

Abstract:

Blood transfusion is a common procedure in the hospital setting, and the safety of the blood supply has been vastly improved over the past few decades largely due to improvements in screening for viral transmissible diseases, especially human immunodeficiency virus (HIV) and viral hepatitis. However, more recent efforts to improve blood safety have focused on non-transmissible disease risks such as transfusion-related acute lung injury (TRALI), non-viral transmissible diseases such as bacterial contamination of blood products (especially platelet components which are stored at room temperature) and Chagas disease (a parasitic disease caused by *Trypanosoma cruzi*), and prion transmissible agents (e.g., variant Creutzfeldt-Jakob disease, also known as the agent of mad cow disease) as well as more recently-recognized transmissible viral disease risks such as West Nile virus. Appropriate blood utilization has also come under more intense scrutiny in recent times due to healthcare costs and the recognition that many blood transfusions are given under circumstances in which the benefit to the patients is unclear and may be potentially harmful due to the above risks as well as the emerging concept that blood transfusions may cause long-term damage to the immune system resulting in worse patient morbidity and mortality outcomes. Toward that end, accreditation agencies such as the Joint Commission and the American Association of Blood Banks (AABB) are advocating for healthcare organizations to implement appropriate patient blood management strategies. This review will examine these issues along with newer blood safety technological innovations and further highlight contributing studies from our institutions.

Reference:

Friedman, M.T., Avadhani, V., Gilmore, S. and Madrigal, E. (2020) Blood Transfusion in the 21st Century. *Discoveries*. 2(1), p.e11. doi: 10.15190/d.2014.3.