The ICES-McMaster site: Opportunities of Anesthesia research

Presentation to Anesthesia Research Dinner Meeting
December 14, 2016
What is Institute for Clinical Evaluative Sciences?

- ICES is a not-for-profit research institute est. 1992
  - Encompasses a community of research, data and clinical experts
  - ICES Central situated in Sunnybrook Health Sciences Centre in Toronto
  - 6 satellite sites: Queens, Ottawa, UofT, Western, McMaster, (North)

- One of four ‘prescribed entities’--allows it to collect and use personal health information for research in Ontario.
  - Holds a vast and secure array of Ontario’s health-related data. (over 80 database holdings that can be linked together)
  - e.g. physician billings, hospital and ED records, population-based health surveys, among others

- Allows for health services and policy research
  - To produce population-based evidence
  - To inform health policy, planning and evaluation
Video explaining ICES

https://www.youtube.com/watch?v=5pZhRSM1cyk&t=51s
What is ICES?

LINKED DE-IDENTIFIED DATA SET FOR ANALYSIS
## Data Repository

Filter by Categories: 

<table>
<thead>
<tr>
<th>Category</th>
<th>PHI*</th>
<th>Library</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Services</td>
<td>Yes</td>
<td>ADP</td>
<td>Assistive Devices Program</td>
</tr>
<tr>
<td>Acquired Cohorts / Registries</td>
<td>Yes</td>
<td>ALR</td>
<td>Cancer Activity Level Reporting</td>
</tr>
<tr>
<td>ICES-derived Cohorts</td>
<td>Yes</td>
<td>ASTHMA</td>
<td>Asthma</td>
</tr>
<tr>
<td>Acquired Cohorts / Registries</td>
<td>Yes</td>
<td>BORN</td>
<td>Better Outcomes Registry and Network</td>
</tr>
<tr>
<td>Population &amp; Demographics</td>
<td>Yes</td>
<td>CAPE</td>
<td>Client Agency Program Enrolment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Registry of patients enrolled in primary care groups)</td>
</tr>
<tr>
<td>Health Services</td>
<td>Yes</td>
<td>CBI</td>
<td>Community Business Intelligence</td>
</tr>
<tr>
<td>Surveys</td>
<td>Yes</td>
<td>CCHS</td>
<td>Canadian Community Health Survey (CCHS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Linked and Unlinked data)</td>
</tr>
<tr>
<td>Acquired Cohorts / Registries</td>
<td>Yes</td>
<td>CCN</td>
<td>Cardiac Care Network Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Cardiac waiting lists)</td>
</tr>
<tr>
<td>Health Services</td>
<td>Yes</td>
<td>CCRS</td>
<td>Continuing Care Reporting System (for Chronic Care)</td>
</tr>
<tr>
<td>Population &amp; Demographics</td>
<td>No</td>
<td>CENSUS</td>
<td>Ontario Census Area Profiles</td>
</tr>
<tr>
<td>Population &amp; Demographics</td>
<td>No</td>
<td>CENSUSCA</td>
<td>Canada Census Area Profiles</td>
</tr>
<tr>
<td>Health Services</td>
<td>Yes</td>
<td>CERNER</td>
<td>Lab data from SW Ontario hospitals</td>
</tr>
<tr>
<td>Acquired Cohorts / Registries</td>
<td>Yes</td>
<td>CFDR</td>
<td>Canadian Cystic Fibrosis Data Registry</td>
</tr>
<tr>
<td>ICES-derived Cohorts</td>
<td>Yes</td>
<td>CHF</td>
<td>Congestive Heart Failure</td>
</tr>
</tbody>
</table>
What is the Benefit for McMaster-HHS-St Joes?

- Enhanced research to improve health outcomes at local, provincial, national and global level
- Improved grant success rates
- Enhanced research productivity
- Increased research capacity (to attract new faculty and new ICES researchers)
- Enriched support for training and mentorship of students and junior & mid-level investigators
- Enhanced opportunities to catalyze new collaborations
What is the Benefit for McMaster-HHS-St Joes?

- 156 Scientists
- 474 New Projects over 2 years
- 294 Publications in 2015-16
- 71 Grant Awards & $36.6 M in 3 Years

- 9 Scientists
- 27 New Projects over 6 years
- 27 Publications in 2015-16
- 2 Grant Awards & $1M in 3 Years
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Hsien Seow, Oncology
John You, Medicine
Jim Dunn, Social Science
Mehran Anvari, Surgery
Michelle Howard, Family Medicine
Michael Patterson, Family Medicine
John Cairney, U of T (Family Medicine)
Noori Akhtar-Danesh, Nursing
Liz Darling, Mid-Wifery
Strategic Goals

1. Promote ICES McMaster
2. Expand research and training capacity
3. Advance research productivity
4. Establish financial sustainability
What is the Benefit for Department of Anesthesia?
ICES VIDEO: THE POWER OF DATA TO IMPROVE HEALTH

POPULATION-BASED HEALTH RESEARCH THAT MAKES A DIFFERENCE
SITE CONTENT RESULTS (12)

- ICES study finds anesthesia consultation before major surgery reduces hospital stay.
- Pre-surgery exam rates vary widely among hospitals; research suggests some patients get unnecessary exams, others not enough.
- ICES study suggests change in guidelines for elective surgery for people with drug-eluting stents.
- About 3% of patients who were not taking opioid painkillers before major surgery continue to use them for more than 90 days after their operation.
- Study raises doubts about value of heart ultrasound before elective surgery.

See all site content results.

PUBLICATION RESULTS (39)

- The effects of midazolam on propofol-induced anesthesia: propofol dose requirements, mood profiles, and perioperative dreams

- A population-based study of anesthesia consultation before major noncardiac surgery

- Postoperative medical complications associated with anesthesia among older adults with dementia

- Combined general and neuraxial anesthesia versus general anesthesia: a population-based cohort study
How Can I Access ICES Data?

1. **Become an ICES Scientist**
   - Ontario University appointment
   - 2 publications with lead role, using ICES or other administrative data

2. **Collaborate with an ICES Scientist**
   - ICES Scientist included as co-Investigator
   - Ensures ICES policies & procedures followed

3. **Become an ICES post doctoral trainee, fellow, visiting scholar or student**
   - Requires supervision/co-supervision by full status ICES scientist

4. **Use Data & Analytic Services (DAS)**
   - Data request program; researcher covers cost of data cut
   - Analysis conducted by researcher/ team member via VPN
   - Ideal for student projects
   - Data cut for oncology studies subsidized by cd-link
How to Engage with ICES McMaster

Preliminary Costing Model

1. **Training Model**
   - $60K per candidate for 2 years ($30K/year)
   - Individual project mentorship and data analytic support to complete 1-2 studies from conceptualization to publication; 2 publications with lead role
   - On completion will meet requirements to apply for ICES Scientist appointment

2. **Service Model**
   - Standard ICES hourly rates applied and written into grants
   - ~ $110-$125/hour for Analyst
   - Highly trained ICES McMaster staff scope project with scientist and conducts analysis
How to Get Involved?

www.ices.on.ca
Website with information about becoming an ICES Scientist and data holdings

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Long-Term Vision

- Scientists
- New Projects over 2 years
- Publications in 2015-16
- Grant Awards & $M in 3 Years

- Scientists
- New Projects over 6 years
- Publications in 2015-16
- Grant Awards & $$M in 3 Years