Public-private mix in the provision of hospital services

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Outline

- Public-private mix across different countries
- Theory: quality, cost-containment and casemix
- Empirical evidence: methods and key findings
- Policy: scope for private providers in publicly-funded systems
- Where next?

Introduction

- In several countries, (for-profit and non-profit) **private** and **public** hospitals co-exist and compete for publicly-funded patients
  - US, England, France, Germany, Italy, Norway and Spain

- Private hospitals prominent in **France** (60%), **Germany** (70%) and **Italy**
  - Germany: 35% private for-profit, 35% private non-profit
  - Italy: varies by Region, eg Lombardy: 50%+ is private, and 30% in several regions

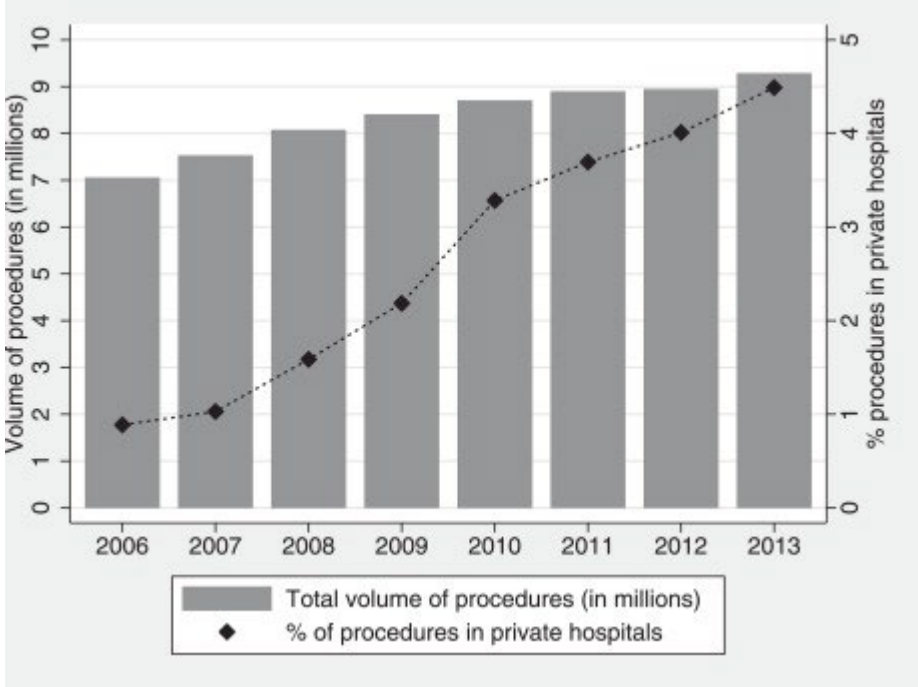
Introduction

- In **England & Norway**, provision by public hospitals is dominant while by private hospitals is small (5%)
  - Specialising in small n. of high-volume planned procedures
  - In England, mostly for-profit private hospitals

- **Netherlands**: all hospitals are private non-profit (100%)

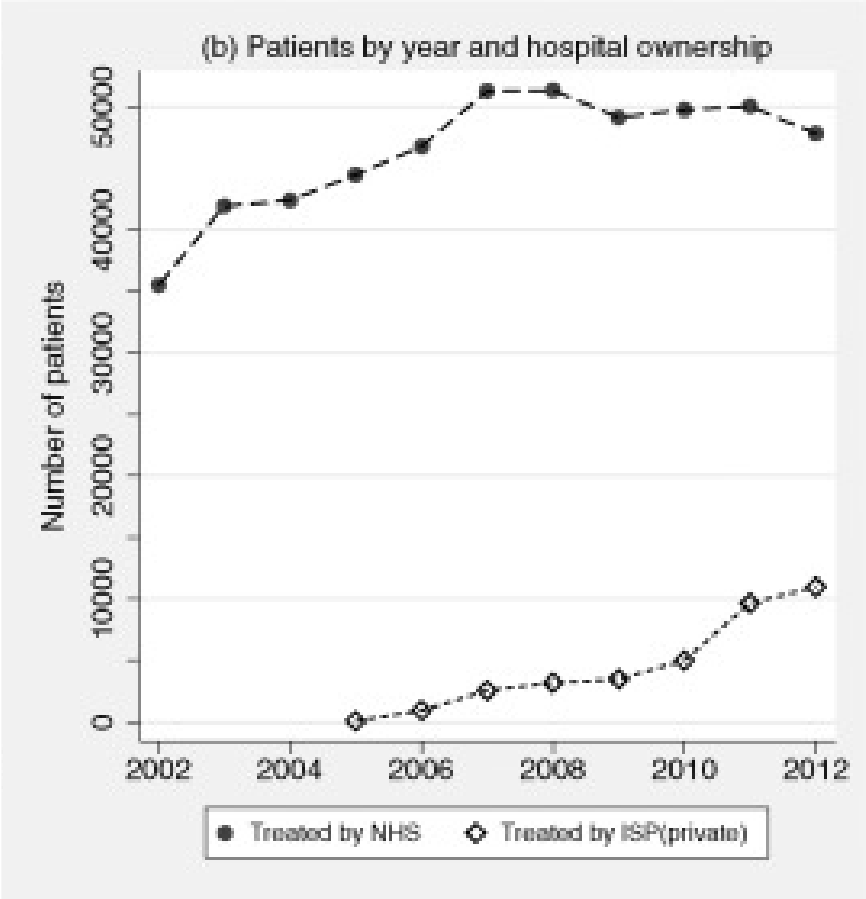
- Expanding private provision within publicly-funded systems can be contentious
  - One step towards privatisation of the health sector
  - Private provision is compatible with public funding
  - **Which one is better?**

England. All planned procedures
Total and % private



5%

England. Number of hip replacements
Total and n. private



20%

Cost containment

- **Private** hospitals have strong incentives to contain costs
  - Because they can appropriate and distribute profits
  - Additional effort translates into an increase in profits

- **Public** hospitals with profit *constraints* or *soft budgets* have weaker incentives to contain cost (Kornai, 2009)
  - But public hospitals tend to have larger *excess demand*
  - More difficult to turn down a patient (public service obligation)
  - This may induce them to be more efficient
  - Public hospitals better able to exploit scale or scope economies if larger

Casemix

- Hospital casemix is *lighter* in private hospitals than in public hospitals if:
  - Private hospitals have an incentive to select low severity patients
  - Do not have the facilities to treat the more severe patients (or not allowed)
  - Private hospitals do not (always) provide emergency services

Quality

- "*quality is higher for private hospitals because they **compete** more aggressively for patients*"

- "*quality is lower for private hospitals because they **skimp** on quality*"

- Theory highlights key role of
  - **demand responsiveness** to quality
  - **negative profit margin** (altruistic concerns)

Brekke et al (2012) Quality competition with profit constraints, *Journal of Economic Behaviour & Organization*, 84, Pages 642-659**.**

Reimbursement mechanisms & other factors

- **differential reimbursement system**, eg private hospitals paid by FFS and public hospitals by a fixed budget / have volume restrictions
- **DRG tariff** may also differ between public and private hospitals (eg France vs England)
- Doctor payment (salary, FFS)
- Degree of heterogeneity in doctors' degree of altruistic concerns and marginal utility of income (implications in terms of sorting across sectors)
- Availability of **emergency department**
  - Synergies with planned/elective care
  - Disruptions from emergency arrivals

Empirical evidence on quality: cross-sections

- **Australia**. Jensen PH, Webster E, Witt J (2009), Health Economics
  - Acute myocardial infarction (AMI) re-admission and mortality
  - selection bias (analogies with competition literature)
  - only patients with first AMI
  - private hospitals consistently perform better than public ones [**pro-private**]

- **France**. Milcent (2005) Health Economics
  - Public and private not-for-profit hospitals have similar **AMI mortality**
  - **Private for-profit** hospitals have instead lower AMI mortality
    - Public and private not-for-profit hospitals subject to a *global budget*
    - Private for-profit hospitals were paid by *fee-for-service.*

Focus on emergency care (in some countries private hospitals only provide planned treatments)

U.S.

Eggleston et al (2008)
Meta analysis for US

Quality:
- Mortality
- Adverse events

Results somewhat inconclusive: whether no-profit have higher quality *depends on data sources, time period and region covered*

For profit versus non-profit

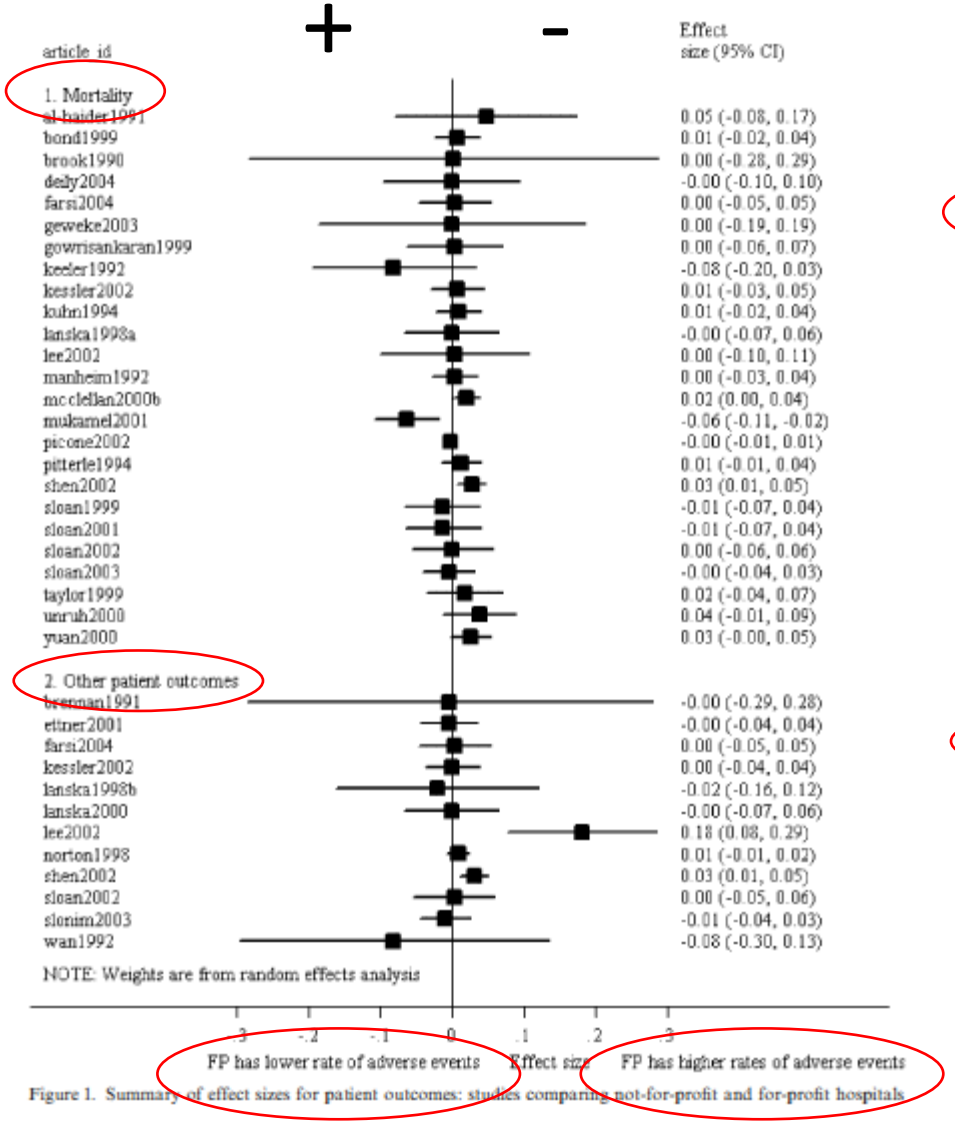


Figure 1. Summary of effect sizes for patient outcomes: studies comparing not-for-profit and for-profit hospitals

FP = for profit

Health Econ. 17: 1345–1362 (2008)
DOI: 10.1002/hec

Public versus non-profit hospitals

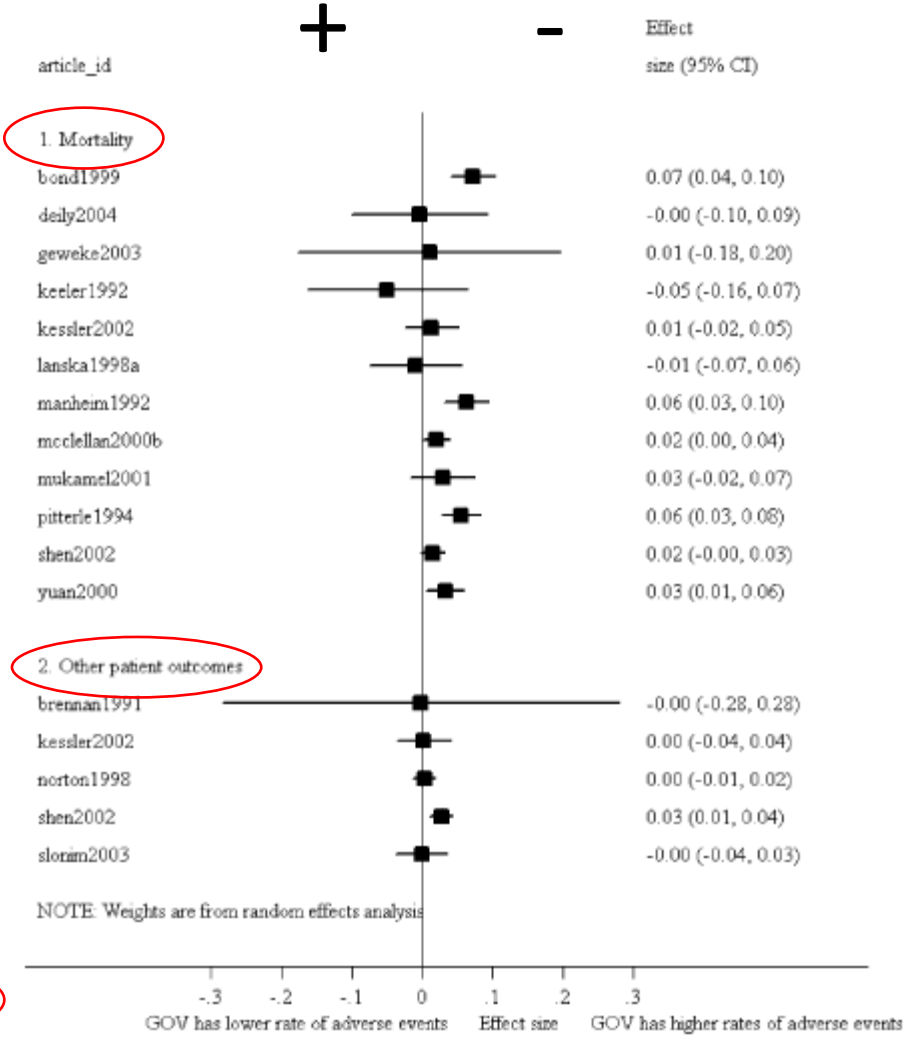


Figure 2. Summary of effect sizes for patient outcomes: studies comparing not-for-profit and government hospitals

GOV = government (public hospitals)

Empirical evidence: instrumental variables

- Lien HM, Chou SY, Liu JT (2008) Hospital ownership and performance: Evidence from **stroke** and **cardiac treatment** in **Taiwan**. *Journal of Health Economics*

- Unmeasured variables (eg severity) affecting outcomes could be correlated with ownership status (eg private hospitals have less severe patients)
  - OLS estimation could be biased
  - Instrument variable: distance to closest public and private hospital

- **Higher quality in non-profit/public hospitals** compared to for profit hospitals
  - No difference in expenditure

OLS vs IV estimates: Taiwan

OLS:
1 percentage point

H.-M. Lien et al. / Journal of Health Economics 27 (2008) 1208–1223

Table 5
Basic regression results[a]

Dependent variables	Payment		Mortality	
	Admission	1 year	1 month	1 year
Ownership				
Non-profit	0.013 (0.027)	0.023 (0.026)	−0.010*** (0.002)	−0.010*** (0.003)
Public	0.084*** (0.025)	0.070*** (0.025)	−0.008*** (0.002)	−0.010*** (0.004)

Table 6
Results of instrumental variable estimation[a]

	Payment		Mortality	
	Admission	1 year	1 month	1 year
IV (distances)/MNL[b]				
Non-profit	−0.074 (0.056)	0.000 (0.051)	−0.022*** (0.008)	−0.031*** (0.012)
Durbin–Wu–Hausman endogeneity test, $\chi^2_{(2)}$	32.147	34.768	6.312	7.990
N	258,080	258,080	258,080	

IV:
2 percentage points

Private for profit doing worse than public or private non-profit

England: emergency re-admissions

Table 2
Effect of ownership on emergency readmissions.

	Emergency readmission (1) OLS with HRGs only	Emergency readmission (2) OLS	Emergency readmission (3) 2SLS
Private	−0.0095***	−0.0070***	0.0028
	(−8.9607)	(−7.3660)	(1.2956)

OLS:
1 pp difference with no patient characteristics

- Moscelli et al (2018). Journal of Economic Behavior and Organization
- 133 planned/elective/non-emergency treatments in 2013-14 in England
  - no emergency treatments provided by private hospitals
  - public/private paid the same DRG tariff
- See Moscone et al (2020) Italy (Lombardy), Regional Science and Urban Economics

Empirical evidence: panel data

- Are hospital types time-invariant? **Conversions**
  - Shen, YC (2002) The effect of hospital ownership choice on patient outcomes after treatment for acute myocardial infarction. *Journal of Health Economics*
  - Propensity score matching: conversions not random

- (pooled) cross-section results
  - For-profit hospitals higher mortality and complication rates than non-profit hospitals by 3%

- Panel data results
  - *Incidence of adverse outcomes increases by 7–9% after an NFP hospital converts to FP ownership*
  - Very little change in outcomes for GOV and FP hospitals that convert to NFP status and for NFP and FP hospitals that convert to GOV status

Efficiency

- **Germany**. Cost function (stochastic frontier) approach, Herr (2008)
  - Private hospitals less efficient than public hospitals
  - Private hospitals paid FFS and longer length of stay
  - No differences under DRG payment (Tiemann et al, 2012)

- **Italy**. Production function. Technical efficiency, Barbetta et al (2007)
  - **Private non-profit** hospitals more efficient than public ones
  - But efficiency **converged** once a DRG payment system was introduced

- Review of 300+ studies, Hollingsworth (2008)
  - public and non-profit hospitals tend to be more efficient than for-profit ones
  - heterogeneity in findings across countries / institutional settings

Effect of private providers on public providers

- **England**. Kelly and Stoye (2020, JHE) Private hospital entry
  - increased n. of publicly-funded hip replacements by 12%
  - but did not reduce volumes or affected readmission rates at public hospitals

- **England**. Cooper et al (2018, JPubE). Entry of surgical centres led to
  - shorter pre-surgery length of stay at nearby public hospitals
  - new entrants took on healthier patients
  - left incumbent hospitals treating patients who were sicker

- **Sweden**. Bergman et al (2016). Opening to private provision (nursing homes) reduced mortality rates
  - Combined access and competition effect

Evidence: key findings

- **Quality**: no systematic differences between public and private providers
- **Cost, efficiency**: not clear that private hospitals do better
- **Casemix**: indirect and some direct evidence that private providers treat less complex patients, but context dependent
- Differences reduced when providers paid with same reimbursement mechanism

Policy considerations

- Role of private providers in publicly-funded systems
  - At times of long backlogs, contracting with private provider can **expand publicly-funded capacity** quickly and improve access
  - Alternative: expand public capacity
  - Several workforce issues
  - Health systems struggling to retain health workforce and recruitment
  - Private providers could recruit from public sector

- How much to pay for care by private providers?
  - Set the same tariff for public and private providers
  - Or lower tariff due to casemix? (or presumed efficiency of private providers)
  - Higher efficiency passed to the funder vs shareholders
  - Access issue for more complex patients

Policy considerations

- Emergency care: coordination between public and private providers
  - If patients have complications, they could be transferred from private to public
- Some discussion on surgical hubs by public providers in England
  - Separate elective and emergency care
  - Exploit scale economies (public providers mimicking private model)
  - Lost synergies between elective and emergency?
  - Adverse effects for emergency care?
- Hospital status could be mandated (as in the Netherlands)
- Expansion of role of private providers will keep coming back regularly in political campaigns and health policy debates

Where next?

- Geographical coverage remains limited
  - Heterogeneity in institutional details
  - Only few studies across Europe

- Mechanisms
  - Drivers of possible differences in quality, costs and efficiency
  - Workforce, management, IT system, amenities
  - Mix of publicly- and privately-funded patients in private hospitals, dual practice
  - Interface between emergency and planned care

- Primary care: Less institutional diversity within countries
- Nursing homes, rehabilitation centres, hospices

Further reading

Siciliani, Chalkley, Gravelle, (2022). Does provider competition improve health care quality and efficiency?, WHO European Observatory of Health Systems and Policies. Policy brief 48.

https://eurohealthobservatory.who.int/

Thank you!