Socio-economic differences in treatment intensity in GP practise

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Background

"Equal treatment for equal need"

Quantity:

- Primary physician services: Yes

Quality?

- Specialist services: No

(Bago d'Uva, Jones, van Doorslaer, 2009)

Motivation

- Health discrepancies by SES – due to health care system?
- GP's role: agent and gate-keeper
- Service components studied: Consultation length and tests

SES and health care utilization

Channels:

- Willingness to pay
- Efficiency in the production of health
- Supply of services, cost of access
- GP’s personal cost

Theoretical model

GP's utility:

$$U = T + p_1 x_1 + p_2 x_2 + \alpha B(\theta x_1, x_2) - \phi(x_1, x_2)$$

First order conditions:

Hypotheses

Assuming that patients of different SES have the same health status:

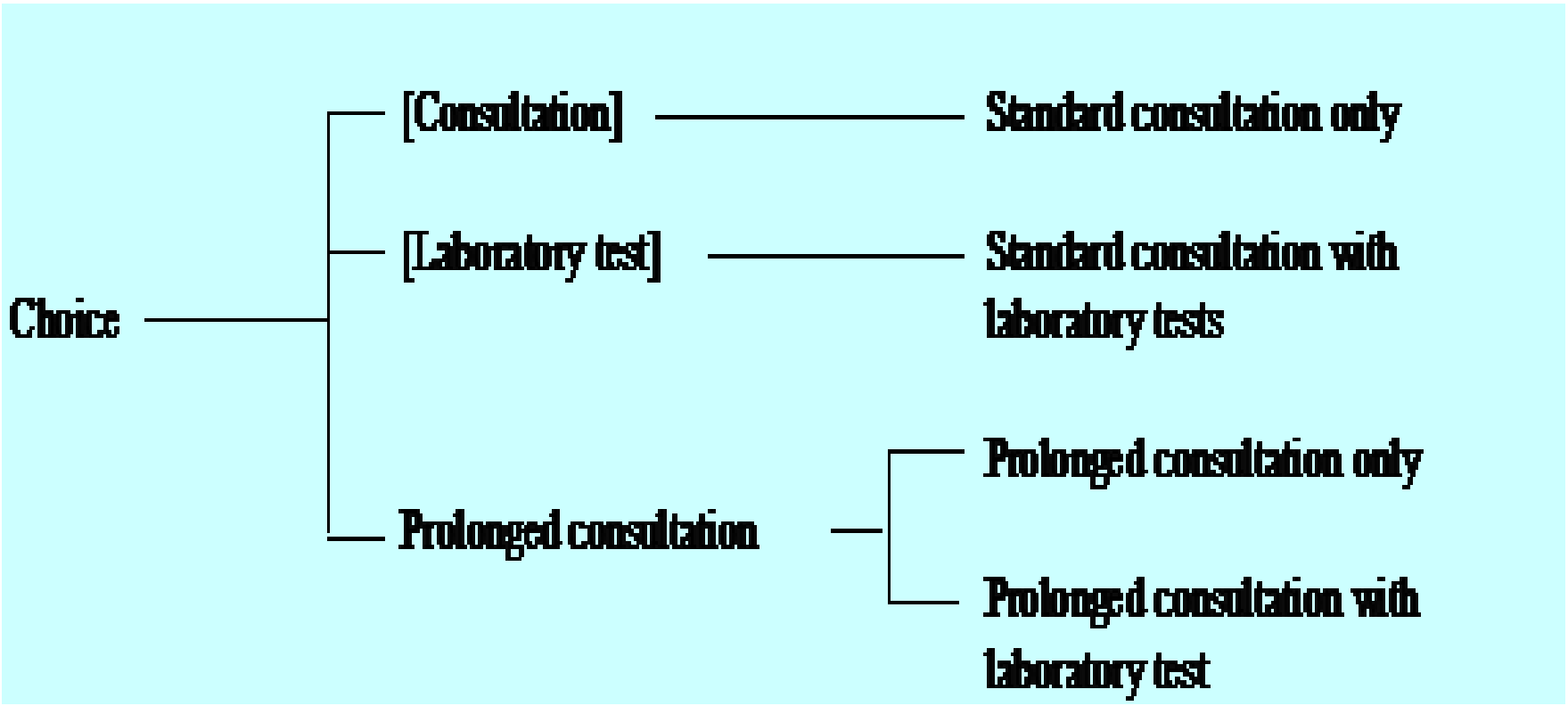
1. The use of *prolonged consultation* is increasing in patient's level of education.
2. The use of *standard consultation with laboratory test* will not depend on patient's level of education.

Data set

- Merged administrative data 2001-2003
- n = 28895 consultations, sick-listed patients
- SES: income, level of education, county of birth
  marital status, no. of children
  GP characteristics
  municipality characteristics
- Controls for health:
  Diagnose group (ICPC-2), diagnose category, age, gender, working fulltime, no. of sick days previous year

Empirical model

- Nested logit



Results (1)

	Prolonged consultation		Standard consultation and laboratory test		Prolonged consultation and laboratory test	
	Coeff.	Std.err	Coeff.	Std.err	Coeff.	Std.err
Upper secondary	0.044	(0.039)	-0.061	(0.055)	0.013	(0.039)
University low	0.246**	(0.048)	0.021	(0.073)	0.202**	(0.050)
University high	0.279**	(0.100)	-0.312	(0.163)	0.225*	(0.102)
Middle income	0.011	(0.044)	-0.032	(0.064)	0.029	(0.045)
High middle income	0.082	(0.046)	-0.009	(0.066)	0.099*	(0.046)
High income	0.109*	(0.049)	0.035	(0.070)	0.136**	(0.050)
Male	-0.082*	(0.036)	-0.332**	(0.052)	-0.120**	(0.037)
Age 15-34	-0.320**	(0.051)	-0.254**	(0.074)	-0.381**	(0.054)
Age 35-49	-0.144**	(0.045)	-0.149*	(0.065)	-0.181**	(0.047)
Working fulltime	-0.059	(0.036)	-0.085	(0.051)	-0.070	(0.036)
Non Scandinavian	-0.043	(0.083)	0.187	(0.107)	-0.087	(0.087)
Wsd	0.073	(0.044)	0.008	(0.066)	0.067	(0.045)
Married	0.112**	(0.038)	0.135*	(0.055)	0.132**	(0.039)
N. of children	0.026	(0.018)	-0.030	(0.027)	0.022	(0.018)
Diagnose group A	0.931**	(0.089)	1.710**	(0.103)	1.109**	(0.092)
Diagnose group B	0.945**	(0.275)	1.703**	(0.347)	1.347**	(0.276)
Diagnose group D	0.817**	(0.097)	1.952**	(0.103)	1.077**	(0.100)
Diagnose group F	0.183	(0.269)	-0.841	(0.542)	0.092	(0.293)
Diagnose group H	0.331	(0.181)	0.800**	(0.250)	0.493**	(0.185)
Diagnose group K	1.126**	(0.088)	1.790**	(0.108)	1.398**	(0.096)
Diagnose group N	0.878**	(0.079)	0.963**	(0.110)	0.969**	(0.082)
Diagnose group P	0.680**	(0.059)	-0.337**	(0.095)	0.544**	(0.062)
Diagnose group R	0.198*	(0.097)	1.994**	(0.093)	0.444**	(0.102)

Results (2)

	Prolonged consultation		Standard consultation and laboratory test		Prolonged consultation and laboratory test	
	Coeff.	Std.err	Coeff.	Std.err	Coeff.	Std.err
Diagnose group S	0.358**	(0.120)	0.987**	(0.156)	0.450**	(0.122)
Diagnose group T	1.391**	(0.156)	2.202**	(0.176)	1.728**	(0.160)
Diagnose group U	0.173	(0.292)	2.008**	(0.281)	0.416	(0.287)
Diagnose group W	0.002	(0.081)	0.588**	(0.104)	0.128	(0.085)
Diagnose group X	0.655**	(0.232)	0.973**	(0.288)	0.886**	(0.235)
Diagnose group Y	0.684	(0.392)	1.235*	(0.530)	0.956*	(0.401)
N. sick days last year	0.015	(0.036)	-0.028	(0.055)	0.009	(0.037)
Symptoms/Complaints	0.125**	(0.043)	0.428**	(0.059)	0.230**	(0.047)
Infections	0.039	(0.068)	0.877**	(0.088)	0.177*	(0.070)
Neoplasm	0.215	(0.252)	-0.599	(0.368)	0.049	(0.260)
Injuries	-0.560**	(0.095)	-1.006**	(0.199)	-0.712**	(0.106)
Congenital Anomalies	0.124	(0.225)	-0.562	(0.409)	0.215	(0.232)
GP age	-0.005	(0.003)	0.008*	(0.003)	-0.004	(0.003)
GP male	0.025	(0.051)	-0.134*	(0.062)	-0.009	(0.051)
Specialist	-0.028	(0.051)	0.156*	(0.061)	-0.012	(0.052)
List length	-0.555**	(0.065)	0.054	(0.075)	-0.523**	(0.066)
GP density	0.011	(0.011)	-0.015	(0.014)	0.011	(0.011)
Distance to hospital	-0.036	(0.050)	-0.115	(0.059)	-0.032	(0.051)
N. of inhabitants	-0.000	(0.002)	-0.006**	(0.002)	-0.001	(0.002)
Year = 2002	0.168**	(0.046)	-0.048	(0.061)	0.197**	(0.047)
Year = 2003	0.072	(0.047)	0.101	(0.064)	0.180**	(0.049)
_cons	2.395**	(0.232)	-1.070**	(0.262)	3.318**	(0.264)
Remuneration	-0.026**	(0.001)	-	-	-	-

Discussion

- Reasonable results?
- Choice of estimator
- Robustness
- Unobserved heterogeneity
- Policy implications
  utilitarian vs. egualitarian/Rawlsian view

Summary

- Main finding: SES matters for GP treatment intensity.
  No social gradient in the probability of purely taking a test, but in the probability of having a long consultation, with or without a test.
- A possible explanation: productivity of long consultations increases with patient educational level
- Contributions:
- i) consultation-based data set
  ii) rich and reliable data
- iii) findings are related to economic theory and principles of equity

Efficiency in the production of health