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Upcoding behaviour of GPs and response to changes in value of upcoding

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Key Findings

- Up to 11% of all travel fees are upcoded whereas only 3% are downcoded
- After the fee rise, we observe a small reduction in upcoding of 0.5%
- This is driven by a reduction in the least valuable home visits of 1-2%
- However, we see an increase in upcoding one of the most valuable home visits of 6-7%

What Problem Was This Research Addressing?

This research seeks to determine if there is evidence of upcoding within primary care. We use Danish general practitioners (GPs) as a case study and investigate upcoding of home visits. Upcoding occurs when physicians use more expensive billing codes that the service actually provided. In this instance we investigate home visits and specifically travel distances.

Home visits are billed in a way such that the initial home visit on a journey is dependent upon the distance from the GP practice to the patient. Therefore, we are interested in GPs If bill for the correct distance from their practice and the patient they visited. The codes for home visits are based upon distance bands; ≤4km , 5-8km 9-12km,13-16km 16-20km and ≥21km.

The second research question relates to whether the prevalence of upcoding changes when the value of upcoding increases. We exploit a fee increase of home visits of 150% in 2018 that changed the value of upcoding from €3-5 to €10-47. We hypothesise that the increase in the value of upcoding will lead to an increase in its prevalence as the gain is larger.

What This Research Adds

It is often difficult for policymakers and researchers to find strong evidence of physicians' gaming behaviour. The uniqueness of this study is that we can directly observe discrepancies in the service provided and the service billed. We were also able to investigate whether the size of the financial gains affects the likelihood of gaming.

Methods

We use of a balanced panel of all GP practices in Denmark from 2015 to 2018. The fee increases affect home visits provided in 2018.

We combine geographic and administrative data that allowed us to measure the travel distance from each address in Denmark to each GP practice. Therefore, we have the travel distance for every home visit conducted. We define upcoding to have occurred when the travel distance between the GP and their patient is less than the travel distance billed. To investigate whether there is evidence of upcoding, we test whether upcoding is more prevalent that downcoding.

Downcoding occurs when the billed distance is greater than the distance billed. There is no incentive to do this thus it is thought of as being a measurement error We next investigate the effect of fee increases on the prevalence of upcoding. To achieve this, we use linear probability models with GP fixed effects to estimate the correlation between the fee increase and the prevalence of upcoding.

To achieve this, we interact a fee change dummy, which indicates if the home visit took place in 2018, after the fee increase, with a vector of dummies for each of the travel bands. As <4km home visits cannot be upcoded we exclude these home visits.

Table 1: Likelihood of upcoding by travel band

	Likelihood of upcoding	
	1km	2km
Bands – Ref 9-12km		
$band\ (5-8km)$	-0.081***	-0.183***
	(0.012)	(0.012)
$band(13-16km)$	0.012	0.033*
	(0.016)	(0.017)
$band(17-20km)$	0.181***	0.200***
	(0.027)	(0.026)
$band(+21km)$	0.184***	0.189***
	(0.032)	(0.033)
Fee*Bands		
$fee*band(5-8km)$	-0.012*	-0.012**
	(0.006)	(0.005)
$fee*band(9-12km)$	-0.024***	-0.031***
	(0.009)	(0.009)
$fee*band(13-16km)$	-0.008	-0.015
	(0.013)	(0.013)
$fee*band(17-20km)$	-0.024	-0.022
	(0.029)	(0.028)
$fee*band(\geq 21km)$	0.057*	0.069**
	(0.030)	(0.029)
N visits	210393	210393
N practices	1515	1515

Policy Relevance of Research

- There is evidence of upcoding behaviour within a primary care setting.
- Increasing the value of upcoding has mixed effects however, the change in behaviour is small.
- Though it led to an increase in the cost of upcoding, it is reassuring that it is not so widespread.

To account for measurement errors, we use two definitions of upcoding, one if the home visits is 1km or more way from the correct billing code and one if the home visit is 2km or more way from the correct billing code.

Research Findings

Firstly, we find that the prevalence of upcoding is greater than that of downcoding, with 10% of all home visits upcoding and 3% of home visits downcoded. Therefore, even in absence of the fee increase this is evidence that there does exist upcoding of home visits that cannot just be measurement error.

Table 1 shows the results for the second research question. We find that there is a reduction in upcoding after the fee increase of 1%-3% in the shortest distance bands (5-8km and 9-12km). However, we observe an increase in upcoding after the fee increase in the furthest distance band (≥21km). The smallest distance bands happen to be the least valuable to upcode whereas, the furthest ¬distance band is one of the more valuable home visits to upcode. Prior to the fee increase the cost of upcoding to the health payer was €80,000, equating to 1% of the cost of all home visits. However, after the fee increase it increased to €300,000, which is 3% of the total cost of home visits. Thus, the reduction in upcoding observed did not in fact reduce to cost of upcoding but increased it.

References

1. Brunt, C.S., CPT fee differentials and visit upcoding under Medicare Part B. Health Economics, 2011. 20(7): p. 831-841.
2. Angrist, J.D. and J.-S. Pischke, Mostly harmless econometrics: An empiricist's companion. 2008: Princeton university press.