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Familial, Associational, & Incidental Relationships (FAIR)

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Et al.

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Familial, Associational, & Incidental Relationships (FAIR)

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Background

- Familial history may increase risk for certain disorders and diagnosis in patients
- Identification of these risks is the first step of action to keeping patients healthy
- Linking patients could serve as a surveillance tool that help to identify outbreaks
- Clinical Data Warehouse (CDW) which utilizes the i2b2 (Informatics for integrating biology to bedside)

Methods

- Using a test set of 500 children, we measured the sensitivity and specificity of several linkage algorithms (e.g: insurance id and phone numbers) and validated this tool/algorithm through a manual chart audit.

FAIR-Viewer Output

FAIR - Viewer

Specify Data View Results Plugin Help

Export table below to a CSV file

Export table below to an Excel spreadsheet

Patient FAIR (Familial, Associational, & Incidental Relationships) Information for Patient Set 'Diag+Proc@15:40:55 [5-31-2012] [demo] [PATIENTSET_71]'

PATIENT_ID	Father_ID	Mother_ID	Brother_ID(s)	Sister_ID(s)	Son_ID(s)	Daughter_ID(s)	Husband_ID	Wife_ID
1 1000000001								
2 1000000002								
3 1000000003	1000000014	1000000016	1000000012					
4 1000000004	1000000014	1000000016	1000000012					
5 1000000005	1000000014	1000000016		1000000011				
6 1000000006								
7 1000000007								
8 1000000008								
9 1000000009	1000000023	1000000025	1000000070	1000000071	1000000108	1000000109		
10 1000000010								

Phone or Insurance Algorithm

	True+	True-	
Test+	289	8	PPV: 97%
Test-	110	93	NPV: 46%
	Sensitivity: 72%	Specificity: 92%	

Algorithm to find Mothers

- Find patients with matching phone number or insurance number as a patient in the initial cohort.
- Eliminate all Male matches
- System select the oldest matching female that is 15-50 years older than the member of the initial cohort.

Demographics

Average Age: 8
Male 52%
White 52%

FAIR-Concept TracerOutput in Excel

Book1 [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins

A1

1

2 Patient FAIR (Familial, Associational, & Incidental Relationships) Concept Trace

3 of selected patients & FAIR members from the Patient Set

4 'Diag+Proc@15:40:55 [5-31-2012] [demo] [PATIENTSET_71]'

5 =====

6

grp	#	PATIENT_ID	relationship	Circulatory system
8	1	1 1000000001		ICD9:458.9; ICD9:458.9; ICD9:
9	2	2 1000000002		
10	3	3 1000000003		ICD9:427.31; ICD9:427.31; ICD
11	3	4 1000000014	father	ICD9:401.9; ICD9:427.0; ICD9:
12	3	5 1000000016	mother	ICD9:429.3; ICD9:429.3; ICD9:
13	3	6 1000000012	brother	ICD9:401.9
14	4	7 1000000004		
15	4	8 1000000014	father	ICD9:401.9; ICD9:427.0; ICD9:

Sheet1 Sheet2 Sheet3

Ready 100%

Applications

- The identification of family and/or caregivers who smoke cigarettes in a pediatric study of asthma.
- Occurrence of Autism has been linked to demographics of parents as well as genetic characteristics of parents
- Epidemiological surveillance; utilizing patients' zip codes or region could assist in the identification of outbreaks