

Authors:

Haroon Wadeeⁱ

Farzana Khanⁱⁱ

Human Resources for Health

Abstract

South Africa faces a major crisis in terms of human resources for health. There is a shortage within the country coupled with a maldistribution between provinces as well as between the public and private sectors. This chapter highlights some of these structural constraints. It further explores the potential policy impacts of a range of policy options from limited private practice to the development of private training institutions and the employment of medical practitioners by private hospitals. The foundation of this chapter is located within the framework of strengthening the overall health system through discussion and engagement in policy debates that will ensure that the public sector is not undermined in the process.

i Board of Healthcare Funders of Southern Africa

ii Independent Researcher

Introduction

“It is now widely accepted that the dire shortage of health workers in many places is among the most significant constraints to achieving the three health-related Millennium Development Goals (MDGs): to reduce child mortality, improve maternal health, and combat HIV/AIDS and other diseases, such as tuberculosis and malaria...shortfalls exist in all categories of health workers.”¹

The health workforce is a major input in the production of health care within the health system. According to the World Health Organization (WHO), “at the heart of each and every health system, the workforce is central in advancing health”.¹ Producing, recruiting and retaining health professionals remain key challenges facing but not confined to South Africa as these have been documented as challenges for the entire Southern African region and globally.^{2,3,4} The human resources for health (HRH) crisis limits growth within both sectors and raises fundamental questions around the future direction of the health system, especially in light of the vision in the National Health Act (Act 61 of 2003) and the unfolding Health Charter process, which seek to unify a segmented health system.^{5,6}

It is beyond the scope of this chapter to deal with the multi-dimensional policy challenges facing policymakers and health system stakeholders. The chapter therefore focuses primarily on the role of the private sector in engaging with the broader health system challenge facing HRH in South Africa. The HRH shortage spans the public-private divide and poses challenges to both sectors. Within the locus of a public-private discussion the public sector needs to explore ways to tap into private sector resources and to curb the exodus of HRH from the public to the private sector. The private sector needs to investigate options to deal with the cost spiral threatening to cripple existing coverage levels and attempts to improve coverage levels. The shortage of HRH in the private sector is viewed as a potential cost-driver.

This chapter provides a descriptive overview of HRH within the country and between the public and private sectors. The chapter presents data sourced from the Health Professions Council of South Africa (HPCSA), Nursing Council of South Africa (NCSA), the Practice Code Numbering System (PCNS) and PERSAL.^a The chapter compares trends in the public and private sector to highlight the HRH challenges facing the country as a whole.

^a Data sourced from <http://www.hst.org.za/healthstats/69/data>, 11 June 2007.

This is followed by a critical discussion of various policy initiatives that have the potential to address the broader strategic imperatives noted in the National Human Resources Plan for Health and the National Health Act.⁷ These include:

- employment of doctors by private hospitals;
- remunerative work outside the public service (RWOPS); and
- development of private medical schools.

Distribution of human resources for health in South Africa

One of the key health sector indicators used to gauge a country's health system performance is the physician and nurse density per 1 000 population. Table 1 highlights a cross-country comparison of physician and nurse density per 1 000 population.

Table 1: Cross-country comparison of physician and nurse density per 1 000 population, 2006

Country	Physician density per 1 000 population	Nurse density per 1 000 population
Mozambique	0.03	0.21
Lesotho	0.05	0.62
Zambia	0.12	1.74
Zimbabwe	0.16	0.72
Namibia	0.30	3.06
Botswana	0.40	2.65
South Africa	0.77	4.08
United States of America	2.56	9.37
France	3.37	7.24
United Kingdom	2.30	12.12

Source: WHO, 2006.¹

In contrast to the high income countries, South Africa, as well as its low and middle income neighbours, experience a chronic shortage of key health professional cadres vital to service delivery. Although South Africa fares reasonably favourably relative to its neighbours, within the global context the country still falls short of the HRH requirements to bolster its overall health system performance. In addition, the segmented nature of funding and provision of services within the South African health system translates into a

Table 2: Number of health professionals registered with professional councils between 1996-2001

Category	1996	1997	1998	1999	2000	2001	Average annual growth (%)
General practitioners	18 916	20 140	21 401	22 367	23 457	25 629	6.3
Specialists	7 972	8 065	8 161	8 249	8 340	8 420	1.1
Nurses	173 709	179 596	182 637	185 387	187 456	190 516	1.9

Source: Pick et al., 2002.⁸

skewed distribution of human resources between the public and private sectors. This poses a fundamental challenge to harnessing the pool of resources within the health sector to address the broader health system imperatives of meeting the Millennium Development Goals (MDGs), on the one hand and improving equity, efficiency and health system effectiveness on the other.

Table 2 provides an overview of the number of health professionals registered with professional councils between 1996-2001.

However, one also needs to consider the distribution of personnel between the public and private sectors. Table 3 highlights a skewed distribution of skilled HRH within South Africa between the public and private sectors as far back as 1998/99.

Table 3: Overview of public and private health personnel distribution, 1998/99

	General practitioners (%)	Medical specialists (%)	Nurses (%)
Public	27.4	24.8	58.9
Private	72.6	75.2	41.1

Source: Adapted from Sanders and Lloyd, 2006.⁹

There is a paucity of data regarding the true public-private distribution of HRH and the public-private split is contested by Pick et al.⁸ Health professionals do register with the HPCSA, but the data are highly disaggregated with nearly 1 400 categories of health professionals across the public and private sectors. Even within one discipline there are multiple categories of health professionals ranging from independent practice, supervised practice, student and public service. However, in an attempt to overcome this limitation, this section unpacks the extent of the public-private maldistribution of specialists, general practitioners (GPs) and nurses, by using multiple data sources such as PERSAL, the PCNS,^b population estimates from Statistics South Africa (StatsSA)

b The PERSAL system is the public sector system used for the remuneration of public sector employees. The PCNS is the system used to register private providers making them eligible for reimbursement by medical schemes.

and medical scheme membership data from the Council for Medical Schemes' (CMS) annual reports.

Table 4 compares the distribution of medical specialists by population dependent on the public and private sector (based on medical scheme coverage) respectively, expressing it both as a ratio and the total number per 100 000 population. The distribution for public sector dependants was calculated based on the number of specialists captured by PERSAL relative to the population not covered by medical schemes, given that public sector resource allocation to a large extent is determined by the population not covered by medical schemes. The distribution of specialists by medical schemes coverage is based on the levels of medical schemes coverage captured by the CMS relative to the numbers of specialists with PCNS numbers (i.e. those registered and hence eligible to claim from medical schemes for services provided). It is worth noting that this does not provide a complete picture as not all specialists are registered with PCNS and in addition, it is not only those registered with medical schemes that use the private sector. Given the paucity of data on the true public-private distribution of health providers, Table 4 is used purely for illustrative purposes to highlight the discrepancy between public sector dependants and those with coverage vis-à-vis access to medical services.

Table 4: Distribution of medical specialists by public sector dependent and private sector (medical scheme coverage) dependent persons, 2007

	Ratio specialist to population	Specialists per 100 000 population
Public sector dependants	1 per 10 202	9.8
Medical scheme beneficiaries	1 per 5 765	17.4

Source: Derived using PERSAL, PCNS and StatsSA, 2006.¹⁰

The estimate in Table 4 highlights the vast discrepancy in allocation of medical specialists between public sector dependants and medical scheme beneficiaries. Medical

scheme beneficiaries therefore have nearly two times the level of access to medical specialists than do public sector dependants. However, one needs to note that this could be an underestimate given that public sector specialists do engage in RWOPS and there may be cases where providers are registered to practise privately, but continue to work in the public sector. In order to obtain a PCNS number, providers need to register with the HPCSA for private practice. However, this does not compel providers to work in the private sector.

With respect to medical practitioners^c the picture is even more complex. The estimation of the distribution of medical practitioners captured in Table 5 uses the same methodology used in the distribution of specialists.

Table 5: Distribution of medical practitioners by public sector dependent and private sector (medical scheme coverage) dependent persons, 2007

	Ratio medical practitioner to population	Medical practitioner per 100 000
Public sector dependants	1 per 4,219	23.7
Medical scheme beneficiaries	1 per 601	166.3

Source: Derived using PERSAL, PCNS and StatsSA, 2006.¹⁰

Table 5 illustrates the extent of the inequity in access to health care providers within the country. It also perhaps reflects the pattern of allocative inefficiency inherent in the medical scheme market with specialists and private hospitals consuming the largest share of health care expenditure. Despite the high density of medical practitioners relative to specialists, there is lack of a clearly regulated and defined gate-keeping role that places primary health care at the forefront of service delivery. Instead the Prescribed Minimum Benefits (PMBs) entrenched in medical schemes promotes a bias towards hospital and specialist care, as is evident by the increased hyperinflationary cost increases in hospital and specialist expenditure since the implementation of PMBs relative to other lines of expenditure such as medicines.¹¹ This holds true especially in a context of an unregulated pricing mechanism and the absence of negotiated tariff schedules in light of the 2004 Competition Commission ruling prohibiting such practice by medical schemes and providers.

Data on the public-private split among nurses are not readily available. There are insufficient data allowing one to isolate

those deemed 'private' that are currently working abroad. In terms of HRH planning, it is unclear to what extent this element of 'brain drain' can be stemmed. However, it is noteworthy that the private sector also feels that it is chronically under-staffed.^d

One of the main issues of policy concern, apart from the maldistribution of HRH, is inadequate generation of personnel. It is estimated that South Africa has chronically low numbers of both specialists and GPs relative to other middle income countries.^{1,8,9}

To some extent this can be explained by the exodus of HRH from the South African health sector. Table 6 provides an overview of the number of South African clinicians currently working in developed countries.

Although Table 6 does not present the complete picture, it demonstrates that the number of South African health professionals abroad is extensive. Apart from trying to attract these skills back to South Africa, the country experiences the double burden of ensuring the production of adequate numbers of personnel to meet both existing health care needs as well as the need to strengthen the health system to levels on par with other middle income countries.

Interaction with existing private providers^e is inadequate to deal with the deeper structural constraints. There needs to be increased emphasis on the generation of skills. With respect to nursing the majority of registered nurses / midwives are between 40-49 and 50-59 years of age (35% and 25% respectively).^f Only 23% are below the age of 30 (for enrolled nurses this figure is 13%). This is largely due to the policy decision to close nursing colleges and to initiate conversion courses for enrolled nurses to become registered nurses. Although not alarming, there needs to be revived effort to increase the training of nurses to meet the needs of the country. This is possible given the number of nursing education institutions in the country (i.e. 401 in total). This suggests that there are sufficient institutions to produce adequate levels of resources to address the chronic shortage in both the public and private sectors.

d This emerged at the annual Hospital Association of South Africa (HASA) conference in Cape Town in June 2007 in a presentation on the nursing issues by E. Branningan of Netcare.

e The language emerging out of the National Health Summit in 2001 and the follow-up Public-Private Lekhotla was that of Public-Private Interactions (PPIs) refers to all engagements (formal and informal) between the range of public and private sector stakeholders with respect to funding and provision. More detail on this process can be obtained from the 2006 SAHR.

f Data sourced from the South African Nursing Council. Available at: http://www.sanc.co.za/stats/stat2006/Age%20stats%202006_files/slide0025.htm

c Medical practitioners refers to 'general practitioners' and is the language used across a range of international and national sources.

Table 6: Distribution of South African practitioners abroad, 2006

	Practitioners	Nurses / Midwives	Other health professionals	Total
Australia	1 114	1 085	1 297	3 496
Canada	1 345	330	685	2 360
New Zealand	555	423	618	1 596
United Kingdom	3 625	2 923	2 451	8 999
United States	2 282	2 083	2 591	6 956
Total	8 921	6 844	7 642	23 407

Source: DoH, 2006.⁷

Further research is required to explore the reasons why colleges have not adequately addressed the shortfall. From a public-private interaction perspective, it is noteworthy that around 36% of colleges are private, suggesting that the private sector does have a role to play in the generation of HRH. It is also unclear to what degree the private training colleges exclusively meet the needs of the private sector and a review process needs to be undertaken to determine the role these colleges can play in addressing the overall goals of the broader health system.

Apart from nursing training and development one also needs to consider the role of training for medical practitioners. Unlike the nursing education institutions, there are few medical schools offering training. There are currently 8 medical schools (including 3 in Gauteng and 2 in the Western Cape),⁹ excluding the accredited institutions that provide training support. A doctor's basic training takes no less than six years and on average each medical school enrolled around 200 new entrants per annum^h between 2002-2004 (a total of some 1 600 admissions per annum). On completion of the 6 years of study, newly-trained doctors must complete an additional year of internship and community service before they may enter the private sector.

Between 1996 and 2001 there was a 6.3% average annual growth in general practitioners and a 1.1% average annual growth rate in specialists.⁸ Despite community service addressing some of the HR shortfalls and the growth in the number of general practitioners, this chapter's focus is on the role of the private sector in meeting the HRH challenges facing South Africa. It is within this context that the debate around private medical schools has emerged, the implications of which are assessed later in the chapter.

g This is to highlight the geographical maldistribution both in terms of production and distribution.

h Data on admission statistics at medical schools (excluding University of Witwatersrand – incomplete data) were sourced from the Health Professions Council (<http://www.hpcs.co.za>), 12 June 2007.

Existing human resources for health public-private interactions

Interaction between HRH of the public and private sectors is not new. For example, significant numbers of private providers are contracted to work within the public sector on a session basis. This is a short-term solution, although there is a history of the implementation of this policy to fill gaps in service delivery. However, a key concern is the lack of data on the numbers of private practitioners engaged in public sector activity and the impact thereof. Another case in point is that of the part-time district surgeon system. There exists substantial evidence of the experience of this system in South Africa.^{12,13,14,15} The national Department of Health (DoH) in its policy on decentralisation, views the contracting of district surgeons as an example of using private sector resources.¹⁶ The system does fill some of the gaps, but the weaknesses (around differentiated quality of care to State patients) highlighted by studies heighten the need to exercise caution when attempting to engage with the private sector vis-à-vis public sector service delivery targets.

Key areas of policy debate

There are a number of key areas of policy discussion at present in relation to positioning the private sector to respond to the national HRH challenges. The discussion below focuses on three critical areas.

1. Employment of doctors within private hospitals
2. Remunerative work outside the public service (RWOPS)
3. Development of private medical training schools

Employment of doctors within private hospitals

There have been increased calls by private hospitals to the HPCSA to lift restrictions on the employment of doctors within private hospitals. It is argued that this will allow hospitals greater control over resources and contribute towards the containment of spiralling costs of specialists. The mining sector model is an interesting case in point. Doctors are employed and the costs are generally lower than those in the current hospital sector, given that reimbursement is fixed irrespective of turnover. By applying this model to the current hospital sector, hospitals can negotiate a universal or global fee with funders that incorporate the cost of health professionals. The risks associated with the hospitals are primarily in terms of taking on the liability for negligence and malpractice, whereas this risk is currently borne by the practitioners. In this model there might be the cost impact in terms of insuring individual practitioners, however in the long-term, global fees can be negotiated. Further, in this model the actual service delivery component remains fixed for that year and can be controlled by both parties in the relationship.

However, if the remuneration levels are lower than those under the current independent practitioner fee-for-service levels, the potential emerges to exert downward pressure on the demands to increase public sector wage levels. This scenario however, is unlikely given the chronic shortage coupled with the decreased production of specialists within the country. There are inadequate push factors likely to make this model attractive to specialists currently in private practice. However, it is worth noting that recently qualified specialists might find the model attractive given the relatively high level of capital investment required to establish a private practice.

The key point emerging is that this model has the potential to drain public sector resources. At the same time it is not likely to attract those currently in private practice given the level of independence and power currently held in this sector.

The key challenge arises in generating a mix of incentives attractive enough to entice doctors to enter into employment contracts with hospitals in a context of a fee-for-service environment which currently strengthens the power relationship in favour of the profession.

Even if this model were to be adopted it does have several limitations.

- In order to attract doctors the remuneration levels will be substantially higher than public sector remuneration levels. This has the potential to inevitably exacerbate the exodus from the public sector to the private sector.
- The argument that the employment of doctors in private hospitals will contribute to lowering costs is yet to be tested empirically. However, this option needs to be explored vis-à-vis the development of alternative reimbursement mechanisms that have the potential to tackle private health care costs.
- With respect to interaction with the public sector it is unclear to what extent this mechanism can bolster public sector, service delivery. However, given that the remuneration levels will be higher than those in the public sector the policy may have a negative equity impact through the 'crowding-out' of public sector doctors. At the same time the policy may place added pressure on the State to raise its levels of remuneration in order to retain existing staff. However, given existing budgetary constraints this may not be feasible.

Remunerative work outside the public service

Remuneration levels in the private sector are far higher on average than those in salaried public employment. Preliminary analysis by the Board of Healthcare Funders (BHF) using total annual benefits paid to specialists from medical schemes alone (excluding co-payments and out-of-pocket expenditure) ranges from R400 000 to R8.8 million.ⁱ This translates into pressures on the public sector to at least match private sector remuneration levels in order to retain personnel. Given the fiscal limitations in dramatically raising public sector salaries, options that are considered include Remunerative Work Outside Public Service as a means of supplementing incomes of professionals working in the public sector. Internationally, RWOPS is referred to as dual practice and is seen as a system solution to the availability of limited resources.^{17,18,19} RWOPS was implemented as far back as January 2000 and guidelines have been developed to guide its implementation.²⁰

With respect to RWOPS it can be argued that the policy addresses recruitment and retention challenges. The policy has the potential to raise provider income from private

ⁱ The total benefits paid are based on 2006 CMS data mapped with total number of providers by discipline for that period captured on the PCNS system.

sources to the greater benefit of the public sector through the retention of scarce skills. However, given the paucity of data on the impact of RWOPS and the difficulty in monitoring clinician activity, caution needs to be exercised with respect to the following key issues.

- ▶ RWOPS has the ability to undermine service delivery in the public sector through the prioritisation of income-generating private activity at the expense of public sector duties. This impacts on the quality of health service delivery given the potential for providers to spend extended time on private sector activity to the detriment of public sector duties.²¹
- ▶ RWOPS can encourage the misappropriation of public resources into the private sector.¹⁷ RWOPS therefore has the potential to transfer public resources to private care at the expense of care to public sector dependants. For instance, if a physician in the salaried employ of the State spends 60% of his / her time on private activity, then 60% of that activity is essentially state-subsidised at the expense of public sector beneficiaries who theoretically should be the main beneficiary of public resource flows. The reverse subsidy flow does not refer specifically to human resources. It can also refer to equipment, consumables and medicines.
- ▶ It is unclear to what extent RWOPS impacts on relationships between different health worker cadres. Despite the policy being applicable across the board, specialists are more likely to embark on RWOPS given the greater financial benefit and access to facilities beyond the public sector.
- ▶ There is also the concern that RWOPS creates the potential to draw away public sector patients towards the private sector activity as evidenced in Peru.^{17,19} This has adverse equity implications given the potentially catastrophic impact on households of financing private health care. However, in the South African context this is less of a concern given the relatively good access to public health care in the context of high levels of poverty, with uninsured public sector dependants largely unable to afford private health care.

Development of private medical schools

The private sector is exerting growing pressure on government to permit the opening of private medical schools. In the long run this initiative has the potential to benefit both the public and private sectors. Private medical schools would not exclusively benefit the private sector since graduates could still be required to fulfil two years internship and community service. In addition, when doctors specialise (usually in the public sector), the public sector gets at least seven years service from these graduates. Furthermore, if new medical schools help saturate the private market with doctors, there is the potential to shift the balance and more doctors are likely to be attracted to public sector employment.

However, an important caveat is the shortage of skills within the country and these facilities will require skilled personnel to provide training. There would have to be a mechanism in place to ensure that there is no exodus of skills from state-run medical schools to the private institutions. In addition, the costs that are likely to be borne by the public need to be taken into account. It is unclear to what extent these facilities will receive public subsidies. These subsidies considerably reduce the level of user-fees borne by the public. A solution would be to increase spending on existing tertiary institutions that already have the infrastructure and links to health facilities to provide long-term training. Such funding could be used to attract the requisite skills needed to scale-up training to boost the currently inadequate student intake levels.

In terms of private sector involvement vis-à-vis training there needs to be recognition of the existing interaction between institutions and private providers. There are mechanisms through honorary positions that allow private providers to engage in health sciences training. In the short-term this addresses the skills shortages in these institutions and assists institutions in meeting existing and potentially expanded training programme requirements.

Policy recommendations

The policy with respect to the employment of medical practitioners in private hospitals should be carefully reviewed in light of developing alternative reimbursement mechanisms to the dominant fee-for-service model. There is the potential to attract newly graduated specialists given the high costs incurred in the setting up of private practice. However, caution needs to be exercised given the concern of poten-

tially attracting clinicians employed in public facilities, which may exacerbate the internal brain drain.

There is a need for research on the impact of RWOPS on the health care system. Monitoring systems need to be put in place to curb potential perverse behaviour at the expense of public sector beneficiaries. A national data base is required that captures data on those performing RWOPS as currently, the distinction between 'public' and 'private' is blurred and difficult to disentangle. To achieve this the HPCSA and PCNS systems need to work together to create an integrated data base.

The development of private medical schools has the potential to strengthen the health system in the long run. The policy should be carefully considered so as not to undermine existing public institutions in the short run. To address the short-term training needs this needs to be rejuvenated though increased funding to build the necessary capacity to expand the current programme of training, whilst exploring public-private partnerships that can increase the overall pool of HRH within the country.

Finally, one of the key recommendations is the need for a national data base on health care providers. There are multiple data sets and currently it is difficult to extract data that allow for meaningful engagement between the public and private sector. There are too many 'unknowns'. It is unclear how many public providers engage in private activity. There is uncertainty as to how many private providers engage in public activity. The exodus of human resources from the public sector to the private sector is not quantified; given the paucity of longitudinal data capturing changes over time. There are also health professionals that have registered with the relevant councils but either do not practice or have migrated. A useful starting point therefore would be the creation of a national HRH data base that would allow both the public and private sectors to progress together towards the goal of strengthening and unifying the health system.

Acknowledgements

The authors wish to thank John Gurovich, Mduduzi Mazibuko and Sharon Swanepoel of the Board of Healthcare Funders of Southern Africa for assisting with the collation of statistics.

Disclaimer

The views expressed in this chapter are those of the authors and do not represent those of the Board of Healthcare Funders of Southern Africa.

References

- 1 World Health Organization. The World Health Report 2006: Working together for health. Geneva: World Health Organization; 2006.
URL: <http://www.who.int/whr/2006/en/>
- 2 Dambisya YM. A Review of Non-Financial Incentives for Health Worker Retention in East and Southern Africa. EQUINET discussion paper 44; May 2007.
URL: <http://www.equinetafrica.org/bibl/docs/DIS44HRdambisya.pdf>
- 3 Gilson L, Erasmus E. Supporting the Retention of Human Resources for Health: SADC policy context. EQUINET discussion paper 37; Sep 2005.
URL: <http://www.equinetafrica.org/bibl/docs/DIS37HRes.pdf>
- 4 Padarath A, Chamberlain C, McCoy D, Ntuli A, Rowson M, Loewenson R. Health Personnel in Southern Africa: Confronting the Brain Drain. Equinet discussion paper 4; 2003.
URL: http://www.hst.org.za/uploads/files/hrh_review.pdf
- 5 Republic of South Africa. National Health Act (Act 61 of 2003).
URL: <http://www.info.gov.za/gazette/acts/2003/a61-03.pdf>
- 6 Department of Health. The Draft Health Charter. July 2004.
URL: <http://www.doh.gov.za/docs/misc/healthcharter.pdf>
- 7 Department of Health. National Human Resource Plan for health to provide skilled human resources for healthcare to take care of all South Africans. Pretoria: Department of Health; 2006.
URL: http://www.doh.gov.za/docs/discuss/2006/hrh_plan/index.html
- 8 Pick W, Doherty J and Joffe AL. The Migration of Skilled Health Personnel in the African Region. School of Public Health, University of Witwatersrand and the World Health Organization (WHO); 2002.
- 9 Sanders and Lloyd. Human Resources: International Context. In Barron P, Ijumba P. editors. South African Health Review 2005. Durban: Health Systems Trust; 2005.
URL: http://www.hst.org.za/uploads/files/sahr05_chapter6.pdf
- 10 Statistics South Africa. Mid-year Population Estimates, South Africa 2006 [statistical release P0302]. Pretoria: Statistics South Africa; 2006.
URL: <http://www.statssa.gov.za>
- 11 Council for Medical Schemes. Annual Report 2006-7. Pretoria: Council for Medical Schemes; 2007.
URL: <http://www.medicalschemes.com/publications/publications.aspx?catid=7>
- 12 McIntyre D, Kruger E, Valentine N, van Zyl N, Jacobs T. An Evaluation of Existing Part-Time District Surgeon Services and Alternative Mechanisms for Future Contracting with General Practitioners. South Africa: Health Economics Unit, Department of Community Health, University of Cape Town and Centre for Health Systems Research and Development, University of the Free State; 1997.
URL: <http://www.hst.org.za/uploads/files/dimac.pdf>
- 13 Palmer N, Sinanovich E and McIntyre D. Primary Care Contracting Study, Phase 1: Western Cape district surgeons draft report on methods and findings. Health Policy Unit, London School of Hygiene and Tropical Medicine & Health Economics Unit, University of Cape Town; 2000.
- 14 Palmer, N. Contracts for Primary Care in South Africa's Part-Time District Surgeon System. In: Soderlund N, Mendoza-Arana P, Goudge J, editors. The New Public/Private Mix in Health: Exploring the changing landscape. Geneva: Alliance for Health Policy and Systems Research; 2003.
- 15 Sinanovich E, Palmer E. Primary Care Contracting Study, Phase 2: Eastern Cape District Surgeons Draft Report on Methods and Findings. Health Policy Unit, Health Economics Unit, University of Cape Town & London School of Hygiene and Tropical Medicine; 2000.
- 16 Department of Health. The District Health System in South Africa: Progress and Next Steps. Pretoria: Department of Health; 2001.
URL: <http://www.doh.gov.za/docs/policy/dhssystem.html>
- 17 Jan S, Bian Y, Jumpa M, Meng Q, Nyazema N, Prakongsai P, Mills A. Dual Job Holding by Public Sector Health Professionals in Highly Resource-Constrained Settings: Problem or solution? Bull World Health Organ 2005; 83(10): 771-6.
- 18 Berman P, Cuizon D. Multiple Public-Private Jobholding of Healthcare Providers in Developing Countries: An exploration of theory and evidence. London: DFID Health Systems Resource Centre; 2004.
URL: http://www.dfidhealthrc.org/publications/health_service_delivery/Berman_Cuizon.pdf
- 19 Jumpa M, Jan S, Mills A. Dual Practise of Public Sector Health Care Providers in Peru. Health Economics and Financing Programme Working Paper 2003.
- 20 Moorman J. Public-Private Partnerships. In: Ntuli A, Suleman F, Barron P, McCoy D, editors. South African Health Review 2001. Durban: Health Systems Trust; 2002.
URL: http://www.hst.org.za/uploads/files/chapter5_01.pdf
- 21 Ferrinho P, Van Lerberghe W, Fronteira I, Hipplota F, Biscaia A. Dual Practise in the Health Sector: Review of evidence. Human Resources for Health 2004; 2(14).
URL: <http://www.human-resources-health.com/content/2/1/14>

