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The Evolving Role of the Transfusion Practitioner

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ABSTRACT

Much of the recent work in transfusion practice has shifted to focus on the patient, after efforts over previous decades to ensure the quality and safety of blood products. After the commencement of hemovigilance and transfusion practice improvement programs, the introduction of transfusion practitioners (TP) into health care services and blood centers has continued to increase worldwide. Since this relatively new role was introduced, much work of the TP has focused on patient and staff education, adverse events, transfusion governance, and monitoring of transfusion practices within organizations. The complex nature of the transfusion process makes the TP an integral link in the transfusion chain. Together with hospital transfusion teams and committees, the TP works collaboratively to facilitate the transfusion change management programs and initiatives. Recently, the TP role has evolved to include an emphasis on patient blood management and, to some extent, is shaped by national standards and regulations. These established roles of the TP, together with the ever-changing field of transfusion medicine, provide new opportunities and challenges for a role that is continuing to evolve worldwide.

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The transfusion of blood and blood products continues to be integral to the provision of health care worldwide. Developed countries have largely eliminated the risk of transfusion-transmitted infections by extensive screening of donors and stringent laboratory processes. The focus in these countries, including Australia, has now shifted from the safety of the blood product itself, to the processes surrounding delivery of the product to the patient such as transport, storage, administration, and patient outcomes.

Internationally, hemovigilance systems have been implemented to improve the safety of blood products and transfusion processes. Hemovigilance refers to a "a set of surveillance procedures covering the whole transfusion chain (from the collection of blood and its components to the follow-up of recipients), intended to collect and assess

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information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence or recurrence" [1].

Since the work of hemovigilance began in France in the 1990s, similar systems have been established worldwide. The World Health Organization Global Database on Blood Safety reports that a national hemovigilance system was present in 13% of low-income countries, 30% of middle-income countries, and 78% of high-income countries [2]. Hemovigilance systems operate at international, national, state, and local levels and rely heavily on voluntary reporting. Instrumental to hemovigilance work, through data collection and reporting, education and awareness is a network of transfusion practitioners (TPs), employed to drive and promote the safe and appropriate use of blood.

This article will review the experiences and available literature regarding the emerging and changing role of the TP, its history, and the contribution of this role to hemovigilance. Articles indexed in PubMed, Google Scholar, and Medline were searched using the following Subject Heading search terms: "Transfusion Practitioner," "Transfusion Nurse," "Transfusion Practice," and "Transfusion Safety Officer." Additional publications and relevant practice guidelines were also included. Although the published literature is limited, this article will explore the challenges and opportunities facing TPs as the transfusion medicine focus continues to shift improving patient care. This relatively new role is also known worldwide as transfusion nurse or transfusion safety officer and will be referred to in this article as TP.

World Experience

Australia, like the rest of the developed world, invested in the TP role during the implementation of transfusion practice improvement and formal hemovigilance programs. One of the first hemovigilance reporting schemes was established in the UK, in 1996. Serious Hazards of Transfusion (SHOT) is an independent professionally led reporting scheme that captures data on adverse transfusion events from participating health care organizations. In 2005, The UK Blood Safety and Quality Regulations 2005 and the European Union directive established the mandatory reporting of all serious adverse events related to blood and blood products to the Medicines and Healthcare Products Regulatory Agency. A new reporting system—Serious Adverse Blood Reactions and Events (SABRE) was introduced and together with SHOT provides hemovigilance data for the UK [3].

In 1998, the Department of Health's Better Blood Transfusion Health Service Circular was published and recommended the establishment of hospital transfusion committees (HTCs) and for hospitals to participate in SHOT and introduce transfusion protocols and education programs for clinical staff to improve transfusion practice and transfusion safety. Some hospitals began to employ TPs to support this work [4]. In 2002, this was replaced by the Health Service Circular titled "Better Blood Transfusion: Appropriate Use of Blood." This sets out a new plan of action, which included the appointment of hospital TPs in all hospitals and the establishment of hospital transfusion teams [4]. According to the National Health Service Blood and Transplant (NHSBT) survey of TPs in England and North Wales, in 2010, there were more than 200 TPs employed across England and Wales [5].

In 2001, the Scottish Better Blood Transfusion program successfully trialed the introduction of TPs in its hospitals. By late 2003, 18 TPs were based throughout Scotland supported by the Scottish National Blood Transfusions Service [6]. The TP in Scotland is usually a senior nurse or biomedical scientist with a broad remit and who reviews training performance to ensure only competent staff participate in the transfusion process with the aim that "blood is used safely and effectively into the future in a changing healthcare system" [6].

In the United States, there are currently more than 30 formal TP programs in operation [7]. The 2011 National Blood Collection and Utilization Survey revealed that 201 US hospitals employed a TP and 60% of these were full time [8]. The role of TP has been filled by either a registered nurse with an expertise in blood administration and education or an experienced medical technologist/scientist with transfusion medicine expertise. This role is based either in the hospital or blood center and is responsible for improving the utilization of blood components, reductions in hospital costs, education of staff, and implementation of best practice processes to improve transfusion safety [7]. The TP is also responsible for capturing and reporting adverse transfusion data into the US National Healthcare Safety Network Biovigilance component module.

In Canada, various transfusion practice improvement programs were established from the late 1990s. Each Canadian province developed and implemented functional blood programs to help hospital transfusion services meet the national mandate and to improve blood utilization and patient safety through best practices and education [7]. In 1999, the health ministry in Quebec implemented hemovigilance programs and created and funded the first 20 TP positions in large hospitals [9].

Australian Experience

Within Australia, there have been a number of transfusion practice improvement projects ranging from local hospital-level to state-wide partnerships involving a number of health services in coordinated programs. From 2001, state-wide projects, such as BloodSafe in South Australia and Blood Matters in Victoria, were established to implement strategies and practical tools to assist health services to improve clinical practice and transfusion outcomes and included the piloting of TPs in a number of participating health services. An assessment of the TP role was undertaken after its inception during the collaborative Blood Matters Program in Victoria in 2001 and was overwhelmingly positive. Most of the participating centers rated the availability of a specialist TP as the most critical factor in the success of their transfusion practice improvement projects [10]. The success of the TP role has seen the ongoing roll out of TPs and later transfusion trainers (TTs). In Australia, the TT does not have specialist qualifications in transfusion and is thus often easier to recruit. A TT typically works in a more remote area with a focus on education and hospital transfusion practice. Currently, there are more than 40 health services with either TPs or TTs employed in Victoria and the equivalent of 40 full-time TPs employed nationally.

According to a report for the Australian Council for Safety and Quality in Health Care in 2005, evidence from these pilot programs indicates that transfusion practice typically reverts to historical norms when practice improvement projects come to closure. This suggests that sustained improvements need to be supported by established jurisdictional programs but driven at a local level by HTCs and, most importantly, a specialist trained human resource such as a TP backed up by medical and scientific staff with expertise in transfusion medicine [10].

Education and Qualifications for the TP Role

The TP is a specialist role similar to other hospital-based specialist practice roles (infection control and diabetes care) and can be fulfilled by individuals from a variety of professional backgrounds. A 2010 survey of England and North Wales TPs by the NHSBT revealed 69% of respondents were nurses [4]. However, many professionals are from a scientific background. A professional with a blood transfusion scientist/technologist qualification has a strong laboratory and blood banking knowledge base and an existing relationship with the blood supplier and transfusion medical staff. However, they are often not as familiar with clinical management of patients and bedside administration procedures [8]. The TP from a nursing background brings different expertise such as patient management, an extended knowledge of bedside practices, and an existing relationship with nursing and medical staff [9].

Blood services and transfusion improvement programs have established a number of educational opportunities for those undertaking the TP role. In the United States, the United Blood Services for