



GPs and hospital expenditures. Should we keep expenditure containment programs alive?

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ABSTRACT

Pay-for-Performance programs offering additional payments to GPs can be used not only to improve the quality of care but also for cost containment purposes. In this paper, we analyse the impact of removing financial incentives in primary care that were aimed at containing hospital expenditure in the Italian region of Emilia-Romagna during the period 2002–2004. Our analysis draws on regional databanks linking GPs' characteristics to those of their patients (including all sources of public payments made to GPs), together with information on the utilisation of hospital services. The dataset includes 2,936,834 patients, 3229 GPs and 39 districts belonging to 11 Local Health Authorities. We employ a difference-in-difference specification to assess changes in expenditures for avoidable and total hospital admissions. We identify the treatment group with GPs operating in districts where the program is withdrawn during the observation period ("Leavers"). Their performance is compared to that of two separate control groups, namely: GPs working in districts that grant incentives for the entire period ("Stayers") and those working in districts that never introduced measures for the containment of hospitalisations ("Non Participants").

The comparison between treatment and control groups shows that removing incentives does not result in a worse performance by *Leavers* compared to both control groups. This supports the policy of removing incentives, as such entail extra payments to GPs which, however, do not seem capable of significantly influencing their behaviour in the desired way. Our findings complement previous evidence from the same institutional context showing that only those programs that aim to improve disease management for specific conditions – rather than to simply contain expenditure – have proven successful in reducing avoidable admissions for the target population.

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Introduction

Publicly-funded health systems are struggling to improve the efficiency of resource allocation through cost-conscious decisions by health professionals and institutions, because of the widening gap between needs and available resources. At the same time, cost containment must be weighed against possible adverse effects on health outcomes. Consequently, initiatives for improving the incentives offered to healthcare providers are a central concern for policymakers.

Ensuring the effectiveness of incentives first involved the hospital sector, due to its organisational complexity, the concentration of physical and human capital investment, the severe case-mix, all

of which calling for the careful planning and implementation of service provision. More recently, other critical areas have emerged, including the coordination between primary and secondary care. This is a consequence of hospitals' increasing specialisation in the provision of acute care, which has implied the transfer of responsibility for low-intensity treatments to the district level. Moreover, general practitioners (GPs) provide assistance in areas such as preventive care, chronic diseases and post-acute follow-ups. Consequently, their role as both providers and gatekeepers is essential to the appropriate utilisation of caring services and to the reconciling of cost-containment policies with successful outcomes.

GPs' remuneration schemes, based exclusively on capitation, are considered not to be fully effective in inducing optimal professional effort on the part of the GPs (Iversen & Luras, 2006). Given that educational strategies alone, such as guidelines and protocols, have not proven completely successful, economic incentives such as Pay-for-Performance (P4P) programs often represent additional means by which to reinforce the governance of healthcare delivery.

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Usually, they add up to capitation and reward high quality care, as well as the achievement of specific policy targets.

We study here the impact of incentives provided to GPs for containing levels of hospital expenditure in the Italian region of Emilia-Romagna. The main purpose of these P4P programs is cost containment rather than improvement in the quality of care and they are grounded on the belief that capitation can result in sub-optimal performance when GPs see patients at the ambulatory level. This may result in referral to secondary-care facilities even if patients' conditions do not strictly require hospitalisation. As long as additional rewards increase GPs' efforts, one would expect a reduction in the utilisation of hospital services, especially for conditions that can be effectively treated in primary care. In particular, the programs that we investigate are general in scope and do not target specific clinical areas. Even if the capacity of the GPs to influence hospitalisation may differ across conditions, the purpose of the program was to contain overall hospital expenditure and indicators for main categories, rather than for narrowly defined clinical areas, seem in this context appropriate to measure the desired effect of the programs.

We use difference-in-differences (DID) estimation methods to evaluate the effects of a reorganisation of the incentive schemes as a consequence of the closure of programs for containing hospitalisation rates in a subset of districts operating in the region during the period 2002–2004. One of the reasons of such reorganisation was the increasing scepticism regarding the effectiveness of programs designed to contain hospitals' spending. Such scepticism led certain Healthcare Districts (HDs) to end these programs during the period of observation. Others did likewise in later years and no such program is ongoing at present. Unfortunately, we only have a full dataset for a limited number of years, during which such programs were ended in a subset of HDs. Among other things, these programs were ended due to the fact that focusing on the financial implications of service utilisation, rather than on health improvements and disease management, was seen to generate negative feedback on GPs' motivations and involvement, which could have undermined the effectiveness of the programs themselves. The present work exploits this policy change as a natural experiment in order to empirically assess the influence of financial incentives on GPs' behaviour and to provide policy indications for the design of payment schemes. Our study draws on administrative data linking GPs' characteristics (including all sources of professional income) with the utilisation of hospital services by registered patients. Together with the institutional documentation, this enables us to establish whether programs for reducing hospitalisations were in fact ongoing in a given district and year. Consequently, we identify all those GPs who were eligible for programs aimed at containing hospital expenditure. We use a DID approach in order to remove potential sources of bias when assessing the influence of P4P programs on physicians' activities.

In Emilia-Romagna, primary care incentives are managed by districts, which can decide whether to use such incentives, which clinical areas or targets to prioritise, and how much funding to give to each area. As a matter of fact, their use varies greatly among districts but once the HD and the GPs' organisations agree upon a particular program, all GPs working in a district become eligible. This ensures that our empirical analysis does not suffer of individual voluntary selection into the programs.

Moreover, the principles of universalism and equity of the Italian NHS exclude the possibility for GPs to apply discretionary criteria in the enrolment of their patients, who can register with the physician they wish without GP's prior approval. Not only GPs cannot formally reject patients, but they also have very little incentive to induce more fragile patients to voluntarily leave their list, by strategically putting low effort in following them. At the

opposite, the remuneration component based on performance is much smaller than capitation and therefore GPs have strong incentives to increase their list as much as possible. This tendency has induced the legislator to impose a maximum size of 1500 registered patients, although exceptions are allowed for those practitioners exceeding the aforesaid threshold at the time of its introduction, and is confirmed by very low turnover rates. Overall these features ensure that the risk of strategic manipulation of list composition by GPs is minimised.

A further important point for our analysis concerns the fact that the assignment to treatment and control groups is not random. This feature, shared by most program evaluation studies (Blundell & Costa Dias, 2000), generates a potential selection bias due to policy choice by districts. One may expect the GPs who are more able to contain hospitalisations to have higher propensity to contract additional payments based on such indicators or HDs with higher hospitalisation rates to be more willing to implement P4P programs aimed at cost containment. The problem can be fully addressed only in an experimental setting, which is not available here. However, we can shed some light on its expected empirical relevance. As for the potential pressure exerted by selected groups of GPs, it must be remarked that the development of P4P programs in Emilia-Romagna is mainly a top-down process where the leading role is played by LHAs and HDs. Their bargaining power comes from the fact that the introduction of additional payments is an act of political will by the LHAs and HDs themselves. Given this, the capacity of selected groups of GPs to influence our results appears a minor empirical concern. As for the role of LHAs and HDs in the bargaining process, if we look at overall hospitalisation rates (Fig. 2) at the start of the programs (around year 2000) we find almost no differences across the groups. Therefore the intensity in the use of hospital services does not seem to be a strong factor to explain the adoption of the program.

At the start of our observation period, we document a number of ongoing initiatives designed to reward GPs for containing the recourse to hospital services by listed patients. These incentives constitute only a fraction of the additional payments payable to GPs, since different objectives (e.g. the improved management of chronic illness) are in many cases incentivised by means of other programs. While the possibility to provide extra payments that top up capitation dates back to the 90s, the programs specifically aimed at containing hospitalisation were introduced in the region only at the beginning of the 2000s. Therefore, when the closures started (end of 2002), the programs had been operating on average for a couple of years. Our data span the period 2002–2004 when a reorganisation of some of these schemes was implemented. Given the short time span covered by the available data and the timing of policies implemented, we can only evaluate the short-run effects of financial incentives. For assessing long-term consequences, more extended experiences are necessary.

Two specific features distinguish our case from standard natural experiments recently used to investigate the responses of primary care providers to changes in the incentive system (e.g. Dumont, Fortin, Jacquemet, & Shearer, 2008; Layte, Nolan, McGee, & O'Hanlon, 2009; Nolan, 2008). Firstly, instead of the introduction of an incentive-based program, we consider the consequences of its closure. Behavioural evidence, supported by lab and field experiments, suggests that penalties and premiums may not always affect individual choices symmetrically (Gneezy & Rustichini, 2000a). Within our specific framework, non-symmetric reactions to the introduction/removal of incentives may stem from clinical practices that are costly to change once they have been adopted. Therefore, removing financial incentives may not necessarily see physicians return to previous styles of practice. A less optimistic hypothesis suggests that if the use of financial incentives crowds out intrinsic

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