

How doctors respond to fee changes: evidence from two quasi-experiments in Ontario

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Why is this important to know?

- ▶ FFS still important in primary care (1/2 of total physician budget); also basis for most non-FFS contracts
- ▶ Research question: Do changes in fees cause services to move in the same or opposite direction? By how much?
- ▶ Two main policy concerns are access and cost
- ▶ Conventional wisdom is to increase fees if you want to improve access, reduce fees if you want to cut costs. Is this correct?
- ▶ Theory is ambiguous: opposing income and substitution effects

How can we find out?

- ▶ Comparison of changes in fees to changes in services:
 - ▶ Across time (what about other concurrent changes?)
 - ▶ Across doctors (what about other differences?)

- ▶ Randomized Experiment
 - ▶ Randomly assign doctors into two groups
 - ▶ Change fees for one group only
 - ▶ Compare changes in services between the two groups before and after the fee change

Evidence from Physician Threshold System

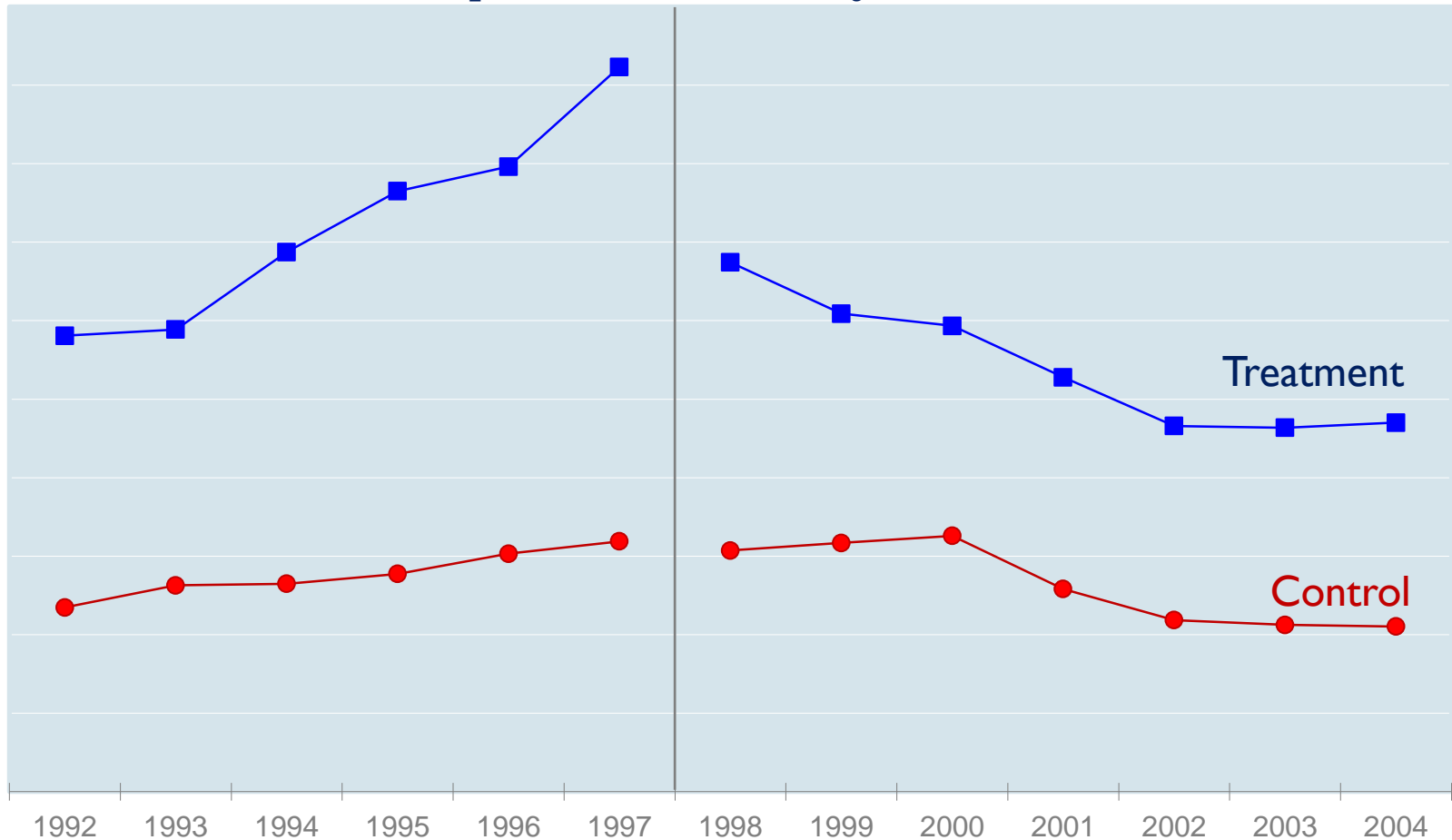
- ▶ Effective in Ontario from 1991 to 2005

- ▶ Similar to an income tax system
 - ▶ Billings reduced if exceeding certain threshold(s)
 - ▶ Some services exempt
 - ▶ Some doctors exempt

- ▶ **1998 Threshold Reform**
 - ▶ Some exempt services turned into non-exempt
 - ▶ Effectively a decrease in fees for these services

Quasi-Experimental Design

Exempt Services Per Physician



Source: Kantarevic et al., CJE, 41:4, November 2008.

Magnitude of Change

Type of Service	Price Elasticity	Substitution Effect	Income Effect
All Exempt Services	+0.102	+0.206	-0.105
Cataract Surgeries	+0.433	+0.457	-0.023
Pacemakers	+1.052	+1.091	-0.039
Obstetrics	+0.232	+0.409	-0.177
Audiology	+0.934	+1.043	-0.109
Transplants	+0.403	+0.505	-0.103
Surgery	+0.383	+0.528	-0.145

Source: Kantarevic et al., CJE, 41:4, November 2008.

Evidence from Patient Enrolment Models

- ▶ Fees for services provided to enrolled patients vary by model:
 - ▶ 15% of FFS value in Capitation Models
 - ▶ $\geq 100\%$ of FFS value in Enhanced FFS Models

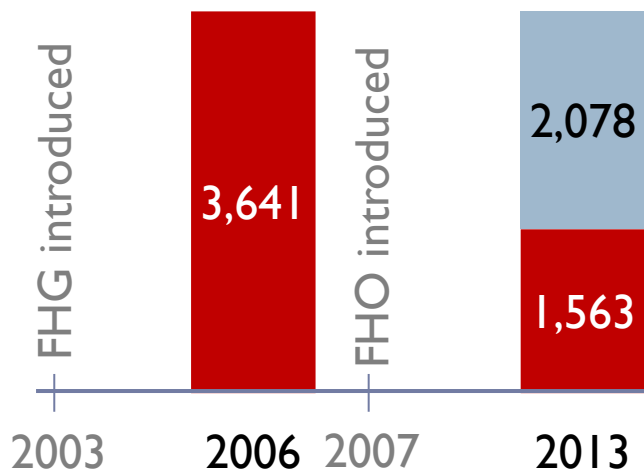
- ▶ What impact does this have on the provision of services?

- ▶ Compare services between FFS and Capitation doctors?
 - ▶ Treatment effect (the impact of different fees)
 - ▶ Selection effect (differences between doctors unrelated to fees)

Quasi-Experimental Design

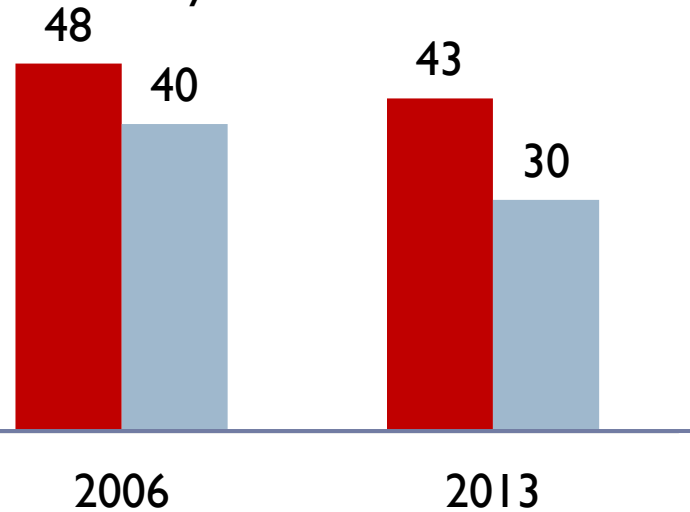
Choice of Contract

■ FFS MDs ■ CAPITATION MDs



Impact on Services per Day

■ Stayers ■ Switchers



Total Impact	=	Selection Effect	+	Treatment Effect
-13 (30-43)	=	-8 (40-48)	+	-5 (30-40)-(43-48)

Source: Kantarevic and Kralj, Health Economics, forthcoming.

Magnitude of Change

- ▶ Price Elasticity =

$$\frac{\text{Percentage change in services}}{\text{Percentage change in fees}} \approx \frac{-5/40}{-0.85/1} = +0.147$$

- ▶ Evidence from 2006 to 2010 period*

- ▶ Price Elasticity $\approx \frac{-0.06}{-0.90} = +0.067$

* Source: Kralj and Kantarevic, CJE, 46(1), February 2013.

Some Policy Implications

1. Changes in fees cause changes in services in the same direction
 - ▶ Higher fees lead to higher volume of services
 - ▶ Lower fees lead to lower volume of services

2. The response of services to fees is relatively inelastic
 - ▶ For every 1% increase in fees, services increase by less than 1%
 - ▶ For every 1% decrease in fees, costs decrease by slightly above 1%

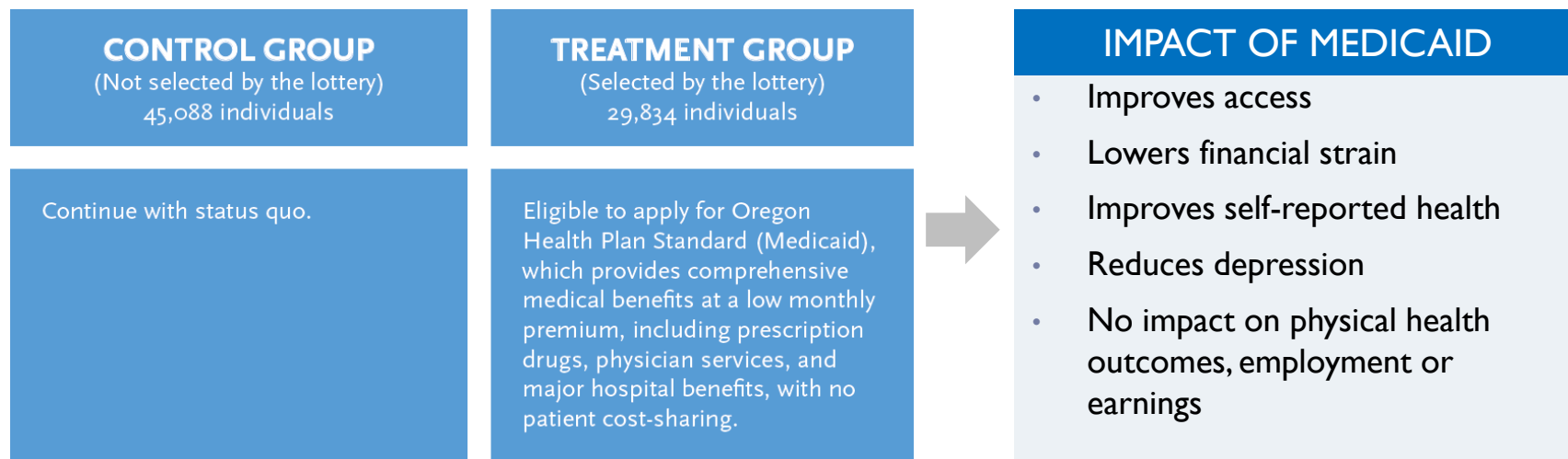
In Praise of Randomized Experiments

- ▶ What can we learn from doctors?

“The gold standard of evidence in medicine is a randomized experiment.”

- ▶ Increasingly used in policy, e.g. education, development economics

- ▶ The Oregon Health Insurance Experiment



Call for Change

- ▶ Why are there not more REs guiding primary care policy in Ontario?
 - ▶ Expertise?
 - ▶ Cost?
 - ▶ Political incentives?
 - ▶ Culture?

“To live in a modern democracy is to be experimented on by policymakers from cradle to grave. Education is intended to mould an upstanding future citizen; a prison sentence, to reshape someone who has gone astray. But without evidence, those setting policy for schools and prisons are little better than a doctor relying on leeches and bloodletting. Citizens, as much as patients, deserve to know that the treatments they endure do actually work.”

The Economist, Dec 12th, 2015