Automating Clinical Data To Reduce Cardiac Staff Burden While Increasing Overall Data Quality, Timeliness And Consistency

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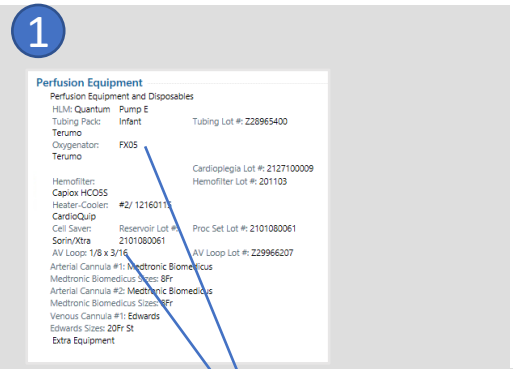
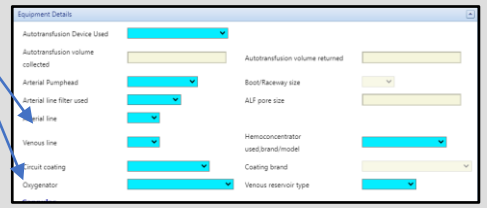
Background: Automation of data loads into registry systems has the potential to reduce data entry burden and increase consistency and accuracy.

Methods:

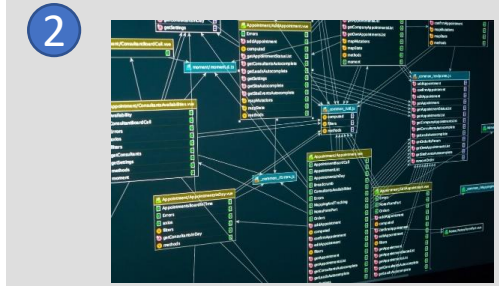
1. Worked with clinical staff to identify source and definition of data variables
2. Wrote programs to extract data from source tables
3. Developed data pipelines to load data to registry application database



Electronic Health Record (EHR)

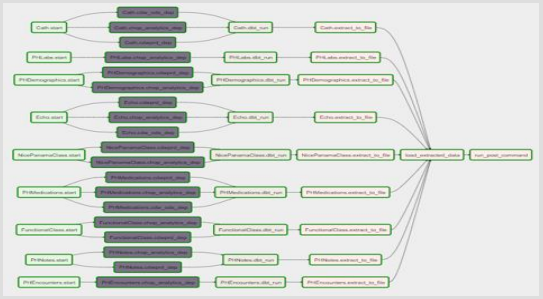


Registry System

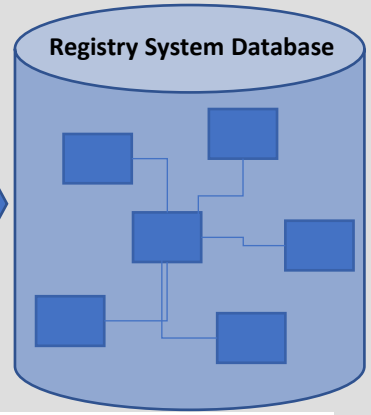


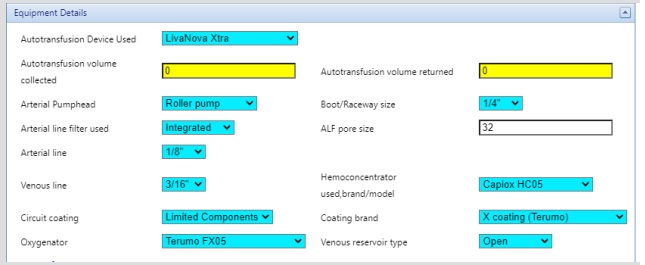
EHR Database / Data Warehouse

Data Extraction Programs



Data Transmission Pipelines





Results:

627 total data elements were automated

- IMPACT - 389 fields
- STS Anesthesia - 182 fields
- STS Perfusion - 56 fields

Encompassing 15 Procedures (Cath/Surgery) per day
Estimated Time savings of 15 minutes average per day

Annual Totals:

~130 hours across all 3 registries.
~975 person hours (~ 0.5 FTE) regained each year

Quality - Error Rates:

IMPACT - decreased from 14% pre-automation to 2% after.
STS Anesthesia, decreased from 14% of the cases to 1%.
STS-Perfusion, missing data decreased from 43% to 3%.