



Physician Dual Practice: A Descriptive Mapping Review of Literature

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Abstract

Background: Physician dual practice is a common phenomenon in almost all countries throughout the world, which could potential impacts on access, equity and quality of services. This paper aims to review studies in physician dual practice and categorize them in order to their main objectives and purposes.

Methods: Comprehensive literature searches were undertaken in order to obtain main papers and documents in the field of physician dual practice. Systematic searches in Medline and Embase from 1960 to 2013, and general searches in some popular search engines were carried out in this way. After that, descriptive mapping review methods were utilized to categorize eligible studies in this area.

Results: The searches obtained 404 titles, of which 81 full texts were assessed. Finally, 24 studies were eligible for inclusion in our review. These studies were categorized into four groups - "motivation and forces behind dual practice", "consequences of dual practice", "dual practice Policies and their impacts", and "other studies" - based on their main objectives. Our findings showed a dearth of scientifically reliable literature in some areas of dual practice, like the prevalence of the phenomenon, the real consequences of it, and the impacts of the implemented policy measures.

Conclusion: Rigorous empirical and evaluative studies should be designed to detect the real consequences of DP and assess the effects of interventions and regulations, which governments have implemented in this field.

Keywords: Physician, Dual practice, Moonlight, Review, Descriptive mapping

Introduction

Health care personnel and specially physicians in almost all countries, regardless of the level of development, work in more than one job or sector (1, 2). The practice has been mentioned in a number of studies as common and ubiquitous among physicians and other health staff (1-5). Dual Practice (DP), dual job holding, moonlighting, multiple job holding, dual employment, multiple employment, dual working, double work, and pluri employment are different terms that has been used in the literature for describing this phenomenon. In addition, there has been a great diversity in the literature in approaching the issue.

Health professionals with multiple specialization (e.g. cardiology and internal medicine), working within different paradigms of health (e.g. allopathic medicine combined with traditional medicine), combining different forms of health-related practice (e.g. clinical activities with research, teaching or management), combining professional health practice with an economic activity not related to health (e.g. agriculture), and multiple health-related practices in the same or different sites or sectors, are various concepts that has been considered in different studies in this field around the world (3). Among all, health profes-

sionals engaging in multiple health related practices is one kind of the phenomenon that has more implications for various aspects of service delivery and has been regarded by the majority of researchers in this subject (3, 6-9). Garcia-Prado and Gonzalez classified different forms of this kind of dual practice based on two variables: the nature of the two jobs (public versus private), and the contractual arrangement in place. According to this classification there are three types of dual practice (public on public DP, private on private DP, and public on private DP) which the last one (public on private DP) has being conducted in four forms (regular public post and private side practice, regular public job and private office, part-time public and part-time private, regular full-time private work and a part-time public post)(5).

The third type (Public on private DP), is the most prevalent form of dual practice in many countries and has potentially adverse welfare implications (5). Therefore, most of the researchers have focused on this particular form of DP and have conducted studies on different aspects of the issue.

To our knowledge, there has not been a study, which comprehensively reviews and categorizes studies in physician dual practice field in the last 10 years. In this paper, we aimed to review studies in this subject and categorize them in order to their main objectives and purposes. We hope this study could describe a map of the knowledge about the phenomenon and highlight gaps in this field.

Method

Design

Comprehensive literature searches were undertaken in order to obtain main papers and documents in dual practice field. After that, descriptive mapping review methods were utilized to categorize eligible studies in this area.

Information sources

MEDLINE and Embase were searched from 1960 to 2013. Search strategy for electronic databases was as follows:

- Search "dual practice"[T/A] OR "dual practitioner"[T/A] OR "multiple job*"[T/A] OR "dual job*"[T/A] OR moonlight*[T/A] OR "moonlighting"[T/A] OR "dual worker*"[T/A] OR "public sector job"[T/A] OR "private sector job"[T/A] OR "multiple employem*"[T/A] OR "dual worker"[T/A] OR "additional income"[T/A] OR "public sector employment"[T/A] OR "private sector employment"[T/A].
- Search "health worker*"[T/A] OR "health professional*"[T/A] OR physician*[T/A] OR doctor*[T/A] OR nurs*[T/A] OR clinician*[T/A] OR "health staff"[T/A] OR medic*[T/A] OR dent*[T/A] OR "medical specialist*"[T/A] OR surgeon*[T/A] OR "general practitioner*"[T/A] OR "general practice"[T/A] OR GP[T/A] OR health[T/A] OR healthcare[T/A].
- Search #1 AND #2

This search strategy was translated into each database using the appropriate controlled vocabulary. We also ran general searches for dual practice into some search engines like Google and Google scholar in order to find reports and related documents in this field.

Inclusion and exclusion criteria

Documents were selected when dual practice was the main research topic of the study. All of the designs such as cross sectional, qualitative, modeling, surveys, etc. were recognized eligible for inclusion.

Studies that were reported in other languages except for English or Persian, or did not include clinical professionals were excluded from the analysis.

Selection of studies and data extraction

Our electronic searches produced a total of 522 titles or abstracts, or both. Search results, including abstracts when available, were entered into EndNote X4 software. Two authors (JM and AAS) screened the titles and abstracts of all obtained articles independently and excluded the papers that obviously did not meet the inclusion

criteria. After that, full texts of all potentially relevant articles selected by either of the authors were retrieved. The two authors then independently assessed studies that if they met our inclusion criteria or not. Disagreements between the two review authors were resolved through discussion and consensus. The following elements abstracted independently from each study by the authors:

- (1) Study references
 - First author and date of publication.
 - Document type
 - The journal or institution where published the study.
 - Location of the study.
- (2) Aims and purposes
- (3) Methods
 - Study design
 - Participants
- (4) Main results

Results

Electronic searches in the mentioned databases provided us with 522 papers. Eliminating for duplicates, 367 remaining titles were screened by the authors and unrelated ones were missed out from the list. After that, authors examined 166 remaining abstracts independently and again omitted the studies, which clearly did not have the inclusion criteria. Latter, adding 37 other studies, which obtained from the web search, 81 full texts were retrieved and have been read by both authors. Finally, there were only 24 studies which be considered as related to our inclusion criteria (Fig.1).

Motivation, reasons and forces behind dual practice

Five studies fell into this category (4, 10-13). All of the studies in this group are article, and in terms of method, they applied quantitative (two studies), qualitative (two studies), and mixed method- both quantitative and qualitative- (one study) approaches (Table 1).

The consequences of dual practice

Six studies were related to this category (1, 8, 14-17). All of the studies in this group are article- except for the reference (17) which is a report-, and in terms of method, they applied modeling (four studies), review (one study), and quantitative (one study) approaches (Table 2).

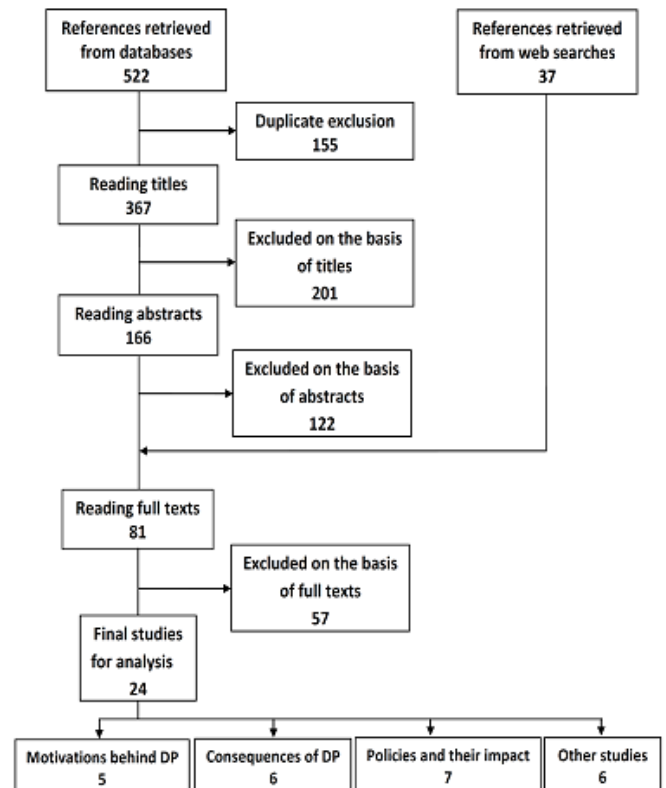


Fig.1: Paper selection flowchart

In the next step, we categorized these 24 studies into four groups according to their main objectives (Tables 1-4).

Policies, regulations, and mechanisms, which governments have used to address this issue, and their impacts

Seven studies dropped within this category (7, 18-23). All of the studies in this group are article- except for the references (20) and (22) which are Thesis-, and in terms of method, they applied modeling (three studies), review (three study), and quantitative (one study) approaches (Table 3).

Other studies

This category refers to the documents, which considered more than one area of DP. Six studies fell into this category (2, 3, 5, 24-26). All of the studies in this group are articles- except for (25) and (26) which are reports-, and in terms of method, they applied review (four studies), qualitative (one study), and a combination of quantitative and qualitative (one study) approaches (Table 4).

Discussion

We conducted a comprehensive search and assessed several articles, reports and other documents in the field of physician dual practice. The results of the study yielded 24 published works, which had our inclusion criteria. These studies were categorized into four groups based on their main objectives. Considering that the fourth category (other studies) is related to studies, which focused on more than one aspect of DP, in this section we reported and interpreted the results of this group in the appropriate areas.

Although almost there was not any study with the primary aim of assessing the extent of physician dual practice, some evidence showed that this phenomenon is common and ubiquitous among physicians and other health staff in all countries more or less (1-5).

Physicians engage in dual practice to accommodate the benefits of both government employment and private practice in their career development (4). Financial incentives seems to be the most important determinant of physician dual practice (3-5, 10-12, 24, 25). Also non pecuniary factors like status and recognition, strategic influence, control over work and professional opportunities(13), strengthen cooperation with other hospitals(26), using more academic opportunities and greater opportunities to feel needed and relevant (11), job complementarities and institutional, professional, structural and personal variables like interactions among professionals and secure approval from peers(5, 25) have been stated as other main determinants of this phenomenon. Furthermore some studies have shown that speciali-

zation, level of care, and location (urban or rural) have significant effect on both the decision and extent of moonlighting among physicians (3, 4, 26).

Dual practice has both positive and negative effects. Evidence indicated that it helps physicians to boost their income (3), increase their professional satisfaction (3), improve access to health services (5, 17), improve the quality in public sector(1), and reduce the financial burden on governments to retain high quality physicians in the public sector (5, 17, 23). On the other hand, there is lots of claims about the negative impacts of the phenomenon. For example, it "crowds out" public provision and also could results in lower overall health care provision (15), predatory behavior and induce demand (3, 5), conflict of interest and reducing the quality in the public sector (3), brain drain (3), competition for time and effort which may lead to absenteeism, tardiness, inefficiency and lack of motivation in the public sector (3, 5, 9), and outflow of resources from public to private sector and corruption (3, 5). However, one should consider that most of the mentioned effects are based on assumptions which are undermined in the broader literature (8). In addition, some evidence showed that there is not any significant difference between the performance of dual practitioners and full timers (2, 14).

Evidence showed that there is not a single recipe about managing physician dual practice for different countries, and governments have adopted a broad range of responses toward it (2, 3, 5, 7, 25). These responses comprise banning dual practice on one side of the spectrum to allowing it without any restrictions on the other side (See reference (6) in Table 4). Although there is not any rigorous empirical study about the effects of these policies and interventions (9, 25), most of the related documents support allowing DP with restrictions (2, 5, 7, 20, 22, 23). Gonzalez showed that among all limiting strategies, limiting involvement is always more effective than limiting income (See reference (7) in Table 4). Almost all of the studies concluded that the policy of banning DP is seldom optimal, as it could lead to leakage of high skilled physicians from public sec-

tor and worsen the quality and social welfare in public hospitals (7, 22, 23).

Several limitations to this study need to be acknowledged. First, we considered only studies, reported in English or Persian because of practical reasons such as time and financial limitations. Secondly, only Medline and Embase databases were searched for the same reasons. Although authors tried to capture relevant studies through searching in the reference lists of important papers and googling in the search engines, these limitations might lead to missing some related documents. Another limitation is that we did not check documents for their quality. The reason behind this decision was the nature of dual practice field which does not yet have a well-developed scientific literature (19).

Conclusion

To our knowledge, this was the first study, which reviewed and categorized the literature in physician dual practice field in the last 10 years. It seems that there is a paucity of scientifically reliable evidence in some areas of DP, like "DP prevalence", "the consequences of DP", and "effects of the related interventions". The present study showed that there has been a propensity to over reliance on methods like "modeling" in predicting the effects and consequences of this phenomenon. However studies showed that almost all of these models are based on assumptions which are undermined in the broader literature (8). As a result, government's responses to DP have been based on these assumptions and anecdotal evidence (25). Furthermore, the effects of these governments' responses and interventions in DP (9), and also their cost effectiveness have not been examined rigorously so far. Therefore, it is not clear that whether we need any intervention in this area, and which kind of policy is more appropriate and cost effective for countries in different levels of development. We therefore suggest that meticulous empirical studies should be designed to detect the real consequences of DP. In addition, it is recommended that rigorous evaluative studies should be planned to assess the effects of interventions and

regulations which governments have implemented in this field.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

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Table 1: Motivation, reasons and forces behind dual practice

Author and date	Country	Aims	Participants or target population	Main results
Ashmore 2013 (11)	South Africa	1- What South African medical specialists find satisfying about working in the public and private sectors 2- How to better incentivize retention in the public sector.	specialists and key informants	1- Although there are strong financial incentives for specialists to migrate from the public to the private sector, public work can be attractive in some ways. For example, the public hospital sector generally provides more of a team environment, more academic opportunities, and greater opportunities to feel 'needed' and 'relevant'. 2- Public specialists suffer under poor resource availability, lack of trust for the Department of Health, and poor perceived career opportunities. These non-financial issues of public sector dissatisfaction appeared at least as important as wage disparities.
Askildsen 2013 (12)	Norway	Which factors may influence physicians' choice of work between the public sector and elsewhere.	Physicians (assistants & consultants)	1. For assistant physicians higher wages at public hospitals affect negatively both the decisions to earn income externally, and level of income once active. 2. For consultant physicians there was no such response to the wage increase. 3. Hospital specific factors like work condition also matter for physicians' decisions to moonlight.
Humphrey 2004 (13)	UK	To investigate the reasons for dual practice	Physicians (surgeons and dual practitioners)	1. Few respondents said that money is the dominating objective, in that they would gladly give up the private practice in exchange for a pay rise in the NHS. 2. Private practice was seen as offering an increase in strategic influence, clinical autonomy, and realization of individual aspirations as a clinician.
Gruen 2002 (4)	Bangladesh	To analyze the system of financial and non-financial incentives underlying job preferences of dual practitioners in Bangladesh	Physicians	1. Commitment to government services was found to be greater among doctors in primary health care who reported they would give up private practice if paid a higher salary. Among doctors in secondary and tertiary care, the propensity to give up private practice was found to be low. 2. Doctors have adopted individual strategies to accommodate the advantages of both government employment and private practice in their career development, thus maximizing benefit from the incentives provided to them e.g. status of a government job, and minimizing opportunity costs of economic losses e.g. lower salaries.
Ferrinho 1998 (10)	Portugal	To discover the motivations and reasons why doctors resort to dual practice and have not made a complete move out of public service.	Physicians	1. The two outstanding reasons why they engage in their various side activities were "to meet the cost of living", and "to support the extended family". 2. 40 percent of participants reported that the median equivalent of one month's public sector salary could be generated by 7 hours of private practice, but being a civil servant was important in terms of job security, and credibility as a doctor. also the social contacts and public service gave access to power centers and resources, through which other coping strategies could be developed.

Table 2: The consequences of dual practice

Author and date	Country	Aims	Participants or target population	Main results
Socha 2012 (14)	Denmark	To compare work behavior of dual and single practitioners in the public hospitals.	Physicians	1. Dual and single practitioners did not differ significantly in terms of the average length of work week, participation in non mandatory activities or duties outside normal working hours, including duties accepted with short notice and their preferences for working hours or turnover intention.
Socha 2011 (8)	Denmark	To review and critically discuss findings on the subject of dual practice effects for the public health care.	Physicians	1. Theoretical analyses indicate both positive and negative effects of dual practice. 2. Some of the effects depend on assumptions that are undermined in the broader literature (e.g. the intention to maximize income). 3. costs of enforcing restrictions on dual practice are rarely considered.
Biglaiser 2007 (15)	USA	To study job incentives in moonlighting, when public-service physicians may refer patients to their private practices.	Physicians	1. Allowing moonlighting always enhances aggregate consumer welfare, but equilibrium public-care quality may increase or decrease. 2. Unregulated moonlighting may reduce consumer welfare as a result of adverse behavioral reactions, such as moonlighters shirking more and dedicated doctors abandoning their sincere behavior. 3. Price regulation in the private market limits such adverse behaviors in the public system and improves consumer welfare.
Brekke 2006 (16)	Norway	To analyze the interaction between public and private health care provision in a NHS system, where publicly employed physicians may work in the private sector.	Physicians	1. Allowing physician dual practice ‘crowds out’ public provision, and results in lower overall health care provision. 2. While the health authority can mitigate this effect by offering a higher wage, a ban on dual practice is more efficient if private sector competition is weak and public and private care are sufficiently close substitutes. On the other hand, if private sector competition is sufficiently tough, a mixed system, with physician dual practice, is always preferable to a pure NHS system.
Gonzalez 2004 (1)	Spain	To analyze how the behavior of a physician in the public sector is affected by his activities in the private sector.	Physicians	1. Physician will have incentives to over-provide medical services when he uses his public activity as a way of increasing his prestige as a private doctor. 2. Physicians’ dual practice can be either welfare improving or reducing, depending on the treatment policy that the health authority wants to implement (If the priority is to contain costs, then the doctor’s dual activity is negative. If the priority is to minimize patients’ health losses, his dual practice affords the objective at a lower cost).
Bir 2003 (17)	Indonesia	To show that allowing dual practice helps low-income governments retain skilled physicians to assure patient access.	Physicians	1. Governments can meet the participation constraint of physicians without paying salaries commensurate to physicians’ abilities because physicians also value the “non salary benefit” of the opportunity to earn significant private practice revenues. 2. If dual-practitioner differentially refer higher income patients to private practice, public funding becomes more effectively targeted on the poor. However, physician incentives to concentrate inducement on those most responsive to inducement -often the poor and uneducated-may act counter to such a social objective.

Table 3: Policies and regulations about dual practice and their impacts

Author and date	Country	Aims	Participants or target population	Main results
Akbari Sari 2013 (18)	Iran	To explore the perception of the chancellors at Iran universities of medical sciences, regarding the challenges and possible negative consequence of physician dual practice law in the country.	Medical university chancellors	1. The need for increasing the share of healthcare budget from the gross domestic product (GDP), inefficient tariff and payment system, and difficulty in obtaining collaboration with other stakeholders are the main challenges of full-time practice program in Iran. 2. Inappropriate implementation of this program might lead to unexpected transfer of the experienced and high skilled physicians from public hospitals.
Gonzalez 2013 (7)	Spain	1. To analyze and compare some of the most common regulations in dual practice. 2. To investigate whether regulations that are optimal for developed countries are adequate for developing countries as well.	Physicians	1. Forbidding dual practice is seldom optimal, as it usually expels valuable professionals from the public system. 2. Limiting income is always less effective than limiting involvement. 3. Results offer theoretical support for the desirability of different regulations in different economic environments. In developed countries the key factor is the potential negative effect of dual practice on public performance: when this effect is low the best option is not to intervene; when it is sufficiently high the best option is to impose a limit on physician involvement. For developing countries, the design of the optimal policy is more complex as it also depends on the attractiveness of the private sector. When this attractiveness is very high the best option is not to intervene and thereby avoid an exodus of highly skilled physicians from the public sector. When it takes an intermediate value, then limits on the involvement are desirable. Finally, if the potential gains from private practice are low, the optimal intervention is either to limit dual practice (if the associated costs are low) or to ban it (if such costs are high).
Kiwanuka 2011 (9)	Uganda	To assess the effects of regulations implemented to manage dual practice.	Health workers	1. There is not any scientifically rigorous study in this field (RCTs, nRCTs, CBA or ITS designs).
Jiwei 2010 (20)	China	To analyze whether dual practice should be allowed in the context of the policy objective that patients should receive their care in the treatment setting that is most efficient.	Physicians	1. Allowing dual practice can improve welfare even when physicians have homogeneous quality/morality. When information is asymmetric among physicians, patients and the planner, dual practice can be conceived as a tool to improve welfare in two ways: first, resource allocation within the hospital is more efficient; second, allowing dual practice can save salary expenditure for the public hospital. 2. People with high opportunity cost (high income) in switching providers will be more likely to go to the hospital while people with low opportunity cost in switching providers (low income) will visit the GP first. Hence, after allowing dual practice, rich patients with mild cases are more likely to be induced to private clinics from the hospital. Low income patients, or patients with serious conditions, are more likely to be treated in the hospital. Therefore, physician dual practice can also be interpreted as an alternative instrument for sorting in terms of both illness severity and switching costs. 3. Under some conditions, allowing dual practice can lead to a second-best improvement in efficiency, compared with a situation in which dual practice is not allowed.
Garcia-prado 2007 (6)	Spain	To study and analyze different governmental responses to physician dual practice.	Physicians	1. There are wide variations in how governments tackle this issue. 2. Banning dual practice, enforcing restrictions on private practice earnings of physicians, offering exclusive contracts in the public sector, encouraging public doctors to develop their private practice in public facilities, raising public sector salaries, and self-regulation are six mechanisms which have been used by different countries.
Chue 2007 (22)	Canada	To examine the incentives of dual practitioners in Canada's health care system in three scenarios of dual practice (banning DP, allowing DP without any restrictions, allowing DP with some restrictions).	Physicians	1. Banning of dual practice worsen the social welfare of the public health sector. It causes dual practitioners to either move out of the province or stay and just shirk in effort. These physicians, who want to dual practice but now is unable to, lowers the aggregate welfare of patients in the public sector by constantly maintaining low quality service rather than trying to improve the service. 2. Allowing dual practice without restrictions is unlikely to result in an improvement in the social welfare of patients. 3. The social welfare of people in Canada's mixed health care system will be better off where restrictions on dual practice are present (Both exclusive contracts and price ceiling allow physicians to still use the over-providing strategy if they choose to dual practice, while also keeping 'public' physicians in the public sector).
Jan 2005 (23)	UK	To examine the policy options for the regulation of dual job holding by medical professionals in relation to the objectives of quality of care and access to services in highly resource constrained settings.	Medical professionals	1. Dual practice can be a possible system solution to issues such as limited public sector resources, low regulatory capacity, and the interplay between market forces and human resources. 2. This paper offers some supports for policies that allow for the official recognition of such activity and embrace a degree of professional self regulation in highly resource constrained settings (because evidence shows that DP is typically poorly regulated in these countries. Regulations are either lacking, or when they exist, are vague or poorly implemented because of low regulatory capacity).

Table 4: Other studies

Author and date	Country	Aims	Participants or target population	Main results
Garcia-Prado 2011 (5)	Spain	To analyze the extent of DP, the underlying factors that motivate physicians to engage in it, the main implications of their decision to do so, and discusses current policies that address DP.	Physicians	<ol style="list-style-type: none"> 1. Dual practice could be found almost in all countries (it is wide spread in many developing countries). 2. Economic motives are not the only reason why physicians engage in DP. Other non-pecuniary factors such as job complementarities, and institutional, professional, structural and personal variables play a relevant role. 3. While dual providers may be tempted to skimp on time and effort in their main job, to induce demand for their private services, or to misuse public resources, the legalization of dual practice may also contribute to recruit and retain physicians with less strain on the budget and improve access to health services, especially in developing countries. 4. The article provides some qualified support for the use of "rewarding" policies to retain physicians in the public sectors of more developed countries, while "limiting" policies are recommended for developing countries - with the caveat that the policies should be accompanied by the strengthening of institutional and contracting environments
Jumpa 2007 (24)	Peru	To examine in Peru the nature of dual practice, the factors that influence individuals' decisions to undertake dual practice, the conditions faced when doing so and the potential role of regulatory intervention in this area.	Physicians	<ol style="list-style-type: none"> 1. Dual practice is widespread and well-accepted. 2. The prime personal motivation was financial. However, broad macroeconomic influences on dual practice such as the oversupply of medical services, the deregulated nature of this market, and the economic crisis throughout the country were also important. 3. There were some support among doctors for tighter regulation. 4. Policy responses to dual practice involve tighter controls on the supply of medical practitioners, alleviation of financial pressures brought by macro-economic conditions, and closer regulation of such activities to ensure some degree of collective action over quality and the maintenance of professional reputations.
Eggleston 2006 (2)	USA	<ol style="list-style-type: none"> 1. To provide a summary and comparison of five models of dual practice, including one we have developed based on total compensation theory and contracting limitations. 2. To discuss whether theoretical predictions are consistent with empirical evidence from developed and developing countries. 	Physicians	<ol style="list-style-type: none"> 1. All theories to date suggest that the impact of dual practice on public service quality is ambiguous. 2. The social trade-off between the benefits and costs of dual practice hinge on the quality of a country's contracting institutions. 3. Allowing dual practice may improve social welfare and the quality of public services, under specific circumstances. 4. The evidence does not support the perception that 'full-timers' embody greater commitment and contribution to public sector provision.
Ferrinho 2004 (3)	Portugal	In this paper dual practice is approached from six different perspectives: conceptual (what is mean by DP?), descriptive(it's typology), quantitative (it's prevalence), it's impacts, qualitative (reasons for engaging in DP), and possible interventions.	Health workers	<ol style="list-style-type: none"> 1. Dual practice is approached in the literature with great diversity: health professionals with multiple specialization, working within different paradigms of health, combining different forms of health-related practice, combining professional health practice with an economic activity not related to health, and multiple health-related practices in the same or different sites or sectors. 2. Typologies of DP: In terms of sector location, dual practice may be public on public, public on private or private on private. 3. Dual practice is probably present in all countries regardless of income, even in settings – such as China – where there are major regulatory restrictions. 4. It has positive and negative impacts. Negative impacts are predatory behavior (self gain is preferred to the interests of others), conflict of interest (lower the quality in the public sector to advertise for the private sector), brain drain (to other countries, private sector, or urban areas), Competition for time and limits to access, Outflow of resources and corruption (illegal use of public resources for private patients); Positive impacts: it's ability to generate additional income for health workers, and higher professional satisfaction. 5. The reasons for dual practice are contextual. The extent of dual practice seems to vary according to urban or rural residence, according to professional group, according to specialty or occupation. This evidence suggests that dual practice depends not so much on the personal, social (marital status) and professional characteristics of health workers, but on factors that are manageable. Sometimes dual practice may be the unexpected result of health care reform. 6. Adequate responses imply the identification of the main underlying reason for the observed dual practice. There is no single recipe to address the reality of dual practice.

Table 4 : Cond

Berman 2004 (25)	USA	To examine the systemic and individual causes of multiple job holding among physicians and other health care professionals and evidence on its prevalence	Health care professionals	<ol style="list-style-type: none"> 1. MJH is very widespread. 2. Governments have a wide range of responses to it based mostly on assumption, anecdote, and etc. 3. Governments' efforts to modify or regulate MJH are often not enforced or implemented effectively. 4. Increasing income is likely to be the main reason for engaging in DP, but job complementarity, institutional and professional factors (the desire to interact among professionals in the practice site, to secure approval from peers, and to influence fellow professionals and ...) are probably also important. 5. Efforts to address MJH should consider what could be done about both the systemic causes of MJH and its program and worker specific manifestations. All MJH is not of equal importance for health outcomes and making services work for the poor. Governments should set priorities carefully, understand causes and effects, and engage in collaborative process with health workers to find solutions which are both acceptable to them and improve system outcomes. 6. Governments should Increase the benefits and reduce the costs (negative effects) in relation to government objectives through the best possible design of incentives and regulations to affect the behavior of health care workers given their demand for MJH (Banning MJH is not really a feasible and effective strategy in most countries, because they lack the capacity to enforce it, and these regulation are often not seen as legitimate by the health workers, their supervisors, and general population; Also Removing the conditions creating the demand for MJH among health workers is rarely viable, because it needs sufficient resources and contractual and monitoring capacities which are not present in many countries).
Bian 2003 (26)	China	To describe policies and regulations of DP, the current situation, and its impact on access to services and physician behavior in china	Physicians	<ol style="list-style-type: none"> 1. Dual practice was very low among physicians, less than twice a month. 2. On average physicians have earned approximately 30% of their total monthly income from DP. 3. The main reason cited for DP was to strengthen cooperation with other hospitals. 4. Most doctors (85.6%) think DP is acceptable and that it should be legal. 5. About 70% of respondents think that DP activities will result in negative influences in their hospital. 6. The level of awareness of the relevant regulation on DP amongst doctors was low, at 24.4%. 7. Over 70% of doctors complained that their income was lower than that in other comparable occupations, while 55% of patients think doctors' income is quite high compared with other jobs in current Chinese society). 8. Different specialties have different opportunities to undertake DP: surgeons have more scope for DP than physicians.