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Copayments and physicians visits: A panel data study of Swedish regions 2003–2012

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ABSTRACT

Objective: This paper analyzes how primary care physician visits are affected by the level of copayment in Sweden.
Data source: We use data between the years 2003–2012 from 21 Swedish health care regions that have the mandate to set their own level of copayment. The copayment per visit varies between €10 and €20 for these years and regions.
Study design: Our strategy to identify the causal effect and deal with unobserved endogeneity of price changes on physician visits is based on a panel data model using fixed effects to control for region and time and regional-variation in time trends.
Principal finding: We cannot reject that the copayment has no statistical or economic effect of significance, and we estimate the "zero effect" with very high precision.
Conclusion: In a setting with sub-national regions with autonomy to set co-payments the results points to that the copayment is not an important predictor for the number of health care visits. The result is in line with some previous studies on European data where the range of copayments used tends to be relatively low.

1. Introduction

Most OECD countries spend around 10% of GDP on health care but due to an increasingly elderly population coupled with the constant influx of new costly medical technology this number is believed to increase further over time [1]. One common suggestion to control costs and to fund an increasingly costly health care system is to increase the use of patient charges (copayments). The use of copayments is relatively common in several public sector areas to fund services, also in the health care sector. Among OECD countries the share of health care expenditures paid directly by households is about 20% [2].

If there is moral hazard, higher copayments will reduce over-utilization, which reduces costs and the welfare loss [3]. For tax-financed health care systems (e.g., the UK and Sweden) it may also be a more efficient means of raising budget income compared to general taxation, given that the latter is associated with significant welfare costs due to the distortionary tax effects [4]. But there are also some downsides of using copayments. If it leads to a reduction in demand this may worsen population health and increase costs even more in the long run. And, if demand drops more in low-income groups, as some previous literature indicates [5], it will increase income-related health inequalities in utilization. Additionally, if patients' demand is completely price inelastic (insensitive) copayment increases will not lead to a reduction in health care utilization and there are no efficiency improvements to be made. There

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may also be offsetting effects, as found by Chandra et al. [6].

In this paper we estimate the effect of changes in the copayment level on primary care physician visits using Swedish regional data between 2003 and 2012. The 21 Swedish regions responsible for financing and providing health care have autonomy in setting the level of copayment and there is significant variation between regions and over time.

Most of the previous empirical literature on copayments and primary care has been conducted in the US [7], and the most influential study is still the RAND health insurance experiment conducted between 1974 and 1982 showing a price elasticity of demand in the range of −0.1 to −0.2 [8–10]. However, the RAND experiment is very dated and its usefulness for policy makers in modern times and non-US contexts is unclear. In the US context recent quasi-experimental studies have found price elasticities close to the RAND estimates [6]. From a European context there are only a few studies with a quasi-experimental approach. For example, a study using a difference-in-difference approach evaluating an increase in patient charges in Belgium during the 1990s estimated price elasticities of demand between −0.03 and −0.13 [11]. And, two studies with a similar empirical approach in a French setting found no price elasticity at all (general population) for office General Practitioner (GP) visits and a very small effect for GP home visits among a general population [12] and no effect at all in a subset of the poorest households [13]. Finally, the 2004 reform in Germany that introduced a €10 copayment (for the first visit for each running three-month period) has been evaluated with the findings that there was no effect on utilization at all [14].

European studies tend to find very low or no price elasticity of demand for visits to primary care physicians, perhaps explained by the low European levels of copayments in comparison to copayments reported in some studies in the United States. The typical office-based out-of-pocket expenditure in the US is about $30, whereas in some of the larger European countries (e.g., the UK, Germany, and Italy) outpatient primary care is free of any charges at the point of care [1,15].

This paper contributes to the literature by focusing on many different copayment changes over a more extensive time period, rather than evaluating a single price reform affecting a full country or region. In contrast to many of the previous studies we can thus detect not only short-term changes but also examine if they are sustained over time. A further benefit is that we evaluate marginal copayment changes, rather than evaluating e.g., a reform moving from a zero copayment to some positive level (such as the German reform in 2004), which may cause very different behavioral responses.

2. Institutional background

The main actors for funding and provision of health care in Sweden are the health care regions (county councils). The councils set the county council income tax rates in order to fund health care delivery and it varies between approx. 10.5 and 12% in the county councils. Within each county council primary care is generally provided at different primary care centers with multiple physicians and nurses employed within the same center. The default is that an individual is listed with the geographically closest primary care center, but everyone is freely available to sign-up with any primary care center within the same county council. The primary care centers are either publicly (88%) or privately (12%) operated, but are financed by the county councils irrespective of provider. The same fee and regulations apply to private and public primary care centers.

In order to get an appointment to your primary GP you need to book an appointment by phone, and nurses and/or your GP apply a "phone triage" system. For example, a patient phoning his/her primary GP documenting symptoms of an ordinary cold may be asked to "wait and see" and will not be offered a visit. Or in cases where the physician believes that the benefit of a visit to be very low, the patient may be assigned an appointment several days later, which may imply that the patient by the "conservative treatment" gets better in time and cancels his/her appointment. This is likely to reduce the potential moral hazard behavior of patients.

Upon attending an appointment at primary care centers the individual pays a copayment per visit, which varies between, but not within, county councils in any given time, although it changes within county councils over time (Fig. 1). All councils also apply an out-of-pocket cost ceiling, and when a patient reaches the ceiling during a moving 12-month period, the copayment per visit falls immediately to zero for the remainder of the 12-month period for primary care medical consultations. The out-of-pocket cost ceiling also varies across councils but tends to be approximately 1100 SEK (€120) per moving 12-month period.

3. Data

We have collected data from all 21 regional governments in Sweden between 2003 and 2012 on primary care physician visits, copayments, and a set of additional control variables; in total 210 region/year observations [16]. The data is aggregated at the regional level, thus ethical review of this study by the ethics committee was not necessary.

Descriptive statistics of all variables are shown in Table 1. Our dependent variable, general practitioner visits per capita, varies between 0.95 and 1.93 across regions and time, with a mean value of 1.32. Our main independent variable, the patient co-payment varies between 89 and 186 SEK across regions and time (€9.7–€20.2, €1 = 9.2 SEK).

Fig. 1 shows the variation of copayments per primary care physician visit and the number of visits per capita per year for each of the 21 regions between 2003 and 2012. In order to identify the effect of copayments on utilization it is important to have a meaningful variation between and within regions. The variation in copayments over time is substantial, and it changes in different regions in different years at by varying magnitudes (annual within-region change ranges from decreases of 20 SEK to increases up to 90 SEK). In Table 1 we can also see that the within variation in copayments is almost as high as the between variation.