Would national health insurance improve equity and efficiency of health care in South Africa?

Lessons from Asia and Latin America

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Abstract **Arguments for and against national health insurance (NHI) for South Africa are illuminated by the experiences of other middle-income developing countries. In many Latin American and Asian countries the majority of their populations are covered by NHI, coverage having steadily increased over the last decade. Patterns of care under NHI tend to be inefficient — hospital-oriented, highly specialised and technical, with excessive investigation, surgery and medication, neglect of primary care and severe cost escalation. In some cases, however, urban primary care has been promoted through polyclinics and health maintenance organisations. Inequalities in funding, access and utilisation exist between the insured and uninsured, between strata of the insured, and between urban and rural areas. These inequalities have at times been ameliorated by expansion of coverage, subsidisation of poorer beneficiaries and initiation of programmes that extend care to rural areas. NHI can improve or impair efficiency and equity in health care, depending on structures and processes of revenue generation, payment and organisation of care. These depend in turn on how those likely to lose or gain from each option exercise their collective power.**

S Afr Med J 1994; **84:** 153-157.

Proposals for national health insurance (NHI) in South Africa have been discussed from a number of perspectives in recent years.[1-3] World Bank[4] and International Labour Organisation[5] publications have also advocated NHI as a solution to inadequate health financing in developing countries. NHI is but one of many potential sources of health care financing, but is the major source in many developed and middle-income developing countries. It is usually based on compulsory contributions by employers and employees in the form of a payroll tax. Individuals unable to afford compulsory insurance may be excluded from benefits, but could instead be subsidised by the premiums of wealthier workers and/or government contributions. The range of health care to which beneficiaries are entitled varies. NHI could cover only a basic package of services, leaving individuals to purchase additional care or insurance themselves, in which case definition of the basic package would be a key issue.

NHI may be conceived narrowly as a financing mechanism, or more broadly as an integral part of a national health care programme. While the feasibility of NHI financing needs detailed investigation, the potential impact of NHI on the nature and distribution of health care provision is of even greater concern.

Proponents argue that NHI could allow central control over private health expenditure which could be directed to the most efficient forms of care, such as preventive and promotive services.[1] Additionally, it is claimed that NHI can increase financial resources for public health care better than can general taxation, because people are more willing to pay insurance contributions in return for a tangible benefit, and because a health insurance fund cannot easily be appropriated by governments to finance non-health expenditures. Critics warn that NHI, unless strongly regulated, may impair efficiency by encouraging excessive specialised care for the insured and aggravate inequity by diverting financial and professional resources away from the uninsured poor who are most in need. Both sets of arguments seem plausible, and should be evaluated in the light of the experiences of other countries.

The middle-income countries of Asia and Latin America are more economically and socially comparable to South Africa than are developed nations or the poorer countries of sub-Saharan Africa. The former countries have similar per capita incomes to South Africa,[6] indicating that similar levels of health care are affordable (Table I). They also have similarly unequal income distributions, making equity considerations important.[7] Many Latin American countries have more than 50 years of experience of social health insurance, and some Asian countries have more recently attained near-universal insurance coverage.

The aim of this review was to examine the available evidence of the impact of national health insurance on equity and efficiency in health care in the middle-income developing countries of Latin America and Asia, so as to inform the choices facing South Africa. In addition, low-income countries with substantial insurance coverage are considered, most notably China. The terms NHI, social health insurance and social security are used interchangeably in this paper.

Insurance coverage

Less than 20% of South Africans have private health insurance: the rest depend largely on public services or out-of-pocket payments for private services.[8] Could NHI significantly increase this proportion? In this paper, 'coverage' applies to the proportion of the population entitled to insurance-funded care. Entitlement may not entail access to services, as will be discussed later.

Coverage has increased steadily in most Latin American countries, starting in the 1930s and accelerating in the last two decades (Table I). Virtually the whole populations of Brazil, Costa Rica[9] and South Korea[10] are, at least nominally, entitled to insurance-funded care. In Brazil universal entitlement was simply decreed by the government during the late 1980s, although a large proportion of the population did not contribute.[9] Insurance often covers only a proportion of costs, and beneficiaries' co-payments may be substantial, as in Korea (20 - 30%),[10] China (up to 50%) and the Philippines (30% of hospital costs),[9] with maximum limits on payments.

In most countries, compulsory insurance began with urban workers employed by large enterprises in a few economic sectors, and gradually extended to other sectors and smaller enterprises. Workers' dependents may or may not be covered.

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Accepted 3 Aug 1993.

TABLE I.
Economic, demographic and health indices, and health insurance coverage in selected countries*

Country	GNP per capita (US$)	Population (million)	Urban population (%)	Life expectancy (yrs)	Infant mortality rate (per 1 000)	Health insurance coverage (% population)	Sources†
Low income							
China	370	1 134	56	70	29	40	10,12
Average	350	3 058	38	62	69		
Low-middle income							
Bolivia	630	7,2	51	60	160	30	13
Philippines	730	62	43	64	72	37	10
Peru	1 160	22	70	63	69	19	41
Thailand	1 420	56	23	66	27	39	5
Turkey	1 630	56	61	67	60	35	10
Costa Rica	1 900	2,8	47	75	16	100	10,13
Chile	1 940	13	86	72	17	13	
Argentina	2 370	32	86	71	29	75	10
Average	1 530	629	52	65	51		
Upper-middle income							
Mexico	2 490	86	73	70	39	60	41
S. Africa	2 530	36	60	62	66	20	8,20
Venezuela	2 560	20	84	70	34	50	10
Uruguay	2 560	3,1	86	73	21	67	41
Brazil	2 680	150	75	66	57	100	10
S. Korea	5 400	43	72	71	17	100	11
Average	3 410	458	71	68	45		
High income							
Average	19 590	816	77	77	8		

*All data are for 1990 except insurance coverage estimates which are for various years between 1985 and 1990.
†All data from reference 6, except insurance coverage estimates from sources cited in last column.

Extension of insurance to rural populations has usually been restricted by these people's inability to afford premiums, or by shortages of rural services. Rural Koreans were reluctant to pay insurance contributions, as the lack of rural services made benefits unlikely.[11] In Brazil and Mexico, special funds subsidised by the government and social security, were established to extend coverage to rural areas.[9,12,13] Brazil also financed insurance for farm workers with a tax on certain agricultural products.[14] Extension of rural health care has been especially successful in Costa Rica, but this was largely financed through the government, assisted by foreign aid.[9,15]

For South Africa, the feasibility of increasing coverage depends largely on the numbers of people in the urban formal economy, as it would be difficult to extract contributions from the large proportion of the population that is unemployed, employed in the informal sector, or living in rural areas. Almost 5 million workers — about 46% of the economically active population — currently contribute to compulsory unemployment insurance.[16] Research is necessary to determine to what extent these workers and their employers are willing and able to pay for NHI and, if dependents were to be included, what proportion of the population could thus be covered.

Equity

South Africa suffers from an extremely unequal distribution of health care resources, whether comparisons are made between racial categories, private or public care, or between homeland and other areas.[8,17,18] It is instructive to consider inequalities in countries with substantial NHI coverage.

While 'equal care for equal need' is a good definition of equity, 'need' is difficult to measure accurately. For purposes of comparison, given the gross inequalities in developing countries, population size remains a useful, though crude, index of a population's need. Ratios of expenditure or health professionals to population are the most readily available indices of health care distribution.

Doctors are invariably the most unequally distributed resource. In Brazil the numbers of doctors per 10 000 population were 17,5 in the south-east, 6,9 in the north-east and 6,6 in the north.[9] In South Korea the corresponding figures were 7 in urban areas and 1,2 in rural areas.[10] Varying levels of inequality between and within other countries are shown in Table II (these ranges can give a misleading impression of differences in inequality between countries, as countries with smaller regions tend to show greater ranges).

TABLE II.
Ranges of resource supply and health insurance coverage between least-served and best-served regions in each country

Country[20]	Doctors/ 10 000 pop.	Beds/ 1 000 pop.	Coverage (%)
Argentina	8,1 - 47	4,3 - 8,4	6 - 100
Bolivia		0,2 - 0,9	11 - 33
Chile	2,1 - 5	3,2 - 4,8	39 - 95
Costa Rica	1,9 - 12	1,1 - 5,7	54 - 100
Ecuador	4,0 - 14	1,6 - 2,8	3 - 20
Mexico	2,4 - 21	0,4 - 3,3	17 - 100
Panama	4,0 - 11	2,7 - 5,2	11 - 75
Peru	0,3 - 19	0,6 - 3,0	3 - 27
Uruguay	6,5 - 35	1,8 - 3,8	17 - 68
South Africa[8]	0,3* - 10†	4,0‡ - 7,0†	

* Homeland.
†Metropolitan.
‡ Non-metropolitan.

Insured people usually have more and better health care than do the uninsured, and coverage is invariably higher in urban than in rural areas. In most countries, the wealthy are most likely to be insured. In Brazil[19] and the Dominican Republic,[20] for example, coverage increased with increasing income level and job status. Unequal coverage may exist even within households, when workers' dependents are not covered, as in Peru,[21] or pay higher fees, as in China.[22] In the course of time, expansion of coverage has proceeded in order of decreasing wealth.

Inequalities also exist among the insured. Entitlement to care does not guarantee that care is provided. Local

services may not exist. User fees, time and transport costs, and lack of knowledge of the benefits of care may deter people from utilisation, especially the rural poor. In Mexico City, social security clinics were located far from the insured residents of poor suburbs, who preferred to pay private practitioners closer to home.[23] In Brazil, social security spent twice as much per capita in the richer south-east of the country as in the poorer north-east.[20] Utilisation rates among insured Brazilians were twice as high in the south-east as in the north-east, four times as high in urban as in rural areas, and ten times as high in the urban south-east as in the rural north-east.[9] Insured Koreans' utilisation rates increased with increasing income, especially for hospitals.[11] As an example from Africa, one hospital in Zaire found that, compared with uninsured people, the likelihood of utilisation was 22 times higher in those fully insured, and 7,5 times higher in those partly insured.[22] These examples show that insurance coverage is not in itself sufficient to ensure access to care.

There is a danger that NHI may drain scarce resources, such as finance and professionals, from government health services. Social security consumed disproportionately large shares of public health finance in most Latin American countries in the 1970s (Table III). As coverage increases, government expenditure on the uninsured, and on preventive services, may decline. Roemer[24] claims that government health spending has generally been maintained during expansion of social security. In Costa Rica, expansion of social security was accompanied by a marked increase in the government supply of primary care.[6,12,25] In Uruguay, by contrast, government expenditure and the quality of its care declined as insurance increased.[26] Similarly, increased social security spending in Brazil was also accompanied by a decrease in government spending.[20]

TABLE III.
Proportion of economically active population entitled to health insurance benefits, and proportion of total public sector (social security plus government) health expenditure consumed by social security in Latin American countries in 1977[19]

Country	Entitled (%)	Expenditure (%)
El Salvador	13	27
Bolivia	18	74
Colombia	21	46
Guatemala	34	50
Panama	46	66
Brazil	49	97
Argentina	52	66
Chile	64	77

Of particular concern is the tendency of doctors to move from public service into private practice. NHI has typically increased demand and financing for private care. Thus Abel-Smith[27] argues that an ample supply of doctors is a prerequisite for NHI. In Latin America, a profusion of private medical schools has helped increase supply to meet the demand.[9] However, despite relatively high doctor/population ratios, doctors are still largely unavailable in rural areas.

NHI has the potential to redistribute resources and wealth from richer to poorer, but it may do the opposite. A key objective of NHI is the subsidisation of poorer and sicker people by the wealthier and healthier, as premiums do not depend on individual health risk, but are usually based on income. Whether NHI does redistribute wealth depends on the distributions of payments and benefits in relation to income. Income tax is usually progressive, i.e. a higher percentage of income is taxed as income increases. NHI contributions are also progressive in Costa Rica,[15] as in France and Germany,[11] but are regressive in Korea, where a low ceiling on maximum contributions means that higher earners contribute a lower proportion of their income.[11] While premiums are ostensibly shared between employers and workers, it may be impossible to determine who ultimately pays, as employers can shift their costs onto workers (through lower wage increases), or onto consumers (through higher prices), depending on labour and commodity markets.[28]

NHI may also be regressive if government subsidies transfer tax money, drawn partly from consumption taxes paid by the poor, to health care for the wealthier. Forms of government subsidy of health insurance include (*i*) direct payments into insurance funds; (*ii*) employer contributions for government workers; (*iii*) tax-deductible premiums; (*iv*) provision of public sector care to insured patients at below-cost prices; and (*v*) professional training. In China, government subsidies of health insurance were markedly greater for wealthier urban workers than for the rural poor.[22] Government subsidies may however be targeted at the poor, as in the Dominican Republic, where subsidies increased with decreasing income of beneficiaries.[20]

The direction of redistribution depends not only on who pays, but also on the ratio of benefits to contributions. Despite the inequalities of Brazilian health care, social security transfers wealth from richer to poorer regions. While the poorer north-east contributed 9% of revenue, it received 17% of expenditure. The wealthier south-east contributed 63% of revenue, but only received 53% of expenditure.[9] The city of Sao Paulo contributed 42% of revenue, but drew 24% of spending.[20] Poorer Brazilians generally received more health care than they paid for. Public expenditure on health increased the proportion of total income that went to the poorest 20% of families in Argentina, Chile, Costa Rica, the Dominican Republic and Uruguay.[20] Unfortunately the latter data do not distinguish the effects of social security from those of government services.

South Korean health insurance, by contrast, appears to aggravate inequality, for two reasons.[11] Firstly, high co-payments and obligatory 'gifts' to doctors deter the poor from using health services, especially hospitals and specialists. Secondly, higher earners have more dependents, many of whom are elderly. Yeon[11] showed that benefit-to-contribution ratios were 25 - 30% higher for wealthier than for poorer beneficiaries, indicating that the wealthy gained more from health insurance than did the poor. Indices of overall income distribution increased when health care benefits were included in their calculation, compared with when they were excluded.

South Africa has a similarly unequal distribution of health care resources as do all these countries, whether one compared geographical areas, racial categories, or public and private sectors. Doctors appear to be the most unequally distributed resource. Doctor/population ratios were 11 times higher and bed/population ratios 1,9 times higher in the country as a whole than in rural 'homelands'.[29,30] and doctor/population ratios were 6,8 times higher in the private than in the public sector.[18] Health care expenditure per capita in 1987 was 4,3 times higher for whites, and 2,5 times higher for Asians, than for blacks.[17] Although less than 20% of the population has private insurance coverage, the private sector consumes 2,8% of GDP and has 59% of doctors, while public services for the uninsured 80% received 3,2% of GDP, and employ 41% of doctors.[18] Government subsidies to private insurance include the last four methods mentioned above.

If health insurance in South Africa, whether private for-profit or compulsory NHI, remains confined to a minority of the population, and if it continues to drain financial and professional resources away from the public service, it will aggravate inequality. If, however, NHI coverage is universal, and if services to the rural and peri-urban poor are extended, with subsidisation through tax or insurance of the poorer by the wealthier, equality will be enhanced.

Efficiency

Efficiency of health care refers to health effects achieved in relation to resources used. It has become increasingly apparent that increased expenditures on highly technical, specialised and hospital-based care have not led to commensurate improvements in health. By contrast, marked health improvements have resulted from measures ensuring universal access to essential curative and preventive services through the primary health care approach.[32] While available data do not allow comparison between countries of health benefits per unit of expenditure, the efficiency of various health systems can be inferred indirectly from the prevailing patterns of care.

Fee-for-service payment for private health care has impaired efficiency by encouraging excessive medication, surgery, hospitalisation, and doctor consultations in South Africa.[31,33,34] Costs to private insurance of medication and hospitalisation increased by 36% and 49% respectively between 1989 and 1990.[17] The public health service is also excessively hospital-oriented, with 43% of the total health budget devoted to 13 teaching hospitals.[35]

How efficient have patterns of care been under NHI in other countries? Health care under NHI in Latin America and Asia has typically been excessively costly, hospital-oriented, specialised, highly technical, and urban based. The greatest inefficiencies do not necessarily arise directly from NHI itself, but rather from the perverse incentives of fee-for-service reimbursement of private care providers, which reward excessive hospitalisation, investigation and treatment. Levels of care are typically poorly defined, with the hospital as the usual first point of contact in countries such as Brazil[36] and South Korea.[11,22] In Brazil, the proportion of the social security budget directed to hospitals increased from 40% in the 1960s to 50% in the 1980s.[22] Brazilians receiving private ambulatory care are eight times as likely to be admitted to hospital as those attending public facilities.[9] In Brazil, the proportion of hospital inpatients receiving radiography and laboratory tests increased 2 - 3 times from 1970 to 1981.[36] South Korea, with a population of 43 million,[6] has 28 hospitals equipped for heart transplants, 26 lithotripsy machines and facilities for computed tomography in every hospital with over 200 beds.[10] Overmedication is also encouraged, particularly in Korea[9] and China,[22] where drugs account for 57% and 50% of the respective health insurance budgets.

Primary care has usually been neglected in NHI-funded systems. In most cases, primary care through NHI entails payments to urban private practitioners. Fee-for-service remuneration has stimulated overservicing, as in Korea, where the number of consultations per illness episode rose from 3 in 1980 to 5 in 1990.[10] There are, however, important exceptions to this trend, in which primary care is provided through health centres. Urban polyclinics were developed by social security institutes in a number of Latin American countries, with sufficient scale efficiently to provide a mixture of general and specialist care.[24] Brazil has about 7 000 polyclinics, in addition to 10 000 (mostly public) health posts and centres.[6] Health maintenance organisations (HMOs), emphasising primary care in urban areas, have expanded in Brazil and Uruguay.[26,37] Costa Rica greatly increased the distribution of health centres in rural areas, but this was largely undertaken by the government.[25]

Curative care has been emphasised, frequently at the expense of preventive and promotive care. While social security health spending increased in Brazil between 1978 and 1982, government spending on communicable disease control decreased by 41%, including a drop of 57% for malaria and 80% for schistosomiasis.[36]

The inefficiencies described have led to steeply escalating costs in most of the countries reviewed, they have responded to these by increasing premiums and co-payments and cutting benefits.[5,9,12] Some have attempted to change methods of paying providers but have at times met resistance. In Korea, for example, doctors successfully resisted limits to excessive remuneration for drug prescription, which is a major source of income.[9] Cost control is possible, however, in countries with near-universal NHI coverage, as has been shown by European countries during the 1980s,[38] but has only been achieved through government and insurance institute intervention in health care. Central control of health care funding through NHI could enable redirection of resources to the most efficient forms of care,[1] but engagement of insurance institutes and the government in health care organisation is crucial.[22]

Organisation

Forms of public sector control of NHI vary widely. In South Korea the health ministry plays a minimal role, e.g. it restricts the establishment of new hospitals.[10] In Brazil, by contrast, the entire insurance system is based within the health ministry.[9] The degree of real control may however be unclear. In Brazil, the social security institute retained much of the staff and structure it had before its incorporation into the ministry when it wielded more economic and institutional power than did the rest of the ministry (personal communication — J. Castro). In none of the countries reviewed has NHI been an integral part of a unified government-provided national health service.

Insurance systems have usually developed piecemeal, with multiple institutes. Fragmented institutes may result in inefficient administration, inadequate risk pooling, unequal benefits and less cross-subsidisation. In many countries, encouraged by governments, the institutes have merged. In Brazil, seven institutes merged into one, covering the entire population of 150 million.[9] In others, such as Korea (with 408 institutes),[39] Argentina (320),[9] and Colombia (171),[40] insurance systems remain fragmented.

A major choice is whether a NHI institute should provide care itself — the 'direct' method — or whether it should purchase services from private or public providers — the 'indirect' method.[9,24] The early decades of Latin American NHI were characterised by direct provision, in which salaried professionals served beneficiaries in hospitals and clinics owned by social security institutes.[24] During the 1970s and 1980s the indirect method became predominant in Latin American and Asian NHI, although the direct method is still dominant in India and Turkey.[5,9,24] While each method has advantages and disadvantages, the direct method allows greater control over the provision of services, and is being reconsidered in a number of countries.[9]

HMOs can be seen as a form of insurance in which care is provided by the insurer, HMOs cover one-half of the Uruguayan population,[26] and expanded greatly in Brazil during the 1980s.[37] Potential limitations of HMOs include exclusion of less healthy populations, neglect of prevention, incentives to enrol too many patients and undertreat them, and failure in rural areas.[26] Managed care can take many forms, however, and some of these problems could be avoided through careful design, including a judicious combination of incentives and regulation.[26] South African trade unions, employers and doctors have shown a growing interest in managed care, and it may be possible for HMOs of some kind to be a major source of prepaid urban health care.

These examples show that NHI in South Africa could be organised in a number of ways. In any case, the state will need to take an active role in organising insurance institutes, and in directing finances to areas of greatest need. It is, however, likely that the urgent task of integrating and improving existing public services that faces a future health ministry will be so great that it will not have the capacity simultaneously to manage the reorganisation of private care through NHI. Equity and efficiency are

most likely where insurers, providers, the state and the public have similar objectives, and where programmes are co-ordinated. Conflicts of interest are inevitable, however, and are played out through overt or latent political processes.

Mesa Lago[41] and Borzutsky[42] have described how social security in Latin America developed under multi-class alliances of industrialists, the middle class (especially government employees) and the organised working class, and was a focus of intense bargaining.[41,42] The state used social security to 'co-opt, neutralise and control' pressure groups.[42] Much decision-making occurred outside formal structures through elite networks, including government officials, professionals, hospital owners, and social security administrators. The power of social security institutes and labour ministries was often greater than that of health ministries. The privatisation drives of military regimes changed direct provision of services by social security institutes and public services to fee-for-service payment to private providers. While the poor have generally been excluded from these processes, more recently popular pressures have prompted the expansion of coverage in countries like Brazil and South Korea. These examples show how powerful interest groups can influence the direction of health care under NHI.

Conclusion

The evidence of countries economically comparable to South Africa shows that NHI can increase funding for health care, but also poses major risks. If NHI is used to expand the present system of fee-for-service payment for private care, the already critical inefficiencies and inequities will be aggravated. An additional danger is that government health resources could be drawn into expensive ineffective care for the few. Efficiency can however be increased under NHI by (*i*) directing of resources to those services which will have the greatest impact on health, via the development of a health system based on primary care; (*ii*) continual evaluation of processes and outcomes of care and critical assessment of new technology; and (*iii*) creation of financial incentives for providers of care, especially doctors, to practise efficiently. Equity can be increased by (*i*) ensuring that the entire population is entitled to and has access to adequate care, regardless of their ability to pay for it; and (*ii*) subsidisation by the wealthy of the poor.

To promote health for all, NHI needs to be linked to an integrated national system of health care. Particularly needed are programmes to ensure access for the poor in rural and peri-urban areas, including the unemployed and the elderly; this has been attempted in Brazil, Mexico and Costa Rica. NHI has the potential to raise and direct large sums of money equitably and efficiently, but it is not a complete solution.

The author is grateful to Jonathan Broomberg, Diane McIntyre and Merrick Zwarenstein for their critical comments on the paper. This paper is based on a dissertation submitted towards an M.Sc. (Public Health Medicine), London School of Hygiene and Tropical Medicine, 1992.

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