The Impact of Occupational Injury And Illness on Non-occupational Disability Benefits

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Overview

• Background
• Data
• Adjustments
• Results
• Implications
• Future Work
Background
Workers’ compensation programs exist in all states
- Paid for by employers
- Average state premiums 2%-6% of payroll
- Includes medical, temporary and long-term disability
- California—Temporary disability up to 730 days

California one of 5 states with near universal non-occupational disability system
- Paid for by employees
- California rate 1.1% of payroll, with maximum contribution
- Covers disability lasting 7-365 days
- No medical or long-term disability benefits
Background

Policy concerns

• Internalizing occupational injury costs to give employers proper incentive for investments in prevention

• Proper employee costs for SDI signals appropriate benefit breadth and level
  – Paid “Family Leave”

• Frequent litigation over correct pay or, leads to substantial legal and admin costs
Background

- Reville, et al. examined cross-subsidization between occupational and non-occupational health benefits.

- But, this is the only study we know of, at least in US, that examines claiming across occupational and non-occupational disability systems simultaneously.

- This is a truly unique set of research:
  - Only research SDI in any state.
  - Only research comparing two, separate short to medium term disability systems.
Data—State Disability Insurance (SDI)

• We obtained a 20% sample of all claimants, the “Single Client File” (SCF) for 1991-2002

• Many employers can opt out of SDI if they are:
  – State government
  – Large employers that elect self-insurance
  – Self-employed workers
Data—SDI

• From Employment Development Department (EDD) “employer file” we obtained a specially constructed data that
  – Defined all workers that were eligible for SDI benefits by number of unique SSNs
  – By 2-digit SIC
  – By contribution and wage

• Allowed us to construct denominators for injury, illness, and total rates by 2-digit industry

• Numerators:
  – Excluded several ICD-9 codes (pregnancy)
  – Defined each claim as injury or illness based on ICD-9 codes
DATA—Bureau of Labor Statistics (BLS) for California

- Survey of Occupational injuries and Illnesses (SOII) for 2000-2002
- Data are incidence/(100 FTEs)
- Separately for injuries and illnesses
- By 2-digit industry codes
- Differs from SDI data which are incidence relative to unique SSNs/year
DATA-Current Population Survey (CPS)

Basic Monthly File

• Allows us to translate unique SSNs into Full-time equivalents (FTEs)

• Allows us to identify characteristics of workers that might affect probability of disability
  – Age, gender, race, ethnicity, etc.
Data—National Health Interview Survey

- Injuries/Illnesses may be correlated with both industry and worker demographics for example,
  - young workers have fewer non-occupational illnesses (but maybe more non-occupational injuries)
  - Female workers might have more illnesses, but fewer injuries
  - Construction has mostly younger, male workers
Data—National Health Interview Survey

• Constructed estimates for a range of worker characteristics

• Adjusted each California industry group to reflect injury/illness risk of workforce

• After adjustment, each industry should have the same non-occupational injury/illness rate
  – Except, if occupational injury/illness rates affect non-occupational injury/illness rates
Occupational and Non-Occupational Incidence Rates for Illnesses by Industry, 2000-2001
Occupational and Non-Occupational Incidence Rates for Injuries and Illnesses by Industry, 2000-2002
Correlations Between Occupational and Non-Occupational Incidence Rates

<table>
<thead>
<tr>
<th></th>
<th>Injury</th>
<th>Illness</th>
<th>Injury or Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.372**</td>
<td>.394**</td>
<td>.265**</td>
</tr>
<tr>
<td>N</td>
<td>105</td>
<td>105</td>
<td>161</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed)**
## Average Incidence Rate All Industries (incidence/100 FTE)

<table>
<thead>
<tr>
<th></th>
<th>Injury Rate</th>
<th>Illness Rate</th>
<th>Injury or Illness Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Occupational (SDI)</td>
<td>0.87</td>
<td>3.66</td>
<td>4.11</td>
</tr>
<tr>
<td>Occupational (BLS)</td>
<td>3.51</td>
<td>0.20</td>
<td>3.73</td>
</tr>
</tbody>
</table>
## Regressions Predicting Non-Occupational Incidence Rates from Occupational Incidence Rates

<table>
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<th>Injury or Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td>0.015</td>
<td>0.229</td>
<td>0.261</td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.215)</td>
<td>(0.144)</td>
</tr>
<tr>
<td><strong>BLS Rate</strong></td>
<td>0.063**</td>
<td>2.941**</td>
<td>0.215**</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.666)</td>
<td>(0.063)</td>
</tr>
</tbody>
</table>

**Significant at the .01 level of confidence**
Percentage of Non-Occupational Incidence Rates Explained by Occupational Incidence Rates

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<tbody>
<tr>
<td></td>
<td>22%</td>
<td>16%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Implications

Substantial subsidization of employer supported workers’ compensation by employee financed State Disability Insurance

Approximately 20-25% of injuries/illnesses may be misclassified as non-occupational

Integration could save substantial administrative costs

Employers might pick up larger percentage of combined program with costs offset by administrative savings
Further Study Necessary

• Do these data accurately reflect final disposition of disputed cases?
  – Check by matching SDI⟷WCAB

• Do these data accurately reflect longer-term overlap between SDI and Workers’ Compensation
  – Recent changes in benefit levels
  – Recent changes in premium levels
  – Long-term trends in illness, apportionment, causation standards etc.
Average BLS and SDI Incidence Rates for Injuries and Illnesses, by year

*BLS rates are for total cases, not for lost workday cases only*
Premium Level May Affect Reporting

Change in Reported Exposure vs. Premium Rates

-4.0%
-2.0%
0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
14.0%
16.0%


Change in reported exposure

$0.00 $1.00 $2.00 $3.00 $4.00 $5.00 $6.00 $7.00

Premium rate/$100 payroll

Policy Year

Change in Exposure
Premium level
Future Work—Some Questions

- Have recent changes in WC benefit levels increased the pressure on SDI?
- Have very high WC premiums increased pressure on SDI? Will this abate with recent decline?
- When benefit levels differ, does reporting shift between two systems?
- Can we extend research to a broader range of social insurance (e.g., group health) and social welfare programs (e.g., MediCal, SSI, etc.)?
Future Work—Some Requirements

- Extend SDI data through 2005
- Extend EDD employment data for full period, 1993-2005
- Link EDD and WCAB
- Link WCIS and other data systems
  - First effort, MediCal/SSI
- This model could be come standard for California and example for other states