one unit of red cells or platelets in non-bleeding patients and reassess the patient clinically and with a further blood count to determine if further transfusion is needed.'* A pilot study run in partnership with National Health Service Blood and Transplant (NHSBT) and Kings College Hospital to introduce a single unit transfusion policy for non-bleeding medical patients in an acute medical unit has resulted in a 40-45% reduction in red cell use over a 6 month period. Implementing this change in practice involved a period of training for both clinical and laboratory staff and changes to policy (Heyes *et al*. 2017). The TP is uniquely placed to drive and monitor initiatives such as this, where they engage with both clinical colleagues who make the

decision to transfuse, and work with the scientific staff in the laboratory promoting the single unit transfusion policy.

Transfusion Practitioners and audit
Surveillance is often achieved through audits which help to identify gaps in staff knowledge, topics for future education and contribute to quality improvement. Within the UK, The National Comparative Audit of Blood Transfusion (NCABT) is a programme of clinical audits which looks at the use and administration of blood and blood components in NHS and independent hospitals in England and North Wales. The objective of the audit programme is to provide evidence that blood is being prescribed and used appropriately and administered safely, and to highlight where practice is deviating from the guidelines to the possible detriment of patient care. Data collection for these audits can be undertaken by a number of health care professionals within the participating organisations, however the majority of the data collection and data submission is undertaken by the Transfusion Practitioner (experience has shown this to be the case). Without the input of the TPs, many of these audits would not have the high volume of collected data required to give an accurate reflection of transfusion practice, and so make recommendations for improvement.

In addition to national audits, the TP is uniquely placed to undertake local audits, looking at issues identified perhaps through haemovigilance. These audits can be designed and written to suit the local healthcare environment and the findings report back to the relevant Blood Management Committee with a locally agreed action plan for any recommendations made.

Developing the TP Role
TPs knowledge and skills development to undertake or enhance their roles can be undertaken in a variety of ways, most often commencing with on the job through mentoring and support from a transfusion specialist, scientist or nurse, and the Blood Management Committee. Other avenues of support and mentoring exist through TP networks locally or internationally and participation and collaboration at conferences and meetings. More formal post graduate studies are becoming available for TPs such as the on-line Graduate Certificate in Transfusion Practice offered by The University of Melbourne in partnership with Blood Matters (Australia) or Master Advanced Specialist Blood Transfusion offered by Swansea University in partnership with the British Blood Transfusion Society (Bielby et al. 2018b, British Blood Transfusion Society 2018).

Where TP roles are established, they are widely acknowledged as a critical part of the transfusion process in the healthcare setting and literature is slowly emerging that supports the value of the role and the benefit it brings (Bielby et al. 2011, Miller et al. 2015, Freedman 2016, Bielby & Moss 2018c). However, there are gaps regarding the drive that the TP can bring to enable the changes required to implement best practice transfusion strategies. It is important to encourage and highlight the importance of ‘those in the role to document and share the challenges and successes, to allow others to learn from these experiences’. By promoting the role of the TP both locally and internationally such as the International Blood Transfusion Society (ISBT) and their Transfusion Practitioner Forum, the TP community are encouraged to document, publish and share the impact their role has on PBM and patient outcomes, safety and patient experience.

Conclusion
The role of the Transfusion Practitioner certainly within the United Kingdom has become as much a part of the transfusion team as the chief scientist within the Transfusion Laboratory or the lead clinician for blood transfusion services. They play a key role within the multi-disciplinary team, not only enabling change to implement best practice strategies whether it is appropriate use of or post

audit recommendations, but also embedding transfusion strategies into practice as a standard of care for all patients.

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