

Formulating National Guidelines for Red Cell Concentrate Usage: A Step Towards Safer Transfusion Practices in Pakistan

Noore Saba*

¹Consultant Haematologist, Peshawar Regional Blood Centre, Provincial Ministry of Health, Peshawar, Pakistan

*Correspondence: dr.nooresaba@gmail.com

Healthcare accessibility is a significant problem in Pakistan, where inequalities in medical infrastructure, workforce training, and resource distribution contribute to ineffective healthcare delivery. The country's median age is 21.6 years, with a literacy rate of 49.5% and a life expectancy of around 61 years. In this environment, blood transfusion services are vital for managing medical emergencies, including chronic conditions like liver cirrhosis, hepatitis, and chronic kidney disease, which rank among the top causes of death in the country.¹ Acknowledging the importance of safe blood transfusion practices, Pakistan has implemented various policy initiatives aimed at ensuring the quality and safety of the blood supply across the nation.

The evolution of blood transfusion services in Pakistan began with the establishment of the National Blood Transfusion Programme in 1942² during British colonial rule much before the WHO advocated for the same.³ A significant change occurred in 1995 when a writ petition in the Supreme Court of Pakistan advocated for mandatory screening of donated blood for transmissible diseases. In response, the Federal Cabinet mandated compulsory screening for HIV, Hepatitis B, and Hepatitis C in all blood banks, resulting in improved blood safety protocols in the years that followed.

In the 1990s, the National AIDS Control Programme (NACP), focal point for blood safety initiatives at that time, appointed provincial Programme Managers to oversee Blood Transfusion Services. This initiative led to the implementation of various quality enhancement measures, including the enactment of provincial blood safety laws.

Subsequently, a timeline of blood transfusion policies was established, culminating in the introduction of the first National Blood Policy and Strategic Framework in 2003, which was revised and updated in 2008 and 2014.

The formulation of national standards and guidelines has been fundamental to improvements in BTS. The initial set of National Standards and Guidelines was prepared in 1999 as a comprehensive document. Subsequent revisions resulted in the separate development of National Standards in 2012, which were further updated in 2014-2015, and National Guidelines categorized as follows: The National Quality Control Guidelines (first issued in 2007, with updates in 2017 and 2020) and the Clinical Use of Blood Guidelines (issued in 2012, updated in 2014-2015 and 2018). Additionally, a Standard Operating Procedures (SOP) Manual was launched in 2007, with updates in 2011-2012 and 2014, and an Urdu translation released in 2016.

In early 2024, the BBMT-Pakistan (Bringing Brilliant Minds of Transfusion) acknowledged the critical need for ongoing advancements in transfusion practices, leading to a national meeting where stakeholders unanimously agreed to revise the Clinical Use of Blood Guidelines in a gradual approach.

The initial phase, planned for the last quarter of 2024, will concentrate on updating the guidelines specifically for red cell concentrates (RCC), while the subsequent phase, scheduled for the second quarter of 2025, aims to enhance the protocols governing platelet and fresh frozen plasma (FFP) transfusions, ultimately improving enhanced safety and efficacy in blood transfusion practices across the country.

The first phase, i.e. revision of the National Guidelines on the Appropriate Clinical Use of Red Cell Concentrates in Pakistan was spearheaded by Dr. Usman Waheed, a former Advisor to the National Health Ministry and an Associate Professor at Islamabad Medical & Dental College. This initiative brought together prominent experts from across the country to ensure an evidence-based approach to transfusion medicine. The revised guidelines, which include 247 references, offer a comprehensive framework for promoting the safe, efficient, and appropriate use of RCC.⁴ By following these guidelines, healthcare providers can optimize blood utilization, reduce transfusion-related risks, and improve patient outcomes.

The revised RCC guidelines were officially launched at the 5th Annual Conference of BBMT-Pakistan in Malaysia (December 2024). The conference convened policymakers, transfusion professionals, and international representatives, including Jenny White, Executive Director of the International Society of Blood Transfusion (ISBT), and Joana Bikulciene from the Institute of Experimental and Clinical Medicine in Vilnius, Lithuania. Both experts praised Pakistan's initiatives and underscored the necessity of ongoing international collaboration in the field of transfusion medicine. To ensure widespread implementation of the new guidelines, BBMT-Pakistan has planned to implement a comprehensive dissemination strategy. This approach includes training workshops, digital learning platforms, and focused educational initiatives targeted at healthcare professionals. The guidelines have been published in a special supplement of the Annals of PIMS, the official journal of Shaheed Zulfiqar Ali Bhutto Medical University, and are available online at <https://www.apims.net/apims/article/view/1285>.⁴

The evolution of blood transfusion services in Pakistan demonstrates an increasing dedication to improving patient safety and healthcare standards. Through comprehensive policy development, legislative improvements, and strategic partnerships, the country has achieved considerable progress in ensuring the safe and effective application of blood products. The recent update of the National Guidelines on the Appropriate Clinical Use of RCC marks a significant milestone in transfusion medicine. Looking ahead, continuous efforts in training, enforcement of policies, and international collaboration will be vital in maintaining best practices in blood transfusion services throughout Pakistan.

References

1. GBD 2019 Pakistan Collaborators. The state of health in Pakistan and its provinces and territories, 1990-2019: A systematic analysis for the Global Burden of Disease Study 2019. *Lancet Glob Health*. 2023;11(2):e229-e243. [http://doi.org.10.1016/S2214-109X\(22\)00497-1](http://doi.org.10.1016/S2214-109X(22)00497-1).
2. Saeed Q, Waheed U. Role of regulations in improving quality of blood transfusion services in Islamabad: Recent developments and future strategies. *Ann Pak Inst Med Sci*. 2023; 19(2): 52-56. <http://doi.org.10.48036/apims.v19i2.814>.
3. World Health Assembly Resolution WHA 28.72. Utilization and supply of human blood and blood products. 1975; Geneva: Switzerland: Available at <http://www.who.int/bloodsafety/en/WHA28.72.pdf> accessed on March 10, 2025.
4. Waheed U, Amanat ST, Jamal DN, Mengal MH, Saba N, Wazeer A, et al. National guidelines on the appropriate clinical use of red cell concentrates in Pakistan. *Ann Pak Inst Med Sci*. 2024; 20 (Suppl. 2): 885-908. <http://doi.org.10.48036/apims.v20iSuppl.2.1285>.