Unequal health, health care needs and SES over the life course: the role of health insurance in a national health system

Emilie Renahy, Amélie Quesnel-Vallée

IRIS (International Research Infrastructure on Social inequalities in health)
Background

- **Social inequalities in health**
  - Extensively described in the literature (relationship with income, education, SES)
  - Increasingly assessed over the life course (cohort studies and longitudinal panel surveys)

- **Governmental policies as a social determinant of health**
  - Health care system
  - Example: health insurance
    - Universal health coverage: reduce disparities, increase overall population health status
    - Private health insurance: increase the gap
Background

- **Canadian context**
  - Canada Health Act: National health system with universal public coverage of all “services provided by all hospitals, medical practitioners or dentist”
  - But:
    - Coverage limited to hospital and physicians
    - Provincial variations (means, needs tested) in coverage for:
      - Medication
      - Dental and eye care
      - Hospital charges (room)
    - Social inequalities in supplementary private health insurance for services not covered by the public system
Objective

- Assess the contribution of health insurance to social inequalities in health through health care utilization:
  - Pathway through unmet health care needs because of cost
Methods

Population

- **Study sample**
  - National Population Health Survey (NPHS), *Statistics Canada*
    - Nationally representative longitudinal household survey
    - Inclusion in 1994
    - n=17,276
    - Biennial interviews from 1994/95 to 2006-07
    - 6 on 7 cycles used
Methods

Sample restriction

Longitudinal panel in 1994
n=17,276

Eligible individuals (25-54 year olds in 1994)
n=7,050

Not at school and do not move from cycle 1 to cycle 6
n=6,446

25-34 year olds
n=1,464

35-44 year olds
n=1,628

45-54 year olds
n=1,369

Missing values:
15 on all outcomes
1970 on at least one covariate
Methods

Measurements & Models

Early Chronic Cond. 1994

Years ChronicCond 1996-2002

Years Insured 1996-2002

Years Inc. Adequacy 1996-2002

Years OLF/Unemployed 1996-2002

Dichotomized years Unmet Needs b/o Cost 1998-2004

Poor Health 2004

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
## Impact of health insurance on social inequality through unmet needs because of cost

<table>
<thead>
<tr>
<th>35-45 years olds</th>
<th>SRH</th>
<th>Unmet needs because of cost</th>
<th>Years insured</th>
<th>Years in income adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=1628)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Unmet needs because of cost</td>
<td>1.435 (0.464)**</td>
<td>0.186 (0.098)+</td>
<td>-0.226 (0.177) #</td>
<td>0.147 (0.094)#</td>
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<td>-0.147 (0.094)#</td>
<td>-0.508 (0.214)*</td>
<td>0.330 (0.036) ***</td>
<td>-0.226 (0.177) #</td>
</tr>
<tr>
<td>Years unemployed</td>
<td>0.477 (0.179)**</td>
<td>-0.185 (0.078)*</td>
<td>-0.572 (0.080) ***</td>
<td>-0.508 (0.214)*</td>
</tr>
<tr>
<td>Years out of labor force</td>
<td>0.479 (0.087) ***</td>
<td>-0.007 (0.041)</td>
<td>-0.397 (0.054) ***</td>
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</tr>
<tr>
<td>High school degree</td>
<td>-0.459 (0.311)#</td>
<td>0.397 (0.884)</td>
<td>-0.027 (0.096)</td>
<td>0.316 (0.135)*</td>
</tr>
<tr>
<td>More than high school degree</td>
<td>-0.712 (0.329)*</td>
<td>1.314 (0.888)#</td>
<td>0.115 (0.092)#</td>
<td>0.621 (0.132)***</td>
</tr>
<tr>
<td>Chronic condition 1994</td>
<td>-0.030 (0.274)</td>
<td>0.639 (0.550) #</td>
<td>0.166 (0.070)*</td>
<td>0.034 (0.093)</td>
</tr>
<tr>
<td>Years with chronic condition</td>
<td>0.487 (0.089) ***</td>
<td>0.044 (0.196)</td>
<td>0.043 (0.027) #</td>
<td>0.049 (0.037) #</td>
</tr>
<tr>
<td>Rsquare</td>
<td>0.781</td>
<td>0.363</td>
<td>0.225</td>
<td>0.227</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>45-55 years olds</th>
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<tr>
<td>(n=1369)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Unmet needs because of cost</td>
<td>0.756 (0.436) +</td>
<td>-0.126 (0.090)#</td>
<td>-0.385 (0.113)***</td>
<td>-0.325 (0.094) ***</td>
</tr>
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<td>Years insured</td>
<td></td>
<td>-0.126 (0.090)#</td>
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<td>Years in income adequacy</td>
<td>-0.325 (0.094) ***</td>
<td>-0.328 (0.164) *</td>
<td>0.257 (0.036) ***</td>
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<td>Years unemployed</td>
<td>-0.262 (0.258)</td>
<td>-0.343 (0.083) ***</td>
<td>-0.363 (0.129) **</td>
<td>-0.385 (0.113)***</td>
</tr>
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<td>Years out of labor force</td>
<td>0.263 (0.089) **</td>
<td>0.016 (0.030)</td>
<td>-0.246 (0.037) ***</td>
<td>-0.257 (0.036) ***</td>
</tr>
<tr>
<td>High school degree</td>
<td>0.147 (0.291)</td>
<td>-0.015 (0.606)</td>
<td>0.090 (0.095)</td>
<td>0.579 (0.124)***</td>
</tr>
<tr>
<td>More than high school degree</td>
<td>0.333 (0.291)#</td>
<td>0.361 (0.659)</td>
<td>0.120 (0.093)#</td>
<td>0.793 (0.119)***</td>
</tr>
<tr>
<td>Chronic condition 1994</td>
<td>-0.106 (0.247)</td>
<td>0.103 (0.524)</td>
<td>0.113 (0.081)†</td>
<td>-0.036 (0.094)</td>
</tr>
<tr>
<td>Years with chronic condition</td>
<td>0.368 (0.115)**</td>
<td>0.448 (0.196)*</td>
<td>0.022 (0.030)</td>
<td>-0.036 (0.034)</td>
</tr>
<tr>
<td>Rsquare</td>
<td>0.625</td>
<td>0.475</td>
<td>0.163</td>
<td>0.303</td>
</tr>
</tbody>
</table>

*Adjusted for education, employment status, chronic condition, age, gender, ethnicity, marital status, and province of residence*

***<.001; **<.01; *<.05; +<.10; #<.25;
Results 1

35-45 year olds

Early Chronic Cond. 1994

Years ChronicCond 1996-2002

Years Insured 1996-2002

Years Inc. Adequacy 1996-2002

Dichotomized years Unmet Needs b/o Cost 1998-2004

Years OLF/Unemployed 1996-2002

Unemployed: 0.477 (0.179) **
OLF: 0.479 (0.087) ***

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Results 1

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Years Inc. Adequacy 1996-2002

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0.186 (0.098) +

Poor Health 2004

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Results 1

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Early Chronic Cond. 1994

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-0.226 (0.177) #

Years OLF/Unemployed 1996-2002

Dichotomized years Unmet Needs b/o Cost 1998-2004

0.186 (0.098) +

Years Inc. Adequacy 1996-2002

1.435 (0.464) **

Poor Health 2004

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Results 2

45-55 year olds

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Results 2

45-55 year olds

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Results 2

45-55 year olds

-0.385 (0.113) **

-0.126 (0.090) #

0.756 (0.436) **

All outcomes adjusted for Education, Ethnicity, Marital Status, Age, Province of residence
Discussion

- Impact of health insurance among the 35-45 year olds:
  - Tend to mitigate health inequalities
  - Positive impact on SRH only when barriers to health care utilization occur (unmet needs because of cost)

- Impact of health insurance among the 45-55 year olds:
  - Tend to exacerbate health inequalities
  - Positive impact on SRH, both directly & indirectly through unmet needs because of cost
Discussion

- Compositional effect of the privately insured population?
  - Initial pathway to social inequalities in health different between the two groups
  - Health issues and health concerns increase with age
  - Greater health concerns and preventive behaviors in middle-high SES
  - Insurance status not randomly assigned
Implications

- Positive impact of health insurance for those with the greatest need:
  - For those who experience cost barriers to health care access

- BUT even in a universal health insurance system, some are left behind:
  - Means-tested policies
  - Working poor
  - Unemployed
  - Retirees