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The effect of a public health card program on the supply of health care

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ABSTRACT

The supply-side responsiveness to public programs targeted to consumers is not widely studied. However, it is unlikely that supply variables remain constant, particularly when their link to the demand initiative is weak. The aim of this study is to provide such analysis, using the experience of the Indonesian health card program, which is a demand-sided program. Without an increase in staff or an appropriate salary revision, the salary payment system of the public sector may not adequately reward the existing health workers, lowering their incentives to maintain their public position. Using data from the Indonesian Family Life Surveys on public health centres, the leading providers of outpatient services in the public sector, this study found some evidence that the health card program resulted in a reduction in the number of full-time GPs working in these facilities. Other conditions not related to workers' compensation, such as infrastructure conditions and registration fees, were not adversely affected. Identification of this program's effect is achieved by variations in time and the intensity of health card distribution across communities. The findings highlight the importance of public policy management in general, and sheds light on physicians' behaviour in developing countries, about which we know very little.

Introduction

The relationship between a public intervention to influence health care demand and the corresponding supply-side variables has received little attention in the health economics literature. Perhaps, this is due to the presence of supply-side policies in conjunction with the demand incentive. For example, the US Medicaid program, which provides health insurance coverage for certain low-income families, pays fees to physicians for treating its population. These fees are supposedly paid to ensure that services are provided to the Medicaid patients. But what would the health providers do in the absence of matched supply policy? In low-income and transitional countries in particular, many public health initiatives are "one-sided" (Gwatkin, 2000). In addition, they often have marginal success (see Filmer, Hammer, & Pritchett, 2000 for a survey of the literature). In this study, I take a small step towards understanding the supply-side responsiveness to a demand-sided intervention. Inadequacy of public health facilities is often argued as one of the main reasons for ineffectiveness of a demand intervention in developing countries (Axelson et al., 2009; Castro-Leal, Dayton, Demery, & Mehra, 2000; Pradhan, Saadah, & Sparrow, 2007), but empirical evidence exploring this relationship is scarce. The results in this study will be based on the experience of the Indonesian public health card program, but given the generality of the problem, the finding would have a wider implication than the Indonesian context.

The health card (*Kartu Sehat*) program is an effort by the Indonesian government initiated in 1994 to reduce asymmetry in access to health care. The program is targeted at poor households, which are believed to be excluded from the health care market due to their inability to pay. Eligibility determination is based on a household's economic condition and is decentralised to community level. By presenting health cards at public health facilities, members of the recipient households can obtain a wide range of health care services, both in the inpatient and outpatient setting, at no cost. The health card is usually valid for a year, after which the recipient household's eligibility is reassessed. In 1998, a second large scale health card program was launched as part of a social safety net program to reduce the adverse impact of the Asian financial crisis in 1997 (Pradhan et al., 2007). By 2000, the health card program had reached about 20 percent of Indonesian households (Indonesian Family Life Survey (IFLS) 3).

The mechanism through which the supply-side variables can be affected by the health card program is the method of compensating the relevant health professionals. Like in most countries, public health workers in Indonesia are salaried workers. The health card program in principle would bring new consumers in to public facilities who were priced out of the health care market in the absence of the health card. Without an accompanying increase in staff or an appropriate salary revision, such a demand expansion would imply a decrease in the reward for equivalent efforts

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compared to that before the program was introduced. Increased numbers of patients to be treated means an increased workload, and for a given salary, the marginal effort for treating an additional patient is not monetarily compensated. Particularly affected are health workers in public health centres, dealing predominately with outpatients so a waiting list does not apply. These health workers do not choose the number of patients to treat and all registered patients must be treated before the facility's closing hour; for instance, the system of registration fees suggests to the patients that they will be examined on the same day. Furthermore, the increasing workload may create a direct disutility to workers in performing their public role (Ikenwilo & Scott, 2007; Scott, 2001). In effect, health workers would have incentives to reduce the effort they allocate into a public job and reallocate time to other activities that generate higher returns (Sæther, 2005). For most workers, this reallocation would be to provide services in the private sector. The national doctors association, IDI (*Ikatan Dokter Indonesia*) reported that over 80 percent of doctors provide services in both the public and private sector. This dual job holding, which is also common among other health workers such as midwives, means that many health workers are able to transfer proportions of their labour between sectors without significant barriers.

The data is derived from the facility surveys in the IFLS, a nationally representative longitudinal study of Indonesian households and communities. The results show some evidence of a negative impact of the health card program on supply, specifically, a reduction in the number of full-time GPs working in public health centres. This result highlights the interdependence of demand and supply conditions, whereby one is unlikely to be constant if the other has changed. Therefore, it is imperative that policymakers take this interaction into account in designing any intervention, so as to avoid any (unintended) mismatch between demand and supply policies.

In an earlier study, Johar (2009) found that the Indonesian health card program has limited effect in increasing health care utilisation of its recipients. This result seems to contrast with the condition needed for the supply reaction, which is increasing patient lists. However, this is not so if we consider chains of reactions and the ineffectiveness of the health card program being partly attributed to the declining availability of health workers in public facilities. The dynamics could be such that the health card program increases demand at public health facilities initially, resulting in adverse supply movement, which then feeds back to discouragement of health care utilisation. Practically however, while acknowledging the importance of dynamics, it is hard to capture them due to data limitations. Nevertheless, studies have found that the short-term impact of such programs could be significant (Axelson et al., 2009; Pradhan et al., 2007). Before concluding this paper, I will use the results to make inferences about the most likely scenario that had happened.

Literature

Only a few studies examine the effect of demand-side interventions on the associated health care providers. Most of them consider the US public health insurance programs, Medicaid and Medicare. Generally, there are also supply-side initiatives linked to these demand-sided policies. For instance, fees are paid to private physicians for treating Medicaid patients. Baker and Royalty (2000) examine the impact of the expansion of Medicaid eligibility and increases in fees on the availability of physicians to pregnant women. They find increases in the amount of health services provided to Medicaid patients. Decker (2007) also finds that more generous fees increased the number of private physicians who treated Medicaid patients. Likewise, Yip (1998) shows that physicians actively alter the volume of care according to fee levels. Using a panel data set of physicians who provide services in both public and private markets, she finds support for a large income effect, as physicians compensated for income losses following Medicare fee cuts by increasing supply in both the Medicare and private markets. On the other hand, McKnight (2007) finds no evidence that Medicare beneficiaries received less care due to physicians receiving lower marginal reimbursements for providing additional services to them. From developing countries, Wagstaff and Yu (2007) analyse the impact of a World Bank project in China that combines demand- and supply-side expansions in the province of Gansu. The demand initiatives take the form of a community-based health insurance scheme and a safety net program for health expenditures, while the supply-side expansion is largely in the form of renovations and purchases of new equipment for township health centres. They find that some doctors and nurses relocated away from their villages to work at the township health centres, where the work environment had improved.

A number of studies focus on physicians' labour supply schedule and their responsiveness to supply-side interventions. Sæther (2005) uses Norwegian data to study the impact of a wage increase on physicians' choices of practice. Using a modified multinomial logit model, he finds that physicians respond to changes in sectoral returns by increasing labour hours in the sector that promises a higher return (as indicated by increased wages), while lowering the hours in the competing sector (as represented by a second job). Baltagi, Bratberg, and Holmås (2005) reach the same conclusion of a positively-sloped labour supply schedule. Several US-based studies also have reported positive wage elasticities for health workers in the range of 0.2–0.3 (Rizzo & Blumenthal, 1994; Showalter & Thurston, 1997). In the UK, Dusheiko, Gravelle, Jacobs, and Smith (2006) find that physicians' behaviour is governed by private incentives. They use the abolition of a fundholding regime among British practices in 1999, which assigned funds to participating practices, from which funds were deducted on referrals for elective surgery, and credited the leftovers to the practices. They find that the fundholding regime exerted a downward pressure on elective surgery admissions, as physicians were maximising the leftover budget. In the post-abolishment regime, there were increases in admissions.

Recently, a number of studies have emphasised the role of non-pecuniary motives in physicians' labour supply decisions. Scott et al. (2006) offer a model of job satisfaction and quitting intention, and find evidence for a negative relationship between them, especially in the public sector. To directly elicit GPs' preferences about work arrangements, Scott (2001) uses a stated-preference method and finds that GPs place negative utility weights on factors related to work overload, such as increasing number of patients and inflexible hours. On the other hand, Heyes (2005) and Biglaiser and Ma (2007) argue there is a significant role for altruism or dedication, in which physicians intrinsically care about their patients' welfare. Altruism, for instance, is consistent with observations that there are still physicians in the public sector, which typically pays lower than the private sector. Other non-pecuniary motives that may explain physicians' retention of public jobs include establishment of professional contacts and training (Berman & Cuizon, 2004; Midttun, 2007).

Estimation strategy

In labour supply studies, it is typically assumed that each health worker allocates available time between labour and leisure in a way that maximises his/her objective function, such as utility. The optimal labour allocation will depend on the opportunity cost of labour and job and personal characteristics. In a setting where