

Background

- In order to target highly connected healthcare facilities for infection prevention, we created a network of all hospitals in Tennessee (TN)
- Tennessee Hospital Discharge Data System (HDDS) provided claims data from TN hospitals
- Protected health information (PHI) in HDDS is accessible for internal Tennessee Department of Health (TDH) use; less is available for approved research outside of TDH
- Patient date of birth (DOB), sex, and zip code are available for external and internal use
- Social security number (SSN) and full-name are available only for TDH use
- We evaluated two person-matching strategies to identify individuals with multiple hospital admissions

Methods

Person matching, sensitivity analysis, and interrater agreement analysis were conducted using SAS 9.4.
 See details in Figure 1 and 2.

Methods: Figure 1. Person Matching with HDDS Data : January 1, 2014 to September 30, 2015

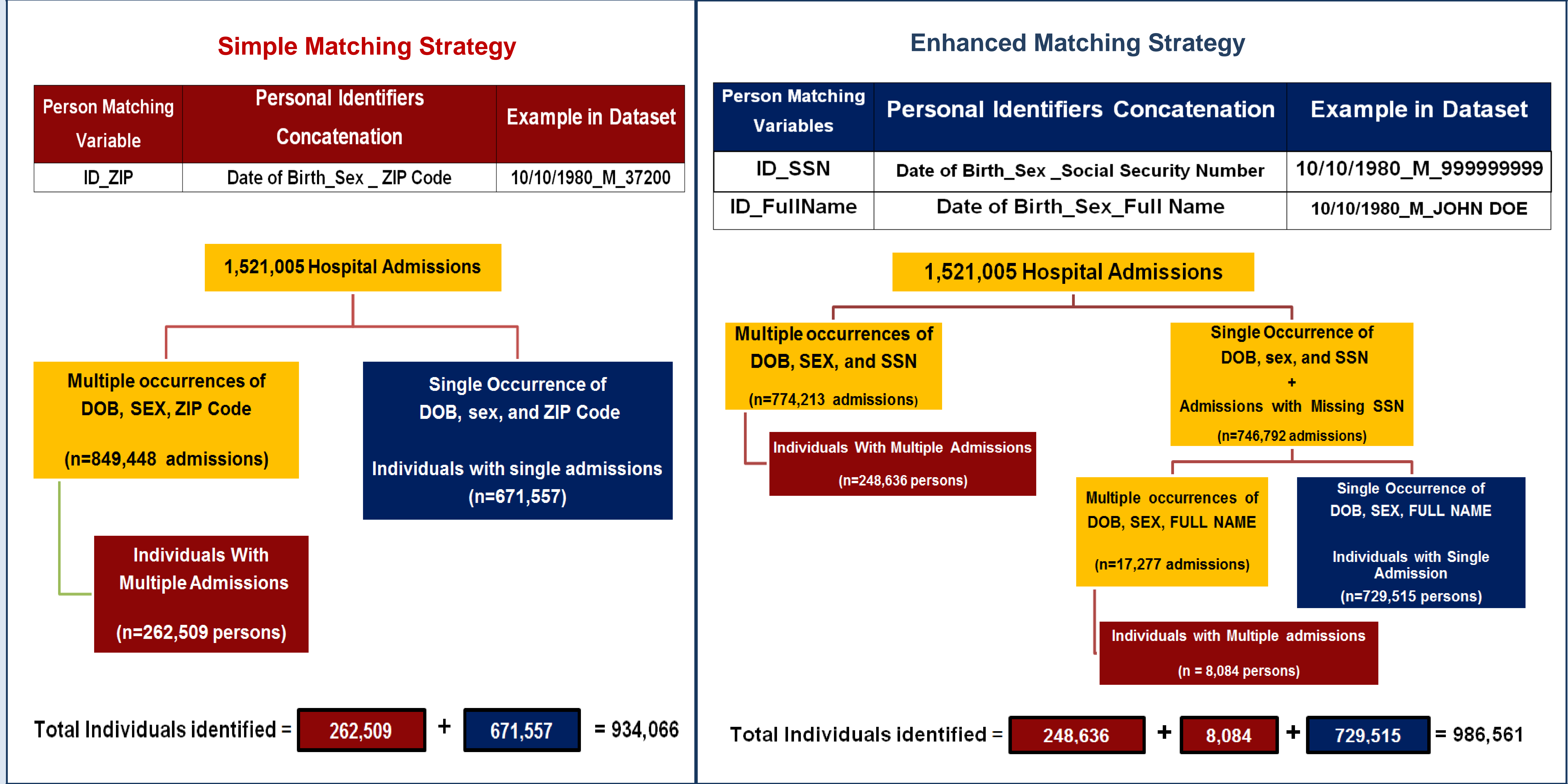


Figure 2. Summary of Results

Simple Matching Identified 934,066 individuals 262,509 (28%) with multiple admissions	Moderately High Interrater Agreement weighted $\kappa=0.759$	Enhanced Matching Identified 986,561 individuals 256,720 (26%) with multiple admissions
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Results

Simple Matching	Enhanced Matching		TOTAL
	Single Admissions	Multiple Admissions	
Single Admissions	241,255	23,596	264,851
Multiple Admissions	34,641	634,574	669,215
TOTAL	275,896	658,170	934,066

Simple matching
 Sensitivity = 87.4%
 Specificity = 96.4%
 to identify individuals with multiple admissions

Conclusions

- Simple Matching on DOB, sex and ZIP code can identify unique individuals with few limitations
- Simple strategy is useful when lacking protected health information such as SSN and patient names

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