

The Health of Disability Insurance Enrollees: An International Comparison

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Discussed by

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What is the paper about?

- DI programs are huge and vary considerably in size
- Parameters (eligibility conditions & benefit) are important determinants of the size of a program (Moral Hazard)
- Question: Is the program optimally designed?
- This is in essence the issue of targeting efficiency:
 - Does it cover those who need the program?
 - How large are the type I errors (False positives)?
 - How large are the type II errors (false negatives)?
 - When countries scale back DI programs, do the declines occur among healthier or less healthy individuals?

- This paper takes a cross country approach
- Use richness of SHARE and HRS to construct innovative health measures (the first component of PCA).
- First ,use pooled data to check upon:
 - Avg Health percentile for those in DI (more effective targeting will lead to lower avg health percentile)
 - Fraction of bottom decile covered by DI (effectiveness of the safety net)
 - In addition check whether labor market skills are important
- Next, track how measures capture the impact of DI reforms reducing enrollment in some countries

Comment1: the definition of health in the model

- Model (individual i , country j)
 - DI receipt (Y_{ij}) = $f(X_{ij}, h_{ij}; \beta_j, \alpha_j)$
 - Take h_{ij} as percentile in the distribution
 - If h_{ij} is identical across countries then coefficient α_j can be compared across countries
- Two issues:
 - h_{ij} validation is needed: How much variance of total health is explained by 1st PCA and does that vary across country?
 - Even if i is satisfied do the deciles have the same meaning (and hence can we compare α_j)?

Americans report higher levels of disease than the English

Table 1. Self-reported Health by Education and Income in England and the United States, Ages 55-64 Years*

	England				United States			
	Low	Medium	High	Total	Low	Medium	High	Total
Years of Schooling, Percent Distribution								
Unweighted sample size	1745	969	967	3681	2293	1003	1090	4386
Diabetes	7.0	4.8	5.7	6.1	14.3†	12.3†	9.5†	12.5†
Hypertension	36.6	31.4	31.0	33.8	46.3†	40.8†	37.0†	42.4†
All heart disease	11.6	7.7	7.8	9.6	17.1†	14.8†	12.0†	15.1†
Myocardial infarction	4.5	3.6	3.4	4.0	6.7†	4.1	4.4	5.4†
Stroke	2.7	2.2	1.6	2.3	4.8†	4.2‡	1.7	3.8†
Lung disease	8.2	5.2	3.7	6.3	10.9†	8.3†	3.1	8.1†
Cancer	5.2	5.5	6.3	5.5	8.9†	10.0†	10.0†	9.5†
Income, Percent Distribution								
Unweighted sample size	1204	1212	1259	3681	1574	1484	1328	4386
Diabetes	7.3	6.7	4.4	6.1	17.4†	11.8†	8.2†	12.5†
Hypertension	36.7	34.6	30.3	33.8	46.3†	43.6†	37.1†	42.4†
All heart disease	13.7	8.7	6.5	9.6	20.0†	13.3†	12.0†	15.1†
Myocardial infarction	6.5	3.1	2.4	4.0	8.5	4.6	3.2	5.4†
Stroke	3.6	1.8	1.4	2.3	6.0†	3.8†	1.5	3.8†
Lung disease	8.1	6.4	4.4	6.3	13.2†	7.1	4.1	8.1†
Cancer	5.9	5.2	5.5	5.5	9.6†	9.6†	9.3†	9.5†

*English data are from the first wave of English Longitudinal Survey of Aging, and US data are from the 2002 wave of the Health and Retirement Survey. Within each country, weekly family income adjusted for family size is divided into 3 equally sized income tertiles with one third of the weighted population in each group. In the United States, the range of the middle income group is \$322-\$635 while in England the range of the middle income group is £127-£241. In the United States, education is separated into high school or less (0-12 years), more than high school but not a college graduate (13-15 years), and college or more (≥16 years). In England the 3-way education division is qualified to a level lower than "O-level" or equivalent (typically 0-11 years of schooling), qualified to a level lower than "A-level" or equivalent (typically 12-13 years), and a higher qualification (typically >13 years). All data are weighted.

† $P < .01$ vs data with England.

‡ $P < .05$ vs data with England.

From: Disease and Disadvantage in the US and in England
(Banks et al, JAMA, 2006, vol 295(17), pp2037-2045)

- **Suggestion:** exploit self rated health (H^S) more directly (omitting i, j indices) and use the regression:

$$H^S = \sum_k \gamma_k H_k^O + \beta X + \varepsilon$$

With H^S the set of (not/less contaminated indicators of health, such as chronic conditions, see for instance Bound JHR1989)

- H^S is ordinal => use ordered probit, with country dummies in the cut-points to filter out country specific reporting (Kerkhofs & Lindeboom, HE1995, JAE2009)
 - With estimates of β and γ one can generate a value of the index function as a measure for individual health
 - Instead of general health one could use work related health (“does your limit yhou in the kind and amount of work”)

Comment 2: the definition of Disability Insurance

- Targeting is about aligning enrolment rates with the aims of a program.
- Programs differ in their aims. E.g. in some countries weaker criteria for workers nearing retirement (Scandinavian Countries)
 - i* Difficult to assess different programs with a single health indicator
 - ii* Regardless of the above, check which programs are included!!!
 - The definition of DI program in the Netherlands (Footnote 10) is not correct!
 - “Bijstandswet” (and “Toeslagenwet”) are social assistance programs, where health is not a criterium

Comment 3: the stringency of a program, false negatives and perverse self screening

- Avg health decile of workers in DI in country A may be low and the fraction of 1ste decile covered by DI in country A may be higher than in Country B
- Yet, the fraction of false negatives and perverse screening may be still be higher in country A
- Indeed, country B may have more false positives, but is targeting efficiency higher in A than in B?
 - => The stats tell something about targeting efficiency, but not enough
 - => Examine outcomes of those **not on** DI
 - Do they work? If not, isn't this indicative of 'overshooting'?
 - Do figures 3 with employment, UI and DI

Comment 4: assessing impact of DI reforms with the micro measures

- This paper looks at the stock of DI enrollees after reforms (notably for the Netherlands and Denmark).
- The stock of workers considered are older workers who have enrolled in previous years
- To assess the effectiveness/efficiency of DI program changes one needs to look at the **flow rather than the stock** before and after reforms