

# An initiative to exchange extended RBC phenotyping information using FHIR

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# Need

- **Blood donor centers** have computer systems geared toward effective and safe manufacture of blood products—Blood establishment computer systems (BECS)
- **Health system blood banks** have computer systems geared toward effective and safe transfusion of manufactured blood products—Blood bank laboratory information systems (BBLIS)
- Both systems manage blood products and associated metadata for the units that are transferred between them.
- **Barcodes provide a minimal digital interface—most of the metadata about the products are rekeyed**

# Importance

- 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

# Proposal

- 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

# Contact

- If interested in discussing and participating, please contact:
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