Nov 7th, 8:00 AM

Familial, Associational, & Incidental Relationships (FAIR)

Thomas M. English
University of Massachusetts Medical School

Michael J. Davis
University of Massachusetts Medical School

Rebecca L. Kinney
University of Massachusetts Medical School

See next page for additional authors

Follow this and additional works at: https://escholarship.umassmed.edu/chr_symposium

Part of the Civic and Community Engagement Commons, Community-Based Research Commons, Community Health and Preventive Medicine Commons, Health Information Technology Commons, and the Translational Medical Research Commons


This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in Community Engagement and Research Symposia by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
Presenter Information
Thomas M. English, Michael J. Davis, Rebecca L. Kinney, Ariana Kamberi, Wayne Chan, Rajani S. Sadasivam, and Thomas K. Houston

Keywords
phenotypes, familial relationships, clinical data warehouse

Comments
Poster presented at the 2014 UMass Center for Clinical and Translational Science Community Engagement and Research Symposium, held on November 7, 2014 at the University of Massachusetts Medical School, Worcester, Mass.

Creative Commons License

This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License.
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%

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

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 Tracer Output in Excel