Dual practice by doctors working in South and East Asia: a review of its origins, scope and impact, and the options for regulation

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Health professionals often undertake private work whilst also employed by government. Such dual practice (DP) is found in both high-income and lower- and middle-income countries (LMIC) around the world, with varying degrees of tolerance. This review focuses on DP in South and East Asia in the context of the rapidly expanding mixed health systems in this region. Although good data are lacking, health service uptake in South and East Asia is increasing, particularly in the private sector. Appropriately regulated, DP can improve health service access, the range of services offered and doctors’ satisfaction. By contrast, weakly regulated DP can negatively affect public health service access, quality, efficiency and equity, as doctors often pursue the balance of public and private work that maximizes their income and other benefits. The environment for regulation of DP is changing rapidly, with improved communications opportunities, increasing literacy and rising civil society, particularly in this region. Currently, the options for regulating DP include (1) those which restrict the opportunities for dual practitioners to prioritize income and other benefits over their responsibility to the public; these require a level of regulatory capacity often missing in LMIC governments; and (2) those which not only tolerate public-sector doctors’ private work but also encourage adequate health services for the general public. Growth of the private sector and weak regulation in South and East Asia increases the risk that dual practitioners will ignore the poor. Responsive and decentralised regulation of doctors involving professional associations, civil society and other stakeholders is increasingly recommended. Moreover, as governments in LMIC strive for universal health coverage, market and financing opportunities for regulation of DP may arise, particularly involving insurers. This may also help to improve the current imbalance in the urban–rural distribution of doctors.

Keywords Dual practice, health sector, public/private, lower- and middle-income countries, South and East Asia, regulation
**KEY MESSAGES**

- Dual practice (DP) is most likely to have negative consequences in lower- and middle-income countries, where regulation of doctors’ behaviour is often weak. Weak regulation of DP threatens equitable, universal access to healthcare.
- As uptake of healthcare rises in South and East Asia’s mixed health systems, the scale of DP is likely to be increasing, but most countries lack current analysis of the problem.
- New options for regulation of DP are emerging, including roles for newly empowered civil society groups; independent, non-government agencies; professional associations; and health insurers implementing financial mechanisms.
- Improved regulation of DP has the potential to harness its potential benefits for increasing access to health services, including for rural communities in South and East Asia.

**Introduction**

Dual practice (DP), also known as multiple job holding, is the widespread phenomenon of government employees working concurrently both within and outside the public-sector environment. The private work may be undertaken physically within or outside public facilities, but is conducted either entirely for personal profit or as part of a profit-sharing arrangement with the relevant government authority. DP is common within but not restricted to the health professions; teachers (who may additionally offer private tuition), academics (who may consult privately), public security staff and conceivably any salaried professional or other public service provider may undertake private work additional to their government employment. However, DP in the health sector attracts the most interest because it concerns an issue of universal importance that can be extremely costly, is inherently unpredictable, and assumes the availability of skilled care (Bloom et al. 2008). Moreover, with the high profile of recent donor- and publicly funded efforts to improve population health (Ravishankar et al. 2009), and burgeoning research interest in human resources for health (Ranson et al. 2010), high-level attention has been paid to DP by public-sector health workers, doctors in particular (Kiwanuka et al. 2011a,b).

DP is common all over the world, and is found in countries whose development and economic status, political system and demographic and health situations vary widely. The United States (where it is rare) and Canada (where it is officially not permitted) are two exceptions, but even in nations or states where it is officially banned, overt or covert DP is common. The frequency of health sector DP varies widely; in some nations, a majority of public-sector doctors also work privately, while in others only senior doctors or specialists do so (Garcia-Prado and Gonzalez 2011).

Accounts of health workforce practices in many South and East Asian nations (including India, Bangladesh, Thailand, Cambodia, China, Vietnam, Indonesia, Papua New Guinea, Sri Lanka and Nepal) and also nearby Australia and New Zealand confirm DP by doctors in this region (Berman and Cuizon 2004; Ferrinho et al. 2004; García-Prado and Gonzalez 2011), but there is less evidence on its impact. Concerns centre on the risk that DP may reduce health service access, quality and efficiency, but there are both theoretical and practical reasons why DP might be of overall benefit.

This article focuses on DP and its regulation in South and East Asia, where the burgeoning, mixed public–private health market makes it a key health workforce issue. It draws on several recent reviews of the available evidence, theoretical perspectives on DP and its regulation, and on the meagre related original research. It contextualizes DP in the evolution of the health systems and political economies of many South and East Asian nations and low- and middle-income countries (LMIC) elsewhere. It also considers the region’s rapidly changing health markets and efforts to achieve universal health coverage (UHC).

As there is no consensus on the overall impact of DP and its regulation, the purpose of this article is first to summarize for policy-makers, finance and health authorities and health regulators the related evidence in South and East Asian nations. Second, this article reviews and builds on suggested options for regulation of DP in the health sector in the context of the growing market for both public and private health services, drawing on a recent model that accounts for the attractiveness of DP and includes the proportion of income from insurers; this is a key consideration as governments strive to achieve UHC. Finally, it considers new approaches to regulation of DP and doctors in general, involving independent but government-sanctioned authorities, professional associations and civil society. The article closes with a brief review of the key related research questions on this issue.

**Method**

This article draws on a recent systematic review (Kiwanuka et al. 2011a), a Cochrane review (Kiwanuka et al. 2011b), published comprehensive overviews of DP, particularly on its regulation in LMIC (Berman and Cuizon 2004; Ferrinho et al. 2004; García-Prado and Gonzalez 2007, 2011), and on a comprehensive search of the peer-reviewed and grey literature. We searched the terms ‘dual practice’, ‘dual job holding’ and ‘multiple job holding’ and ‘health sector’, or the former three terms individually, in the PubMed database available at http://www.ncbi.nlm.nih.gov/pubmed?db=pubmed and the three terms and ‘health sector’ in the Google internet search engine. These searches were undertaken during the period October–December 2012 and again in May 2013, and identified 45 more-or-less related, peer-reviewed articles through PubMed and collectively over 8000 hits in Google. The internet searches assessed the first 260 results for the DP and ‘health sector’ search, the first 200 results for the ‘dual job holding’ and
healthcare governance, financing and provision’ (Berman and Cuizon 2004, p. 10). Absenteeism and moonlighting in LMIC are said to reflect ‘high levels of unorganized health markets . . . . [porous] boundaries between public and private health sectors and lack of state regulatory capacity’ (Bloom et al. 2008, p. 2076). These authors link the pluralistic health systems of many LMIC to the establishment and subsequent failure of systems emulating the socialized (expensive) health sectors of former colonial powers. These failures resulted from the various crises—economic, political, security and structural—affecting many developing nations since the 1960s, weakening their public sectors and leaving a void in which non-State health services have proliferated, including services provided by state-employed providers working privately. Demand for healthcare has also been lifted by the information revolution, investments in infrastructure and education and in some countries by the supply of new providers with limited opportunities for public employment and low salaries. While in some countries DP is more common among senior staff (Gruen et al. 2002), in others it is junior doctors who are more likely to take on additional private work (Jumpa et al. 2007). In the context of economic growth and weak regulation, mixed health systems have grown rapidly in many South and East Asian nations (Hort and Annear 2012; Peters and Bloom 2012). This trend is likely to continue, particularly with efforts to achieve UHC and the introduction of new social health insurance schemes.

Evidence on the factors influencing DP in LMIC is again scant. Research in South and East Asian nations (Dieleman et al. 2003; Gruen et al. 2002; Henderson and Tulloch 2008; Soeters and Griffiths 2003; Ying et al. 2003) emphasizes low or unreliable salaries as the main incentive (as also documented in Africa (Ferrinho et al. 2004; Roenen et al. 1997), but where the perspectives of providers have been sought first-hand, other sources of motivation (e.g. professional satisfaction, public responsibility, better physical conditions, communication, training opportunities, prestige, etc.) also underpin the balance of public and private work (Ferrinho et al. 2004; Gruen et al. 2002; Ying et al. 2003).

The scope of DP in South and East Asian nations

Although most of the related reports are old and none provides more than a glimpse based on local surveys, it is apparent that DP in several South and East Asian Nations is widespread and takes many different forms (Berman and Cuizon 2004; Ferrinho et al. 2004; Garcia-Prado and Gonzalez 2011). Table 1 summarizes the evidence on DP among nations in this region and nearby.

The information on DP in this region is incomplete and often unreferenced. For example, the claim (in Gruen et al. 2002) that more than 80% of government doctors in Bangladesh undertake DP is unreferenced; despite widespread perspectives that DP is widespread in India (Yip and Mahal 2008), some states have banned it entirely (Berman and Cuizon 2004) and there are no detailed studies of DP there. In Vietnam, although a 2001 health sector review estimated that only 10% of private physicians were also working for the government (Ministry of Health 2001), a 2003 report stated that most rural doctors take on private work due to poor employment conditions (Dieleman et al. 2003). A review of health service contracting to

The origin of and influences on DP in the health sector

Although private healthcare is an ancient profession, concerns about the separation from public responsibility created by private practice have existed for at least two centuries (Chadwick 1842; Russell 1951), and the evolution of DP is ongoing. Its foundations vary widely, and while there is overlap between doctors’ stated reasons for DP across nations as diverse as the United Kingdom (Humphrey and Russell 2004), Bangladesh (Gruen et al. 2002) and lusophone Africa (Russo et al. 2013) the balance of reasons for public-sector doctors taking on private work differs between developed and developing nations (Socha and Bech 2011).

In most developed nations healthcare has become highly socialized, with governments ensuring availability of services through the public sector, and the private sector providing an alternative environment with different personnel or treatment approaches, less waiting or sometimes differing degrees of care.

Most developed nations have a liberal approach to DP, with doctors in most continental European nations, the United Kingdom, Australia, New Zealand and Japan permitted to work privately either within or outside their public-sector workplace, and either outside or within their scheduled public-sector hours of work. In the latter case, doctors’ private patients are nested within public facilities (Garcia-Prado and Gonzalez 2011; Kiwanuka et al. 2011a).

First-hand evidence on the factors motivating doctors to take on extra work in higher-income countries is scant, but suggests income enhancement, expanded or complementary use of professional skills, clinical autonomy, broader professional contact and peer approval, access to alternative facilities and equipment, prestige or reputation-building, relief from the high-pressure of and low appreciation received in the public-sector environment, and the greater flexibility of private practice (Garcia-Prado and Gonzalez 2011; Humphrey and Russell 2004; Jumpa et al. 2007).

By contrast, in developing countries it is widely acknowledged that the adverse consequences of DP are ‘embedded in the larger setting of sub-optimal government strategies for

‘health sector’ search, and the first 70 results for the ‘multiple job holding’ and ‘health sector’ search, after which original sources were exhausted and Google only identified repetition. Published articles comprised a mix of original, purposive assessments of the scale of and reasons for DP and its impact on health services and outcomes. Alternatively, they focused on theoretical perspectives or models of the impact of DP, piloted approaches to limiting or regulating it, or econometric evaluation. The grey literature comprised hundreds of commentaries on or summaries of published articles (e.g. Kiwanuka et al. 2011a), conference abstracts (e.g. Johnston and Ozaltin 2012), academic dissertations that included discussion of DP (e.g. Triyana 2012), items of commissioned research (e.g. Vian 2002) or reports that mentioned DP in the context of a predominant focus on other issues such as mixed health systems or health service governance/regulation (e.g. Deussom et al. 2012; Mba and Ongolo-Zogo 2011). For both the peer-reviewed and grey literature, references cited were also carefully assessed for new sources of information.
non-government providers in Cambodia describes extensive informal private work by government health workers (Soeters and Griffiths 2003). Secondary data also describe DP in Cambodia as ‘ubiquitous’ and conclude that in Indonesia and Vietnam ‘most doctors . . . complement public sector work’ with private practice (Ferrinio et al. 2004, p. 5). In many LMIC, the private work includes doctors opening private pharmacies to sell drugs. Unlicensed pharmacies are a major part of the unregulated health market in LMIC (Peters and Bloom 2012, and, based on our observations, in most LMIC in South and East Asia).

In China, private practice has theoretically been allowed for decades (Lim et al. 2004; Yang 2006), but with such unattractive limits that most doctors are unaware of the related regulations (Yang et al. 2003). Moreover, both formal DP and informal payment of physicians in public facilities are common (Yang 2006; Ying et al. 2003). While informal payments differ from DP, they often have the same motivation and adverse impact on service access. China’s Medical Practitioners Law of 1998 prohibits doctors ‘from utilising their professional positions to solicit funds and/or goods from patients and receive illegal funds and/or goods from patients’ (Yang 2006, p. 19). However, as the price for health services is set artificially low (Blumenthal and Hsiao 2005; Tian et al. 2008), most doctors both receive formal payment (salaries and/or a share of hospital income) and accept informal payment from patients (Fan 2007; Lim et al. 2004; Yang 2006). Informal payments (red packets) remain very common in China and are even defended by consumers (Yang 2006).

Although evidence is lacking, it is almost certainly true that the scale of DP in South and East Asia is increasing. Total health spending is rising and health systems are increasingly characterized by mixed public and private practice (Hort et al. 2011; Hort and Annear 2012; Peters et al. 2001; Ramesh and Wu 2008). Moreover, in their efforts to improve access or achieve UHC, governments in many nations have committed to increasing health sector spending and social health insurance coverage/benefits (High Level Expert Group 2011; Ministry of Health 2012; State Council 2009; The Economist 2012). More funding and broader insurance coverage may increase uptake of not only public-sector healthcare but also private healthcare among those who can afford it. The balance and hence the impact on levels of DP will probably vary according to patients’ and insurers’ willingness to pay for private health services.

Moreover, notwithstanding the commitment to UHC, it is not apparent that regulation and governance of health providers or commitment to health financing by local authorities in South and East Asia’s decentralized environments will improve (e.g. Hipgrave et al. 2012). In such circumstances, it is likely that the trend which sees public providers undertaking more parallel private practice with minimal regulation will continue (Ensor and Weinzierl 2007; Peters and Bloom 2012). In this context,
identifying and funding feasible options for regulation of DP are increasingly imperative. The options for such regulation are reviewed below.

Theory and evidence on the outcomes of DP
A considerable amount of theoretical modelling and policy, practice and economic analysis has been undertaken in relation to the implications of DP, and options for its regulation (Berman and Cuizon 2004; Biglaiser and Ma 2007; Bir and Eggleston 2003; Brekke and Sorgard 2007; Eggleston and Bir 2006; Gonzalez 2004; Gonzalez and Macho-Stadler 2013; Kiwanuka et al. 2011a). The different models applied in desktop research on DP have been summarized elsewhere (Berman and Cuizon 2004; Biglaiser and Ma 2007; Eggleston and Bir 2006). Moreover, the models based on theories relating to labour supply, employment satisfaction, bureaucracy, work-leisure incentives, the healthcare market, principal–agent relationships, rational profit-maximization and others are usually studied without reference to context, particularly the different levels of incentive and regulation in various settings (Berman and Cuizon 2004; Garcia-Prado and Gonzalez 2011; Kiwanuka et al. 2011a). These models may therefore be somewhat removed from many nations’ health systems which, even within the various income levels, vary widely in the amount of public–private segmentation and regulation (Bloom and Standing 2008). However, a recent exception with implications for the regulation of DP is considered below (Gonzalez and Macho-Stadler 2013).

Implications of DP for health service equity, quality and efficiency
The literature is reasonably consistent on the possible broad impacts of DP, both positive and negative. A recent comprehensive review analysed its impact on health service access and equity, quality of care and efficiency of use of health resources (Garcia-Prado and Gonzalez 2011) (Table 2). These impacts are highly simplified and will not apply everywhere. Moreover, the balance of positive and negative effects will vary widely, and perspectives on this balance may vary between health authorities and providers, rich patients and poor patients (Berman and Cuizon 2004).

For example, the incentives will vary widely according to whether doctors are salaried or receive fee for service payments, and whether a system of capitation applies. The benefits and costs will also differ by country, as priorities will be different. The balance between countries’ desires to improve access and equity, efficiency and quality of care will vary widely according to income level and many cultural, political and other factors. Institutions or agencies such as professional bodies, health bureaucracies, regulatory frameworks and public feedback will influence dual practitioners’ behaviour. ‘The implications of DP that are important to one country are not necessarily important to others; likewise, the response of each country…should be individually tailored’ (Garcia-Prado and Gonzalez 2011, pp. 271–2).

Overall it seems that in market economies with limited public-sector capacity, well-regulated DP probably improves health service access and possibly its efficiency. Much depends on how similar are the services offered by the public and private sectors (Brekke and Sorgard 2007), the level of incentive for public-sector workers to also work privately (or the disincentives to commit to the public sector), the cost of private healthcare to consumers and the ability of government to regulate the behaviour of dual practitioners.

DP outcomes among LMIC in South and East Asia
Notwithstanding the above, it is very difficult to write with confidence about the impact of DP among LMIC in South and East Asia. This is not only because we lack information from studies at country level and the tendency of new reports to cite old reviews and secondary data. It is also because in the rapidly evolving socio-economic, demographic and political context in many such nations, the health market is also changing rapidly, possibly invalidating previous conclusions.

Nonetheless, several studies of dual practitioners in this region imply that the impacts tabulated above are highly relevant. In Bangladesh, tolerance of DP was felt to expand health service availability, including in rural areas where it is difficult to attract doctors to work in the public sector. It also enabled workers to minimize the opportunity costs and economic losses associated with public employment (Gruen et al. 2002). However, also in Bangladesh, in several states in India and in Indonesia, rates of absenteeism are high among public-sector health staff, especially doctors and especially those known to have a private practice. In India, there was a strong and direct inverse relationship between rates of absenteeism and income (Chaudhury et al. 2006).

A study in Cambodia found that DP enhanced the professional reputation, job security, training opportunities and career progression of public health workers, as well as increasing their extremely low public-sector income (Henderson and Tulloch 2008; Soeters and Griffiths 2003).

On the other hand, a study at public hospitals in Thailand noted opportunistic behaviour among dual practising obstetricians, particularly in relation to rates of operative delivery, and manipulation of treatment choices for doctors’ convenience (Hanvoravongchai et al. 2000). DP was tolerated to the extent that the care of public patients was not compromised. While it is possible that the observed ‘sorting’ of patients enhanced overall access to care, it was not clear that public patients had a voice in demanding appropriate care from ‘absent’ obstetricians, nor that the care of private patients was optimal.

Thailand, Malaysia and India are also known to receive many foreign tourists for medical procedures—so-called medical tourism. There is concern that government tolerance of DP by state-sector specialists encourages them to prioritize high-paying foreigners over local public-sector patients (Pocock and Phua 2011).

China’s laissez-faire approach to regulating public-sector doctors’ formal or informal payments is a difficult problem for health authorities. For decades, doctors and hospital administrators in China have circumvented low, state-established fees for healthcare by charging patients for additional drugs, investigations, procedures and services not covered by the fee schedule or various other regulations (Blumenthal and Hsiao 2005; Eggleston et al. 2008; Hu 2010; Lim et al. 2004; Tian et al. 2008). While private care in public facilities is not uncommon, additional and informal payments in China often
benefit the doctor or hospital administration, not the public purse. Recent reforms aimed at improving equity by improving access to insurance (Meng et al. 2012), controlling drug profits (Xiao et al. 2012; Yang et al. 2013) and introducing capitation or other forms of price control (Yip et al. 2012) are not directly addressing the need to separate doctors from hospital management and financing, and to price services appropriately (Eggleston et al. 2008; Ying et al. 2003). Moreover, tolerance for doctors’ opportunism and poor practice standards (Lim et al. 2004) appears to be waning (Li and Zhang 2012; Yang and Fan 2012). Regulating the financing of China’s hospital sector and doctors’ incomes in particular is proving the most difficult element of its current health reform (Yip et al. 2012; Barber et al. 2013).

The most recent evidence on the impact of DP in this region comes from a comprehensive World Bank review of health service provision in Indonesia (Rokx et al. 2012). Whilst recommending further study, its conclusion on DP is reasonably positive, particularly on the improvement of access to health services at community level: ‘Indonesia’s impressive gains in access to health services are explained, in part, by DP. Coupled with removal of financial barriers, DP has increased the use both of services at public facilities, puskesmas and pustu, and of services provided privately by physicians, midwives, and nurses…’ (p. 10). Moreover, although again citing the dearth of information available, the review is also cautiously positive on the issue of efficiency: ‘More understanding is needed about the impacts of the so-called sorting of patients in which the poor make more use of public services while the more affluent seek care at private facilities. The initial indication is that… dual practice contributes to the sorting of patients. ‘That may have a positive effect on efficiency, as long as the non-poor continue to support the public system’ (p. 10). Use of the public system by the poor has declined. However, the review speculates that legalized DP may influence doctors to favour working in urban areas where opportunities for private work are greater, as identified elsewhere (Hort et al. 2011; Meliala et al. 2013). And like most of the literature, it also fails to address quality of care and the relative amount of time spent by dual practitioners with their public and private patients.

**Table 2** The impacts of DP on health service access and equity, quality and efficiency*  

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<tr>
<th>Health service access and equity</th>
<th>Potential negative impacts</th>
<th>Potential benefits</th>
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<tbody>
<tr>
<td></td>
<td>Absenteeism and shirking during official work hours. Patients are forced into the private sector by dual practitioners preferring private work</td>
<td>Provides incentives for doctors to stay in the public sector</td>
</tr>
<tr>
<td></td>
<td>Patient diversion from the public to private sector to increase income</td>
<td>Reduces the incentive for doctors to request informal payments</td>
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<td></td>
<td>Manipulation of quality of care or wait-times to encourage private care</td>
<td>Provides an alternative to crowded public facilities and long waiting lists</td>
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<td></td>
<td>Cream-skimming: doctors refer healthier or wealthier patients to the private sector, leaving the poor with less access to better care</td>
<td>Some types of private work involve public-sector doctors working in poor rural areas lacking even public facilities</td>
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<td></td>
<td>Decreased service access in rural areas, as dual practitioners are incentivized to live in urban areas</td>
<td>Uptake of private services by the wealthy or the formal sector reduces pressure on the public system; more effective public-sector targeting of the poor (although evidence shows frequent use of private services by the poor, even in urban areas)</td>
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<tr>
<th>Technical and cost efficiency in use of public resources</th>
<th>Potential negative impacts</th>
<th>Potential benefits</th>
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<tr>
<td>Treating private patients in public wards</td>
<td>Free-riding or outright theft of supplies from public facilities (drugs, dressings, etc.), or use of public administration or nursing staff or equipment for private patients</td>
<td>Allowing DP provides incentives for doctors to stay in the public sector, avoiding staff shortages and non-use of service capacity</td>
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<tr>
<td>Absenteeism or shirking</td>
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<tr>
<th>Quality of care (technical, interpersonal and amenity)</th>
<th>Potential negative impacts</th>
<th>Potential benefits</th>
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<tr>
<td>For a given level of ability, doctors provide better care in the private sector; this assumes doctors do not overwork and provide poor care in both sectors</td>
<td>Allowing DP provides incentives for good doctors to stay in the public sector; however, adequate incentives are needed to ensure good service</td>
<td></td>
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<tr>
<td>Doctors may provide poorer care in the public sector to incentivize patients to go private</td>
<td>Dual practitioners may provide better care in the public sector so patients will self-refer to their private practice</td>
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<tr>
<td>Absenteeism of senior doctors working in private leaves public patients to be managed by junior staff</td>
<td>Provides a health service alternative to poor public facilities with old or absent equipment</td>
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<td></td>
<td>Enables doctors to learn from a broader range of practice experience and colleagues</td>
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Note: *Based on a recent review (Garcia-Prado and Gonzalez 2011).

**Context and options for regulating DP**  
**The context for regulation of DP in LMIC**  
The context for regulation of DP in LMIC is well summarized as follows: ‘Since the early 1980s, economic and structural crises have exposed the weak institutional capacity of the public sector in many countries…[Growing] demands and structural reform policies have left the State overworked and underfunded…[resulting in] the rapid growth of non-State provision to fill gaps in supply. This has been both a formal process, sanctioned by the State through contracts with not-for-profit providers and legislation allowing development of the private healthcare market, and an informal process with burgeoning numbers of unlicensed practitioners, pharmacists and drug pedlars increasingly...
Options for regulation of DP

Several reviews of DP have paid attention to its regulation (Garcia-Prado and Gonzalez 2007, 2011; Kiwanuka et al. 2011a), and noted major differences between developed and other nations. However, as was noted earlier in relation to the qualitative impact of DP in LMIC, there is little evidence to recommend any particular strategy. Indeed, not one article has reported research on the relative benefit of one approach to regulation of DP in LMIC over another, or has even evaluated any such approaches (Kiwanuka et al. 2011b), although a new article compares approaches to DP in three disparate health markets in Africa (Russo et al. 2012).

The options described for regulation of DP are summarized in Table 3. They may be divided into those which place limits on providers, or incentivize or reward them. An early review of DP summarized the authors’ perspectives on its regulation: ‘The real issue is what types of private practice should be allowed in order to minimize conflicts of interest, and what…regulatory mechanisms can be introduced to isolate [behaviours] associated mostly with lack of regulation rather than just with low income…. Efforts should be undertaken to ensure multiple and independent channels of accountability, by means of penalties for not satisfying contractual obligations, through channels of accountability to professional councils and associations and to the public’ (Ferrinho et al. 2004, p. 13).

A recent report models options for regulation of DP in the context of varying levels of private income, and considers both developed and developing economy contexts (Gonzalez and Macho-Stadler 2013). The authors assessed the costs of three policy approaches: banning DP, providing incentives to providers to work exclusively in the public sector, and limiting DP income or activity. The model suggested that banning DP is uneconomical, as allowing it reduces public salaries and theoretically enables health authorities to purchase additional services. Equally, offering exclusive contracts is not as financially effective as allowing limited DP. Finally, limiting DP is more effective than limiting income, as the latter impacts mainly high-earning practitioners, while the former impacts all providers.

In LMICs, the results of the model depend heavily on the relative appeal of work in the private sector. Where it is very attractive (offers much higher income), the costs of limiting or banning DP for the health authority will be high; but where private practice has low appeal, it is more cost effective for health authorities to induce practitioners to operate exclusively in the public sector. This is evident in the comparison of salaries, patterns of private practice and the availability of exclusivity contracts in three African countries (Russo et al. 2013), although the ability to regulate exclusivity may be low in the poorest LMIC.

While the model focuses on economic outcomes, including minimizing the cost of production (i.e. providing healthcare) for the health authority, it provides a basis for the consideration of policy and regulatory options in the LMIC context. A framework for such options may be developed, but it should be acknowledged that even among high-income nations there is definitely no one-size-fits-all approach. Differences in local institutional frameworks and public service values pertaining to the health sector and providers will influence the available choices.

Three broad options are available:

(a) Taking no action. This is equivalent to allowing unregulated DP, and is likely to allow proliferation of the negative outcomes and abuses of both public and private practice that have been noted in the literature. It is not recommended.

(b) Banning or limiting DP. Both the regulatory literature and modelling (Gonzalez and Macho-Stadler 2013) suggest that this is difficult to enforce and more costly to government for a given level of service provision. However, if feasible, limitation of DP (income, location or time spent) is an option for consideration.

(c) Allowing DP with regulation of behaviour in the public and private spheres, as appropriate to the situation and local capacity to enforce. This requires consideration of local context which varies by location (demands and opportunities for private practice), local regulatory capacity and practitioner category (demands and income opportunities vary for different types).

In Table 4, two measures are used to categorize different contexts for DP, and the resulting options for regulation. The first adapts the concept of ‘attractiveness’ of private practice, a key determinant in the recent modelling exercise (Gonzalez and Macho-Stadler 2013), and uses the proportion of private income as the indicator. Higher proportions of private sector income indicate higher opportunities for private practice, and higher demand for the practitioner type. Data from Indonesia (Melala et al. 2013) and elsewhere indicate that the proportion of doctors’ income from private practice can exceed 75% of the total. The second key factor is the proportion of private sector income from insurance payments. While still low in most Asian LMIC, this is likely to increase with gradual introduction of UHC, providing new opportunities for regulatory control.

Broader issues related to regulation of physicians in LMIC

The regulation of DP is only one example of the broader issue of regulation and stewardship of physicians in LMIC. Despite their evident weak capacity to do so, governments in LMIC...
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<th>Regulatory option</th>
<th>Global experience</th>
<th>Commentary</th>
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<td><strong>Restrictions</strong></td>
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<tr>
<td>Banning DP</td>
<td>Canada, the USA, Greece, certain states in India and for certain practitioners in some other nations (Berman and Cuizon 2004; Garcia-Prado and Gonzalez 2011; Kiwanuka et al. 2011a, b)</td>
<td>Only feasible where government or professional regulation is independent and effective. This does not apply in many LMIC nor in some developed nations where bans were attempted. Banning may also lead to brain drain as doctors leave the public sector for more lucrative private work, limiting public access to their services; or it may encourage corrupt and informal payments to public physicians (Garcia-Prado and Gonzalez 2007)</td>
</tr>
<tr>
<td>Restricting doctors’ private activities or earnings</td>
<td>Several European nations including the UK, France, Austria and Italy (Garcia-Prado and Gonzalez 2011)</td>
<td>The government restricts the maximum amount of private services doctors can provide or private income they can earn. This demands a high level of accountability and effective regulation, including of hours worked and services provided. No experience with this has been reported from LMIC (Garcia-Prado and Gonzalez 2007, 2011)</td>
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<tr>
<td>Self-regulation by the profession and regulation by peers and the public</td>
<td>In developed countries, professional associations and peer pressure, accreditation and other means of performance management can impact public-sector activity and doctors’ engagement in DP</td>
<td>In LMIC, especially in South and East Asia, unregulated growth of the private sector has not been matched by improved regulation (Balarajan et al. 2011; Gruen et al. 2002; Sheikh et al. 2011) and professional associations have been unhelpful (Hort et al. 2011; Hort and Annear 2012). Laws to regulate marketized health sectors are weakly implemented (Bloom 1998; Yang 2006; Ying et al. 2003), and there is a risk of regulatory capture (Ensor and Weinzierl 2007). However, moves to improve accreditation in LMIC are being introduced (Anand et al. 2008; Garcia-Prado and Gonzalez 2007). Peer review and pressure from civil society are effective in regulating provider behaviour and standards in developed countries (Ferrinho et al. 2004), but again rely on the independence of the review and the availability of effective channels for complaint (Peters and Bloom 2012)</td>
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<td><strong>Rewards or incentives</strong></td>
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<td>Incentivising doctors to work exclusively in the public sector</td>
<td>Reported in European nations, the UK, Thailand, India and Cambodia through salary supplements or promises of promotion (Garcia-Prado and Gonzalez 2007, 2011); now being piloted in Indonesia</td>
<td>These schemes are reported difficult to implement and to have resulted in negotiations between provider associations and government which either favoured or were simply ignored by doctors (Garcia-Prado and Gonzalez 2007). They also require well-functioning and transparent health financing (Ferrinho et al. 2004), and so are not widely reported from LMIC. However, where salaries are very low and incentives are weak, they may be effective (Johnston and Ozaltin 2012; Soeters and GriffiThs 2003)</td>
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<td>Allowing or tolerating private practice or informal payments in public facilities</td>
<td>Common in Australia and some European countries (Garcia-Prado and Gonzalez 2011). Pilot ed in Malaysia (Ramesh and Wu 2008) and known in some places in Africa (Russo et al. 2013). Legal for some doctors in Indonesia. In LMICs, informal payments are widespread</td>
<td>Apart from informal payments, this has the advantage of being convenient and easier to supervise, but may yield conflict of interest and competition between public and private patients for doctors’ time and hospital resources. Transparent supervision is required and reports from LMIC are lacking (Garcia-Prado and Gonzalez 2007) although examples exist in Africa (Russo et al. 2013) and Malaysia (Ramesh and Wu 2008). Experience in Indonesia suggests that it improves access (Rokx et al. 2012)</td>
</tr>
<tr>
<td>Raising public-sector salaries</td>
<td>In two surveys doctors said that they would drop DP for more salary (Garcia-Prado and Gonzalez 2007; Gruen et al. 2002); a model suggests the same thing (Brekke and Sorgard 2007)</td>
<td>Intuitively effective, particularly if non-financial incentives are provided in parallel. The Greek experience reportedly failed because the salary remained insufficient (Garcia-Prado and Gonzalez 2007). Estimates of the costs of ‘buying off’ dual practitioners with higher salaries have been calculated in some LMIC (including Cambodia) (Garcia-Prado and Gonzalez 2007; Soeters and GriffiThs 2003), but were prohibitive. However, another report from Cambodia suggests that it can be effective (Johnston and Ozaltin 2012)</td>
</tr>
</tbody>
</table>
often overestimate their ability to regulate physicians’ and other providers’ behaviour, particularly in decentralized settings; there are many examples of the result of weak regulation of physicians in South and East Asian nations (Ensor and Weinzierl 2007; Teerawattananon et al. 2003), with major implications for population health. Moreover, regulation by professional associations is usually lacking in LMIC, or captured by individual or collective self-interest (Ensor and Weinzierl 2007; Teerawattananon et al. 2003). Notwithstanding recent moves by Indonesia (Indonesian Medical Council 2007) and other national authorities to improve the behaviour of physicians’ associations, calls for a greater role of such bodies in LMIC (Jan et al. 2005) may be premature.

Factors that may change this include increasing democratization and press freedom, education and literacy rates, exploding options for social discourse and the rise of civil society, and formal models not dominated by professionals (such as public participation on regulatory bodies). These factors are likely to have a major impact on the ability of the public to judge and inform others about the behaviour of individual practitioners, and also the agencies representing them and the facilities where they work. Engagement of the public was a major strength of Thailand’s health reforms (Ramesh and Wu 2009), and patient advocacy organizations elsewhere have influenced right-based approaches to health service provision (see www.patientsorganizations.org/).

It is too early to measure the influence of these changes in South and East Asia, and in poor rural areas communities may still lack both provider choice and the ability to communicate. However, recent incidents in China (Li and Zhang 2012; Yang and Fan 2012) and the rise of medical lawsuits in the region (Ensor and Weinzierl 2007; Teerawattananon et al. 2003) imply that expectations of physician behaviour may be rising with population health literacy.

Indeed, an increasing role for the public and other groups in regulating physician behaviour or in health governance more broadly has been recommended in several commentaries (Bloom et al. 2008; Ensor and Weinzierl 2007; Ferrinho et al. 2004; Garcia-Prado and Gonzalez 2011; Jan et al. 2005; Kickbusch and Gleicher 2012; Nodzenski 2012), and by two eminent researcher/commentators on health and society: ’Bringing order to unregulated health markets will take broad coalitions that go beyond governments and health professionals…. [including] citizen groups, pharmaceutical companies, information-technology and telecommunications companies, and… informal healthcare providers. Such coalitions might coordinate disease-surveillance systems, information networks for pricing and sourcing quality drugs, and patient-referral mechanisms’ (Peters and Bloom 2012, p. 164).

However, this does not absolve governments and professional bodies from establishing and maintaining accreditation systems, another form of regulation, examples of which are emerging in a number of LMIC, including in South and East Asia (Anand et al. 2008; Ensor and Weinzierl 2007; Garcia-Prado and Gonzalez 2007, 2011).

Future approaches to regulation of DP in South and East Asia

Rapid expansion of the private health sector in South and East Asia is likely to continue as demand for services increases with economic growth and the rise of the middle class (Hort and Annear 2012; Rokx et al. 2012; Yip et al. 2012). It is very likely that much of this private work will be undertaken by public-sector physicians who prefer the benefits of working in both sectors. As changes to the provision of healthcare evolve, the options for regulation of DP described above may be considered in the context of new approaches to the governance and stewardship of the health sector overall.

**Responsive and de-centred regulation**

In one such approach, the regulatory strategies required vary according to the engagement of providers, as represented by the pyramid shown in Figure 1.

At the top, providers are either least compliant or least engaged and old-style command and control are required, assuming of course, there is capacity to implement it. Further down, meta-regulation (oversight by independent authorities which can draw on reports on provider behaviour from professional associations, consumer groups, auditors and other sources) broadens the options for oversight. Reports by meta-regulators are integral elements of another regulatory concept which ‘de-centres’ responsibility for regulation from government (Black 2002). Participation in self-regulation and market mechanisms are further down the pyramid, and require that providers can be trusted to behave in ways that meet both population health needs and professional standards and expectations. Currently, the ability of LMIC to implement either meta-regulation or the more responsive regulation at the bottom of the pyramid is weak, but with the rise of civil society and strengthened professional associations, this may change.

De-centring replaces the notion of a regulatory state with one of a regulatory society. Community associations, advocacy groups, etc. act as both regulators and the regulated, involved in and responding to exchange of information that influences regulatory outcomes (Akhtar 2011). The state and even professional associations in turn are relieved of their pre-eminence responsibility for regulation, detecting deviations and penalizing violators. At a higher level, that of governance of the health sector, this concept has been taken up by WHO (Kickbusch and Gleicher 2012), which recently described a ‘diffusion of governance from a State-centred model to a collaborative one, in which governance is co-produced by a wide range of actors at the level of the State… society… and supranationally’ and ‘the new governance dynamics of diffusion, democratization and shared value’ (p. viii). This has also been discussed specifically in the South and East Asian context in relation to the potential for civil society to overcome the inertia of some government and inter-government processes (Nodzenski 2012). However, as implied earlier and as extensively reviewed recently (Mansuri and Rao 2012), these concepts assume adequate representation of those with the most to gain (women, the poor or the otherwise marginalized), and means to avoid regulatory capture (Bolsewicz Alderman et al. 2013).

The concept of de-centring also overcomes problems commonly associated with state-centred regulation (Black 2002): weak or inappropriate laws; lack of information or knowledge about what is being regulated; implementation failure and motivation failure (the capturing of regulation by special interest groups). It acknowledges the complexity and autonomy
of the systems being regulated and the variety of perspectives on what regulation should achieve.

These approaches open up exciting new possibilities for the regulation of DP, including in LMIC where the state often lacks authority and capacity. They give voice to consumer groups and legitimize a role for non-government actors. On the other hand, they remain concepts, not governed by guidelines or recommended processes (Bolsewicz Alderman et al. 2013), and at risk of vague interpretation. Moreover, there remains considerable scepticism about the ability of the public to regulate doctors working in the private sector (Schuftan and Unger 2011).

**Regulation in the context of evolving health markets**

As suggested in Table 4, regulation of physicians may evolve as new, market-influenced options open up for government or for those involved in provider stewardship. These alternatives may take into account the geographical distribution of doctors; consumer demand and ability to pay and the availability of new incentives related to UHC and social health insurance. The literature has not yet considered DP in this global, health market context, but related research is imperative given the rapid evolution of health markets in comparison to governments’ ability to incentivize physicians to attend to the public sector.

For example, the introduction of social health insurance or subsidies like conditional cash transfers is likely to encourage patients back into the public sector and increase the use of private providers, as occurred in Indonesia (Triyana 2012), Thailand (Ramesh and Wu 2008) and Taiwan (Lu and Hsiao 2003). In these circumstances, insurance funds can assume an important regulatory role by rewarding good quality of care or services in underserved locations (Lu and Hsiao 2003), and penalizing poor quality of care or absenteeism by dual practitioners. As UHC increases demand, the right mix of performance or promotion incentives, and eligibility for insurance payments and reputation-building opportunities might be enough to counter doctors’ preference for urban private
practice. Insurance payment mechanisms, such as capitation or case-mix, can limit over-servicing and excessive fees, and improve quality of care, particularly when administered by single national insurers or other government purchasing (Evans et al. 2012; Lu and Hsiao 2003; Ramesh and Wu 2009).

Taiwan, Thailand and also Singapore provide examples of UHC at an affordable cost through strong regulation involving financial mechanisms (Evans et al. 2012; Lu and Hsiao 2003; Ramesh and Wu 2009). By contrast, in China social health insurance has improved financial access and service uptake, but not financial protection. Total health expenditure there is increasing at an average of 17% per year (Meng et al. 2012; Yip et al. 2012), and government-subsidized insurance and other subsidies have not reduced opportunistic behaviour by physicians. Similarly, in Indonesia, whilst government support for the health sector is increasing, dual practitioners are increasingly servicing the private sector (Hort et al. 2011; Ramesh and Wu 2008). This does not rule out efficiency in UHC, but the provider payment must be attractive enough to encourage dual practitioners to provide services that are affordable to the poor and to rural communities.

Controlling dual practitioners’ behaviour through market mechanisms may be more important than engaging the public or professional associations. Again, this will require future

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**Box 1** Indicators informing approaches to the regulation of DP

- The balance of health service supply and demand, including influences (such as the attractiveness of private practice) on the distribution of doctors across urban and rural areas.
- The capacity of patients to pay, and the coverage and benefit of social health insurance for those who cannot afford public-sector fees or private care.
- The capacity of social health insurers to play a role in financial mechanisms of regulation (their independence; negotiating power; funding and solvency, etc.).
- The role and character of professional associations in country, and the possibility of them collaborating effectively in, and not capturing regulatory processes.
- The engagement of the public and the possibility of civil society being effectively involved in regulation of health providers and facilities.
- The existence of independent regulatory agencies, representing government and with authority to recommend or implement sanctions if appropriate.
- The availability or possible creation of private services within public health facilities, and agreements with doctors on their financing and management.
- The availability of legal leverage over hospitals or doctors, through mechanisms like periodic accreditation, maintenance of professional standards, sanctions, etc.
- The decentralization of power and financing in the health sector, and local capacity.
revisiting of the relative roles of different stakeholders on provider regulation.

**Selection, monitoring and evaluation of regulatory mechanisms**

Finally, LMIC introducing new regulation of DP, in South and East Asia and elsewhere, must select the best indicators of progress and success. Box 1 summarizes the characteristics that should assist decisions on which regulatory mechanisms to pursue, or which elements to improve.

Once the balance of restrictions and incentives has been selected and funding is assured, a system of supervision, monitoring and evaluation is also needed. Human resource management and administrative reporting in LMIC are typically weak, so it is likely that improvement of this will involve mixed qualitative and quantitative methods, and will be part of a general strengthening of health sector oversight. These methods might include periodic reports by the various regulatory agencies assigned by government to monitor and evaluate doctors’ behaviour; the establishment and reporting of a functioning complaint service for patients; independent community surveys using cheap methods such as citizens’ score cards (Brixi 2009) or social audits; occasional key informant interviews or focused group discussions on doctors’ behaviour, or requests for community input using new media; quantitative monitoring of doctors’ case load and mix, workplace, income and fees, hospital revenue and charges, insurance payments, etc.; monitoring of absenteeism, opportunistic referral of public patients to the private sector or private use of public facilities by dual practitioners and occasional surveys of household access to health services, including by specialists.

**Suggestions for future research**

The dearth of information on the scale and impact of DP in South and East Asia, and the need for consideration thereof in the reform of health systems among LMIC in the region underscore the need for carefully designed prospective research and piloting on this topic. The recent evaluation of DP in the context of three health markets in lusophone Africa is a good example of such research (Russo et al. 2013). Apart from descriptions of the prevalence of DP and public–private income profile of dual practitioners in the region, the questions of most interest for health regulators would include the major incentives for or enablers of DP; how such ‘medical entrepreneurship’ could be harnessed more equitably (Ranson et al. 2010) and the role of insurers or financial mechanisms, professional associations and the public in regulating provider behaviour and influencing geographic distribution. The latter is particularly important in mixed systems where the private sector has been allowed free rein (Tangcharoensathien et al. 2011). Nearly all of the region’s health systems are in constant evolution, with piloting and evaluation of various aspects of policy and implementation. The regulation of DP should be no exception to this process, but lessons from both LMICs and developed states in the region should also be considered.

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