



DFWHC linkage projects:

A Business case for probabilistic linkage Recent Developments & Lessons Learned

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March 7, 2007

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Historical Probabilistic Linkage Projects DFWHC



- Hospital Discharge Data (HDD) & Birth Certificate data linked using AutoStan & AutoMatch
- Research
 - Longitudinal Cardiovascular Study
 - Domestic Violence Study linking HDD
 - Growing number of research projects
- Outpatient data added
- Readmission rates requested across hospitals in the region

Overview Discussion



- Growing need to link and analyze data:
 - Patient encounters across hospitals and settings (inpatient and outpatient) for numerous types of analysis.
 - Assisting in research endeavors. Linking disparate data sources such as a clinical research files to administrative hospital billing data.



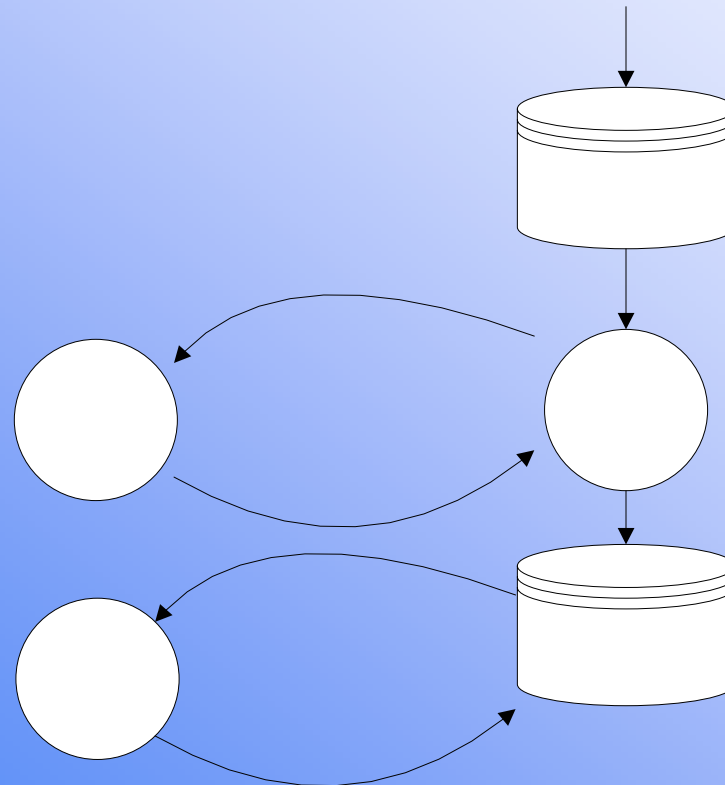
The growing needs of our region for use of data called for raising record linkage to another level to maximize use of data for improving patient safety, quality and the health of the population.

Goals and Objectives of the Project



- Acquire a business relationship with a vendor that specializes in record linkage
- Record linkage will be used to determine whether incoming patient records pertain to an individual already known to the data warehouse, or to a new individual.
- Creating a database which allows automated linkage procedures to identify and group multiple records belonging to the same individual with a unique id.
- One of the primary uses of record linkage by the DFWHC will be to maintain and organize a master patient index database.
- Record Linkage will also be used to match research data to Inpatient to Outpatient Hospitalization Encounters

Planned Approach:



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Hospital D

Applications of Record linkage



- Link Inpatient to Outpatient Hospitalization Encounters
- Link Multiple Outpatient Encounters
- Calculate 30, 60. and 90 day Re-admission Rates
- Link cardiovascular, stroke, and chronic disease research data to our Inpatient and Outpatient databases
- Support research activity to improve healthcare delivery
- Improve patient safety and quality efforts
- Track complication rates
- Track infection rates

Proof of Concept



- Initiate Systems
- QuadraMed
- Dataflux
- Vendors asked to:
 - demonstrate proof of concept on BC & HDD data linkage on last year linked with AutoStan/AutoMatch
 - Batch process of three years of data and one added quarter similar to simulating batch process

Lessons Learned



- Setup on RHIO-type vendors are significant
- Transactions/processing speeds differ significantly from vendor to vendor
- Processing speeds are not as important with our application of linkage as it is with RHIO application
- Robust tools for data cleanup and refining the linkage strategy—differing methods by vendor

Next Steps



- Select a vendor by the end of March
- Implement the solution 1-3 months
- Refine auto linkage methods for batch processing
- Use AutoStan/Automatch until we have successfully implemented
- Develop episodic metrics based on linked episodes on heart failure, pneumonia, sepsis
- Readmissions 30, 60, 90 days
- Examine “frequent flyers” in the ER



Discussion & Questions

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