GENERAL PRACTITIONERS AND NATIONAL HEALTH INSURANCE — RESULTS OF A NATIONAL SURVEY

M S Blecher, T Jacobs, D McIntyre

Objective. To determine the attitudes of South African general practitioners (GPs) to national health insurance (NHI), social health insurance (SHI) and other related health system reforms.

Design. A national survey using postal questionnaires and telephonic follow-up of non-responders.

Setting. GPs throughout South Africa.

Participants. Four hundred and forty-three GPs were randomly selected from a national sampling frame of 6 781 GPs.

Main outcome measures. Acceptance of NHI and GP preferences with regard to financing, provision, benefits, coverage and the role of GPs.

Main results. A response rate of 82.1% was achieved. Sixty-two per cent of GPs approved of the introduction of some form of social or NHI in South Africa, while 24.1% disapproved. Approval rose to 81.6% if GPs were to maintain their independent status, e.g. own premises and working hours, to 75% if additional private top-up insurance was allowed, and to 79.9% if payment was by fee-for-service.

Seventy per cent of GPs in the study stated that they had the capacity to treat more patients. The most important reason given for approving of NHI was to make health care more equitable and accessible to the majority of South Africans. A high proportion of GPs approved of increasing the level of interaction between GPs and district health authorities.

Conclusions. Most GPs approved of some form of social or NHI system, provided that the system did not significantly threaten their professional autonomy or economic and financial situation.

S Afr Med J 1999; **89:** 534-540.

The need for fundamental restructuring of the South African health care system has been discussed for decades.[1-5] The establishment of some form of national health insurance (NHI) or social health insurance (SHI) system has been one of the options proposed[1,6-10] (and ANC health policy discussion document, Western Cape Branch, African National Congress, 1991).

In January 1995 the Minister of Health established a Committee of Inquiry into NHI. The brief of this Committee was to prepare a plan for the introduction of a NHI system or a publicly funded alternative, with the express aim of ensuring that all South Africans would have access to primary health care (PHC) services. The Committee of Inquiry's report was published in 1995[11] and was followed by an official policy document.[12] Despite its initial focus on NHI, the report's main recommendations focused on the 'publicly funded alternative', and on strengthening public sector organisation and delivery of PHC services. This is presumably because the data available to the Committee suggested that this was the only way, in the current South African context, that PHC services could be made universally accessible and free at the point of access.

The report recommended a central role for district health authorities (DHAs) and the introduction of a purchaser-provider split in which DHAs would purchase services from a mixture of public and private providers. The report specified at least four roles for GPs in the national health system: (*i*) full-time employment in public facilities; (*ii*) accredited private provider status in terms of which DHAs could purchase services from accredited providers; (*iii*) sessional work at public facilities; and (*iv*) referral contracts from public facilities to independent GPs. Alternatively, GPs can elect to continue in full-time private practice with no involvement in the publicly funded system. The report, therefore, opens the door for unprecedented co-operation between public and private or independent providers, and if implemented will allow for many creative experiments that may be evaluated over the coming years. With regard to NHI the report proposed a limited SHI, with mandatory public hospital services insurance for all employed persons. This recommendation has been endorsed in several subsequent publications by the Ministry of Health.[13,14] Several related reforms on private sector financing have recently been put before Parliament.[15] An interdepartmental committee is being established to examine the establishment of a broader social security system in South Africa.

Physicians constitute powerful stakeholder groups whose opinions should be considered in restructuring processes within the health sector. This journal recently published a study[16] conducted in the Cape Peninsula which found that 63.3% of GPs approved of NHI; this figure increased to more than 81% if GPs were allowed to maintain their independent status. Since it seemed unlikely that these results would be

Health Economics Unit, Department of Community Health, University of Cape Town

M S Blecher, MB BCh, FCCH, MFGP, MPhil (MCH)

T Jacobs, BA Hons (Psych)

D McIntyre, B Com, BA Hons, MA

generalisable to the entire country a national study was recommended.

As part of its investigations, the Committee of Inquiry requested the authors to undertake a national survey of GPs. The survey aimed to determine the attitudes of GPs to the establishment of some form of NHI or SHI system, and to various options. These included who should be covered by such a system, how it should be financed, what benefits should be offered, how the system should be administered, and issues concerning delivery of care, the role of GPs and mechanisms of reimbursement. The study also aimed to explore GP views of collaboration between the public and private sectors, such as their role in the proposed district health system and as second-line providers in the publicly funded PHC system should a front-line role for GPs be deemed unaffordable.

METHODOLOGY

The population consisted of all private GPs in South Africa during the study period. The quantitative method consisted of a cross-sectional survey using postal questionnaires. A list of private GPs maintained by the South African Medical Association (SAMA) was used as a sampling frame. It consisted of 6 781 GPs and was chosen because it was assessed, after comparing it with several other databases, to be the most complete and up-to-date list of private GPs in South Africa. Systematic random sampling was used to select a sample of 443 GPs.

The questionnaire was developed on the basis of various behavioural models,[17-19] international studies of a similar nature,[20-23] and the findings of the Cape Peninsula study.[12] Most of the questions were of a closed nature, with GPs asked whether they approved or disapproved of each of a number of options.

Each GP was mailed the questionnaire on three occasions and telephonic follow-ups of non-responders were undertaken. In addition every GP was sent two introductory articles on NHI, one specifically compiled for this study, because it emerged during the Cape Peninsula study that GP understanding of NHI was incomplete. NHI was defined according to a previous study,[12] and it was made clear that a range of coverage options were possible. Informed consent was obtained from each respondent and confidentiality was maintained. Key GP stakeholder groups were consulted in the process of undertaking the study. A pilot study was conducted.

Statistical analysis was done on SAS version 6. Bivariate analysis was done using relative risk (prevalence ratios), with confidence intervals and chi-squared tests. Multivariate analysis was done with multiple logistic regression using forward, backward and stepwise models until the best fitting model was determined.

A number of qualitative focus group interviews were also conducted, but these will not be reported on here.

RESULTS

Data were collected from 317 randomly selected GPs, and a response rate of 82.1% was attained. Fifty-seven of the GPs (12.9%) were removed from the sampling frame as they were no longer in practice, or because contact information was incomplete. The GPs came from all of the nine provinces, namely Gauteng (27.7%), Western Cape (20.3%), KwaZulu-Natal (19.3%), Free State (7%), Mpumalanga (7%), Eastern Cape (6.7%), North West (6%), Northern Province (3.3%) and Northern Cape (2.7%).

Characteristics of GPs

Eighty-seven per cent of the sample were male and 13.2% were female. The median age was 43 years (range 25 - 82 years). The majority of GPs in the sample lived in metropolitan areas (38.9%) or large towns (24.1%), with 30.7% located in small towns and 6.7% in rural areas. Their universities of graduation included Pretoria (26.6%), Cape Town (13.6%), Stellenbosch (13.3%), Natal (11.7%), Witwatersrand (11%), University of the Orange Free State (7.5%), MEDUNSA (2.9%) and foreign universities (13.3%).

The median number of patients seen per GP per day was 30 (range 3 - 105). The median coverage of their patients by medical schemes was 70% (range 1 - 100%). The majority of GPs charged Representative Association of Medical Schemes (RAMS) Scale of Benefit rates (71.6%), with only 11.8% charging higher and 16.6% lower. Some GPs (33.7%) had worked as panel doctors for a sick fund or medical benefit scheme at some stage.

Attitudes to NHI

When asked how they would feel about the introduction of some form of NHI or SHI in South Africa, 62.2% (95% confidence interval CCI) 56.9 - 67.5%) said they approved or strongly approved, 24.1% disapproved or strongly disapproved and 13.7% were uncertain. Nineteen per cent strongly approved and 10.4% strongly disapproved. The proportion of GPs who approved of NHI by province, university of graduation and practice location is shown in Table I. Fifty-eight per cent of GPs approved of the establishment of a national fund for primary care services.

A larger majority of GPs said that they support NHI under certain conditions; 81.6% said that they would be in favour of a NHI system if GPs were to maintain their independent status (e.g. own premises and working hours). Seventy-five per cent said that they would support it if any person who wished to could take out additional private top-up insurance, and 79.9% were supportive if payment was by fee-for-service.

Analysis of responses to the open-ended questions and written comments by GPs demonstrated an entire spectrum of views on NHI, ranging from those who saw NHI as essential and long overdue, to those who said it was completely undesirable and hoped it would not occur in their lifetimes!

Table I. GP approval of NHI by province, university of graduation and practice location (%)*

	Approve	Disapprove
Province		
Western Cape	73.8	11.5
Eastern Cape	65	25
KwaZulu-Natal	63.8	19
Gauteng	60.2	20.5
North West	55.6	27.8
Northern Cape	55.6	33.3
Eastern Transvaal	52.4	38.1
Free State	47.6	42.9
Northern Province	20	50
University		
Natal	83.3	8.3
Foreign	73.2	7.3
Cape Town	71.4	14.3
Witwatersrand	67.7	20.6
MEDUNSA	66.7	11.1
Stellenbosch	58.5	29.3
Pretoria	46.3	30.5
Orange Free State	30	60.9
Practice location		
Metropolitan	61	22
Large town	61.6	23.2
Small town	58.9	25.3
Rural	44.4	38.9

*In each case the remainder of respondents were uncertain.

Determinants of support for NHI

GPs were asked in an open question the reasons for their attitude to NHI. By far the most common reason given for introducing some form of NHI or SHI was that it would make health services more equitable and accessible to the majority of South Africans (53.2%). Responses in this category included that NHI would improve health services for the underprivileged majority and the nation, that health care is a right and an essential component of civilised societies, and that the effects of apartheid, including inequalities, must be addressed. Other reasons for approval included that NHI would lead to redistribution of resources (5.4%), that the current medical scheme system is not functioning adequately (3.7%), that it would be a useful mechanism for financing health care (1.7%), and that NHI would decrease incentives for private sector practitioners to over-service and over-prescribe (1%).

Reasons given by those who disapproved of NHI (the minority) included that they were opposed to cross-subsidisation (8.9%). Statements included that middle class persons were already overtaxed and were supporting non-taxpayers, and that they were being expected to contribute more while receiving fewer services. Linked to this were concerns about the high rate of unemployment (2.7%). This group preferred the current two-tier system (4.4%), or perceived NHI as a threat to private practice (3.4%). Some saw NHI as not economically viable or practically impossible (10.2%). Some said that health is a private matter which governments should not be involved in or saw NHI as anti-free market, and likely to lead to socialist medicine or a welfare state (2.4%). Other GPs said that quality of care would decrease (3.1%), that there would be fewer incentives for physicians, who would have an increased workload, lower incomes and would over-refer (3.1%), and that patients would abuse the system (5.2%). Another perception was that NHI hasn't worked well in other countries (2.7%).

Table II shows the results of bivariate analysis, demonstrating which variables were statistically significantly associated with approval of NHI.

Table II. GP beliefs associated with support for NHI*

Beliefs about NHI	%†	RR‡	CI
More equitable system of health care			
Yes ($N = 159$)	96.9	4.4	2.6 - 7.1
No ($N = 54$)	22.2		
More patients able to consult GPs			
Approve ($N = 200$)	86	3.8	2 - 7.3
Disapprove ($N = 31$)	22.6		
Compatible with free enterprise			
Yes ($N = 100$)	94	1.9	1.6 - 2.3
No ($N = 122$)	50		
GP income			
Increase ($N = 48$)	91.7	1.7	1.4 - 2.1
Decrease ($N = 118$)	53.4		
Has capacity to treat more patients			
Yes ($N = 180$)	78.9	1.6	1.2 - 2.1
No ($N = 56$)	50		
Control over professional decisions			
Increase ($N = 40$)	87.5	1.5	1.3 - 1.8
Decrease ($N = 146$)	58.2		
University of graduation			
English medium ($N = 144$)	84	1.5	1.2 - 1.7
Afrikaans medium ($N = 121$)	57		

*Data on this table exclude non-responders and those who were uncertain on either question in the bivariate analysis.
†The table should be interpreted as follows: of those who believed NHI was a more equitable health system, 96.9% expressed support/approval for NHI, etc.
‡The relative risk (RR) is a ratio of the two percentages and is statistically significant if its confidence interval (CI) does not include 1.

Coverage

GPs overwhelmingly (96.5%) stated that all South Africans should have access to a basic package of primary level services. However 61.1% said they would prefer a SHI that covered contributors only, while 38.9% preferred a NHI with universal coverage.

Financing

When asked to indicate which of the following forms of financing should be used if a national fund for primary care services were to be introduced, 76.9% of GPs opted for the NHI (usually based on contributions deducted from the payroll), 42.5% for general tax revenue, 47.7% for private sources of funding and 39% for a dedicated health tax.

With regard to contributions by individuals to the NHI, the majority of GPs (65.6%) approved of membership being compulsory for all employed persons, of individual risk rating not being used (69.8% approved), and of contributions being proportional to income (58.3% approved).

Benefits

The majority of GPs (89.1%) believed that all those covered by the scheme should be entitled to at least a standard minimum benefit package. GPs were given a list of the following services and asked to consider whether each was an essential component of a basic package of primary care services. The proportion of GPs who considered each service to be essential was as follows: primary medical care (99.3%), public health services such as infectious disease control (91.9%), dental care (89.6%), mental health services (86.3%), school health services (84.4%), occupational therapy (54.5%) and physiotherapy (52.3%).

A small majority of GPs (58.4%) said that in the current South African situation benefits should cover primary care services only, with 41.6% believing that all levels of care should be included.

Administration

GPs were asked whether each of a number of parties should or should not be part of the central controlling body of a NHI in South Africa. Results were as follows: 93.7% favoured the inclusion of doctors' professional groups, 70.1% the inclusion of government, 71.8% employers' organisations, 56.7% employees' organisations and 48.6% medical schemes. In each case the remainder said that these groups should not be part of the controlling body.

Forty-three per cent of GPs would prefer a NHI to be administered by one large national scheme, 45.8% preferred a combination of a national scheme and multiple schemes, and 11% preferred multiple schemes (such as medical schemes) only.

With regard to which organisation(s) should administer a NHI, GP preference was for a new independent organisation, with government, employers' organisations, employees' organisations and professional organisations represented (68.1% approved this option). Other approved options were the Department of Health (49.7%), private administrators (41%), medical schemes (23.9%) or other government departments such as a new parastatal or the Department of Labour or Finance (13.4%). In each case the remaining respondents disapproved.

The preferred levels at which NHI should be administered were stated to be national (62.6%), provincial (55.2%) or district (37.4%). In each case the remainder did not approve of NHI being administered at that level.

Delivery of care under NHI and interactions between private and public providers

Most GPs clearly expressed their desire to maintain their status independent from the public sector, and for both the public and private sectors to provide services under a NHI. For example, while 82% said they would be in favour of NHI if they maintained their independent status, only 11.1% said that full-time employment by the NHI would be attractive to them. Respondents were asked whether most primary medical care under NHI should be provided by GPs, government community clinics or a combination of these. Most GPs (76.8%) chose the combination option.

GPS appeared to want to care for patients financed by private sources as well as those financed by NHI. The majority (70.7%) said that in a given geographical area all doctors, with no limits on numbers, should be able to care for NHI-funded patients, and 88.6% disapproved of only those doctors contracted solely to NHI caring for NHI-funded patients. While 62% of GPs approved of NHI, only 47.3% said they approved of the GP's role shifting towards a model of independent practitioners contracted to a NHI.

Seventy per cent of GPs approved of making greater use of primary care nurses in their practices should a NHI be introduced, and 68.1% approved of the use of an essential drug list provided that such a list was compiled by South African medical experts. While 51.8% said that GPs should be responsible for providing preventive services such as immunisations, 39.8% felt that they should not provide such services.

With regard to interactions between private and public providers, 81.1% of GPs said that referrals from public sector clinics would be attractive to them, 54.3% said GP sessions at public sector clinics would be attractive and 93.8% said GP access to resources in the public sector, such as radiological and laboratory tests, would be attractive.

With regard to interactions between GPs and district health authorities (DHAs), 79.2% approved of GPs retaining their independent status but becoming a more integral part of the district health system. Sixty-six per cent approved of DHAs contracting with GPs to care for patients, 90.8% approved of GPs providing relevant information to district health information systems, 71.8% approved of the DHA playing a role in quality assurance in the private and public sectors and 83.7% approved of GPs taking part in campaigns initiated by the DHA, e.g. TB health promotion. Most GPs (65.4%) were

opposed to the DHA licensing where new doctors' surgeries are located.

Mechanisms of reimbursement

Many GPs (47.8%) disapproved of capitation as a method of reimbursement, with only 29.8% approving. A somewhat larger proportion of GPs would accept capitation under certain conditions. Fifty-three per cent indicated that they would accept capitation if gross income was the same as that currently received, 55.3% would accept it if the capitation fee excluded pharmaceuticals and diagnostic tests, 68.5% if they could continue to receive payments on a fee-for-service basis from patients with private insurance or medical scheme cover, and 27.2% would accept it under some kind of private managed care option.

Fifty-seven per cent of GPs said they would accept a combination of capitation and fee-for-service for certain specified activities, e.g. immunisation and Pap smears. If payment was by fee-for-service 79.9% said they would be in favour of a NHI.

Conditions for approval of NHI

GPs were asked in an open question if there were any conditions that would be essential for them to support NHI. Over seventy different conditions were expressed. The most commonly cited of these are shown in Table III. Additional conditions, mentioned by fewer than 5% of respondents and not shown in Table III, included that GPs should have free choice as to whether to participate in the NHI system, that there should be a reasonable and defined PHC package, and that there should be incentives for health education and prevention.

Table III. GP conditions for approval of NHI ($N = 220$)

Condition	% of GPs
Fee-for-service reimbursement	36.4
Private practice and private sources of financing are allowed	33.7
GPs maintain their independent status	22.3
Professional autonomy is maintained	22.3
Reasonable or current income levels are maintained	17.7
Additional private top-up insurance allowed	15.4
Efficient administration	12.3
High quality of care, standards maintained and reasonable workload	11.8
Consultation with doctors and other stakeholders on decision making	9.1
Mechanisms to stop abuse by patients, e.g. user fees or co-payments	8.1
Patients retain choice of doctor, facility and between public and private sector	6.7
Mechanisms to stop abuse by doctors, e.g. peer review	6.3
Tiered system with NHI only for lower income workers	5.9
Every citizen contributes something	5.4

Discussion

The demographic data and characteristics of practising GPs are interesting and provide information that is not easily obtainable from other sources. The proportion of graduates from each university is fairly similar to national data on registered practitioners (Department of Health — personal communication, 1988), but reflects a higher proportion of graduates of historically Afrikaans universities in general practice.

Findings of this study indicate that there is substantial and surprisingly favourable support for health sector reform among GPs. The variation in support for NHI, from 30% of University of the Orange Free State graduates to 83.3% of University of Natal graduates, is interesting and reflects the historical differences between universities. In addition to approving of the establishment of some form of national or SHI system, the majority of GPs supported many of the basic principles of NHI, for example that membership be compulsory for all employed persons, that contributions be proportional to income, that individual risk rating not be used and that all those covered by the scheme be entitled to at least a standard minimum benefit package. Some of these principles are contained in the Medical Schemes Bill currently before Parliament,[15] and the findings of this study suggest that GPs would be likely to maintain their independent status and top-up insurance would probably be allowed. Given this scenario, support for the establishment of some form of NHI or SHI approximated the 80% level. There was also substantial support for increased interaction between the private and public sectors.

The validity of these results is supported by the representative sampling, the high response rate (82.1%) and the concordance of these results with those of a previous study.[16] However, the expressed support for NHI should be interpreted with caution since the support of many GPs was conditional on their economic and financial situation and their professional autonomy not being significantly affected.

International studies of the attitudes of physicians to NHI and other health sector restructuring initiatives,[20-25] (and personal communication — Department of Health, Pretoria) have described three broad axes of belief that were important determinants of these attitudes, namely political ideology, economic self-interest and professional autonomy. In this study, by far the most common reason for GPs supporting the introduction of NHI related to its equity effects. The support expressed for reform and greater equity may reflect GP acceptance that major changes are likely as a result of the country's current transition to democracy. If implementation of NHI is substantially delayed, attitudes may harden and an opportunity for change may be lost. Given that many GPs believed that NHI would lead to decreases in income and

professional autonomy, or that it is not compatible with free enterprise principles, their approval may not be strong and is likely to be conditional on the type of model introduced.

Coverage

This study shows clearly that the majority of GPs would approve of the introduction of a (more limited coverage) SHI system. While the minority (38.9%) stated that they preferred a universal coverage option, the data seem to suggest that a larger proportion would accept higher coverage options, given the fulfilment of certain conditions. However the data also suggest that GP concerns about cross-subsidisation, financial viability and quality of care increase with higher coverage options.

Benefits

GPs overwhelmingly (99.3%) believed that the benefits of a SHI should include primary medical care. However, recent government policy states that SHI will only cover public hospital services.[13,14] If the government does go forward to establish a SHI it is likely that GP groups will lobby to have their services included as a benefit.

Financing

GP support for contributions to be compulsory, not rated according to risk and to be income-related is interesting and challenges the principles previously underlying the Medical Schemes Amendment Act, which make our medical schemes more typical of private health insurance systems. Some of these are likely to change with the passage of the Medical Schemes Bill through Parliament.[15]

Many GPs perceived NHI as a source of funding for their practices additional to private medical schemes. This preference for multiple sources of financing may explain the relatively low support for GPs becoming independent contractors to the NHI, since this might have been perceived as being an exclusive contract with the NHI.

Delivery of care

The Committee of Inquiry Report identifies at least four potential roles for GPs in the publicly funded NHS. Of these, our findings show that referral contracts and sessional posts would be attractive to many private GPs , but that full-time employment at a public facility would be unattractive to most. Accredited private provider status would be desirable to many GPs, but not (for most) at the cost of relinquishing private sources of financing at that practice location — a requirement specified in the report. The option of GPs having two premises, one for private practice and the other for publicly funded patients, is permissible under the plan but presents its own disadvantages. Accreditation itself was unpopular with GPs, who believed that all GPs should be able to treat publicly financed patients.

The Report advocates the implementation of an essential drugs list and greater use of nurse practitioners in GP practices. This study has shown both to be acceptable to GPs. Their acceptance of a closer contractual relationship with DHAs, including data reporting and quality assurance, is encouraging, as is their willingness to explore a variety of other public-private interactions.

Given that the Committee of Inquiry suggested that care should be comprehensive, it is of concern that only 51.8% of GPs believe they should undertake preventive services such as immunisation. This issue needs careful consideration if critical preventive services are not to deteriorate under the restructured health system.

Reimbursement

While most GPs are opposed to capitation, this study suggests a softening in their approach when compared with earlier studies.[26] It is noteworthy that GP approval for NHI increased from 62% to 79.9% when the mechanism of reimbursement was specified as fee-for-service. This suggests the importance of personal interests in physicians' appraisal of reforms in the health sector.

Health system reform

The report of the Committee of Inquiry proposed a gradualist, incentive-based approach in which GPs would be encouraged to compete for contracts and become more involved in the publicly funded system. The report argued for more posts and better working conditions for doctors and a range of potential mechanisms of involvement of GPs in the public health system. The findings suggest that GPs are likely to support such proposals. GPs are also likely to be relieved that their concerns have been addressed and that private practice and private health insurance will continue.

Should a NHI be introduced, GP preference would be for a limited-coverage SHI for employed persons, with fee-for-service reimbursement for GP services and maintenance of their incomes and autonomy. This is in contrast to the government's current proposals for SHI, which only include benefits for public sector hospital services and not for GP services.

The study suggests that a proportion of GPs would have concerns around types of NHI that collectively involve universal coverage, capitation or salary as a mechanism of reimbursement, lack of access to private insurance, and decreases in autonomy and income. One of the models initially considered by the National Finance Committee (the Deeble model), which explored the possibility of bringing all GPs into a publicly financed national health system, is an example of this type of model.

Conclusions

This large national survey found considerable support among private GPs for reforms in the health sector. These reforms include the establishment of some form of NHI or SHI system and greater interactions between the private and public sectors and between GPs and DHAs. Caution should be exercised in interpreting this support, since it was to some extent conditional on GPs maintaining their financial and economic positions and professional autonomy. Should the government go forward and implement a SHI, GP groupings are likely to lobby for inclusion of GP services as benefits.

We wish to acknowledge assistance from Drs J Bloomberg, N David, M Bachmann, S Jooste, R Ehrlich, L London, J Myers and M Hoffman. Financial support from the Health Systems Trust and the Department of Health is also acknowledged.

References

1. Naylor CD. Privatisation of South African health services— are the underlying assumptions correct? *S Afr Med J* 1987; **72:** 673-678.
2. Van Rensburg HCJ, Fourie A, Pretorius E. *Health care in South Africa — Structure and Dynamics*. Academica, 1992.
3. Owen CP. *The Case for a National Health Service*. Cape Town: University of Cape Town, 1989.
4. Price C. Health care beyond apartheid — economic issues in the reorganisation of South Africa's health services. *Critical Health* 1987; March: 8.
5. De Beer C. *The South African Disease: Apartheid Health and Health Services*. Johannesburg: South African Research Service, 1984.
6. African National Congress. *A National Health Plan for South Africa*. Johannesburg: African National Congress, 1994.
7. Broomberg J, De Beer C. Financing health care for all — is national health insurance the first step? *S Afr Med J* 1990; **78:** 144-146.
8. Broomberg J. The future of medical schemes in South Africa: towards national insurance or the American nightmare? *S Afr Med J* 1991; **79:** 415-418.
9. Bachmann MO. Would national health insurance improve equity and efficiency of health care in South Africa? Lessons from Asia and Latin America. *S Afr Med J* 1994; **84:** 153-157.
10. Price M, Masobe P. *The Future of Medical Schemes: Issues and Options for Reform*. (Centre for Health Policy Paper No. 32). Johannesburg: Centre for Health Policy, Department of Community Health, University of the Witwatersrand, 1993.
11. Department of Health. *Restructuring the National Health System for Universal Primary Health Care*. (Report of the Committee of Inquiry into National Health Insurance). Pretoria: DOH, 1995.
12. Department of Health. *Restructuring the National Health System for Universal Primary Health Care*. (Official policy document issued by the Department of Health). Pretoria: DOH, 1996.
13. Department of Health. White paper for the Transformation of the Health System in South Africa. *Government Gazette* 1997; **382**(17910): 1-230.
14. Department of Health. *A Social Health Insurance Scheme for South Africa*. Pretoria: DOH, 1997.
15. Minister of Health. *Medical Schemes Bill*. Pretoria: DOH, 1998.
16. Blecher MS, Bachmann M, McIntyre D. Acceptability to general practitioners of National Health Insurance and capitation as a reimbursement mechanism. *S Afr Med J* 1995; **85:** 847-851.
17. Ajzen I. *Attitudes, Personality and Behaviour*. Stratford: Open University Press, 1988.
18. Mullen PD, Hersey JC, Iverson DC. Health behaviour models compared. *Soc Sci Med* 1987; **24:** 973-981.
19. Janz NK, Becker MH. The health belief model: a decade later. *Health Education Quarterly* 1984; **11**(1): 1-47.
20. Colombotos J, Kirchner C, Millman M. Physicians view National Health Insurance. *Med Care* 1975; **13:** 369-396.
21. Goldman L. Doctors' attitudes to National Health Insurance. *Med Care* 1974; **12:** 413-423.
22. Sudit M. Ideology or self-interest? Medical students' attitudes towards NHI. *J Health Soc Behav* 1988; **29:** 376-384.
23. Globerman J. Free enterprise, professional ideology, and self-interest: an analysis of resistance by Canadian physicians to universal health insurance. *J Health Soc Behav* 1990; **31:** 11-27.
24. O'Connor SJ, Lanning JA. The end of autonomy? Reflections of the postprofessional physician. *Health Care Manage Rev* 1992; **17**(1): 63-72.
25. Margolis PA, Cook RL, Earp JA, *et al*. Factors associated with paediatricians' participation in Medicaid in North Carolina. *JAMA* 1992; **267:** 1942-1946.
26. Volmink JA, Metcalf CA, Zwarenstein M, Heath S, Laubscher JA. An exploration of the attitudes of private general practitioners towards health care in South Africa. *S Afr Med J* 1993; **83:** 827-833.

Accepted 12 Dec 1998.