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Familial, Associational, & Incidental Relationships (FAIR)

Thomas M. English
*University of Massachusetts Medical School*, Thomas.English@umassmed.edu

Michael J. Davis
*University of Massachusetts Medical School*, MichaelJ.Davis@umassmed.edu

Rebecca L. Kinney
*University of Massachusetts Medical School*, Rebecca.Kinney@umassmed.edu

*See next page for additional authors*

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Presenter Information
Thomas M. English, Michael J. Davis, Rebecca L. Kinney, Ariana Kamberi, Wayne Chan, Rajani S. Sadasivam, and Thomas K. Houston

Keywords
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Comments
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Familial, Associational, & Incidental Relationships (FAIR)

Thomas M. English, PhD, Michael J. Davis, BA, Rebecca L. Kinney, MPH, Ariana Kamberi, MBA, Wayne Chan, MSME MSEE, Rajani S. Sadasivam, PhD, and Thomas K. Houston, MD MPH FACMI

The University of Massachusetts Medical School, Worcester, MA

**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 helps 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.

**Phone or Insurance Algorithm**

<table>
<thead>
<tr>
<th></th>
<th>True+</th>
<th>True-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test+</td>
<td>289</td>
<td>8</td>
</tr>
<tr>
<td>Test-</td>
<td>110</td>
<td>93</td>
</tr>
</tbody>
</table>

PPV: 97%
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 selects 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%

**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 code or region could assist in the identification of outbreaks.

**FAIR-Concept Tracer Output in Excel**

| Patient FAIR (Familial, Associational & Incidental Relationships) Concept Tracer of selected patients & FAIR members from the Patient Set
| Exp=Proc| [11:00:55 [5-15-2013]] [demo] [PATIENTSET_72]
| C   | 1 | 1000000001 | Relationship | Circulatory system |
| B   | 1 | 1000000001 |              |                   |
| A   | 1 | 1000000001 |              |                   |
|      | 3 | 1000000003 |              |                   |
|      | 4 | 1000000001 | father       |                   |
|      | 5 | 1000000001 | mother       |                   |
|      | 6 | 1000000001 | brother      |                   |
|      | 7 | 1000000004 |              |                   |
|      | 8 | 10000000004 |              |                   |

- Export table below to a CSV file
- Export table below to an Excel spreadsheet