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Title: Private Health Sector Performance: implications for Universal Health Coverage

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RM & TE: Reviewed and summarized the literature, wrote the draft of the initial paper, and reviewed all drafts

HW: Provided evidence in support of arguments, write individual sections of the paper, and reviewed final drafts

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Abstract

While the private sector is an important health care provider in many low and middle income countries (LMICs), its role in relation to progress towards Universal Health Coverage (UHC) varies. Drawing on a review of the published and grey literature, we explore the factors that affect private sector contribution to UHC: i.e. we are interested in the overall impact on system outcomes such as the population's access to services and equity. Evidence on the performance of both the private and public healthcare sectors is used to examine the characteristics of private providers that are associated with their performance, and the implications for how these factors might interrelate to influence progress towards UHC. Studies of private sector performance have focused on three main dimensions: quality, equity of access, and efficiency. We found that the characteristics of patients, the structures of both the public and private sectors, and the regulation of the sector influence the types of health services delivered, and outcomes. Combined with characteristics of private providers – including their size, objectives, and technical competence – the interaction of these factors influences how the sector performs within different contexts. Changing the performance of the private sector will require interventions which target the sector as a whole, rather than individual providers alone. In particular, the performance of the private sector appears to be intrinsically linked to the structure and performance of the public sector, which suggests that deriving population benefit from the private health sector requires a regulatory response focused on the health sector as a whole.

Key messages

- The critical policy relevant question about the private sector is not its performance in isolation, or relative to the public sector, but the extent to which it supports or detracts from progress towards Universal Health Coverage
- There is a dearth of evidence on factors affecting system level performance, reflecting the complexity and heterogeneity of the private health sector and the difficulty in exploring the inter-relationships of factors at the system level, and their effect on overall performance.
- Deriving population benefit from the private health sector will require interventions which target the sector as a whole, rather than individual providers alone.

Key words: private health provider; performance; health system; quality; equity; efficiency

Introduction

While the private sector is an important source of health care provision in many low and middle income countries (LMICs), its role varies widely across countries (1). The heterogeneity and complexity of the sector make any judgement about performance complex and nuanced (2). Despite these difficulties, a number of studies have attempted to assess private sector performance – usually through comparisons with the public sector (3, 4). Most focus on specific types of private providers and discuss factors which influence providers' performance, but overall conclusion regarding such factors is challenging. Most such studies include a small sample or narrow range of providers, but individual performance ranges widely and depends substantially on the context in which providers are operating. Furthermore, a narrow focus on individual performance rather than on the overall impact of a particular provider on the health care opportunities for relevant populations misses what may be the most important implications of a changing public-private mix. Private providers may individually provide excellent quality, but if they absorb a disproportionate share of the health workforce and are inaccessible to a majority of the population, their overall contribution may still be assessed as negative; alternatively they might train high quality health staff who are later employed in more accessible public provision systems. It is these chains of inter-relationships between private

sector behaviour and population health outcomes that shape the implications for Universal Health Coverage (UHC).

This suggests that whether the private or public sector performs best is a sterile question. An assessment on the contribution of any single provider depends on its system level impact, including whether it fills gaps left by other providers or creates new ones. Such a contribution is premised on a host of economic and social factors. A dearth of research at this system level is an indication of the complexities inherent in attempting to explore these relationships.

This paper seeks to review the evidence surveying important individual factors, which are well-researched but may be misleading because they are presented in isolation of context, and consider implications for UHC. The paper is structured as follows: the next section describes the literature search strategy, followed by a presentation of available evidence on the performance of the private sector in relation to quality, efficiency, and equity. The characteristics of individual private provider types that are considered to be associated with performance are then discussed. We then develop a conceptual framework theorising the linkages between individual performance characteristics and system-level impacts that determine progress towards UHC (illustrated in figure one). By identifying factors which affect private sector performance as a whole, we aim to stimulate a debate on how overall private sector performance affects system-level outcomes, and the types of interventions that can be implemented to support UHC.

Search strategy

Drawing on a review of the published and grey literature, this paper investigated and searched for studies which explored private health sector performance in relation to quality, equity, and efficiency. As discussed in the introduction, most studies have explored the performance of specific types of private providers. The lack of research on system-level influences and impacts meant that these factors had to be extrapolated from these studies. Only studies that reported performance outcomes or included an assessment of factors that determine performance are included.

Both qualitative and quantitative studies are included. PubMed and EBM Reviews were used for published literature, supplemented by Google Scholar for Grey literature. Search terms were designed to capture the diversity of the private sector. A combination of the following terms was used: 'private sector' OR 'private provider' OR 'private practitioner' AND role OR performance AND quality OR efficiency OR equity AND 'developing country' OR 'low and middle income country'. Reference lists were also searched in order to look for additional relevant literature. The titles and abstracts of peer-reviewed articles and grey literature were reviewed. Overall, 51 peer-reviewed articles, along with grey literature, which focused on the performance of private health care providers in relation to quality, efficiency, or equity are included.

Performance of the Private Health Sector: Quality, Equity & Efficiency

Three general outcome measures are used in order to assess the performance of the private health sector: *quality*, *equity* and *efficiency*. These terms were selected because they are widely used and encompass many other terms, such as *responsiveness* and *access*. Despite the heterogeneous nature of the private sector, we found that many studies fail to be clear about the type of private provider when reporting on performance, instead grouping all providers together. As a result, some performance assessments apply to only one or two types of providers, even though results are presented as applying to the sector as a whole.

Quality

Quality has two main components: service quality, including responsiveness of staff and often measured by patient satisfaction; and technical quality, incorporating the competence of providers and their adherence to clinical guidelines (4). Many comparative studies suggest that when compared to the public sector, service quality is better in the private sector. Comparing health care for female outpatients in south-central India, for example, Bhatia and Cleland (5: 408) found that “private practitioners are providing a better service, defined in relation to consultation time, privacy, and likelihood of receiving information about diagnosis and prognosis, than their public sector counterparts”. Likewise, a systematic review comparing the performance of private and public healthcare systems in LMICs found that clients thought private provider service delivery was better as a result of shorter waiting times, better hospitality, increased time spent with doctors, cleanliness of facilities, longer and flexible opening times, and better availability of staff (3).

In contrast, there is evidence to suggest that technical quality across a range of private providers is inferior to the public sector, although many studies note that public sector services are also of a low standard. Basu et al. (3), for example, found that diagnostic accuracy, adherence to medical management standards or prescription guidelines, knowledge of correct diagnosis and treatment, and the incidence of unnecessary procedures, such as caesarean sections, were inferior in the private sector compared to the public sector in Nigeria, Uganda, South Africa, Vietnam, Laos, Peru, and Mexico. Likewise, studies in Zimbabwe and Uganda have found that many private providers have limited diagnostic capacity and erratic prescribing practices for HIV/AIDS (1, 6, 7); and in Nigeria and Vietnam poor adherence to prescription guidelines by private providers has been associated with a rise in drug-resistant Malaria (8, 9).

Many of the studies in this area rely on users reporting on the provider used, and private providers are frequently lumped into one category, masking any differences between types and context of provision. Few studies disaggregate contexts and patient groups served; where they do, different results may be observed. The sub-Saharan African studies in particular use DHS evidence that largely reflects utilisation of unregulated, small private providers in contexts where the public sector is weak. In settings with a stronger public sector, and a complementary and better-regulated private sector, different comparisons emerge (10). In Sri Lanka, where the private sector complements a strong public sector, a study of private primary practitioners found that their quality was comparable to that of Australian doctors in relation to the clinical management of conditions (11). A recent study in Sri Lanka found evidence of similar quality in public and private hospitals (12).

As discussed above, studies that explore quality within one or two types of provider fail to account for their contribution to overall health system performance. However, when broader structural factors – such as the nature of the public sector and effective regulatory practices – are considered, a picture of private sector performance affecting the system as a whole begins to emerge.

Equity of Access

We define equity as the fair availability of and access to quality health care commensurate with need and without regressive financial implications (3). Individually, private providers financed from individual out-of-pocket payments tend to exclude poorer patients and so might be considered inequitable. From a systems perspective, the more fundamental question is how they contribute to opportunities for health care access of the whole population, which impacts overall health system fairness and progress towards UHC.

Commented [A1]: Insert following reference here: Gwatkin DR, Rutstein S, Johnson K, Suliman E, Wagstaff A, Amouzou A. Socio-economic Differences in Health, Nutrition, and Population within Developing Countries – An Overview. Produced by the World Bank in collaboration with the Government of the Netherlands and the Swedish International Development Cooperation Agency, 2007.

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Much of the literature focuses on the direct influence of private providers on equitable access. The majority of private services in LMICs are funded directly by patients (out-of-pocket). This feature itself tends to mean that private services from providers with qualified medical staff are likely to serve populations that are more affluent (3). For example, comparative analysis of DHS surveys, conducted in 27 countries between 1990 and 2004, clearly show that wealthier households disproportionately use private providers for child health services (10). DHS surveys suggest that the absolute levels of private sector use vary by geographic region but a gradient in utilization by socioeconomic status is apparent across all geographic regions (East Asia Pacific region, Latin America and Caribbean region, and the Middle East and North Africa), with the wealthy more likely to use private providers.

Where there are gaps in public sector provision of essential services the poor may use some types of private providers disproportionately. In such instances, services are often of low quality and delivered by unqualified providers, but are accessible. According to Bloom et al. (13), the informal sector provides the majority of health care for the poor in many LMICs. Prata et al. (14) found, for example, that in 19 of 22 LMICs both the wealthy and the poor received more care from the private sector than from the public sector – when private providers are classified to include informal providers such as private drug shops. The convenience, accessibility, and affordability of these small private providers compared to public sector alternatives make them attractive to patients (15). Lack of effective regulation however, exposes poor patients to inadequately qualified practitioners providing low quality care in many settings (16).

Efficiency

Efficiency is the extent to which resources are used effectively or are wasted (17). Examples of inefficiencies include over-prescribing, wastage of stock, and use of branded rather than generic medicines. From the perspective of UHC, we are interested in the extent to which the presence of private providers impacts on overall efficiency, and hence on the extent to which a given level of health expenditure can cover a population with a range of services. A number of studies, focusing on the treatment of specific conditions, suggest that private treatment results in higher service costs, and thus potential inefficiency (3, 5, 18, 19). Higher rates of potentially unnecessary and expensive procedures, such as caesarean sections, are one source of higher costs (18). Much of the evidence, particularly derived from sample surveys, focuses on small, and often unqualified, private providers operating within a weak public health system and regulatory framework. In these circumstances it is unsurprising that the literature suggests that services are inefficient. For a similar clinical diagnosis, for example, average prescription drug costs in the private sector were found to be higher than in the public sector in countries such as India, Tanzania, and Bangladesh, where public services are poorly resourced and regulation is weak (3, 5, 19). In these circumstances consumers have no clear benchmarks of quality and are largely at the mercy of private prescribing. Delays in diagnosis caused by a lack of linkage between sectors is a further contribution to higher prices faced by service users. Basu et al.'s (3) systematic review, for example, found evidence that an absence of referral linkage between sectors and levels of the same sector mean that diagnostic investigations must often be repeated following referral since information is not passed between providers, resulting in higher costs and lower efficiency.

Across all three outcome variables: quality, equity and efficiency, the performance of individual private providers is mixed. In LMIC contexts private providers have been found at both ends of the quality spectrum. Quality differs between low-qualified unregulated providers and well-qualified better-regulated providers, but not only according to this distinction. Private providers were often more accessible than public providers but there is a clear gradient in utilization by socioeconomic status – with the wealthy more likely to use expensive, high quality, qualified providers, and the

Commented [A2]: Please add following references here:
Basu S, Andrews J, Kishore S, Panjabi R, Stuckler D. Comparative performance of private and public healthcare systems in low- and middle-income countries: a systematic review. *PLoS Med* 2012; **9**: e1001244.

Bhatia J, Cleland J. Health care of female outpatients in south-central India: comparing public and private sector provision. *Health Policy Plan* 2004; **19**: 402–06.

Brugha R, Pritze-Aliassime S. Promoting safe motherhood through the private sector in low- and middle-income countries. *Bull World Health Organ* 2003; **81**: 616–23.

World Bank. Comparative advantage of public and private health care providers in Bangladesh. Dhaka: World Bank, 2005.

poor more likely to use less expensive, low-quality, unqualified providers. Private providers were also found to exhibit certain efficiency problems, particularly in relation to prescription costs and repeated diagnostic investigations; but the structure and type of private providers is again important, as much of the evidence focused on small, unqualified private providers operating within weak public health systems and regulatory frameworks.

The following sections explore both individual and system-level factors which were found to influence the mixed private sector performance discussed above. These sections contribute to the aim of the review, to identify system level impacts of private participation, which are addressed in the final section.

Provider Characteristics Affecting Performance

The literature suggests that three groups of individual features appear to be important in driving the performance of individual providers: organisational objectives, competence of staff, and size of organisation.

Organisational Objectives

Organisational objectives of private providers vary. Providers are typically divided into For-Profit and Not-For Profit but this categorisation masks a more complex spectrum of provider objectives. These range from providers that focus largely on repayment of creditors or shareholder dividends, aiming to maximise financial gain to providers with a mandate to protect the health of a given population (20, 21). The evidence comparing for-profit and not-for profit private providers is mixed. Two studies have suggested that decentralised decision-making combined with organisational objectives common to not-for profit providers, enable them to deliver superior services compared to for-profit providers, even though the qualifications of practitioners are often lower than in for-profit private organisations (22, 23). A systematic review by Berendes et al. (4), which explored the quality of private and public ambulatory healthcare in LMICs, found little difference between for-profit and not-for profit private providers overall. However, not-for profit providers were found to do better than for-profit providers in relation to structural quality (building equipment, material, drug availability) and quality of delivery (responsiveness, but not patient satisfaction). The findings for technical quality were mixed. Both for-profit and not-for profit private providers were found to perform worse than the public sector in relation to competence while clinical practice was found to be superior within for-profit private providers.

Further evidence is needed to show the link between the organisational objectives of for-profit and not-for profit private providers and quality, efficiency and equity outcomes, and how this effects performance of a health system as a whole.

Competence of Staff

The study by Berendes et al. (4) showed slightly lower competence of staff (defined as professional knowledge and skills, assessed using case scenarios or vignettes, provider interviews, or a formal test, and related to overall technical quality) within the private sector compared to the public sector, although the types of facilities compared are not always clear from the studies. A series of studies in India, Indonesia, Paraguay, and Tanzania focused on the clinical quality of individual practitioners working within the public and private sectors using competence measurements (24). These studies, which match like-with-like facilities, suggest that the competence of qualified doctors (defined as what doctors know and collected using vignettes, direct observation, and exit surveys) in the private sector was as good as or exceeded their colleagues in the public sector. This is perhaps unsurprising

given that they are often the same doctors with dual roles (25, 26) (a practice which has an effect on system level outcomes).

The studies suggest that at the mid-range of competence, private doctors are 'asking more questions and do more examinations' than similar public sector providers, which, depending on the complexity of the health issue, can lead to different efficiency, equity, and quality outcomes (24). In particular, the higher effort expended by private providers may lead to better outcomes for patients who present with ambiguous symptoms where diagnosis is complex. In India, for example, it was found that while public doctors may have insufficient time to understand complex symptoms and interpret multiple tests, the extra effort put in by private providers can lead to better outcomes (25). In contrast, where illness is relatively simple to diagnose or the illness is self-limiting, the additional effort by private providers may simply manifest in excessive treatment and prescribing. For these illnesses, the public sector is a more cost-effective provider. A similar conclusion is reached by an Indonesian study where public providers were found to offer the most effective preventive services, including antenatal care, while private doctors provided higher quality curative services, as measured by observation-based clinical management scores (26). In contrast, private facilities that depend heavily on nurses and midwives on average scored poorly for clinical management possibly because staff were required to extend their remit beyond their qualifications (24).

Size of Organisations

The size of organisations was found to influence provider performance. Larger facilities are able to share expensive cost items across a larger number of patients, provide larger volumes of similar cases to improve staff expertise, and ensure that a wide range of skills is available at all times. Operating at larger scale also supports the opportunity for health professionals to hone skills for providing increasingly rarely required services, and can therefore be a pre-requisite for quality care for such services (27). A much quoted review based on evidence in high-income countries suggested that the optimal size for an acute district hospital is around 200-400 beds (28) while a recent analysis of country hospitals in China suggested a range of between 200 and 600 beds (29). This rather crude generalisation is conditioned strongly by the way services are provided – a high day-case load may enable greater output from smaller inpatient capacity – and a wider range of services offered. It may also depend on the proximity to other facilities since a smaller facility may be efficient if it can rely on rapid referral to larger facilities in the case of complications. A recent study of the costs of surgery in India, for example, found the lowest costs in departments with high caseloads regardless of whether ownership was public, charitable or private (30). Data on hospital bed size are patchy and difficult to compare given shifting definitions of the term 'hospital', but consistently show low hospital bed numbers in private hospitals (for example Kutty (31)) find average bed sizes of 26 and 34 in private hospitals in Kerala in 1986 and 1995 respectively; and a study of hospitals in Guangdong province in China found that private for-profit hospitals had an average of 66 beds compared to 256 in the public sector (32).

Health system level factors affecting private sector performance

Moving beyond the individual provider level, the literature suggests that a series of health system factors impact the functioning of the private sector as a whole: the structure and performance of the public health sector, the structure of the private sector, the characteristics of patient demand for health care, and the regulation of the private health sector. Factors at the individual level are then linked to these system factors. The discussion is limited to factors that can be considered directly

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Das J, Hammer J, Leonard K. The quality of medical advice in low-income countries. *J Econ Perspect* 2008; **22**: 93–114.

part of the health system rather than broader societal influences such as economic, social and cultural factors, or overall level of development.

Structure and Performance of the Public & Private Sectors

The close links between public and private health sectors mean that they are likely to affect each other's performance and structure. Poor performance and lack of availability of the public sector, for example, create gaps in service provision which the private sector steps in to fill, often providing essential primary services to the population. This gap may be the result of low public health expenditure, or low efficiency of public expenditure, leading to lack of capacity to provide services. In Bangladesh a shortage of qualified healthcare professionals in rural areas has long been acknowledged as a key reason why a larger part of the population seeks assistance from unqualified allopathic providers (33). In Tanzania, the percentage of people utilizing the private sector was found to increase during drug stock-outs in the public sector (34). Private sector expansion which allowed small scale, lower cost, and poorer quality facilities to grow in several sub-Saharan countries was linked to higher public sector user charges, as well as deregulation of private provision (2). Conversely, Sri Lanka and Thailand show how higher, well-targeted public spending can create a more accessible and better quality public sector, restricting opportunities for private sector involvement mainly to higher quality services for richer people (2).

Public sector policies can also shape the space left for private sector provision. For example, in urban Mozambique, the presence of both reasonable drug availability in public hospitals and parastatal pharmacies for outpatients that reliably stock affordable essential medicines, directs private involvement in the market to upper income segments, signalling high quality with branded drugs, superior packaging, and significantly higher prices (35).

The extent to which dual practice occurs within the public and private health sectors will influence the performance of each sector. Dual practice is a common feature of many LMIC health systems (36). While most health practitioners are trained in the public sector, many practitioners choose to either leave the public sector completely or supplement their income in the private sector (37). Evidence from studies of medical career paths indicates that doctors, and to a lesser extent nurses, move between the public and private sectors, influencing the performance of both sectors (37). Dual practice may lead to increased referral to the private sector, leading to increased patient costs, increased absenteeism in the public sector, suppression of quality of care in the public sector, increased capacity to retain health workers in the health system as a whole, but such potential impacts are themselves contingent on other health system features such as attempts at regulation and the extent of market opportunities (38-40).

Characteristics of patients

Patient characteristics also shape the performance of the private sector. Paucity of information available to patients on health care providers, lack of education, lack of economic capacity, and household and community preferences have been shown to act as barriers to the use of quality health services (41). Reducing these barriers enables patients to make better choices about their healthcare, and access higher quality health services in both the public and private sectors. While education itself has been found to be an important factor in determining overall health, higher levels of education have also been found to increase the desired and actual use of quality health services, inducing patients to move away from unqualified private providers towards qualified public or private services (42). There is evidence in Bangladesh, for example, that patients with some education are more likely than those with no education to switch to a qualified allopathic provider

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Mackintosh M, Selveraj S, Channon A, Zhao H, Cavagnero E, Karan A. What is the private sector: understanding private provision in low and middle income countries' mixed health care systems. *Lancet* 2016; [ED: Add publication details] xxx; xxx.

from an unqualified provider (43). Similarly, patients describing themselves as impoverished are more likely to seek care from unqualified private providers.

Although evidence is lacking, better economic conditions seem likely to spur an improvement in the quality of both public and private medical services. Increased purchasing power, concentrated in urban areas, for example, may allow hospitals to reach a size that allows them to provide improved quality of service through a more qualified and stable workforce and improved facilities. In some parts of India there is a trend to larger private hospitals; industry projections suggest a rapid growth in the size and specialisation of private hospitals over the next five years (44, 45). Larger size hospitals, resulting from an increase in patient demand, could provide the opportunity to reduce unit costs, but also, as suggested in the section above on the effects of size, lead to quality improvements.

Regulation

The purpose of regulation is to control provider behaviour and ensure that private providers offer services that not only are acceptable to the public, but also meet overall health sector goals (21, 46). Lack of regulation can lead to the growth and greater use of small scale, poorer-quality facilities, as was seen in Ghana, Malawi, Tanzania, and Zambia (2); or a high-quality private sector which becomes inaccessible to lower socio-economic groups due to the high cost of care, such as in South Africa and Argentina (2). Certification – a type of voluntary self-regulation which individual providers can obtain after meeting a set of standards – is one form of regulation which can help to ensure high levels of qualified and competent staff within private health facilities (20, 21). Likewise, accreditation – another type of voluntary self-regulation which health facilities can obtain after meeting a set of standards – may be effective in influencing the overall quality of private health facilities (28). A review of the private sector in India, for example, highlighted a reduction in surgical infection rates following adoption of international accreditation standards (47). Private hospital accreditation in Thailand appears to have improved overall patient satisfaction and health outcomes, including inpatient mortality (48, 49).

Despite these examples, evidence of effective regulation is rare and may be related to the context in which the sector is working. In Thailand, for example, a competitive network of private hospitals much utilised by medical tourists works alongside a strong well-funded public sector. Accreditation in India is largely restricted to large private hospitals that offer services to wealthy residents and patients from abroad, and there is little regulation of the smaller hospitals and clinics that dominate the sector. Governments in most low-income countries lack capacity to provide effective regulation, and there are few external influences (such as medical tourism) to induce change. Paper 3 within this series discusses regulation as a type of intervention in more detail (50).

Discussion: Implications for Universal Health Coverage

The policy objective of Universal Health Coverage suggests that rather than focus only on the productivity or quality of individual or a specific group of private providers, it is important to understand not only what factors influence overall health system performance, but how these factors interact. Understanding these interactions can then help to develop policy and interventions that focus on different parts of the private (and public) sector with the aim of improving overall sector performance and population health.

Figure 1 proposes a set of relationships, moving from the micro level of individual providers and their characteristics which have been more extensively researched to their potential UHC implications.

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Posnett J. Are bigger hospitals better? . In: McKee M, Healy J, editors. Hospitals in a Changing Europe. Buckingham: European Observatory on Health Care Systems Series, Open University Press.; 2002.

Figure one: Factors affecting the performance of the private health sector

What is sought from the perspective of progress towards UHC is a health system that maximises health outcomes, and equitably distributes feasible levels of good quality financially and geographically accessible services, that are delivered efficiently, with low levels of out-of-pocket burden, distributed progressively (according to affordability).

The figure is informed by the literature reviewed above. Despite the lack of evidence regarding system-level factors, studies exploring individual private provider performance offer suggestions about system level influences and impacts. For example, evidence discussed above suggests that the structures of both the public and private sectors, the characteristics of patients, and the regulation of the sector all influence the types and outcomes of health services delivered. The contribution of the private sector better supports good outcomes in areas where users are wealthier and better informed, particularly in cities, where patients can demand higher quality services and choose to use only those services that they deem high quality. As a result, services are more likely to be delivered by qualified private providers who spend on average a longer amount of time with each patient, with improved outcomes for quality, equity, and efficiency, particularly for more complex diseases.

Ensuring services are safe and effective requires standards that are enforced and monitored. Most experience of government bureaucratic regulation in low-income countries is rather negative, although other regulatory instruments may be more effective (50). Regulation will also have an influence on and be influenced by the structure of the sectors with regulation of qualified and unqualified providers implemented in different ways. A minimal regulatory response requires government to ensure that essential services are accessible both geographically and financially within the health sector as a whole, while at the same time protecting individuals from poor quality services. This suggests that changing private sector performance requires a regulatory response which not only targets private providers, but also the health sector as a whole. Influencing the quality, efficiency, and equity in access within the public sector is likely to lead to changes within the private sector over time for example.

The achievement of good system level impacts is clearly frustrated by some characteristics of private provision discussed above. For example, inefficient provision of unnecessary interventions reduces quality, efficiency, and likely (by absorbing limited skilled professionals and occupying market space), the accessibility of any quality efficient provider, and increases the burden of out-of-pocket expenditure. Dual practice has been identified with a number of potential impacts – for example increased private sector referral and costs, as mentioned above, but considered from a system level, it may also retain health staff in the system as a whole, increasing the availability of qualified personnel to users of the public sector.

Given the limited empirical evidence, the figure also inevitably draws on plausible, logical relationships, as well as empirically suggested ones. The lack of research and the difficulties of researching system level impacts explain why many arguments remain hypothetical. Empirical opportunities to study the ‘counter-factual’ – what the system would look like without private provision, without dual practice, or with a different regulatory environment for example, are not available. Such significant variation in health system character cannot be manipulated by policy experiment. Paper 4 in this series will return to this question by comparing countries in which such characteristics vary through using national level trends in characteristics and system impacts.

Changing the performance of the private sector will require interventions which target the sector as a whole, not individual providers in isolation. Evidence focused on individual performance may mislead. Despite the difficulties, future research should look more critically at the way in which

system factors encourage the creation of a given mix of public and private services and how regulation and other policy instruments can be used to ensure a mix of services that promotes the system level efficiency, equity, and responsiveness that will support UHC.

References

1. Bennett S, Hanson K, Kadama P, Montagu D. Working with the Non-State Sector to Achieve Public Health Goals. Geneva: World Health Organization, 2005.
2. Mackintosh M, Selveraj S, Channon A, Zhao H, Cavagnero E, Karan A. What is the private sector: Understanding private provision in low and middle income countries' mixed health care systems. *Lancet*. 2016;xxx.
3. Basu S, Andrews J, Kishore S, Panjabi R, Stuckler D. Comparative Performance of Private and Public Healthcare Systems in Low- and Middle-Income Countries: A Systematic Review. *Plos Medicine*. 2012;9(6):e1001244.
4. Berendes S, Heywood P, Oliver S, Garner P. Quality of Private and Public Ambulatory Health Care in Low and Middle Income Countries: Systematic Review of Comparative Studies. *Plos Medicine*. 2011;8(4):e1000433.
5. Bhatia J, Cleland J. Health care of female outpatients in south-central India: comparing public and private sector provision. *Health Policy and Planning*. 2004;19(6):402-6.
6. Brugha R. Antiretroviral Treatment in Developing Countries: The Peril of Neglecting Private Providers. *British Medical Journal*. 2003;326:1382-4.
7. Nyazema N, Khosa S, Landman I, Sibanda E, Gael K. Antiretroviral (ARV) drug utilization in Harare. *Central African Journal of Medicine*. 2000;46(4):89-93.
8. Gbotosho GO, Happi CT, Ganiyu A, Ogundahunsi OA, Sowunmi A, Oduola AM. Potential contribution of prescription practices to the emergence and spread of chloroquine resistance in south-west Nigeria: caution in the use of artemisinin combination therapy. *Malaria Journal*. 2009;8(313).
9. Gupta S, Gunter JT, Novak RJ, Regens JL. Patterns of *Plasmodium vivax* and *Plasmodium falciparum* malaria underscore importance of data collection from private health care facilities in India. *Malaria Journal*. 2009;8(227).
10. Gwatkin DR, Rutstein S, Johnson K, Suliman E, Wagstaff A, Amouzou A. Socio-economic Differences in Health, Nutrition, and Population within Developing Countries – An Overview. Produced by the World Bank in collaboration with the Government of the Netherlands and the Swedish International Development Cooperation Agency, 2007.
11. Rannan-Eliya RP, Jayawardhane P. Private primary Care Practitioners in Sri Lanka. In: Yazbeck AP, D., editor. *Health Policy Research in South Asia*. Washington: The World Bank; 2003.
12. Liyanage IK, Jayanthan J, Wijemanne N, Alwis Sd, Amarasinghe S, Siriwardana I, et al. Study of Quality of Care in Public and Private Sectors 2013. Available from: http://www.ihp.lk/publications/pres_doc/pres20130706.pdf.
13. Bloom G, Standing H, Lucas H, Bhuiya A, Oladepo O, Peters DH. Making health markets work better for poor people: the case of informal providers. *Health Policy and Planning*. 2011;26(suppl 1):i45-i52.

14. Prata N, Montagu D, Jefferys E. Private sector, human resources and health franchising in Africa. *Bulletin of the World Health Organization*. 2005;83(4):274-9.
15. Sudhinaraset M, Ingram M, Lofthouse HK, Montagu D. What is the Role of Informal Healthcare Providers in Developing Countries? A Systematic Review. *Plos One*. 2013;8(2):e54978.
16. Mills A, Brugha R, Hanson K, McPake B. What can be done about the private health sector in low-income countries? *Bulletin of the World Health Organization*. 2002;80(4):325-30.
17. Hsu J. The relative efficiency of public and private service delivery. *World Health Organization*., 2010.
18. Brugha R, Pritze-Aliassime S. Promoting safe motherhood through the private sector in low- and middle-income countries. *Bulletin of the World Health Organization*. 2003;81(8):616-23.
19. World Bank. Comparative Advantage of Public and Private Health Care Providers in Bangladesh. Dhaka: World Bank, 2005.
20. Harding A. Introduction to Private Hospitals in Health Services. In: Harding A, Preker AS, editors. *Private Participation in Health Services*. Washington: The World Bank; 2003.
21. Morgan R, Ensor T. The regulation of private hospitals Asia. *The International Journal of Health Planning and Management*. 2014.
22. Leonard KL. When both states and markets fail: asymmetric information and the role of NGOs in African health care. *International Review of Law and Economics*. 2002;22(1):61-80.
23. Leonard KL, Masatu MC, Vialou A. Getting Doctors to Do Their Best: The Roles of Ability and Motivation in Health Care Quality. *The Journal of Human Resources*, 42, 682-700. 2007;42(3):682-700.
24. Das J, Hammer J, Leonard K. The quality of medical advice in low-income countries. *Journal of Economic Perspectives*. 2008;22(2):93-114.
25. Das J, Hammer J. Money for nothing: The dire straits of medical practice in Delhi, India. *Journal of Development Economics*. 2007;83:1-36.
26. Barber SL, Gertler PJ, Harimurti P. Differences in access to high-quality outpatient care in Indonesia. *Health Affairs (Millwood)*. 2007;26(3):w352-66.
27. Halm EA, Lee C, Chassin MR. Is volume related to outcome in health care? A systematic review and methodologic critique of the literature. *Ann Intern Med*. 2002;137(6):511-20.
28. J. P. Are bigger hospitals better? . In: McKee M, Healy J, editors. *Hospitals in a Changing Europe*. Buckingham:: European Observatory on Health Care Systems Series, Open University Press.; 2002.
29. Cheng Z, Tao H, Cai M, Lin H, Lin X, Shu Q, et al. Technical efficiency and productivity of Chinese county hospitals: an exploratory study in Henan province, China. *BMJ Open*. 2015;5(9):e007267.
30. Chatterjee S, Laximinarayan R. Costs of surgical procedures in Indian hospitals. *BMJ Open*. 2013;3:e002844.
31. Kutty VR. Historical analysis of the development of health care facilities in Kerala State, India. *Health Policy Plan*. 2000;15(1):103-9.
32. Eggleston K, Lu MS, Li CD, Wang J, Yang Z, Zhang J, et al. Comparing public and private hospitals in China: Evidence from Guangdong. *BMC Health Services Research*. 2010;10(76).

33. Ahmed S, Hossain M. Knowledge and practice of unqualified and semi-qualified allopathic providers in rural Bangladesh: Implications for the HRH problem. *Health Policy*. 2007;82(2-3):332-43.
34. Mikkelsen-Lopez I, Tediosi F, Abdallah G, Njozi M, Amuri B, Khatib R, et al. Beyond antimalarial stock-outs: implications of health provider compliance on out-of-pocket expenditure during care-seeking for fever in South East Tanzania. *BMC Health Services Research*. 2013;13(444).
35. Russo G, McPake B. Medicine prices in urban Mozambique: a public health and economic study of pharmaceutical markets and price determinants in low-income settings. *Health Policy and Planning*. 2010;25(1):70-84.
36. Macq J, Ferrinho P, De Brouwere V, van Lerberghe W. Managing Health Services in Developing Countries: Between Ethics of the Civil Servant and the Need for Moonlighting. *Human Resources Health Development*. 2001;5(1):17-24.
37. Ensor T, Serneels P, Lievens T. Public and Private Practice of Health Workers. In: Soucat A, Scheffler R, Ghebreyesus TA, editors. *The Labor Market for Health Workers in Africa: A New Look at the Crisis*. Washington DC: World Bank; 2013.
38. Eggleston K, Bir A. Physician dual practice. *Health Policy*. 2006;78(2-3):157-66.
39. Socha KZ, Bech M. Physician dual practice: a review of literature. *Health Policy*. 2011;102(1):1-7.
40. McPake B, Russo G, Hipgrave D, Hort K, Campbell J. Implications of dual practice for universal health coverage *Bulletin of the World Health Organisation*. 2015.
41. Ensor T, Cooper S. Overcoming barriers to health service access: influencing the demand side. *Health Policy and Planning*. 2004;19(2):69-79.
42. Borah BJ. A mixed logit model of health care provider choice: analysis of NSS data for rural India. *Health Economics*. 2006;15(9):915-32.
43. Ahmed SM, Tomson G, Petzold M, Kabir ZN. Socioeconomic status overrides age and gender in determining health-seeking behaviour in rural Bangladesh. *Bulletin of the World Health Organization*. 2005;83(2):109-17.
44. Dilip TR. Utilization of inpatient care from private hospitals: trends emerging from Kerala, India. *Health Policy & Planning*. 2010;25(5):437-46.
45. Northbridge Capital. *Hospital Sector*. Mumbai, India: Northbridge Capital, 2010.
46. Akhtar A. *Health care regulation in low- and middle-income countries: a review of the literature*. The Nossal Institute for Global Health, 2011.
47. Rao RH. *The Private Health Sector in India: A Framework for Improving the Quality of Care*. *ASCI Journal of Management*. 2012;41(2):14-39.
48. T. E, P. P. *The Oversight and Regulation of Non-State Health Care Providers: A Rapid Review in Selected Middle and High Income Countries*. Oxford Policy Management, 2009.
49. Sriratanaban J, Wanavanichkul Y. Hospitalwide quality improvement in Thailand. *Joint Commission journal on quality and safety*. 2004;30(5):246-56.
50. Montagu D, Goodman C. Prohibit, Constrain, Encourage or Purchase. *The Lancet*. xxxx;xxx(xxxx).