“Precision Transfusion: Unique Donors; Unique Recipients”

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Unlike prescription medications that are chemically defined and well characterized, therapeutic cell products inherit the unique biological properties of the donors which makes them individually unique. As no two blood components are identical, understanding the impact that this heterogeneity in the blood supply has on the complexity of patients requiring transfusion support is essential to optimizing patient outcomes. Our group has been focusing on how donor factors including age, sex, frequency of transfusion, and ethnicity affect the quality characteristics of stored blood components. What is emerging is that these factors, in combination with different component manufacturing methods, can be used to create products with unique physical and biological properties. Targeting these unique products to specific recipient groups will be the future for ensuring that the right patients, get the right products at the right time; the new mantra for personalized, precision transfusion medicine.