Lantana
CONSULTING GROUP

Exchange of Blood Product Information

An Initiative to Develop an HL7 FHIR® Standard

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Today, blood donor centers and blood banks share blood products, but have no digital interfaces between their information management applications. The lack of a bidirectional interface between donor centers and blood banks is a rate limiting step in the improvement of transfusion medicine procedures.

Donors centers have blood establishment computer systems (BECS) which are geared toward the critical steps in safely manufacturing blood products (whole blood, packed RBC, platelets, plasma) while blood banks laboratory information systems (BBLIS) are geared toward the critical steps of safely transfusing manufactured blood products (compatibility checks, provenance, monitoring) into patients. The commonality between the two systems are the blood products themselves which have metadata associated with them (unique ID, blood type, product description).

Definitions

- Blood donor centers: Institutions that collect and process blood products for transfusion
- Blood banks: Institutions that transfuse blood products from donor centers into patients

Presently, much of the metadata associated with a blood product must be rekeyed by the BBLIS upon receipt from the donor center. The blood products arrive with a barcode that will have a unique identifier and other basic information. Special circumstances or specific needs of a blood bank are manually reported to the donor center. At the same time, the amount of information generated about blood products is increasing, especially in genetic predictors of RBC phenotypes (genotyping or genetic sequencing based phenotyping) and a concomitant increase in information about recipients (more patient RBC phenotyping information). At population levels, efficient and comprehensive exchange and management of this additional information would allow for more precise blood compatibility determination, better allocation of rare blood phenotypes, and improved understanding of the long term sequelae of blood transfusions.

The current manual processes between BBLIS and BEC systems do not scale and may be delaying the implementation and use of more detailed genotyping information. We believe now is the time to put in place standardized representations of blood bank genotype and phenotype information as a first step in bidirectional interface development.

The development of a standard will focus industry attention on the need for an interface and encourage development of innovative solutions, with the potential to increase patient safety, and will conserve resources through more efficient workflow.

What is proposed?

Lantana is initiating and looking for supporting partners to:

- Develop a standard for exchange of blood banking genotyping and phenotyping information
- Specify genomic data structures and phenotyping data structures for BECS, BBLIS incorporation
- Expand and convene a group of key stakeholders to launch this work and support it throughout with domain expertise
- Leverage the momentum of the core group and the standards development project to procure the funding that will carry the project through to feasibility (Connectathon) testing, ballot, ballot reconciliation, and publication.
- Support and encourage implementation across the blood product industry.

Who are key stakeholders/potential participants?

Lantana is reaching out to recruit participants among the following types of stakeholder:

- Blood Donor Centers
- Health Systems
- Reagent Vendors (both serology and array-based; phenotyping and genotyping and LDT)
- BBLIS and BECS Vendors (some are both)
- Professional Groups and pathologists

To date, the following organizations have indicated their support:

- Blood Donor Center: San Diego Blood Bank
- Reagent Vendor: HaploGNX

For more information, Contact John Spinosa, Chief Medical Consultant, Lantana Consulting Group, john.spinosa@lantanagroup.com