CENTRE FOR ECONOMIC POLICY RESEARCH

Australian National University

DISCUSSION PAPERS

An Economic Analysis of the Private Health Insurance Incentive Act (1998)[*]

Rhema Vaithianathan[•]

Economics Program
Research School of Social Sciences
Australian National University

DISCUSSION PAPER NO. 427

February 2001

ISSN: 1442-8636
ISBN: 0 7315 2291 5

[*] I thank Bruce Bradbury and Bruce Chapman for helpful comments and Paul Collins from the Health Insurance Administration Council for data. Any remaining errors are, of course mine.

[•] Economics Program, Research School of Social Sciences, The Australian National University, ACT 0200, rhema@coombs.anu.edu.au; ph: 61 2 6249 3292; fax: 61 26125 0182

CONTENTS

ABSTRACT

The *Private Health Insurance Incentives Act (1998)* (PHIIA) provides a universal subsidy to private health insurance. It was justified on two main grounds: that increased private insurance would ease the pressure on the publicly funded portions of the health system, and that the PHIIA would mitigate the adverse selection consequences of community rating. This paper argues that since insurers are able to design plans to separate risk groups, the consequences of adverse selection may have been exaggerated. Using data on claims and insurance coverage, little evidence of adverse selection is found in the 1998 September quarter. This paper also argues that the reduction in demand for public health services as a result of the subsidy is likely to be small for a number of reasons. Using data from the September 2000 quarter on membership of hospital insurance, we find that the subsidy attracted mostly young individuals into private insurance. While these individuals make few demands on the public sector, the lack of targeting means that they attract the same premium subsidy as older people. Therefore, the expected savings to the public hospital sector of the PHIIA may be considerably less than the cost.

1 Introduction

The *Private Health Insurance Incentives Act (1998)* (PHIIA) provides a 30 per cent subsidy to the purchase of private health insurance from 1 January 1999. Accompanying this scheme is a 1 per cent levy imposed on high income earners who do not purchase health insurance. Prior to the introduction of this legislation, there existed a more targeted incentive scheme existing from July 1997 which subsidised private health insurance for people with income below a specified threshold.

The cost to government of the earlier targeted scheme was $600 million[1] . However, because the PHIIA is universal, the cost is predicted to be around $2.19 billion[2] . The PHIIA is clearly a more expensive scheme than the one it replaced, and was justified on two grounds: that increased private insurance would ease the pressure on the publicly funded portions of the health system and secondly, that it would mitigate the adverse selection consequences of community rating.[3]

The purpose of this present paper is to provide a critique of the PHIIA. We first argue that the effect of private insurance on utilisation of public expenditure might be over-stated. The argument that increasing insurance coverage causes individuals to switch from the private to the public sector is flawed for a number of reasons.

Many Australians choose not to be insured, but avail themselves of private hospitals if the need arises. These "self-insured" people, who account for roughly 10 per cent of the population, will be the first to obtain private insurance when a subsidy is offered. However, expanding insurance coverage to these self-insured consumers does not reduce the demand for public sector services. Of course, if the insurance subsidy is large enough, insurance will also be taken up by consumers who intend to switch from the public system to the private. The problem is that the "first dollar" of subsidy may have no impact on the demand for public services.

[1] Hall (1999)
[2] Duckett and Jackson (2000)
[3] For a discussion of the institutional arrangements in the health insurance industry, the reader is referred to Hall (1999) and Smith (2000) (table 1).

Health care costs are extremely skewed towards the older age group. Data on hospital utilisation indicates that while the over-55 age group comprises only 23 per cent of the general population, they account for 65 per cent of the total bed days in all hospitals during the 1998-99 year. Therefore, if the bulk of people who are insured as a result of the subsidy are relatively young, the savings in the public sector will be small. We show that so far, increased insurance coverage due to the PHIIA has tended to be disproportionately amongst the younger population. While this may be the outcome sought by the Government, the expected savings on the public health system are likely to be low – and potentially less than the cost of the subsidy.

We also argue that the adverse selection consequences of community rating might be over-stated. If insurers are able to design plans in such a way as to cause younger consumers to self-select into separate plans, then the adverse selection problems associated with community rating is reduced. We find that, in comparison to New Zealand where community rating is not imposed, Australia has a far greater variety of plans. This suggests that plan design is being used in Australia to overcome the problems associated with community rating regulation. We also find that the plan uptake amongst various age-groups in 1998 was fairly similar – despite substantial differences in benefits. Therefore, we find little evidence of adverse selection in 1998, which contradicts one of the principle justifications for the introduction of PHIIA.

2 Easing the burden on medicare

The major argument in support of the PHIIA is that insured patients reduce the demand on the publicly funded system and therefore ought to subsidised. The Minister for Health, Micheal Wooldridge, had the following to say :

"... the health of the publicly funded health sector depends upon a vital private sector. Having some six million Australians with private health insurance directly pays for around one-third of the costs of hospital care in Australia. If there were no private sector, the extra costs borne by the taxpayer would simply be incalculable and the increased demand on public hospitals would be unsustainable." Wooldridge (1998).

The general idea is that when patients face a choice between private and public services, insured patients will be more likely to use the private system. Therefore, it is argued that expanding insurance coverage means that consumers who would have previously used the publicly funded system will transfer to the private system.

This proposition ignores the fact that many consumers prefer the public hospital system because there are no user-part charges and the quality of care is often perceived as being superior (although the hotel services may be less convenient). These patients tend to turn to the private sector only when and if the waiting list is particularly long.

This argument fails to address two important issues: (1) many consumers are self-insured; and (2) many of the consumers who are induced to insure as a result of the PHIIA tend to be young and healthy and therefore make few demands on the public system anyway.

In the current system, a number of consumers choose to be *self-insured* in the sense that they pay for private care if they fall ill – but are not insured. Consumers who are insufficiently risk averse, are wealthy or consider themselves to be a particularly good risk may choose to self-insure. Indeed, since the average benefit paid per episode in hospital for insured patients is around $2,000[4] , self-insurance is feasible. Department of Health and Aged Care (undated) cites data indicating that the exit from insurance since 1992 was concentrated amongst wealthier families. These wealthy families may have been opting out of insurance and into self-insurance (rather than into the public sector).

While it is difficult to obtain figures on the percentage of people who choose this option, the Productivity Commission reports that around 9 per cent of patients admitted to private hospitals paid for the service themselves[5]. If self-insured individuals have a lower than average chance of hospitalisation, then this 9 per cent figure indicates self-insurance of more than 9 per cent in the population as a whole. The possibility that private providers offer price discounts to the uninsured adds to the attraction of being self-insured.

[4] Calculated from the PHIAC A Report for September 2000.
[5] *Private Hospitals in Australia* : Productivity Commission Research Paper. December 1999. Available at http://www.pc.gov.au/research/otherres/privatehospitals/index.html

In Vaithianathan (2000) we show that if there exists a portion of consumers who are self-insured, then premium subsidies may have no impact at all on the public health system.

This is because under fairly general conditions[6], the first group of people to whom insurance coverage is expanded as a result of subsidies are the self-insured. However, because increasing insurance coverage of the self-insured has no impact on the public health system, there is little gain to the public sector from the PHIIA. Of course, if the subsidy is large enough, then eventually consumers who were previously using the public system will purchase health insurance and switch to the private system. However, if the purpose of the policy is to ease the burden on the public system, insurance subsidies are a particularly poor mechanism for doing so.

Directly subsidising private care, on the other-hand, is a more cost-effective mechanism for reducing the demand for the public health system. The "first dollar" of such a price subsidy scheme reduces demand for public health services – although the extent of this will depend on the responsiveness of demand for private care as well as the level of current consumption. Of course, it could be argued that a subsidised private sector is in reality a public sector with higher user-charges!

2.1 How much can the public sector save through insurance expansion?

Expansion of health insurance may have little impact in reducing costs in the public sector if it is only attracting young, healthy consumers into private insurance. This is because health expenditure is highly skewed, with most health expenditure being spent in the last decade of life. This means that most of the public sector expenditure is on the older population. Figure 1 illustrates the public hospital separations by age group.

[6] Vaithianathan (2000) provides a more formal discussion of this case and provides sufficient conditions for insurance subsidies to make no difference to demand for public hospital services.

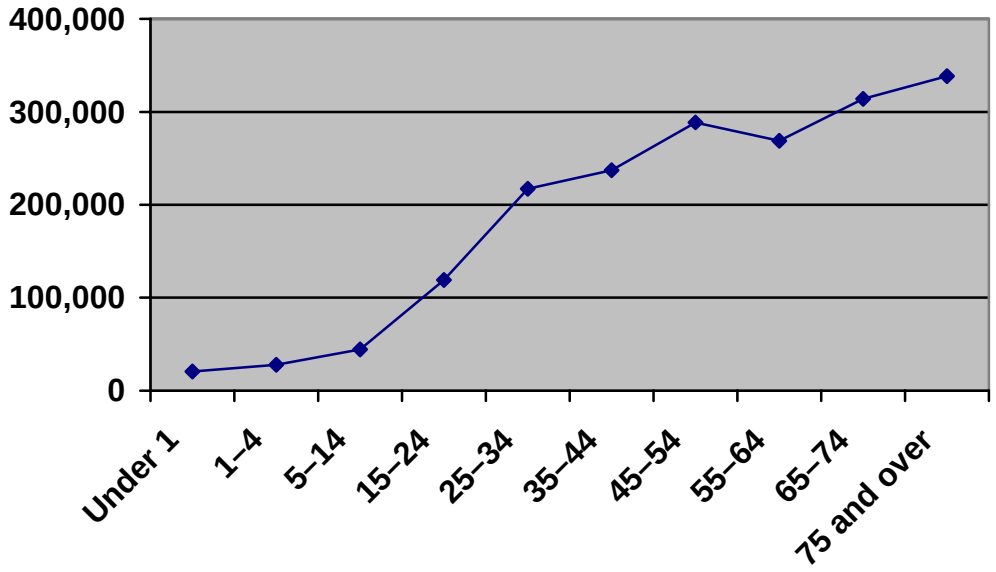

Figure 1 Separations from public hospitals (1998-99)

Source: Hospital Statistics, Australian Institute of Health and Welfare

Figure 2 illustrates the hospital benefits per head of population claimed from insurers in the September 2000 quarter. The columns represent the average hospital claim per head of population in each age category, while the line represents the net increase in the insured population within each age band from December 1998 to September 2000. A feature of this graph is that the bulk of the consumers who entered the pool of insurance within this period were the young and healthy. One explanation for this is that the older age group are unlikely to be motivated by the avoidance of the medicare levy, to purchase insurance.

The younger age groups have very low levels of hospital expenditure, and therefore transferring these consumers to the private sector would not be expected to save the public sector a large amount of money. However, the lack of age targeting of the insurance subsidy means that a twenty four year old who buys private insurance receives the same subsidy as an eighty year old, even though the latter may be expected to save the public sector a great deal more money than the former.

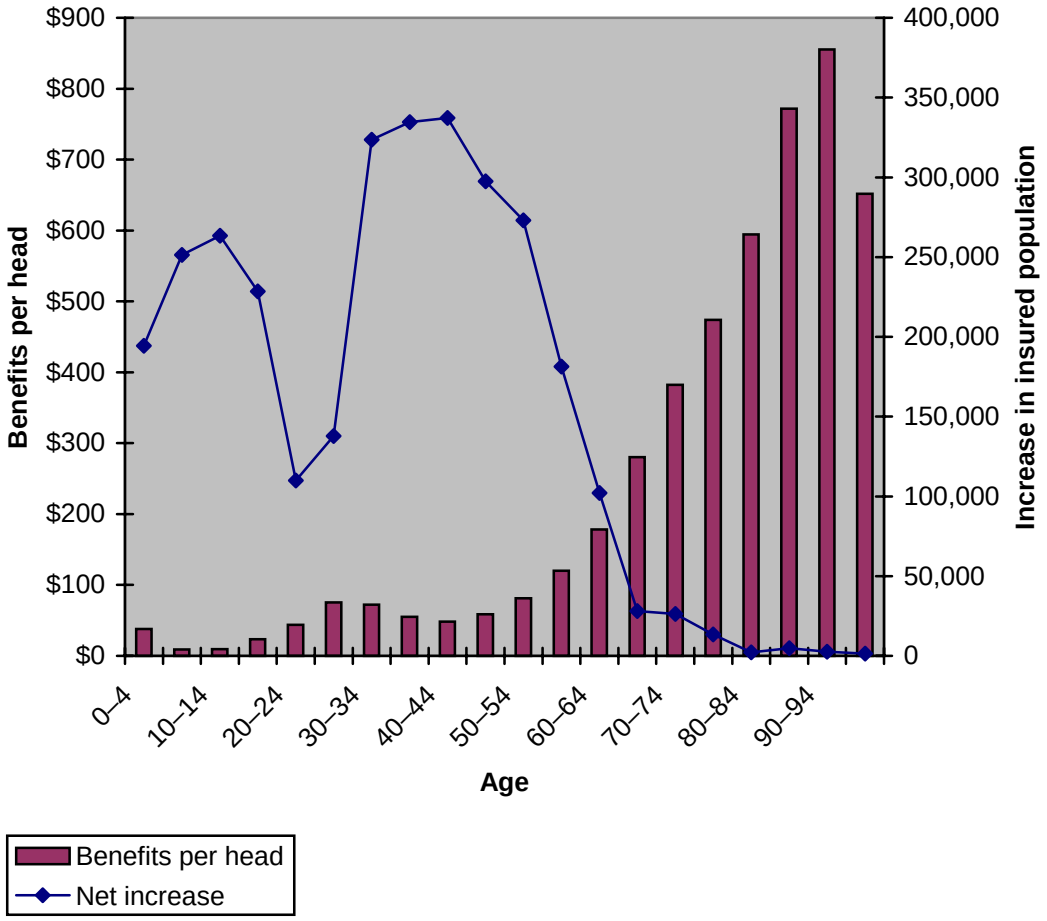

Figure 2: Net increase in insurance and average hospital benefit claims by age (Dec qtr 1998-Sept qtr 2000)

Source: PHIAC Report (various years) for benefits and number insured

To roughly estimate the potential quarterly savings to the public sector from the insurance subsidy, we undertook the following exercise. We obtained data on the value of total hospital benefits claimed from private health insurance funds by age group. We then calculated benefits per head in each age category. We made the generous assumption that all the net increase in membership between the quarter ended December 1998 - when the new scheme was announced - and the September quarter of 2000 was attributable to the PHIIA. Using these average benefits per age category as weights, we calculated the weighted total of benefits that would be claimed by those who entered during the period. The increase in claims calculated in this manner was estimated to be around $200 million per quarter (or $800 million for the year). If these new entrants are shifting their demand from the public hospital sector, and the value of benefits claimed by these people in the

private sector is equal to the value of benefits they would have claimed in the public sector, then the public sector is saving around $800 million per annum of hospital care by providing this subsidy. However, the cost of the subsidy is expected to be more than $2 billion (Duckett and Jackson (2000)).

Of course this calculation ignores the substantial out-of-pocket expenditure by consumers on health services, which implies that consumers would have consumed services in excess of $800 million. We also ignore the non-hospital ancillary benefits that are paid out by private insures such as ambulance costs, dental work and physiotherapy. However, because a large proportion of these ancillary services are not provided by the publicly funded portion of the health system, the reimbursement of these type of services by insurers cannot be readily construed as a shift from the public to the private sector.

It is clear that the combination of the Medicare levy and the insurance subsidy has considerably expanded the insurance coverage amongst the younger people. While this may not help the public sector directly, it is argued that expanding insurance to this age group could improve the long term sustainability of private insurance. In particular, it could reduce the price of insurance to older age groups and thereby expand coverage amongst this target group. However, as the older age group join, the total costs of plans will rise and insurance will become expensive once again.

3 Community rating

Community rating means that consumers cannot face differentiated premiums due to difference in age and other risk factors. The benefit of community rating is that it provides lifetime insurance (Jack (1998)). If community rating is removed, then an individual's future premium may rise with age or health shocks, resulting in less than lifetime cover. An additional attraction of community rating is that there is cross-subsidy of health expenditure, so that the price of health insurance is relatively low.

The draw-back to community rating is that insurers are forced to sell insurance at the same price to all consumers *regardless of risk.* In this case, only high risk consumers

such as the elderly and those in poor health will purchase private insurance. Individuals who have a low risk of falling ill will opt-out of the private health insurance and "self-insure" rather than subsidising high risk.

Therefore, under community rating, we may predict a deterioration of the average risk of the insured pool and an increasing premium until eventually only the highest risk or the most cautious are insured. This naturally leads to the conclusion that in order to sustain the private insurance market in the presence of community rating, insurers will need to be subsidised so that low(er) risk types will be subsidised into the insurance pool. The following passage from the Department of Health and Aged Care (undated) articulates this argument:

"Under Australia's system of community rating, healthier members support sicker members (which are typically relatively more elderly). ...Means testing (of insurance subsidy) runs the risk of eroding this cross subsidy by encouraging younger, relatively better off, lower risk people to drop their private cover. This would leave the relatively older, poorer, higher risk people in private health insurance" (p17).

In this section we argue that *plan selection* can overcome adverse selection in the private insurance market. Therefore, the role of adverse selection in justifying the PHIIA may be minimal.

3.1 Plan selection and community rating

Under the Australian community rating rules, insurers are permitted to offer a variety of plans which may be designed to *screen* individuals into plans that are more suitable to their risk classes (Industry Commission (1997)). If individuals are able to be perfectly screened, then plan design enables the insurer to perfectly overcome community rating. By allocating individuals to different plans based on the individual's risk category, the insurer is able to circumvent the need to charge all risk classes the same price.

This is actually a well established idea in the economics literature due to Stiglitz (1977). Stiglitz suggested that when an insurer is unable to observe the risk characteristic of a

consumer, the insurer can design and price plans in such a way that high risk and low risk consumers self-select into different plans. While this is not as profitable as when the insurer observes risk and can design plans specifically for each risk type, it is none the less more profitable than insuring all risk types under the same plan (i.e. pooling). Although with community rating, the insurer does observe the risk type, he or she is precluded from excluding individuals from plans on the basis of risk. This is similar to the case when risk types are unobserved.

For example, joint replacement surgery is almost solely demanded by people aged over 65 year. Therefore, insurers may restrict this benefit to the most expensive and comprehensive plan as a means of selecting older people into this plan. The following consumer information provided by an insurer suggests that this might be the case:

"If you're healthy, young and single then Bodyguard Young Singles cover is an excellent hospital and extras package. You save on your premiums because Bodyguard provides private hospital benefits for services that young singles normally require. By reducing the level of cover on those services you are unlikely to need in a private hospital we can keep your premiums lower."[7]

If this particular insurer is successful in screening the younger consumers into this low-coverage and low-priced plan (and attracting older people into another plan), the insurer effectively avoids the pooling of risk classes that community rating intends to promote. Such screening prevents cross-subsidisation between age groups and, more importantly, means that as people get older they are forced to step-up through increasingly expensive plans. The sort of lifetime cover that is an advantage of community rating is undermined.

However, one ought not to interpret the insurer's behaviour as "cheating" older people. If insurers are unable to select the elderly into more expensive plans, then expensive services like hip-replacements may never be covered by insurance. This is because – as Stiglitz points out - forcing the pooling of risk types can cause complete market failure .

[7] See http://www.nib.com.au/index_about.html

The inability of the elderly to obtain insurance would be reduce the welfare of older people.

New Zealand provides an interesting contrast to Australia in terms of the number of plans offered by private insurers. Table 1 compares the number of separate insurance plans available through the largest private health insurers in Australia and New Zealand. In New Zealand, where community rating is not imposed, plan diversity is less than in Australia although coverage rates are similar. Medibank offer almost double the number of plans offered by Southern Cross in New Zealand. The diversity of plans offered by Medibank provides casual empirical evidence that screening may occur.

	Australia	**NZ**
Plan pricing	Community Rated	Not Community Rated
Number of plan options offered by largest private insurer	21	11
Private insurance as a proportion of total national health care funding	11%	6%
Percentage of population covered by private insurance	32%	37%

Table 1: New Zealand and Australian Insurance statistics

<u>Notes and Sources</u>: The insurers considered are Medibank Private in Australia and Southern Cross in New Zealand. A "plan" is defined as a product for which a premium is quoted. For example, different excess levels for the same hospital plan are defined as different plans. Medibank plans are those available in the NSW and were obtained from the Medibank Private web page; Southern Cross plans are derived from the Consumer's Institute health insurance tables available from http://www.consumer.org.nz/consumer/apr99-healthins.html. Source of private insurance expenditure and insurance coverage is *Australia's Health 2000* (Canberra: Australian Institute of Health and Welfare, 2000) and *Health Expenditure Trends in New Zealand 1980-99* (Wellington: Ministry of Health).

If community rating forces insurers to use plan design to screen risk types, there will be sub-optimal insurance design[8] in the sense that plans are being designed to achieve two objectives: (1) provide coverage for all risky health services and (2) create incentives for choosing the appropriate plan[9]. For instance, the premium difference between a plan which offers joint replacement and one which does not, will be more than the expected cost of joint replacement. It will also reflect that fact that the need for joint replacement and underlying risk are correlated. In this case, young and low-risk individuals who might value a more comprehensive coverage will be poorly served. This is the standard Stiglitz result that screening contracts typically offer low-risk consumers less than full insurance.

If community rating is causing distortions in plan design, it is not clear that premium subsidies will lessen this distortion. This is because premium subsidies are not correlated with patient risk-class. Therefore, premium subsidies do not reduce the incentives on the insurers to screen risk types.

3.2 Evidence of adverse selection in the private health insurance market

If the predictions of adverse selection are correct, we expect to see much higher insurance coverage amongst older people. This is because age is strongly correlated to the predicted demand for private care. Under community rating, younger people are subsidising older people and therefore ought to opt-out of insurance. Using PHIAC data, we graph insurance coverage and benefits per head of population in Figure 3. We expect there to be a strong correlation between these two.

Benefits per member and the percentage of the population in the age-group who have hospital insurance are plotted on the graph. While the benefits per head of population illustrates a strong exponential trend over the age range, membership coverage does not demonstrate the same trend.

[8] Indeed, it is well recognised that when Managed Care organisations are paid by capitation, they have an incentive to distort the sort of services offered in order to attract the low-risk types. See for example Frank, Glazer and McGuire (1998)

[9] This latter aspect is a familiar concept from the adverse selection literature (Stiglitz, J. (1977))

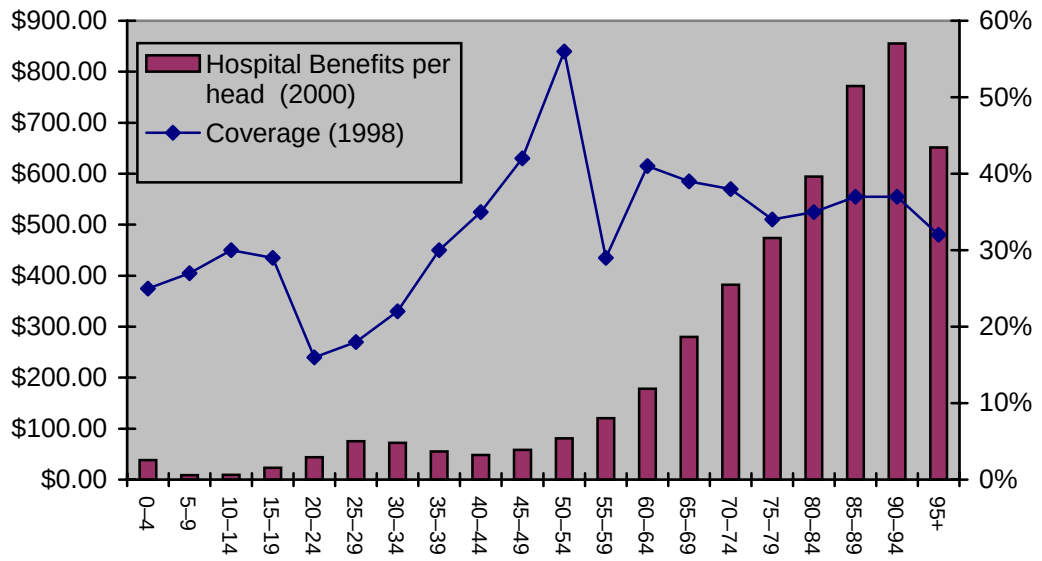

Figure 3: Percentage insured in 1998 by benefits per age group

Under community rating, all age groups ought to be paying the same premium, while the average benefit per person in this sample being $114 per quarter. As is illustrated in Figure 3, this is considerably more than the average benefit for all those aged less than 55 years and considerably less for those aged over 55 years. Yet coverage rates for those over 55 years appear to be less than coverage rates amongst the younger population which is strongly contradictory evidence of adverse selection.

4 Conclusion

The purpose of this paper is to evaluate the arguments used to justify the PHIIA. We argue that if the aim of this policy is to reduce demand on public hospitals, then it ought to target the older population who have the highest health expenditure. Expanding insurance rates amongst the young, healthy population who make few demands on the health system will have little effect on the costs of Medicare. Preliminary data indicates that most of the expansion in insurance coverage is coming from young, low cost people. This implies that the expected savings in hospital services from this expansion is likely to be less than the cost of the subsidy.

We conclude that the insurance subsidy may be simply shifting resources to the private insurance industry with little potential gains to the public sector.

5 References

Fels, Alan (1998) *Competition health: two years on* Speech to the Australian Medical Association Competition in Health Conference, 31 July 1998.

Freedman,Vicki. A and Reschovsky, James. D (1997) "Differences across Payors in Charges for Agency-Based Home Health Services: Evidence from the National Home and Hospice Care Survey" *Health Services Research* 32 (4): 433-52.

Chiu, H.W. (1997) "Health insurance and the welfare of health consumers." *Journal of Public Economics,* 64:125-133.

Cutler, D and Gruber, J (1996) "The Effect of Medicaid Expansions on Public Insurance, Private Insurance, and Redistribution" *The American Economic Review (P&P)*, 86 (2): 378-383

Department of Health and Aged Care (Undated) Submission to the Senate Community Affairs Legislation Committee Inquiry into Private Health Insurance Incentive Bill 1998.

Duckett, Stephen and Jackson, Terri (2000)"The New Health Insurance Rebate: an Inefficient Way of Assisting Public Hospitals" Medical Journal of Australia 72: 439-442.

Feldstein, M. S. (1970) "The rising price of physicians' services." *Review of Economics and Statistics.* 52:121-33.

Frank, R; J. Glazer and T. McGuire (1998) *Measuring Adverse Selection in Managed Care.* National Bureau of Economic Research Working Paper, number 6825.

Hall, Jane (1999) Incremental change in the Australian health care system, *Health Affairs* 18:3 95-110.

Jack, W (1998) "Intergenerational risk sharing and health insurance financing" *Economic Record.* 74(225): 153-161

Richard G. Frank, Jacob Glazer, Thomas G. McGuire, Measuring adverse selection in managed health care, *Journal Of Health Economics* (19)6 (2000) pp. 829-854

Smith, Julie (2000) *Tax Expenditure and Public Health Financing* The Australia Institute discussion paper number 33: September.

Spegal, Leonie (2000) Comment on first report – public hospital funding and options for reform". Submission to the Senate Community Affairs References Committee, Inquiry into Public Hospital
Funding, August 2000

Staiger,-Robert-W.; Wolak,-Frank-A. (1992) Collusive Pricing with Capacity Constraints in the Presence of Demand Uncertainty *Rand Journal of Economics* 23(2) :203-20..

Stiglitz, J. (1977): "Monopoly, Non-linear Pricing and Imperfect Information: The Insurance Market," *Review of Economic Studies* 44, 407--430.

Vaithianthan, Rhema (1999) "The failure of corporatisation: public hospitals in New Zealand" *Agenda* 6(4) : 325-38.

Vaithianathan, Rhema (2000) *Will subsidising private health insurance help the public health system?* Working paper. Economics Programme, Research School of Social Science. The Australian National University.