

An initiative to exchange extended RBC phenotyping information using FHIR

Blood donor centers

- Computer systems geared toward effective and safe manufacture of blood products
- Blood establishment computer systems (BECS)

Health system blood banks

- Computer systems geared toward effective and safe transfusion of manufactured blood products
- Blood bank laboratory information systems (BBLIS)

Both systems manage:

- Blood products
- Associated metadata

Barcodes provide a minimal digital interface—most of the metadata about the products are rekeyed

Registering blood products manually was tolerable when the amount of metadata was relatively small

Molecular techniques are rapidly changing this.

- Automated instruments are increasing the speed and ease of having larger serologic characterization of blood products
- Nucleic acid molecular techniques (arrays, mass spec, targeted sequencing, gene sequencing) expand and extend genotypic predictions of RBC phenotypes—5 features->30 features->350 features
- Blood product compatibility is not localized: the search for compatible blood can be regional, national, and (rarely) international
- Increasingly, donors will be characterized genotypically and donors eventually become patients—transferring genotyping is important
- Sharing extended phenotyping information between patients and blood donors
 - Supports allocation of compatible blood products.
 - Prevents allo-antibody generation which benefits patients, especially those who require chronic transfusions

Lantana is working with partners to:

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

Current efforts

- Supporting parties to date—San Diego Blood Bank, HaploGNX
- HL7 working group presentations this week—O&O, Public Health WG, Clinical Genomics WG (in 2-3 weeks)
- Professional organizations contacted and evaluating
- Some vendors contacted and evaluating

Requesting feedback, information on related efforts, WG sponsorship, stakeholder participation

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