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Prescribing behavior of General Practitioners: Competition matters

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ABSTRACT

Background: General Practitioners (GP) have limited means to compete. As quality is hard to observe by patients, GPs have incentives to signal quality by using instruments patients perceive as quality.
Objectives: I investigate whether GPs prescribe more units when confronted with more competition. As there is no monetary benefit in doing so, this type of (perceived) quality competition originates from GPs satisfying patients' expectations.
Method: Market level data on per capita and per contact number of items prescribed by GPs is studied for the Belgian market of General Practitioners. I hypothesize that GP competition has a positive impact on the prescribed volume, after controlling for medical needs and GP characteristics. Properly controlling for medical needs implies the use of a two-stage linear regression model.
Findings: The analysis indicates that a higher number of GPs per capita results in a higher number of units prescribed by GPs, both per capita and per contact. This is consistent with quality competition in the GP market, while inconsistent with alternatives explanations (GP scarcity, GP inducement and GP dispersing prescription in time).
Conclusion: GPs prescribe more units when there is more competition to satisfy patients' expectations. The paper thus presents empirical evidence of (perceived) quality competition.

1. Introduction

In social health insurance systems, the price for primary care, delivered by General Practitioners (GPs) is typically regulated, be it in a fee-for-service or capitation way. Furthermore, it is common that GPs are not allowed to advertise their services. As a result, GPs can only to compete in quality. It however remains an open question whether this quality effect of competition occurs in primary care markets. Theory predicts that competition improves quality only in case quality elasticity is large compared to price elasticity [1,2]. But even in fixed price settings, empirical studies are not consistent in their finding of an impact of competition on quality of care [3–5]. This is not surprising considering the severe information asymmetry which makes it virtually impossible to judge whether a GP is good in diagnosing, proposing or performing treatment. Furthermore, while GPs have incentives to communicate and signal quality, measures of quality in the GP market are scarce and unreliable. As such, quality competition would entail GPs focusing on specific actions that are measurable, visible to patients and perceived as indicating good quality by patients (i.e. perceived quality). Looking through the literature, quality competition for GPs concerns opening hours and availability of appointments,

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access to the practice by phone or internet, facilities, the degree to which GPs involve patients in their decisions and referral behavior [5–7].

An unvisited topic concerns the prescribing of medication in response to competition. In most countries, GPs do not benefit from their prescriptions. That is, the profession of pharmacist and GP are strictly separated (with the exception of some dispensing GPs in population scarce areas). Therefore, whether a GP prescribes few or many units of medication should not depend on the economic environment in which a GP operates. Due to the information asymmetry in the market however, the GP does have some discretion over whether and how much to prescribe. Walley and Williams [8] lists non-medical factors influencing the prescribing behavior of physicians. While it is documented that physicians overestimate the demand for prescriptions, legitimizing the patient's illness and perceived patient pressure play an important role. In other words, writing a prescription at the end of a contact satisfies the expectation of a prescription by patients, confirms their health concern and indicates that the GP is taking it seriously. Both Frantsve and Kerns [9] and Zgierska et al. [10] confirm that fulfillment of patient expectations on prescriptions usually results in a more satisfied patient in the context of pain relief (patient satisfaction hinges crucially on communication with the patient and is only limitedly driven by met/unmet expectations [11–13]). When the competitive pressure in the market is higher, it is likely that a physician is more sensitive to patients' expectations and satisfying patients to retain them. This argument is analog to Iversen and Ma [6], where a GP satisfies patients' requests for referrals to compete for patients (although there is a financial consequence to this). Furthermore, putting on paper the exact names and quantities of medication to take, even though it concerns over-the-counter (OTC) drugs, can be seen as an extra service toward patients and as clear communication.

This paper hypothesizes that more intense competition between GPs leads to an increase in the number of prescriptions, as prescribing behavior can be perceived (by patients) as a quality signal. I test this hypothesis for the Belgian GP market. Previous work on Belgian GPs indicates that GPs do behave differently in the face of competition. More precisely, Schaumans [14] finds evidence of supplier inducement in GP dense areas and indicates that GPs use consultations (as opposed to home visits) to do so. Whereas these findings indicate that Belgian GPs do respond to competitive pressure to increase their income level, I now look at behavior that has no direct monetary impact on GP income. As such, the focus is on pure quality or perceived quality competition. Note already that I investigate the number of units of medication, both OTC- and prescription drugs, prescribed by GPs. The paper thus focus solely on explaining the prescribing behavior of GPs, rather than investigating total consumption of drugs.

2. Institutional details: Belgian market of General Practitioners

The General Practitioners (GPs) I study are active in a fee-for-service system, based on the number of contacts, in combination with a third-payer system with copayments. While GPs get a higher fee for home visits and visits during the weekend, the content of the contact nor the GP's testing or prescribing behavior adds to her income. GPs are free to locate wherever they want, with the exception of physical and business separation from pharmacies. Moreover, GPs are joined in a system of night and weekend duty organized on local market level (LKO's). GPs can differentiate themselves (and increase their fee) by getting an accreditation, which is conditional on registration and sharing requirements of patient contacts and quality management. As 80% of Belgian GPs are accredited and as this accreditation is not systematically communicated to patients, its signaling function is limited.

GPs typically prescribe all products patients need from the pharmacy. That is, a GP would write a prescription for both over-the-counter drugs (OTCs) and prescription drugs. Note that Belgian pharmacies have the professional monopoly to sell not only prescription drugs but also OTC-drugs. Since 1996, the prescribing behavior of individual GPs has been recorded carefully and is made available to GPs for self-evaluation (Farmanet). Starting 2004, institutional incentives concerning GP prescribing behavior came into place. Initial incentives aiming to decrease the consumption of antibiotics quickly made place for cost reduction policy: GPs are given incentives to prescribe more generics since 2006. Apart from that, there is neither institutional incentive nor monetary benefit with respect to the frequency of prescribing and to the number of units prescribed.

3. Explaining the volume of GP prescriptions

I study the extent to which GP prescribing behavior is influenced by market characteristics. The volume of prescriptions is clearly driven by medical needs: population characteristics and use of medical care define in essence the inherent demand for medication, which is at least partly correlated to the number of GP prescriptions. Also GP characteristics are likely to impact the volume of prescriptions, as GPs learn (and adjust) how and what to prescribe during their education and on the job, through peer influence (through e.g. LKO's) and from pharmaceutical representatives and drug samples [8,15]. For example, Gouni-Berthold and Berthold [16] summarizes studies which indicate that the gender of the GP influences the medical therapy suggested. The main hypothesis of this paper is that, after controlling for the needs for medical care and GP characteristics, the level of competition for patients between GPs influences the volume of prescriptions, as GPs compete in quality.

To test this, I combine three independent data sets to get information at market level on the prescribing behavior of GPs, the number and characteristics of GPs and the demand for care. I use the postal code as the relevant market level, as in Schaumans and Verboven [17]: in general, studies indicate that patients typically do not travel far for GP care. The resulting market level dataset is far from ideal – a dataset on patient and/or physician level would allow better identification, but is however not accessible at this