Employee Absenteeism in a Southeastern Ontario Tertiary Care Hospital: A Record Linkage Study

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KFL&A Public Health

Kingston, Ontario, CANADA
Outline

- Rationale
- Key Messages
- Study Methods and Analyses
- Data Sources
- Results
- Discussion
- Implications
- Future considerations
Rationale

- Utilization of existing, electronically collected administrative data for the evaluation and surveillance of HCW absenteeism
- Lack of published research on HCW absenteeism regarding infectious disease transmission, and surveillance
- Threat of infectious diseases & nosocomial infections (i.e. SARS)
Key Messages

- Improve OH reporting
- Reducing absenteeism & costs
- Enhance monitoring of HCW absenteeism
Study Methods

- Retrospective cohort design involving a record linkage of Occupational Health and Human Resources data
- Study Period – June 1, 2004 to May 31, 2005
- Study Sample – 1,964 full-time employees
- Setting – KGH
- Descriptive Analysis – rates, frequencies
- (Multivariate Analysis)
Data Sources: Occupational Health Data
(Injury/illness reporting)

**Parklane** Software System

- Date of birth, sex, postal code
- Department
- OH Visit date
- Syndrome(s) - pre-determined by the system, classified by Occupational Health nurses
Data Sources: Human Resources Data (Absenteeism)

- Date of birth, sex, postal code
- Department
- Incident(s), hours, days absent (by month)
Modified Variables

Independent Variables:
- Departments
- Full-time Equivalency

Outcomes:
- Respiratory Illness - Febrile Respiratory Illness, Upper/ Lower Respiratory
- Gastrointestinal Illness
- Musculoskeletal/ Inflammatory condition
Objective

- To identify and describe absenteeism and Occupational Health visits among full-time Kingston General Hospital (KGH) employees, according to frequency, duration, workplace variables and seasonality.
## Absenteeism characteristics of Full-time Employees at KGH

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absent</strong> (at least once/year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1411</td>
<td>72</td>
</tr>
<tr>
<td>No</td>
<td>553</td>
<td>28</td>
</tr>
<tr>
<td><strong>Number of New Periods of Absence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>553</td>
<td>28</td>
</tr>
<tr>
<td>1</td>
<td>423</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>311</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>248</td>
<td>13</td>
</tr>
<tr>
<td>4.5</td>
<td>216</td>
<td>11</td>
</tr>
<tr>
<td>6+</td>
<td>194</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable (†n=1411)</th>
<th>Median</th>
<th>25&lt;sup&gt;th&lt;/sup&gt;, 75&lt;sup&gt;th&lt;/sup&gt; Quartiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of times absent/ person/ year</td>
<td>2</td>
<td>(1, 4)</td>
</tr>
<tr>
<td>Hours Absent/ person/ year</td>
<td>53</td>
<td>(23, 135)</td>
</tr>
<tr>
<td>Days Absent/ person/ year</td>
<td>7</td>
<td>(3, 18)</td>
</tr>
<tr>
<td>Mean duration of total days absent</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

† only employees experiencing an absence
Primary Reasons for Absenteeism for 3,946 Periods of absence (n=1,964)

- Respiratory: 32%
- Gastrointestinal: 12%
- Musculoskeletal: 10%
- Undefined/Other: 22%
- Neurological/Psychological: 12%
- Obstetrical/Gynaecology: 12%
- No reason provided: 10%
- Absence not reported to OH: 12%
## Total number of Absences for Full-time KGH employees reported by HR, but not reported to OH

<table>
<thead>
<tr>
<th>Department</th>
<th>Total Number of FTE</th>
<th>Average Number of times absence reported to OH/ FTE/ year</th>
<th>Average Number of times absence not reported to OH/ FTE/ year</th>
<th>Percentage of times absence not reported to OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>75</td>
<td>4.0</td>
<td>1.3</td>
<td>33</td>
</tr>
<tr>
<td>General Medicine</td>
<td>234</td>
<td>3.4</td>
<td>1.5</td>
<td>44</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>26</td>
<td>3.0</td>
<td>1.1</td>
<td>37</td>
</tr>
<tr>
<td>Resource Pool</td>
<td>60</td>
<td>2.9</td>
<td>1.1</td>
<td>38</td>
</tr>
<tr>
<td>Critical Care</td>
<td>183</td>
<td>2.5</td>
<td>1.0</td>
<td>40</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>52</td>
<td>2.6</td>
<td>0.7</td>
<td>27</td>
</tr>
<tr>
<td>Out-patient clinics</td>
<td>162</td>
<td>2.2</td>
<td>0.5</td>
<td>23</td>
</tr>
<tr>
<td>Obstetrics/ Gynaecology</td>
<td>49</td>
<td>2.0</td>
<td>0.8</td>
<td>40</td>
</tr>
<tr>
<td>Administration &amp; Support</td>
<td>678</td>
<td>1.8</td>
<td>0.4</td>
<td>23</td>
</tr>
<tr>
<td>Diagnostic Imaging</td>
<td>234</td>
<td>1.5</td>
<td>0.5</td>
<td>27</td>
</tr>
</tbody>
</table>
Discussion

- Highest crude absence rates = Surgical, General Medicine & Paediatric departments
- Highest percentage of visits not reported to OH = General Medicine, Critical Care & Obstetrics/ Gynaecology

**Improve OH Reporting**
Reduced Absenteeism and Costs

- Workplace Health Promotion
- Maximize productivity/ utilization while minimizing staffing costs
- Retention strategies
- Target specific departments to provide more complete and accurate OH data

= Reduction in costs & Improvement in monitoring
Next Steps

- To examine the potential for integration of this Occupational Health data stream into an existing Emergency Department surveillance system.
Emergency Department System

- Community Health monitoring system
- Public Health initiative
- **Real-time** - ED visits to 7 area hospitals (KFL&A and HPE Health Units), admissions to 3 hospitals
- Outbreak detection
- Alerting, Reporting, Dissemination of results
- ED visits from 7 area hospitals covering 2 public health units
- Admissions to 3 hospitals
- Approx. 240,000 visits/yr
- Population ~ 350,000
- System captures ~ 94% of visits by this population
Respiratory Illness Reporting

[Graph showing ED visits and OH visits over months from June 2004 to May 2005. The graph includes two lines: one for Resp/ILI ED visits and another for Reported Resp OH visits.]
Gastrointestinal Illness Reporting

![Graph showing ED and OH visits from June 2004 to May 2005. The graph includes two lines: one for GI ED visits and another for Reported GI OH visits. The x-axis represents months from June 2004 to May 2005, and the y-axis represents visits ranging from 0 to 450.]
Strengths & Limitations

- Existing administrative databases
- Novel application of health data
- All absenteeism events

- Under-reporting
- Self-reported outcomes
- Merge proved difficult
Implications

- Improve OH reporting
- Reduce absenteeism & costs associated
- To create a HCW OH surveillance system

** Monitor HCW injury and illness events**
Future Considerations

- Continued monitoring of infectious disease
- Early detection of hospital-based outbreak
- Integration with existing Emergency Department system
- Pandemic Influenza
- Provide feedback (alerts & reports)
Thank you

Acknowledgements:
Dr. Kieran Moore & Dr. Elizabeth VanDenKerkhof
QUEST project for funding and support

Contact Info: tdonovan@healthunit.on.ca
Reasons associated with highest absenteeism by department

![OH Data Chart]

- Surgery
- General Medicine
- Paediatrics

- No Reason
- Respiratory
- Musculoskeletal
- Gastrointestinal
Questions

- BTWMF – difficult to interpret, is there information that can be provided?
## Total Absence Reporting

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted Odds Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Services</td>
<td>2.5</td>
<td>(1.7, 3.7)</td>
</tr>
<tr>
<td>Nurses</td>
<td>2.9</td>
<td>(1.9, 4.4)</td>
</tr>
<tr>
<td>Full-time Work-years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-&lt;15 years</td>
<td>1.4</td>
<td>(1.1, 1.8)</td>
</tr>
<tr>
<td>15 + years</td>
<td>1.4</td>
<td>(1.1, 1.8)</td>
</tr>
</tbody>
</table>

*controlled for union affiliation, annual salary, full-time work-years, sex, age
## Respiratory Illness Reporting

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</thead>
<tbody>
<tr>
<td>Union Affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Services</td>
<td>1.8</td>
<td>(1.2, 2.8)</td>
</tr>
<tr>
<td>Sex</td>
<td>1.5</td>
<td>(1.1, 2.0)</td>
</tr>
</tbody>
</table>

*controlled for union affiliation, annual salary, full-time work-years, sex, age
## Gastrointestinal Illness Reporting

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<tbody>
<tr>
<td>Union Affiliation</td>
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<td>2.1</td>
<td>(1.2, 3.6)</td>
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<td>Full-time Work-years</td>
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<td></td>
</tr>
<tr>
<td>5-&lt;15 years</td>
<td>1.6</td>
<td>(1.2, 2.2)</td>
</tr>
</tbody>
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*controlled for union affiliation, annual salary, full-time work-years, sex, age
Conditions

Respiratory

● Upper Respiratory - Laryngitis, tonsillitis, sinusitis, tracheitis
● Lower Respiratory - Bronchitis, broncheolitis, pneumonia
● FRI symptoms - fever, cough, chills, malaise, body aches
Conditions

Gastrointestinal Illness

- Gastroenteritis
- Symptoms - Nausea, vomiting, diarrhea
Health Care Worker Absenteeism

- When productivity/utilization levels are kept below 80 percent, nurses are more likely to be satisfied with their jobs and absenteeism is reduced.
- Retention strategies must address:
  - physical and mental health of nurses (interpersonal relationships)
  - balancing the efforts and rewards associated with work
  - nurse autonomy (job control)
  - full scope of practice
  - managerial relationships
  - innovative work schedules
  - hiring more nurses into full-time permanent positions
  - reasonable nurse-to-patient ratios based on targeted productivity/utilization standards

**Economic Impact**
Last Minute Absence Reasons

- Personal illness most common reason for last-minute no-shows (33%)
- Family issues (24%)
- Personal needs (21%)
- Stress (11%)
- Entitlement mentality (10%)

[CCH Incorporated, 2002 Survey]
Workplace Health Promotion

- Medical costs are directly related to health risks and health behaviours (i.e. employees with fewer risk factors incur lower medical costs).
- Comprehensive workplace health promotion programs lower health care and insurance costs, decrease absenteeism, and improve performance, productivity and work morale.
- $1/ $2.05 – $5.96

[Makrides, L., Cdn. Assoc. of Cardiac Rehab., 2004]
Reduced Absenteeism

- At **DuPont**, each dollar invested in workplace health promotion yielded $1.42 in lower absenteeism costs over a 2 year period. [American Journal of Public Health, September 1990]

- **Johnson and Johnson** reduced their absenteeism rate by 15% within two years of introducing their wellness program. They also cut their hospital costs by 34% after just three years. [Human Resources Executive, April 1993]

- To prevent back injuries among its employees, a **county in California** offered classes and fitness training to all its workers. As a result, there was a significant decrease in sick days related to back injuries, producing a net cost-benefit ratio of 1 to 1.79. [WELCOA – 1999]
What information are we collecting?

- **Real-time** - ED visits to 7 area hospitals (KFL&A and HPE Health Units), admissions to 3 hospitals
  - Date and Time of Visit or Admission
  - Hospital
  - Age/Sex
  - Postal Code (5 digits)
  - Chief Complaint
  - **Triage Score**
  - Febrile Respiratory Illness (FRI) Screening results
- Syndromes: Gastroenteritis, Respiratory, Fever/ILI, Asthma, Derm-infectious, Neuro-infectious, Severe Infection, Other