

# Dual practice of public hospital physicians in Vietnam

Ngan Do<sup>1,2</sup> and Young Kyung Do <sup>2,\*</sup>

<sup>1</sup>Asia Health Policy Program, Shorenstein Asia-Pacific Research Center Stanford University, Stanford, CA, USA and <sup>2</sup>Department of Health Policy and Management, Seoul National University College of Medicine and Institute of Health Policy and Management Seoul National University Medical Research Center, Seoul, Korea

\*Corresponding author. Department of Health Policy and Management, Seoul National University College of Medicine, 103 Daehak-ro, Jongno-gu, Seoul 110-799, Korea. E-mail: ykdo89@snu.ac.kr

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## Abstract

Although many public hospital physicians in Vietnam offer private service on the side, little is known about the magnitude and nature of the phenomenon so-called dual practice, let alone the dynamics between the public and private health sectors. This study investigates how and to what degree public hospital physicians engage in private practice. It also examines the commitment of dual practitioners to the public sector. The analysis is based on a hospital-based survey of 483 physicians at 10 public hospitals in four provinces of Vietnam. Nearly half of the participants in the study sample reported themselves as dual practitioners. Various types of private practice were mentioned. Private practice at health facilities owned by the private sector was the most prevalent, followed by private practice delivered at health facilities owned by the dual practitioners themselves. Private practice inside public hospitals was also noted. Dual practitioners were likely to be senior and hold management positions inside their public hospitals. Substantial income differences were found between dual practitioners and those physicians practicing exclusively in the public sector. The majority of dual practitioners, however, reported the willingness to give up private practice if certain conditions were met, such as a basic salary increase or non-pecuniary benefits. The main reasons dual practitioners gave for not leaving the public sector included a sense of public responsibility and opportunities to gain a broader professional network and more training. This study reiterates the significant challenges associated with dual practice, including its financial implications and possible effects on health care quality and access. The need for a high-quality workforce committed to the public sector is particularly critical, given the possibility of universal insurance coverage. Future research should address the need to improve data collection on physicians' dual practice and incorporate the topic in policy debates on health reform.

**Keywords:** Physician dual practice, public–private mix, Vietnam, human resources for health, hospital reform, health system research, low- and middle-income countries, universal health coverage

## Introduction

Governments in low- and middle-income countries (LMICs) often supplement their public health care systems by encouraging the involvement of the private sector (Cheng *et al.*, 2013). In many countries, a public–private mix of health service delivery has created opportunities for health workers to combine both public and private practices. A variety of forms have been identified: private practice provided outside, beside, or within public facilities and even

integrated into public practice (Russo *et al.*, 2014). This phenomenon, known as dual practice, refers to health workers practicing concurrently in both the public and private sectors. It has a variety of labour market and health system consequences (Eggleston and Bir, 2006), with crucial implications for efforts to achieve and sustain universal health coverage (UHC) (McPake *et al.*, 2016).

Physicians' dual practice has direct implications for access to health services, equity, and the quality of care received by patients in

### Key Messages

- Among our sample of 483 public hospital physicians in Vietnam, 48% provide private practice inside or outside their public hospitals.
- Dual practitioners are more likely to be senior, hold higher status in hospitals and earn substantial income from the private sector.
- Dual practitioners express commitment to working in the public sector to enlarge their professional networks, maintain a secured job, access to training opportunities, and fulfil a sense of public responsibility.
- More than 60% of dual practitioners report that they would be willing to give up private practice in exchange for a basic salary increase, housing benefits or promotion opportunities.

the public health care system (Sousa *et al.*, 2013; McPake *et al.* 2016). Dual practice has been associated with absenteeism (Gruen *et al.* 2002; Chaudhury *et al.*, 2006; Rokx *et al.*, 2010). In addition, public patients often have longer waiting time than private patients (Morga and Xavier, 2001; Brekke and Sorgard, 2007; Shmueli and Savage, 2014). These issues can arise because dual practitioners may divert their time and resources from the public sector to the private sector, where the unit income per hour is higher (Ferrinho *et al.*, 2004; Tuohy *et al.*, 2004; Johannessen and Hagen, 2014). It is also suspected that dual practitioners purposely provide lower-quality care in public practice to encourage their public sector patients to seek treatment in private practice (Gruen *et al.*, 2002; Jan *et al.*, 2005). Concern has also been raised that dual practitioners may ignore the poor under weak regulation, with further equity implications (Hipgrave and Hort, 2014). On the other hand, physicians' dual practice can positively impact the quality of and access to health services for public sector patients. If dual practitioners transfer low-risk patients to private practice and leave only high-risk patients in public practice (Barros and Olivella, 2005; González, 2005), the crowding in public practice could be reduced, providing more chances for public sector patients to receive better access and quality care (Delfgaauw, 2007).

Physicians' dual practice also involves issues of resources for health care as well as for the financing of the public health care system (McPake *et al.*, 2016). Allowing public sector physicians to work extra hours in a private practice can augment the total supply of physician work hours and productivity at a given level of the physician workforce, providing a policy option to mitigate an existing and growing shortage of physicians in LMICs. It can also help attract and retain more experienced physicians in the public sector (Ashmore and Gilson, 2015), because they are permitted to earn an extra income to supplement their relatively low income from the public sector. In other words, allowing physicians' dual practice can be seen as a reward for their commitment to the public sector (García-Prado and González, 2011; Ashmore and Gilson, 2015). This also helps LMIC governments address their budget constraints in financing public health care systems. These important advantages may explain the popularity and overall institutional similarity of physician dual practice in LMICs with limited resources—both financial and human—in the health sector.

Given the pervasiveness of physician dual practice and its crucial impacts on LMIC health care systems, research on this topic is surprisingly limited. Inadequate research and data in LMICs pose significant challenges to addressing the uncertainties inherent in system-level health care reforms such as UHC (McPake *et al.*, 2016). In a survey of 24 LMICs, key informants gave dual practice the second-highest priority as a topic for research on human resources in the health sector, right after the issue of attracting and retaining

qualified health workers in underserved areas (Ranson *et al.*, 2010). Theoretical modelling and empirical analysis concerning dual practice should be followed by studies providing contextualized insights (Hipgrave and Hort, 2014). The nature of dual practice and its societal consequences likely depend on the historical and institutional contexts of health care systems (Eggleston and Bir, 2006), further necessitating country-specific research efforts (McPake *et al.*, 2016).

This article investigates physicians' dual practice in Vietnam, where the topic has been high on the public health agenda in recent years. To achieve UHC, the Vietnamese government is increasing efforts to reform public hospitals and encourage the development of the private sector. Although 87% of hospitals in Vietnam are owned by the public sector (MOH, 2016b), many of them provide both public and private health care (Government of Vietnam, 2006, 2012, 2014). Public and private services in public hospitals are similar in type and provided usually by the same physicians. The main difference is the ownership of facilities and devices used to provide the respective services. As the government purchases the equipment for public hospitals and pays monthly salaries to physicians, the prices of public health services constitute only consumable and utility costs. Meanwhile, the prices of private services are higher than those of public services because they include equipment depreciation and labour costs. When physicians deliver private services, they receive additional income based on the amount of services provided. Profit from private medical services provided in public hospitals is then added to the Autonomous Fund, and used for capital re-investment and incentives for hospital staff. The national health insurance covers public prices for health services. Therefore, patients pay higher co-payments when using private services (Do *et al.*, 2014). In addition, the government encourages the development of fully private health facilities. There are some 30 000 private clinics and 169 private hospitals in the country (MOH, 2015b). These are smaller in size and provide less varied services compared with public hospitals. They perform 60% of outpatient services, largely focussing on imaging and lab services (MOH, 2016b), while >90% of the most complicated surgeries are conducted in public hospitals, especially specialized provincial and national hospitals. Private facilities tend to be in newly constructed buildings and feature modern equipment, shorter waiting times and staff with more customer-friendly attitudes (MOH, 2016b).

Vietnam is facing a shortage of physicians, with 0.7 physicians per 1000 people (a total of 70 362 physicians) (MOH, 2016a). Furthermore, it is estimated that the growing need for medical services will result in a shortage of 55 245 physicians by 2020 (MOH, 2015a). Hence, the government has allowed public hospital physicians to practice at private hospitals and clinics to maintain the supply of physicians (MOH, 1987; Government of Vietnam, 2003). Yet little is known about the distribution and key features of physicians

across public and private sectors, and there is a significant gap in understanding the extent and characteristics of physicians' dual practice in Vietnam.

We sought to fill this gap by conducting a hospital-based survey in four provinces in northern and southern Vietnam. This study specifically aims to: (i) estimate the prevalence and key features of physicians' dual practice, (ii) identify factors associated with public hospital physicians' choice to engage in dual practice and (iii) capture motivations for dual practitioners' remaining in the public sector as well as incentives that would further increase their commitment to the public sector.

## Methods

We conducted a hospital-based survey between December 2014 and January 2015 in four provinces in northern (Hai Phong, Ha Nam and Thai Nguyen) and southern (Ho Chi Minh City) Vietnam. Ho Chi Minh City is the most urbanized city in Vietnam and is known as the country's economic hub. It also has the highest number and proportion of private hospitals: 46 out of 155 (MOH, 2015a). Hai Phong, the third largest city in the country, is the economic hub of the Red River Delta region and has two private hospitals. Thai Nguyen is the economic centre of the Northern Midlands and Mountain Area region, with no private hospitals. Ha Nam is a small province in the Red River Delta region and also has no private hospitals. Our survey included a total of 10 public hospitals: four national, three provincial and 3 district hospitals. The important advantage of approaching public hospitals to study physicians' dual practice is to be able to capture all types of public-private practice combinations, including private practice embedded inside public hospitals. Obtaining this information came at a cost: our approach turned out to be challenging because it was mandatory to get permission from health authorities at various levels in order to conduct the survey inside government-owned health facilities. We presented the study objectives, survey questionnaires and research plans to the Ministry of Health and Provincial Health Offices. We also provided a list of urban public hospitals that we would like to survey in the four selected provinces. We chose these hospitals primarily for convenient access considering our logistical capacity. Public hospitals in urban areas were also likely to have both public and private health care provisions, allowing us to examine more varied forms of physician dual practice. Furthermore, few surveys had been conducted before on physician dual practice in urban public hospitals in Vietnam. Based on the list of public hospitals we provided, health authorities introduced us to 12 public hospitals (4 hospitals at each of the 3 levels: national, provincial and district. In total 2 of the 12 hospitals approached, however, declined to participate, leaving us with 10 hospitals for the survey. Overall, we distributed 582 sets of the questionnaire and received 510 back (87.6% response rate) (See details in [Supplementary Table S1](#)). We dropped responses from the physicians who held only administrative roles and did not see patients directly in public hospitals. Our final sample for analysis consisted of 483 individual physicians. This study received Institutional Review Board approval from the 175 Military Hospital (in Vietnam) and Seoul National University (in the Republic of Korea).

We first conducted a frequency analysis to obtain the proportion of dual practitioners for each of the three hospital levels. Dual practitioners were defined as public hospital physicians who also deliver medical services at health facilities or settings that have any source of private investment, whereas non-dual practitioners are those who

practice only at health facilities that are fully owned by the government. We used responses on private practice engagement and on income from private practice to classify dual and non-dual practitioners (see the Annexe for our survey questionnaire). Among those who were engaged in dual practice, the type of public-private practice combination was further categorized by the location of private practice: inside or outside the public hospital. We also obtained the average income for different types of practice, as this information is critical to gaining further insights on dual practice.

We then undertook a logistic regression analysis to explore and identify factors associated with public hospital physicians' dual practice engagement. To this end, we used a set of variables that represented physicians' personal and professional characteristics, and institutional settings. Personal and professional characteristics included age, gender, marital status, number of dependents, years of experience, clinical specialization and education. Variables related to institutional setting included hospital level and hospital location.

Finally, we analysed the perspectives of public hospital physicians on dual practice to understand their key motivations for remaining in the public sector and the potential policy measures that could be implemented to increase their commitment to the public sector. We obtained the proportion of agreement to each of their listed reasons for remaining in the public sector as well as the conditions under which they would be willing to give up private practice.

## Results

### Sample description

[Table 1](#) summarizes the characteristics of our study sample. Of the 483 physicians included in the analysis, 63% were male and 83% were married. On average, the physicians in the sample were 39.2-years old and had provided medical services for 11.6 years. About one-third of the physicians had no post-graduate training, 43% had further specialized training (specialist Level 1 or 2 or residency) and 24% had additional post-graduate clinical research education (ie, a master's or PhD). Only 20% of physicians were contracted directly by their public hospitals, while the rest 80% had permanent contracts with the government or a managerial status. Dual and non-dual practitioners were different in many respects: dual practitioners were 5.1-years older and had 4.8-years more professional practice on average. They were more likely to be male (72 vs 54%), to be married (87 vs 79%) and to have a higher average number of dependents (1.96 vs 1.59). There was also a larger portion of specialized doctors among dual practitioners than non-dual practitioners (80 vs 69%). Seventy-eight percent of dual practitioners were better qualified in both clinical practice and clinical training—22% more than that of non-dual practitioners. Not only did they have higher qualifications, dual practitioners had higher hospital status compared with non-dual practitioners: 41% of dual practitioners held management positions compared with only 23% of non-dual practitioners.

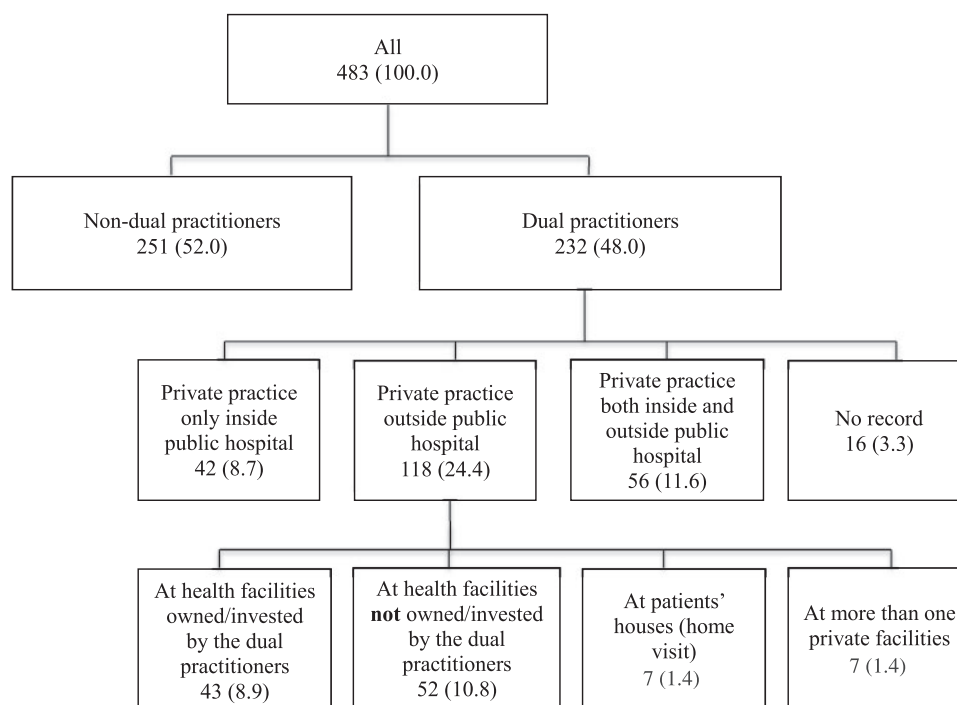
### Prevalence and features of public-private practice

[Figure 1](#) presents the prevalence of various combinations of public and private practice: inside public hospitals only, outside public hospitals only, and both inside and outside public hospitals. The overall proportion of dual practice engagement was 48.0%. Out of the total sample of public hospital physicians surveyed, 24.4% reported delivering private service outside the public hospitals where they provided public services, 11.6% had a private practice both inside and outside their public hospitals, and 8.7% had one inside the

**Table 1.** Description of the study sample

Characteristics	All	Non-dual practitioners	Dual practitioners
Total count	483 (100%)	251 (100%)	232 (100%)
Age (in years)	39.2 ( $\pm 9.6$ )	36.8 ( $\pm 9.4$ )	41.9 ( $\pm 9.1$ )
Gender			
Male	303 (63%)	136 (54%)	167 (72%)
Female	180 (37%)	115 (46%)	65 (28%)
Marital status			
Married	400 (83%)	198 (79%)	202 (87%)
Not married	83 (17%)	53 (21%)	30 (13%)
Number of dependents	1.77 ( $\pm 1.3$ )	1.59 ( $\pm 1.2$ )	1.96 ( $\pm 1.4$ )
Professional practice (in years)	11.6 ( $\pm 9.0$ )	9.3 ( $\pm 8.4$ )	14.1 ( $\pm 9.1$ )
Expertise			
General doctors	124 (26%)	77 (31%)	47 (20%)
Specialized doctors	359 (74%)	174 (69%)	185 (80%)
Qualification			
Medical doctor	161 (33%)	111 (44%)	50 (22%)
Specialist level 1	124 (26%)	45 (18%)	79 (34%)
Specialist level 2	52 (11%)	18 (7%)	34 (15%)
Resident	30 (6%)	20 (8%)	10 (4%)
Master's in medicine	90 (19%)	43 (17%)	47 (20%)
PhD in medicine	26 (5%)	14 (6%)	12 (5%)
Professional status at public hospitals			
Manager	151 (31%)	54 (23%)	94 (41%)
Permanent	233 (49%)	131 (53%)	102 (44%)
Contracted	96 (20%)	61 (24%)	35 (15%)
Hospital location			
North	209 (43%)	130 (52%)	79 (34%)
South	274 (57%)	121 (48%)	153 (66%)
Hospital level			
National	227 (47%)	120 (48%)	107 (46%)
Provincial	167 (35%)	88 (35%)	79 (34%)
District	89 (18%)	43 (17%)	46 (20%)

$\pm$ , standard deviation.

**Figure 1.** Prevalence of dual practice, by type. Percentages out of the total sample of 483 physicians are in parentheses

**Table 2.** Physicians' self-reported average monthly income from public and private practice

Unit: million VND <sup>a</sup>	Non-dual practitioners	Dual practitioners			No. of responses
		Only inside public hospital	Outside public hospital	Both inside and outside public hospital	
Payment from public sector					
Basic salary	5.21	6.16	6.52	6.78	425
Fringe benefits (night shifts, overtime work)	1.50	1.19	1.38	1.22	313
Payment from private sector					
Refer patients to private practice	0.03	0	0.37	0.19	71
Public hospital Autonomous Fund	1.61	1.70	2.90	1.27	228
Medical service delivery at:					
Public hospital		0.96			19
Private hospital/clinic			7.81		37
Private facilities owned/invested by dual practitioners			9.29		25
Patients' homes			8.01		3

<sup>a</sup>1 million VND ≈ 50 USD.

public hospitals where they also provided public services. Private practice outside the public hospital was further classified into sub-categories by site: health facilities not owned or invested in by dual practitioners (10.8% of the total sample), health facilities owned or invested in by dual practitioners themselves (8.9%), more than one private health facility (3.3%) and home visits (0.2%). If dual practice is narrowly defined as the provision of any private practice outside a public hospital (i.e. not including private practice inside public hospitals), then the prevalence of dual practice becomes 36% (= 24.4% + 11.6%).

The differences between public and private incomes as well as income of dual practitioners and non-dual practitioners were substantial (Table 2). On average, non-dual practitioners were paid 5.21 million Vietnamese Dongs (about 260 USD) per month as basic salary and 1.5 million Dongs (about 75 USD) for fringe benefits by the government. In addition, they received 1.61 million Dongs (about 80 USD) from the hospital as the income from the public hospital Autonomous Fund (the earning of the public hospital from private practice). Dual practitioners received higher government basic salary than non-dual practitioners but lower amount of fringe benefits. They also received higher amount of money from the public hospital Autonomous Fund. Dual practitioners on average earned 7.81 million Dongs (about 390 USD) from the practice at private hospitals and clinics. This amount is 120% of their basic salary and 150% of the basic salary of the non-dual practitioners. Dual practitioners earned 9.29 million Dongs (about 465 USD) per month from their owned/invested private clinics, which equalled to 142% of their basic salary and 178% of the basic salary of non-dual practitioners. Interestingly, both dual and non-dual practitioners reported some income earned from referring public patients to private practice.

### Factors associated with dual practice engagement

Table 3 presents results of a logistic regression analysis of dual practice engagement. For personal and professional characteristics, dual practice engagement was associated with sex, age group, professional status and hospital location. Specifically, male physicians were more likely to practice in both the public and private sectors. Physicians aged 30 and above were more likely to participate in dual practice than younger physicians. Those in managerial positions were also more likely to participate than were permanent and contracted

**Table 3.** Logistic regression of dual practice engagement

Variables	Odds ratio	95% CI
Sex (ref. female)		
Male	*1.77	(1.15 2.73)
Marital status (ref. married)		
Single	1.02	(0.49 2.14)
Dependents (ref. none)		
1	0.89	(0.43 1.84)
2	*0.48	(0.23 1.00)
3 or more	1.13	(0.53 2.40)
Age (ref. <30)		
30–39	*2.51	(1.17 5.41)
40–49	**3.84	(1.52 9.68)
50 and older	**3.57	(1.37 9.31)
Expertise (ref. general doctor)		
Specialist	1.21	(0.71 2.07)
Education (ref. medical doctor only)		
Specialist level 1	1.65	(0.84 3.26)
Specialist level 2	0.96	(0.37 2.51)
Resident	0.63	(0.24 1.68)
Master in medicine	1.23	(0.59 2.61)
PhD in medicine	0.49	(0.16 1.53)
Professional status at public hospitals (ref. manager)		
Permanent	**0.45	(0.25 0.79)
Contracted	*0.47	(0.23 0.97)
Hospital location (ref. north)		
South	***2.56	(1.56 4.19)
Hospital level (ref. national hospital)		
Provincial hospital	1.15	(0.69 1.93)
District hospital	0.96	(0.51 1.81)
Constant	0.26	(0.10 0.72)

n = 480.

\*P &lt; 0.05; \*\*P ≤ 0.01; \*\*\*P ≤ 0.001.

physicians. Physicians in hospitals in the south were more likely to practice dually compared with their peers in the north. However, there was no statistically significant difference by hospital level.

### Commitment to public practice

Table 4 shows dual practitioners' perspectives on public and private practice, their motivations to remain in the public sector as well as



**Table 4.** Dual practitioners' perspectives on public and private practice

	Positive / No. of respondents	%
Motivations for remaining in the public sector <sup>a</sup>		
Be able to allocate time to both sectors	72/198	36
Uphold public responsibility	155/202	77
Enlarge professional contacts	139/201	69
Build reputation	75/196	38
Have private patients from public hospitals	23/191	12
Attend training	119/205	58
Maintain secured job	164/221	74
Would give up private practice? <sup>b</sup>		
Would not give up under any condition	73/207	35
Would give up if certain conditions were met		
Increased basic salary (mean = 2.7 times basic salary)	39/134	29
Housing benefits	6/134	4
Faster promotion opportunities	0/134	0
Increased basic salary and housing benefits	31/134	23
Increased basic salary and faster promotion	1/134	1
Housing benefits and faster promotion	12/134	9
Increased salary and housing benefits and faster promotion	24/134	18
Missing	21/134	16

<sup>a,b</sup>Multiple responses were allowed.

the conditions under which they would be willing to give up private practice. The top three reasons dual practitioners remained in the public sector were to fulfil a sense of public responsibility (77%), maintain a secure job (74%) and gain a wider professional network (69%). The training opportunities provided by the public sector (58%) were also considered an important reason. Less important reasons included time flexibility (36%) and professional reputation (38%). Only 12% of dual practitioners agreed that they choose to stay in the public sector in order to have more private patients.

Thirty-five percent of dual practitioners expressed that they would not give up private practice, while the rest (65%) reported that they would be willing to do so under certain conditions. Among those who were willing to give up private practice ( $n = 134$ ), 29% chose an increase in basic salary as the condition to be met: the mean income increase proposed was 2.7 times their current salary. In addition, 23% of dual practitioners asked for both basic salary increase and housing benefits, while 18% reported that they would give up private practice if they were provided a basic salary increase, housing benefits and promotion opportunities. Only 4% reported that they would give up private practice in exchange for only housing benefits.

## Discussion

Among 483 Vietnamese public hospital physicians surveyed in this study, 48% were engaged in various types of private practice. Previous surveys in Vietnam, however, reported the prevalence of dual practice as 30% (Tuan *et al.*, 2005; Vujicic *et al.*, 2011). Although none of these surveys, including ours, claim to use a nationally representative sample of public hospital physicians in Vietnam, the higher prevalence of dual practice found in our study has at least two possible explanations. Most importantly, our study was more inclusive, i.e. it included both the integrated private services inside public hospitals and the separate private services at fully

private health facilities, whereas previous studies counted dual practitioners as public hospital physicians who provided medical services at private health facilities outside the public setting. In fact, to restrict the definition of dual practice to private practice outside public hospitals in our sample results in a prevalence of 36%, which is closer to what was reported in previous studies in Vietnam. Another possible explanation is that our survey focussed on public hospitals in urban areas, while other studies included health centres and private clinics in rural areas.

Various combinations of public-private practice were found to exist. The most popular type was private practice outside public hospitals, that is, at health facilities owned by the private sector (but not owned or invested in by the physicians themselves). The second-most popular type was private practice at health clinics the doctors owned or invested in, which earned them the highest private income among all categories. Private practice inside public hospitals was also notable, although the proportion was smaller than that of private practice outside. There were also physicians who delivered private practice both inside and outside the public hospitals. These various public-private practice combinations should be attributed not only to the private income earned by individual physicians but also to the architecture of health care service delivery and health governance systems (Russo *et al.*, 2014). The current organizational structure of the health care system in Vietnam provides a variety of choices of private practice for public hospital physicians. Further investigations are needed to understand the reasons for these different patterns of public-private practice, differentiated by individual physicians' characteristics, region and hospital level.

This study revealed differences in personal and professional characteristics between dual and non-dual practitioners. Dual practitioners are older and more likely to hold management positions at public hospitals, indicating that they may be more skilful physicians. If private patients are more likely to be taken care of by these more experienced physicians, potential concerns arise regarding the implications for public patients' access to health services, quality of care, and equity as well as out-of-pocket health care spending.

Similar to previous studies in other countries, our study finds that dual practitioners want to maintain the status quo or would be willing to consider giving up dual practice when certain conditions are met (Macq *et al.*, 2002; Humphrey and Russell, 2004; Jumpa *et al.*, 2007). Although the majority of dual practitioners surveyed in our study expressed their willingness to give up dual practice for a pay rise or non-pecuniary incentives such as housing benefits or promotion opportunities, the level of salary increase asked was high—2.7 times the basic salary. Even when extra income from private practice does seem to matter, dual practitioners also want to fulfil their public responsibility, perhaps because medical training is free of charge in Vietnam. The public sector could leverage the professional development and training opportunities they offer to keep physicians in the public sector. However, this might pose a policy challenge: what if a physician drops out of the public system after receiving professional training? Most well-trained physicians have more opportunities in the private sector. Thus, the possibility that the private sector could erode the public sector's human capital and financial investments is a real one. Further studies, including qualitative research and longitudinal analysis, should be conducted to gain more in-depth knowledge of what motivates physicians in public hospitals to provide private practice.

This study adds to the growing body of international literature on physician dual practice. As has been noted in other health systems, our results from Vietnam affirm that physician dual practice is prevalent and can take many forms (Russo *et al.*, 2014;

McPake *et al.*, 2016). We found that within the form of private practice ‘outside’ public facilities, physician ownership of private facilities can be an important attribute to consider in the Vietnamese context, where practice at private facilities owned or invested by the dual practitioner is associated with substantially higher incomes. In line with the existing literature (Russo *et al.*, 2014), our results suggest that both personal characteristics, such as gender, seniority, and managerial status, and the local health care market may influence physician’s decision to engage in dual practice. A number of financial and nonfinancial motivations appear to be at work in affecting physicians’ decision to engage in private practice and to maintain positions in the public sector, a finding that studies from other societies have consistently noted (Gruen *et al.*, 2002; Socha *et al.*, 2011). As has been discussed in the literature (García-Prado and González, 2011; Hipgrave and Hort, 2014; Alaref *et al.*, 2017; Bazayr *et al.*, 2018), regulating physician dual practice would face various challenges: on the physician’s side alone, about one-third of the dual practitioners in our sample responded that they would not give up private practice under any condition, while among those who would, inducing full commitment to the public sector would require a large increase in public salary (consistent with our data on incomes from public and private sources). Nevertheless, dual practice has wide-ranging implications for health system governance and UHC (McPake *et al.*, 2016) and should therefore be studied and addressed with a high priority in Vietnam and other LMICs (Ranson *et al.*, 2010). Overall, our study has raised more questions than it has answered and should stimulate further and more in-depth research that mixes qualitative and quantitative methods.

This study has several limitations. First, our data do not come from a representative sample of public hospital physicians in Vietnam. Although we covered three different levels of public hospitals in northern and southern Vietnam, all the hospitals included were in urban areas. The prevalence and features of dual practice patterns might exhibit important differences between urban and rural areas. For example, public physicians in rural hospitals are less likely to engage in formal and institutionalized dual practice than those in urban hospitals. In addition, while the response rates were relatively high, physicians who did not complete the survey can be systematically different from those who did. This limitation points to the need for the government to establish an effective system to collect health care workforce data, including that of the distribution and commitment of public hospital physicians, as has been highlighted (McPake *et al.*, 2016). Second, all information was self-reported. Sensitive information, such as private income, is particularly a concern in this regard. Our data on self-reported income, therefore, should be viewed as providing a rough approximation, not an accurate picture. Third, while our data offer some insights into dual practitioners’ forecasted responses to increased incentives to stay in the public sector, responses based on such a hypothetical scenario may not reflect their behaviour in the real world. Future studies with a better research design, such as discrete choice experiments, could better predict physician behaviours in response to new policies and other relevant changes in incentives regarding dual practice.

Despite these limitations, this article has produced several key insights into the public–private practice of public hospital physicians in Vietnam, particularly given the scarcity of relevant research on this increasingly important policy issue. It is vital to secure an adequate physician workforce in the policy context of extending national health insurance coverage in the country. Our study has provided detailed descriptions of physicians’ dual practice in Vietnam: its prevalence, its features, the factors associated with dual

practice engagement and the perspectives of dual practitioners on public–private practice. The overall results reiterate the significant challenges associated with physicians’ dual practice in terms of its financial implications and effects on health care quality and access. Future research should address the need to improve relevant data collection and incorporate the topic of dual practice in policy debates on health reform.

## Supplementary data

Supplementary data are available at *Health Policy and Planning* online.

## Ethics approval

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## References

- Alaref J, Awwad J, Araujo E *et al.* 2017. To ban or not to ban? Regulating dual practice in palestine. *Health Systems and Reform* 3: 42–55.
- Ashmore J, Gilson L. 2015. Conceptualizing the impacts of dual practice on the retention of public sector specialists—evidence from South Africa. *Human Resources for Health* 13: 3.
- Barros PP, Olivella P. 2005. Waiting lists and patient selection. *Journal of Economics and Management Strategy* 14: 623–46.
- Bazayr M, Rashidian A, Jahanmehr N. 2018. Prohibiting physicians’ dual practice in Iran: policy options for implementation. *International Journal of Health Planning and Management*, pp. 1–10. <http://dx.doi.org/10.1002/hpm.2524>.
- Brekke KR, Sorgard L. 2007. Public versus private health care in a national health service. *Health Economics* 16: 579–601.
- Chaudhury N, Hammer J, Kremer M *et al.* 2006. Missing in action: teacher and health worker absence in developing countries. *Journal of Economic Perspectives* 20: 91–116.
- Cheng TC, Joyce CM, Scott A. 2013. An empirical analysis of public and private medical practice in Australia. *Health Policy* 111: 43–51.
- Do N, Oh J, Lee JS. 2014. Moving toward universal coverage of health insurance in Vietnam: barriers, facilitating factors, and lessons from Korea. *Journal of Korean Medical Science* 29: 919–25.
- Delfgaauw J. 2007. *Dedicated doctors: public and private provision of health care with altruistic physicians*. Tinbergen Institute Discussion Paper No.2007-010/1. <http://dx.doi.org/10.2139/ssrn.958693>.
- Eggleston K, Bir A. 2006. Physician dual practice. *Health Policy* 78: 157–66.
- Ferrinho P, Van Lerbergh W, Fronteira I *et al.* 2004. Dual practice in the health sector: review of the evidence. *Human Resources for Health* 2: 14.

- García-Prado A, González P. 2011. Whom do physicians work for? An analysis of dual practice in the health sector. *Journal of Health Politics, Policy and Law* 36: 265–94.
- García-Prado A, González P. 2007. Policy and regulatory responses to dual practice in the health sector. *Health Policy* 84: 142–52.
- González P. 2005. On a policy of transferring public patients to private practice. *Health Economics* 14: 513–27.
- Government of Vietnam. 2003. Circular on private medical and pharmaceutical practice, 07/2003/PL-UBTVQH11. Hanoi: National Assembly.
- Government of Vietnam. 2006. *Decree on Autonomization of Public-owned Organizations*, 43/2006/ND-CP. Hanoi: Government of Vietnam.
- Government of Vietnam. 2012. *Decree on Financial, Operational Mechanisms and User Fees at Public Health Facilities*, 85/2012/ND-CP. Hanoi: Government of Vietnam.
- Government of Vietnam. 2014. *Stipulation on Public Hospital Development*, 93/NQ-CP. Hanoi: Prime Minister Office.
- Gruen R, Anwar R, Begum T *et al.* 2002. Dual job holding practitioners in Bangladesh: an exploration. *Social Science and Medicine* 54: 267–79.
- Hipgrave DB, Hort K. 2014. Dual practice by doctors working in South and East Asia: a review of its origins, scope and impact, and the options for regulation. *Health Policy and Planning* 29: 703–16.
- Humphrey C, Russell J. 2004. Motivation and values of hospital consultants in south-east England who work in the national health service and do private practice. *Social Science and Medicine* 59: 1241–50.
- Jan S, Bian Y, Jumpa M *et al.* 2005. Dual job holding by public sector health professionals in highly resource-constrained settings: problem or solution? *Bulletin of the World Health Organization* 83: 771–76.
- Johannessen KA, Hagen TP. 2014. Physicians' engagement in dual practices and the effects on labor supply in public hospitals: results from a register-based study. *BMC Health Services Research* 14: 299.
- Jumpa M, Jan S, Mills A. 2007. The role of regulation in influencing income-generating activities among public sector doctors in Peru. *Human Resources for Health* 5: 5.
- Macq J, Ferrinho P, Debrouwere V *et al.* 2002. Managing health services in developing countries: between the ethics of the civil servant and the need for moonlighting. *Human Resources for Health Development Journal* 5: 16.
- McPake B, Russo G, Hipgrave D *et al.* 2016. Implications of dual practice for universal health coverage. *Bulletin of the World Health Organization* 94: 142–6.
- MOH. 1987. *Circular on Private Practice outside Working Hour*, 30-BYT-TT. Hanoi: MOH.
- MOH. 2015a. *Development Plan for Human Resources for Health: 2015–2020*. Hanoi: Ministry of Health.
- MOH. 2015b. *Health Statistics Yearbook*. Hanoi: Ministry of Health.
- MOH. 2016a. *Health Statistics Yearbook*. Hanoi: Ministry of Health.
- MOH. 2016b. *Joint Annual Health Review 2015: Strengthening Primary Health Care at the Grassroots toward Universal Health Coverage, Joint Annual Health Review*. Hanoi: Medical Publishing House. [http://jahr.org.vn/downloads/JAHR2015/JAHR2015\\_full\\_EN.pdf](http://jahr.org.vn/downloads/JAHR2015/JAHR2015_full_EN.pdf).
- Morga A, Xavier A. 2001. *Hospital Specialists' Private Practice and Its Impact on the Number of NHS Patients Treated and on the Delay for Elective Surgery. Discussion Papers 01/01, Department of Economics*, York University, York, UK. <https://ideas.repec.org/p/yor/yorken/01-01.html>.
- Ranson MK, Chopra M, Atkins S *et al.* 2010. Priorities for research into human resources for health in low-and-middle-income countries. *Bulletin of the World Health Organization* 88: 435–43.
- Rokx C, Giles J, Satriawan E *et al.* 2010. *New Insights into the Provision of Health Services in Indonesia. Directions in Development: Human Development*. Washington, DC: World Bank.
- Russo G, McPake B, Fronteira I *et al.* 2014. Negotiating markets for health: an exploration of physicians' engagement in dual practice in three African capital cities. *Health Policy and Planning* 29: 774–83.
- Shmueli A, Savage E. 2014. Private and public patients in public hospitals in Australia. *Health Policy* 115: 189–95.
- Socha KZ, Bech M. 2011. Physician dual practice: a review of literature. *Health Policy* 102: 1–7.
- Sousa A, Scheffler RM, Nyoni J *et al.* 2013. A comprehensive health labour market framework for universal health coverage. *Bulletin of the World Health Organization* 91: 892–94.
- Tuan T, Dung VT, Neu I *et al.* 2005. Comparative quality of private and public health services in rural Vietnam. *Health Policy and Planning* 20: 319–27.
- Tuohy CH, Flood CM, Stabile M. 2004. How does private finance affect public health care systems? Marshaling the evidence from OECD nations. *Journal of Health Politics, Policy and Law* 29: 359–96.
- Vujcic M, Shengelia B, Alfano M *et al.* 2011. Physician shortages in rural Vietnam: using a labor market approach to inform policy. *Social Science and Medicine* 73: 970.