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Reputational concerns with altruistic providers[☆]

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ABSTRACT

We study a model of reputational concerns when doctors differ in their degree of altruism and they can signal their altruism by their (observable) quality. When reputational concerns are high, following the introduction or enhancement of public reporting, the less altruistic (bad) doctor mimics the more altruistic (good) doctor. Otherwise, either a separating or a semi-separating equilibrium arises: the bad doctor mimics the good doctor with probability less than one. Pay-for-performance incentive schemes are unlikely to induce crowding out, unless some dimensions of quality are unobservable. Under the pooling equilibrium a purchaser can implement the first-best quality by appropriately choosing a simple payment scheme with a fixed price per unit of quality provided. This is not the case under the separating equilibrium. Therefore, policies that enhance public reporting complement pay-for-performance schemes.

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1. Introduction

A key policy issue in the health sector is how to incentivise providers (e.g. doctors, hospitals) to improve care. Providers have two sources of motivation: monetary and non-monetary ones. Monetary incentives include pay-for-performance incentive schemes: for example, hospitals are paid a price for each patient treated; family doctors can be financially rewarded if they have better quality indicators. Non-monetary incentives can be equally important and include two other incentive forces. First, providers may be altruistic and care about patients' well-being. Altruism motivates them to provide better quality and has long been recognised in the health economics literature (Ellis and McGuire, 1986;

Chalkley and Malcomson, 1998). Second, providers care about what other people (their family, the community, their peers, other patients; henceforth society) think about them. Policymakers increasingly publish, and make available to patients and the general public, information on doctors' performance. Examples include the scheme "QualityCounts" in Wisconsin which compares adverse events in hospitals (Hibbard et al., 2005); the Hospital Quality Alliance, which encourages public hospital reporting for a minimum of ten quality measures regarding three clinical conditions (Lindenauer et al., 2007); and report cards for coronary bypass in Pennsylvania and New York State (Dranove et al., 2003).² Such policies can potentially enhance reputational concerns by more widely advertising the performing doctors and the underperforming ones; they are sometimes (colloquially) known as *name and shame* schemes, where poorly performing doctors are subjected to shame in front of the community. Although reputational incentives have been recognised in the general economics literature (e.g. Bénabou and Tirole, 2006, 2011) we are not aware that they have been applied specifically to doctors and health care providers. This study fills this gap.

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² Analogous schemes have been implemented in other countries, sometimes in combination with pay-for-performance schemes, such as Brazil, Estonia, Korea, New Zealand and the United Kingdom (see Cashin et al., 2014, p. 44–51).

Can the simple fact of publishing information change doctors' behaviour? If so, which doctors change their behaviour and in which direction? Do patients and doctors gain from such policies? This study investigates the extent to which name and shame policies can enhance reputational concerns and induce some doctors to provide more quality to avoid a reputational damage. Health systems differ in the extent to which they compare and report quality in the public domain. They can vary from a small to a large set of indicators. They can report quality at organisation level (practice, hospital) or at individual doctor level, the latter exposing the doctors more directly. They can post indicators on a website, or more proactively disseminate the indicators by publishing them in newspapers. Variations in reporting generates variations in doctors' reputational concern. We investigate the effects of such variations in reputational concerns induced by different intensity of quality reporting. In our model doctors differ in altruism and care about their own reputation: they enjoy being known by society as good doctors, and dislike being known as bad doctors. The analysis is distinct from the literature on financial incentives of healthcare providers since name and shame policies do not involve any direct payment, and instead require a signalling model to investigate how reputation is created in the first place.

We also investigate other policy relevant questions. First, we study whether a more extensive use of monetary incentives such as pay-for-performance schemes crowds out or crowds in the non-monetary incentives. Second, we investigate whether the benefits from publishing and disseminating information also arise within a multi-tasking framework when doctors provide different dimensions of quality, some of which are unobservable (e.g. diagnostic effort). Third, we investigate whether there is still scope for publishing and disseminating information on quality even when the purchaser (a health authority or a health insurer) can design a pay-for-performance scheme which pays a fixed price for each unit of quality provided. Since our focus is an applied one, we restrict the instruments which are available to the purchaser to *linear* performance contracts, since they are commonly used by policymakers.

Our model predicts that policies that publicise doctors' performance may be virtuous. By increasing reputational concerns, name and shame policies induce the bad doctor to mimic the higher quality provided by the good doctor. Whether the introduction of a pay-for-performance scheme crowds out or crowds in the non-monetary incentives is in principle indeterminate. Higher prices increase the good doctor's performance, and make more costly for the bad doctor to mimic the good doctor, which favours crowding out. But higher prices also increase overall revenues when performance is high, and make more attractive for the bad doctor to mimic the good doctor, which favours crowding in. We show that whether crowding in or crowding out arises ultimately depends on whether the good doctor provides *proportionally* lower or higher quality compared with the bad doctor in the absence of reputational payoffs. If the marginal benefit is decreasing, then under some regularity conditions on third-order derivatives of costs, the good doctor provides proportionally lower quality and *crowding in* arises.

Therefore, policies that introduce a pay-for-performance scheme do not seem to be in conflict with the introduction of report cards. However, this conclusion holds only if quality can be observed by patients and society. If some dimensions of quality cannot be observed (i.e. in the presence of multitasking), then name and shame policies can induce the bad doctor to *crowd out* non-observable dimensions of quality, and potentially reduce patients' benefit. Although crowding out is also found in the multitasking literature (Eggleston, 2005; Kaarboe and Siciliani, 2011), name and shame policies are not exempt from this issue: publishing in the public domain only a narrow set of quality indicators might make such policies undesirable. Moreover, from a modelling point of view, we show that multitasking interacts with reputational con-

cerns by increasing the scope for the pooling equilibrium to arise. Name and shame policies make it easier for the bad doctor to mimic the good doctor by saving costs on the unobservable quality.

As for the optimal design of simple pay-for-performance schemes, we show that a linear contract which pays a fixed price per unit of quality is sufficient to achieve allocative efficiency for all doctors only if reputational concerns are high: the payer can design the incentive scheme aimed at the good doctor, and by pooling accomplishes efficiency of the bad doctor as well. This cannot arise for low reputational concerns unless more sophisticated non-linear contracts are available to the purchaser (e.g. the purchaser can offer a menu of contracts, which are not commonly observed in practice). Therefore, if the purchaser is constrained by the use of a linear performance contract, policies which publicize quality can make patients and purchasers better off even when the payment is optimally set. The result is relevant for policy and suggests that policies aimed at disseminating quality indicators have a role even in the presence of pay-for-performance schemes.

Our results are consistent with some empirical studies evaluating the effects of publicizing performance reports. Hibbard et al. (2005) compare the evolution of quality standards in obstetrics for (i) hospitals that had their reports made public; (ii) hospitals that received the report privately; and (iii) hospitals that did not receive any report. These authors find that “[a]mong the eight ‘public report’ hospitals with [...] low scores at baseline, only one had a worse-than-expected score two years later. In contrast, two-thirds of such hospitals in the ‘private report’ group and almost as many in the ‘no report’ group still had worse-than-expected scores two years later” (p. 1155). This suggests that hospitals with low quality responded to their reports being made public by improving performance. Similarly, Fichera et al. (2014) report in their survey that “[e]vidence from [the Hospital Quality Incentive Demonstration] and [the Advancing Quality] initiatives suggests that providers quickly converge to similar values on the process metrics and differences in performance must be measured at a very high level of precision to discriminate among providers.” (p. 113) Wang et al. (2011) examine the impact of coronary bypass report cards. They find that poorly performing hospitals or surgeons responded with a reduction in volume, while highly rated hospitals and surgeons did not respond.

1.1. Related literature

The empirical and theoretical literature on altruism and intrinsic motivation is extensive. Within the public and health economics literature the assumption of motivated agents is commonly shared.³ Establishing that reputational concerns matter has also been investigated. Some empirical evidence has quantified the effects of publicizing performance indicators, either in isolation (Hibbard et al., 2005) or when combined with other pay-for-performance schemes (Lindenauer et al., 2007; see Roland and Dudley, 2015, for a review).

However, few studies formally include the possibility that reputational concerns come from society learning about doctors' altruism from observed actions. These studies can be classified into two groups. In the first group, this effect is either directly assumed in the doctor's payoff function (Siciliani, 2009) or comes

³ Within the public economics literature, see Francois (2000), Besley and Ghatak (2005), Dixit (2005), Lakdawalla and Philipson (2006), Delfgaauw and Dur (2008), Glazer (2004), Prendergast (2007), Makris (2009) and Makris and Siciliani (2013). Within the health economics literature the analytically-similar assumption of altruistic agents was introduced by Ellis and McGuire (1986), and then extended by Chalkley and Malcomson (1998), Eggleston (2005), Jack (2005), Siciliani (2009), Choné and Ma (2011), Brekke et al. (2011, 2012), Kaarboe and Siciliani (2011), Siciliani et al. (2013), Kolstad (2013).

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