Delivering on-demand evidence via an informatics consultation service

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Acknowledgements

Informatics Consult team

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The Green Button Service

Given a specific case, provides a report summarizing similar patients in Stanford’s clinical data warehouse, the common treatment choices made, and the observed outcomes.

An institutional review board approved study (IRB # 39709).

http://greenbutton.stanford.edu
Mildly elevated serum free light chains and subsequent malignancy

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Observed</th>
<th>Expected</th>
<th>$(O - E)^2 / E$</th>
<th>$(O - E)^2 / V$</th>
<th>chisq</th>
<th>pvalue</th>
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</thead>
<tbody>
<tr>
<td>normal</td>
<td>760</td>
<td>49</td>
<td>71.365</td>
<td>8.092</td>
<td>16.413</td>
<td>16.4</td>
<td>5.00e-05</td>
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<tr>
<td>elevated</td>
<td>760</td>
<td>96</td>
<td>71.635</td>
<td>8.287</td>
<td>16.413</td>
<td>16.4</td>
<td>5.00e-05</td>
</tr>
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</table>
Service = software, data, and personnel

Informatics Consult Service

Software
- **ACE search engine**
  For patient timelines

Data
- EMR
- Claims

Personnel
- Informatics Physician
- EMR Data Specialist
- Data Scientist
The ACE search engine

www.tinyurl.com/search-ehr
The process

- **Requesting physician**
  - Request consult
  - Refine clinical question

- **Informatics physician**
  - Create definitions for exposures and outcomes
  - Build patient cohorts

- **EHR data specialist**
  - Perform statistical analysis

- **Data scientist**
  - Write consult report
  - Review results

- **ACE search engine**
  - 24 to 72 hours
  - Apply evidence to clinical decision
What we do to not be wrong

• Use CohortMethod’s data diagnostics
• Use negative controls for empirical calibration
• E-values to quantify the degree of confounding that can produce the observed effect
• Ask the question using multiple datasets
• Schedule an in-person debrief
Learning from the first 150 consults
Deploying the service at your site

• Data in OHDSI CDM
• Institutional support
• Data science expertise
• Marketing
• A process to sanity-check the data and consult findings
Ask me about the next phase of our study on measuring utility, and deploying the Green Button at Stanford Health Care

http://greenbutton.stanford.edu