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**The effect of increased part-charges
on the health-seeking behaviours
of Group 3 workers and their families**

A thesis presented
in partial fulfilment of the requirements
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Abstract

This thesis is about health, change and user charges. In 1991 New Zealand embarked in a new direction for the funding of health services, including extensive use of a targeting regime in which 'those that can afford' social services were paying more so that those who could not were paying less. For the 'high-income' families classified as Group 3, this meant that part charges at point of service were increased at all levels of health services. Concerns immediately arose that the income levels had been set too low and would create financial barriers for some 'high-income' families, particularly those on the margin.

This thesis explores the demand response of 129 families in Group 3 to the new charges imposed by the Interim Targeting Regime. The survey population is characterised by high incomes and insurance coverage across income levels. Through a nonrandom survey methodology based on the opinions and perceptions of the user community (Group 3 workers and their families), over one-quarter of the survey families reported health services demand being diverted from allopathic medical services. However, even though 25% reported demand diversion, only 11% of families reporting lowered health status.

The study also looked at diversion from conventional medicine to alternatives including self-treatment, seeking advice from a chemist, complementary therapies or changing lifestyle habits. The data did not suggest diversion to alternatives equal to the reduction of conventional medical services.

Through the use of nonparametric statistical techniques, characteristics of the survey population were analysed in an attempt to begin untangling a complex web of factors affecting the survey population's health services demand when faced with increases in price. Factors included in this study were income level, insurance coverage, health status, gender, family size and composition .

Various subsamples of the survey population reported different effects and different magnitudes of demand diversion. The differences between insured and uninsured families were particularly marked. Evidence provided by the user community implicates a high degree of moral hazard within the insured subsample. The study suggests further research on the influence on moral hazard in meeting the stated goals of the reforms.

Because the study is nonrandom and exploratory, any claim of representativeness would be unwarranted. However, the study suggests that the attributes of high incomes and insurance coverage may be inherent to Group 3. To more accurately assess the representativeness of any research on the effects of the increase in part charges on Group 3, the study proposes a further clarification of the specific attributes of the families belonging in the Group 3 category is necessary.

Finally, the study questions the adequacy of the targeting regime and the increase in part charges for meeting the objectives set out by the health reformers, particularly in respect to the objectives of cost containment and individuals becoming more responsible for their own health.

Preface and acknowledgments

Before I began this thesis I was warned that the business of life is often enough to thwart the best efforts to complete a masters degree. These academic soothsayers were correct. At some point, your research must dominate your life in order to 'master' it. It has taken slightly over two years to bring this thesis to closure. For me, the long illness and death of a beloved parent and a move from a small town to a large city away from friends, my University and supervisors caused long periods during which my work was temporarily abandoned.

The fact that I am writing this means that I am nearly at the end. For me, acknowledgments go beyond gratefully saying 'thank you'. The people who follow are actually part of my efforts and share the credit of the work I have done. To all of you, not only 'thank you' but 'we did a good job'.

I must first acknowledge the contribution of the families who took the time to share their experiences in the new user pays environment. I appreciate you letting me take your knowledge to a larger audience.

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1

Health and health policy in New Zealand

Health is a precious condition of our lives. We need good health to work, to raise our children, to live productive and enriching lives. Good health is so important that even in good health we act preventively to maintain health. We seek diagnostic procedures which might give us an early indication of illness. We may watch our diet, exercise and generally live our lives in ways to promote good health.

On the other hand, ill health disrupts the routine of our lives. It can incapacitate us physically and mentally. Serious ill health can lead to long-term disability or unemployment. It is no wonder when we are ill we often take immediate steps to regain our good health. These actions may include accessing conventional medical services which carry costs some of us cannot afford.

This thesis is about health, health-seeking behaviours and public policy. In February 1992 New Zealand embarked in a new direction for health services moving to a 'more market' philosophy which included a greater reliance on user pays as part of its cost-containment strategy. Part-charges were increased with the idea that people would think more carefully about accessing health services resulting in an overall reduction in utilisation of health services and the state's financial commitment.

The National Government divided the population of New Zealand into three groups. Rather than 'need' being classified by those often requiring a higher than average number of services, entitlement to subsidies became defined by the total household income of the 'family unit'. Group 1 was defined as beneficiaries and their families, pensioners with little other income, families entitled to full Family Support and other low income individuals. Group 2 was a very small group made up of families entitled to partially abated Family Support. Group 3 was the 'all other' category - if a family was excluded from Group 1 or Group 2 entitlement, that family belonged to Group 3. Group 3, the high-income families, were to pay more for their

health care while generous subsidies would be granted to the low-income and middle-income families.

By moving away from more universally applied health services and subsidies to a targeting regime, concerns arose over the question of thresholds. How high do incomes need to be in order for families to be able to 'afford' health care? Eligibility for Group 3 status did not automatically mean families who were not entitled to more generous substitutes could 'afford' the new pricing schemes. How would Group 3 families react if they found their access to health services compromised by the increases in part-charges? Would they forego or delay treatment, even if it meant prolonged or greater ill health? Would the demand for health services be diverted to other forms of care?

As an American with first-hand experience in one of the most market-oriented health delivery systems in the world, I found not only the history of New Zealand's health services but also its struggle to push delivery in 'more market' directions to be quite absorbing. My experiences purchasing health services through the market led me to question not only the efficacy but the ideological foundations of National's strategies. Particularly, I wondered if targeted cost sharing offered the benefits National believed it had. Personal experience with many years of cost sharing led me to be very cautious in embracing cost sharing (or 'user pays' as it is called in New Zealand) as an effective tool for ensuring a healthier New Zealand.

I became further interested in the differences between market-oriented private and public health service delivery systems. I came to understand that cost sharing, a strategy used in many welfare states to ration its health resources, has definite implications for not only clinical medicine and health economics but political science, social policy, ethics and philosophy as well. Questions regarding Group 3's reactions to increased part-charges could only be answered through studying possible changes in the health-seeking behaviours of Group 3 workers and their families. Understanding how and why people make their health-seeking and care-seeking choices when faced with considerations of affordability became the underlying motivation for this thesis. New Zealand's reforms to its medical services subsidies provided a 'natural experiment' to study the effects of changes in price relative to demand for services.

Regardless of the shift from universal to targeted health services, the policies established by the National Government did not entirely abdicate the welfare state's responsibility for the health of its citizens. In this introductory chapter, the welfare state's commitment to health care provision in general is discussed. Then National's health reforms are briefly summarised before turning to look more specifically at its strategies of targeting and user pays¹. User pays as a strategy of health care reform is reviewed, specifically at the level of primary care. The aims of this study and outline of the thesis will conclude this chapter.

Health policy and the Welfare State

Because we not only value our own health but the health of others, the welfare state has assumed in varying degrees some responsibility for the health of its constituents. Unfortunately, unlike other social services provided in various forms, 'health' is not a commodity that can be traded like housing or food. It cannot be measured in units or kilograms. One difficulty faced by the welfare state is the definition of 'good health' which Blank (1993:4) maintains is varied by and intrinsically bound to racial, ethnic and cultural factors. Although the meaning of 'health' remains elusive, 'health services' can be defined and measured. To say that *health* has become a responsibility of the welfare state is somewhat inaccurate. What the welfare state can and does provide is *access to health services*.

Whether those health services are meeting the needs of the welfare state's constituents are often determined by measures of health status. Since it is extremely difficult to define what 'health' *is*, in order to provide services; the welfare state has come to define health by what it *is not*. Indicators of health status have focused on the 'absence of disease' instead of the prevalence

¹ The terms cost sharing, co-payment, user pays and part-charges for the purpose of this thesis are similar but not interchangeable. 'Cost sharing' will be used to broadly describe any strategy, public or private, to charge the user a fee at the point of service and encompasses 'co-payments', 'deductibles' and 'user pays'. 'Co-payment' refers specifically to the charge required by insurance companies which is paid by users of health services at point of service. 'Deductible' refers to the amount paid by the consumer at point of service not reimbursed by private insurance. 'User pays' generally refers to a strategy of charging all or part of the costs of providing a publicly-funded service to the users rather than paying all costs through taxes or general revenue. The term 'part-charges' is more specific referring to the actual amount patients might expect to pay at point of service.

of health. Mortality and morbidity statistics have become the accepted substitute for measures of health status and have often driven health policy.

Because the complexity, capriciousness and undifferentiated nature of illness and disease precludes the welfare state from guaranteeing good health, the welfare state has focused on guaranteeing access to health services as a substitute. Some welfare states have elevated access to health services to the status of a public good, leading to universal schemes. Even the most reluctant welfare states have declared health to be a key ingredient for productivity and integral to the ability and right to fully participate in society.

While there is no controversy that health policy is a high priority for welfare states, there is ample divergence of opinion on how an individual state's health policy can best achieve a healthy society. The continuum for the Western world runs from fully integrated public health systems paid for by general taxes as in the Netherlands to a subsidised but predominantly market-oriented health care system in the United States (see Blank 1994:57 for a convenient typology).

New Zealand's health system

Hewitt (1992) argues ideology has played a formal role in the development and conception of welfare states and their strategies and institutions. Since its Social Security Act of 1938, New Zealand's health policies could be said to reflect an ideology in which access to health services is viewed as a positive right of citizenship. For New Zealand, this has meant not only economic but geographic access to health care services for all New Zealanders. After expanding the 1938 provisions of the Social Security Act to general practice in 1941, New Zealand incrementally began to provide universal access to many health services and heavily subsidised those that were not universally provided such as primary care.

At the time of my arrival from the United States to New Zealand in 1991, New Zealanders still benefited from a health delivery system with a strong universal flavour. Public hospital care and most laboratory work were substantially free, pharmaceuticals were heavily subsidised and the General Medical Services (GMS) benefit paid a portion (but increasingly smaller portion) of the charge for visits to general practitioners. Although a

private health system was increasingly available and insurance was a growth industry, for most New Zealanders I met, the delivery system either owned, administered or subsidised by the government continued to be their first choice for medical services.

However, this was changing. Although the budget for health services increased substantially throughout the 70s and 80s, demand in the public sector was not met with an adequate supply. This resulted in long queues for everything from operations to specialist services. As a response, more and more New Zealanders were beginning to look to the private delivery system for care. Increasingly, New Zealanders began to purchase health insurance to insure a choice between long queues in the public sector and the unsubsidised significantly higher costs of the private sector. By 1992, forty-five percent of the population had private health insurance, making up 3.5% of the total expenditures on health (New Zealand 1992 Yearbook, 124).

Recognising the need for reform and wishing to abate its accelerating financial commitment to health services, New Zealand governments began designing ways to decrease dependence on its public delivery system and reduce total costs. Although reform had begun by earlier regimes, the ideology reflected by the reforms of the National government elected in 1990 were decidedly 'more market' than any previous. National Government's initiatives have included major cuts in social assistance, changes in targeting methods and a redesign of the manner in which the State provides its services (Boston 1992a:1).

National's reforms for the health sector included both supply-side and demand-side changes. On the supply side, the National Government proposed an 'internal market' model, severing the purchasing and providing roles of public health services with the goal of increasing competition and accountability while decreasing the difficulty in determining actual costs of delivery. On the demand side, a scheme of targeted user pays by income grouping was introduced in order to reduce the government's total dollars spent on health care and to reduce demand for 'unnecessary' services.

As established in the Minister of Health's (1991a) *Your Health and the Public Health*, the official policy goals were couched in such consumerist

terms as improving access, reducing waiting times and widening choice. These official policy goals did not specifically identify the need to reduce government spending on health, but the message contained in the 1991 Budget was clear. National sought to slow the steady increase of health spending as part of New Zealand's national budget.

The role of targeted user pays in the reforms

The move to a targeted system which included significantly increasing the part-charges for 'high-income' families was a significant change from the previous system in which family practice subsidies were awarded because of an individual's affiliation with a group defined by their general health status as needing extra help in accessing health services (e.g. children and the elderly). Under the new regime, only the chronically ill were given special status, a status that had to be 'proved' for entitlement by utilising services until a certain number of services and pharmaceuticals had been reached.

Reforms to cost sharing were across the board and included hospital stays, outpatient services, primary health care and pharmaceuticals. Initially, laboratory services were intended to be included but were never fully integrated into the cost-sharing arrangements.

From 1941 through 1972 the subsidy level of the GMS saw very little amendment. From 1972 to the present, subsidy levels have been the target of a great deal of revision. One might validly ask why there has been such a long period of quiescence over the issue of subsidy levels. Fougere (quoted in Hay, 1989:162) believes that many of those same people who might have the "time, money and political influence" effectively to pressure for greater subsidy have been absorbed into third-party payment systems, primarily private medical insurance.

The preponderance of private medical insurance may not only be a factor in how people have responded politically to GMS levels, but also to how they might react to National's reforms. With nearly one half of all New Zealanders benefiting from insurance coverage at the time of the changes to cost sharing (Southern Cross Health Care Group, 1990), reimbursements from insurance claims could cushion the effect of increased user pays producing decreases in utilisation that might be lower than desirable to

meet policy goals. On the other hand, as government subsidies decrease, insurance companies experienced an increase in costs, resulting in increased premiums. Indeed, one of the findings of this study was that certain individuals chose to discontinue coverage due to increase premiums (see Chapter 6, "Changes in Insurance").

Table 1.1 presents the value of primary care and pharmaceutical subsidies for Group 3, before and after the initial round of reforms to user pays as well as the average patient charge from 1 February 1992. Keeping in mind many Group 3 members would have insurance cover, even though adults of this group received no subsidy from the government, insurance reimbursements would have returned as much as 90% of the part-charges for primary care services to those with coverage. Certainly, with the moral hazards of insurance coverage factored in, as will be discussed in Chapter 3, no clear cut price/demand relationship could be expected.

It was perhaps inevitable with the fundamental shift from health-related need to income-related need that persons utilising health services came to be described as 'winners' or 'losers' (see O'Dea, et al. 1993; Davis, et al. 1994, 117). Generally, 'winners' were declared to be Group 1 and 2 adults and Group 1 pensioners whose subsidy under the new regime increased. Children of Group 3 families were declared 'losers' as were Group 3 adults and pensioners. Without the less than obvious effects of insurance as a factor, such distinctions could be clearly drawn.

Olliver (1988:3) reasons "because there need to be losers if there are to be winners, some attention is paid to those at whose cost social policy goals were achieved." In the case of National's reforms, Group 3 seemed at first glance to be clearly the losers. But with a large number of Group 3 members having insurance compounding the effects of racial, ethnic and cultural factors on utilisation, could such a distinction be made with certainty? Or, as insurance premiums increased, would more Group 3 families drop their insurance coverage? This study concentrates on those at whose cost the social policy goals of National's health reforms seemed to be achieved.

Table 1.1
Primary Care Subsidies to 1 February 1992

General Medical Services benefit	Before	1/9/90-	1/2/91-	After	1/2/92
	1/9/90	1/2/91	1/2/92	1/2/92	Patient Charge
Children 0-4	\$16	\$29	\$25	\$15	\$16
Children 5+	\$16	\$24	\$20	\$15	\$16
Adults	\$4	\$4	0	0	\$31
Beneficiaries	\$12	\$12	\$12	0	\$31
Elderly	\$12	\$17	\$12	0	\$31
Chronically ill (child 0-4)	\$16	\$29	\$25	\$25	\$6
Chronically ill (Child 5+)	\$16	\$24	\$20	\$20	\$11
Chronically ill (Adult)	\$12	\$17	\$17	\$17	\$14
Prescription charges					
Children 0-4		\$2	\$5	\$20	
Children 5+		\$2	\$5	\$20	
Adults		\$5	\$15	\$20	
Beneficiaries		\$2	\$5	\$20	
Elderly		\$2	\$5	\$20	
Chronically ill		\$2	\$5	\$5	

Table adapted from Ashton 1992b, 151 and 159

Primary care and user pays

Utilisation studies investigating the effect of cost sharing on various levels of health services have repeatedly indicated that the inverse relationship between price and health care services utilisation may be the strongest at a primary care level (Lohr, et al. 1986; Manning, et al. 1987; Keeler and Rolph 1988). In other words, increasing cost sharing for primary care consultation resulted in greater percentages of reduced utilisation than for other ambulatory services and secondary care.

The strength of this apparent price/demand relationship is considered particularly important because (1) primary care physicians are often considered the 'gatekeepers' of other forms of both ambulatory and secondary care (Keeler and Rolph 1988), and (2) lack of access to primary and preventative care at an early stage is attributed to higher numbers of

'sicker' people being treated at later stages in illness or disease (Manning, et al. 1987).

In thinking about these two concerns in relation to reducing overall costs of care, it appears that they may be conflicting effects. Certainly, they may act as counterbalances in a study of primary care utilisation. Grants to all regional health authorities consumed the highest percentage of *Vote: Health* at 70% (Department of Statistics 1992). If reducing primary care has the potential to reduce the demand for these services, logically a reduction in expenditure for these services would ensue. However, if keeping people away from general practitioners results in people being admitted to the hospital when they could have been treated much more cheaply by services and treatments available through their general practitioner, expenditures could increase. If moral hazard is present in the population, increasing the likelihood of ineffective or unnecessary care, it is equally possible that demand for primary care could be reduced without an erosion of health status.

So in addition to the pure price/demand considerations of reducing primary care, less transparent, more long-term effects on secondary care should be explored. If all reduction in demand is the result of 'unnecessary' or 'inappropriate' care we can reach our policy goals of cost-containment. If, however, as the RAND study suggests (Lohr, et al. 1986) increasing cost sharing indiscriminately results in a reduction in the episodes of care, 'sicker' people may be showing up at their general practitioners or at the hospital, as many physicians and community service workers feared (Scott 1992; Delahunty and McCabe 1993:8). In the long run, increasing part-charges at a primary care level might place us further away from our policy goals of cost containment.

The aim of this study

A review of the pertinent studies, provided in Chapter 3, clearly indicates an inverse relationship between price (at time of service) and demand for primary care services. This policy study will focus not only on the fact or extent of this relationship but also on the *responses to and results of* decreased in utilisation.

This thesis specifically looks at the effect of increased part-charges on Group 3, particularly in the areas of general practice visits and the related downstream cost of pharmaceuticals. The empirical evidence from overseas suggests a decrease in utilisation but has that been the pattern for New Zealand's workers and their families? If families in Group 3 have reduced the number of general practice visits, has less medical care equated to lowered health status? If so, has there been any effect on wage-earners' health and, therefore, their ability to earn? Have these families made any other changes in their health-seeking behaviours? Have the effects of increased part-charges been uniform across income levels? Is there a difference in the way insured and uninsured families in Group 3 experienced the increases? From a policy perspective, are part-charges an effective tool for reducing utilisation of primary care services, thus useful for cost containment? Or, returning to the question of ideology, does this system of rationing reduce health status and increase inequity in New Zealand's health care system?

In order to explore the effects of increased part-charges on workers and their families, this study employs a survey design through which 129 families reported their experiences with the new cost-sharing arrangements in the first year of the changes. The results of their experiences form the basis of this thesis.

Outline of thesis

This chapter has introduced user pays as a tool for the 'more market' policies of the health reforms. User pays as a strategy for reform indicates an axiomatic belief in the price/demand relationship of neo-classical economics. This belief, and others prevalent in the neo-classical economics viewpoint, are inseparable from the political ideology of the framers of New Zealand's health reforms. Chapter 2 examines the interconnectedness of ideology, need and strategies for need fulfilment, reviewing the implications of ideology on policy design and specifically discussing the ideological bias of National's health reforms. Chapter 2 also summarises the economics of health, looking at health services as a 'commodity' and examining commonly cited failures of the market for health care services. Cost sharing as an economic instrument of policy is more thoroughly explored in the third chapter. Key results of studies pertinent to the issue of cost sharing at a primary care level are provided and discussed.

The ideological perspective influencing the structure of this study as well as the study's research question and design are reported in chapter 4. Chapter 5 includes an overview of the survey results, supplying the 'general statistical' information provided by the respondents to the survey. Armed with the general overview provided in chapter 5, chapter 6 looks at how different subgroups within the survey population, delimited by income, insurance coverage, health status, gender, family size and composition have reacted to the changes in part-charge arrangements. My conclusions and the implications of this research for future health policy research and reforms are provided in chapter 7.

Although cost sharing may encourage less dependence on others and more dependence on ourselves for our own health, there are also definite and unavoidable risks to this policy strategy. This thesis explores both the advantages and the disadvantages of user pays in the New Zealand context and reports the findings of 129 Group 3 working families as they experienced their first year under the reforms.

2

Ideology, need and health care

A web of social, political and economic factors affects choices individuals make in their health-seeking behaviours. Government policy also impacts on people's choices by defining what resources will be available to whom and in what way. Government policy is framed according to the dominant perspective of the government in power, social values and the systems already in place.

The health reforms of the National government are an example of the impact of ideological influence imposed on pre-existing structure. National's reforms did not 'revolutionise' the way New Zealand provided its health services. Much of the structure of the health services was retained. The largely private primary care sector was retained and public hospitals, although directed to become more cost-conscious and budget-oriented, maintained their public status. However, the neo-liberal principles of competition and profitability were imposed over the structure of the public medical services sector.

Perhaps one of the most striking changes was the imposition of user part-charges at all levels of health care. This strategy, coupled with National's Interim Targeting Regime, are indicative of a neo-liberal orientation to social policy.

This chapter examines how need, ideology and markets are integrated in National's user pays strategy. Ideology is the lens through which both need and the market are constructed. With this in mind, the first two sections of this chapter attempt to follow the ideological thread that interweaves the reforms by arguing the importance of ideology on social policy, with the second section more clearly reviewing the implications of National's ideological concept of individualism working within the market, the foundation of National's strategy for reform. I discuss how National's ideological bias and its consequent faith in the rational economic models not only permeate its policy definitions and strategies but also the methods

it employs to determine the efficacy of its strategies. Various theories of need are then discussed, specifically in relation to how National's market-reliant ideological perspective addresses health need.

The theory of markets is briefly discussed in the third section which is followed by a more targeted examination of the market for health services and its particular market failures which motivate governments to intervene. Finally, the chapter looks at what theories of need, ideology and the market may tell us about the potential of a user pays strategy in meeting the objectives of the reforms.

Why is ideology important?

Social policy has been described by Wilkes and Shirley (1984, 7) as the "conscious intervention by society to fulfil a social need." Their definition requires several important qualifications. The first is the question of 'conscious intervention'. If 'conscious', how is this consciousness developed? The prerequisite of consciousness implies a process by which a system of values are synthesised into a coherent and guiding set of principles informing the strategies of intervention.

Secondly, what is meant by 'society'? What constitutes society? Minimally, we might be able to agree that the concept of society constitutes more than one actor. If 'society' is doing the intervening (rather than, for example, a dictator or a despot), process is again implicated. How does society make its decisions as to which strategies to use? In a social democracy, 'process' would mean some sort of parliamentary or bureaucratic process. But what happens if all its constituents do not subscribe to the same views? How are divergent views dealt with? By consensus, by compromise? How neutral is the arena in which these choices are made?

We are not yet half way through the definition and we see that this business of social policy is inherently problematic. Perhaps the most troublesome term in Wilkes and Shirley's definition, however, is 'social need'. What *is* social need? How is it constituted? Would deconstructing the term into separate concepts of 'social' and 'need' be particularly useful? It is possible that determining the meaning of 'social' could be equally as difficult as and perhaps dependent on, defining 'society'.

And what about 'need'? Nelson's (1993, 33) concept of "needs or necessities" (in reference to Adam Smith) is "dialectical and fluid" with the line between needs and wants indistinct. Viewed alone, need poses particularly cumbersome definitional difficulties as further discussed below. When we add the modifier 'social' our understanding of need is even more complicated.

Finally, what do we mean by 'fulfil'? As a concept, fulfilment is likely to be directly related to how we have defined need. If I say I need 'food', why do I receive more fulfilment from a chocolate than a carrot? To fulfil my 'need' for food a carrot is not only sufficient but healthier. Referring to Nelson's concept, it is reasonable that the carrot is a 'need satisfier' and the chocolate a 'want satisfier'. In a world of finite resources, should my choice be exclusive of the needs of others? Who decides?

Constructing our understanding of need as a society may be even more complicated. Ultimately, the definition is likely to be not only the result of ideals, values and beliefs held by individual members of our society but our political organisation as well. Our social and political order coalesce these individual ideals, values and beliefs into a coherent system.

A key role of the welfare state is a more equitable redistribution of resources. In order to determine how this redistribution is to be done, however, decisions must first be made as to needs, available resources, and finally effective strategies to marry the two. The ideology of the decision makers will influence all three decisions. Hewitt (1992, 8) describes ideology as a thread, which "ties together human projects in a conditional world and directs them towards the attainment of human ideals." I see it more as a lens filter, or set of filters, through which perceptions of reality and need are viewed which subsequently determine the possible strategies for meeting our filtered perceptions of need.

In the case of health care funded or provided by the state, policy makers must first decide how need is to be determined. In New Zealand's recent past, health benefits have been universalist in nature with special attention paid to groups felt to be mostly in need of health care services, including children, beneficiaries and the elderly (O'Dea et al. 1993, 2). National's

Interim Targeting Regime has shifted the focus to financial need of the household rather than health need of the individual.

That resources are finite is axiomatic. But not all available resources must be channelled through the welfare state. The specific resources to be made available through the apparatus of the state is another decision framed by ideology. One of National's central vehicles for determining resources to be made available is the National Advisory Committee on Core Health and Disability Support Services (or the Core Services Committee). As will be further explored below, although the process is somewhat out of step with a neo-liberal view, the act of defining the state's role in public provision is very much a product of National's ideology.

National's neo-liberal ideology marries its vision of individualism acting within the market with its goal of a minimal state in its strategy of user pays. The next section briefly discusses the logic of individualism and the market regarding the neo-liberal objectives of greater individual choice and a lowered profile for the welfare state.

The promised neutrality of neo-liberalism²

The neo-liberal identifies a key difficulty with the welfare state in that decisions are made by a group for the individual, often contrary to individual choice. Described as a critique of the welfare state by Hewitt (1992), the neo-liberal strand of the New Right proposes that by relying on market forces it inherently offers a neutrality of interests which would grant the widest possible scope for divergent interests (and definitions of need). The liberal view is closely connected with neo-classical economics and its model of the 'rational', self-maximising individual. For the neo-liberal the market is the best arena to protect individual sovereignty and to allocate resources.

² I base labelling the National Government's policies as 'neo-liberal' as opposed to 'liberal' due to its acceptance of a wider obligation for the welfare state than would normally be sanctioned by liberals. Whether liberal or neo-liberal, the concept of individualism is the linchpin of its perspective. I also view the New Right as having two distinct strands—neo-liberals who seek change and are less inclined to invoke morality in their social policies and conservatives who lead the way *back* and impose a strict version of values and morality on their social policies. The current National Government seems to have slightly more of the flavour of the former than the latter.

Hayek (1982), a key neo-liberal theorist, established the link between the liberal doctrine of individualism and the neutrality of the market. Viewed by Hayek, only the individual can judge what is best for the self (Hayek 1946, 76). The neo-liberal, believing in the sovereignty of his/her own needs, is reluctant to declare what is best for others. As Upton (1987, 4) explains, the liberal view "starts from a profound awareness of human ignorance." Therefore, not only is the individual ideally suited to determine his or her needs or ends, but the individual is ultimately ignorant of others' needs and ends.

One of the greatest attractions of neo-liberal thinking is its insistence on the elimination of the ideology from any determination of social need. Although it could be argued that this insistence is an ideological position of neo-liberalism, Upton (1987, 1) contended that the policies of social democracies are heavily laden with ideology and rails against "the subordination of individuals to a collective cause, reliant on dogma or ideology and hostile to dissent." In explaining what he terms the 'superiority' of the logic of the market, Hewitt (1992, 39) notes

The beauty of the market—its mystique—is that it assumes an ideologically free zone where human actions are guided by the price system to maximise the satisfaction of different desires without favouring any one individual.

Notice Hewitt's word 'assumes'. To claim the market is 'ideologically free', the market must be the perfect market, one which does not 'favour any one individual' and is not compromised by market failures. If truly ideologically neutral, the advantages of neo-liberalism in assimilating divergent cultures, ethnicities, views and *needs* would be significant. Values, culture and ethnicity would influence the market only through the selection of individuals acting to satisfy need rather than being imposed by political power.

It is with this understanding of individualism that the market, as a neutral judge of competing ideas and interests, has appeal. In a diverse democratic society where the beliefs, attitudes, cultures, ideas, ethnicities and so forth cannot be known by all, two choices emerge for the expression of preference. The first, a process which entails a democratic system of voting, will necessarily reflect the value structure of those with the most

political power, including special interests. Neo-liberals would argue that the second, the market, offers a 'level playing field' in which each individual can act according to his or her preferences, 'voting' through the system of exchange. The marketplace becomes the neutral arena in which the knowledge of individuals is "pitted one against the other" (Upton 1987, 6).

Neo-liberals believe that not only are individual interests served more effectively through the market, but the market, given its proper function, removes the need for large state apparatus. Because individuals acting through the market rather than a democratic process determine the distribution of resources the state has "no need morally to justify specific distributions which have been brought about deliberately" (Hayek 1982, 117). An additional benefit is that a large bureaucratic state which has been established to determine social need and then to appropriately intervene in order to carry out the required redistribution is no longer necessary.

Viewed through the lens of neo-liberal ideology, the two-pronged approach the National government has implemented through the health reforms begins to make sense. The dominant themes are the sovereignty of individual choice, a reliance on market mechanisms and a reduced government sector. Supply-side reforms, such as the division of purchasing from provision, have the potential to more easily reduce the extent of resources provided by government. In the neo-liberal view, the demand-side strategy of user pays ultimately allows greater freedom of choice while at the same time giving the market a greater opportunity to act as the arena envisioned, ultimately directing the purchasing decisions of the supply-side measures.

As Hewitt (1992, 41) explains

this is how the market operates; supplying services competitively at the lowest cost the market will bear, and deploying resources effectively in accord with what consumers will pay....The mystique of the market is that it presents reality as if there were nothing under the surface, no magician pulling strings, nor ventriloquist breathing life into the dummy, only the 'hidden hand' invisibly co-ordinating the infinitude of individual projects towards realising their ends, optimising individual needs and contributing to the greatest fulfilment of all.

To the neo-liberal, the ideologically free market offers an elegant solution to diverse interests, a bloated bureaucracy and inefficient resource allocation. Yet is it possible or practical to declare neo-liberalism ideologically free? If it can be shown that the primary assumption of neo-liberalism—that of the 'unencumbered', 'rational' and atomistic individual—is value-laden, neo-liberalism itself becomes quintessentially ideological.

This point is not argumentative rhetoric. In order to live up to its claim of neutrality, it is necessary that its base assumptions are also neutral. In this thesis, I will argue that the neo-liberal ideology (or market liberalism as Ashton [1992, 147] has identified the philosophy and strategies of National Government) is inherently and incurably value-laden *because* of its dependence on the self-maximising, rational individual as the economic centre of decision-making. In the market for health, there are many instances of market failure, including the breakdown of the 'rational' consumer as will be discussed later in this chapter.

Neo-liberalism as ideology

The history of health services in New Zealand shows us that the idea of individualism is not a phenomenon of the 20th century (Hay 1989). It formed the basis of the Elizabethan Poor Laws which in turn were instrumental in early colonial social policies. The issues arising from individualism are ones associated with individual responsibility, autonomy, self-determination and justice. Criticisms of neo-liberal individualism come from both sides of the political spectrum, but have common themes.

Hewitt (1992, 182) views the neo-liberal project as a new proto-hegemony seeking to replace the old hegemony of postwar consensus of the welfare state:

The imaginary attractions of the market in optimising opportunity are expressed in a series of propositions about the relations individuals have to their means of existence and to each other. This is an *ideology* (emphasis added) about market order, self-discipline, effort and incentives, which may bear some relationship to the real world of human need, but none the less remains fundamentally out of kilter with it."

The conservative philosopher Gray (1993, viii) is sceptical of the individualist view which he terms "the denatured fiction of the person, the Kantian subject that lacks any particular identity and has a history only by accident". He doubts the logic of a perspective based on abstract principles of rights and justice which deny the influence of history or culture.

It is exactly this sort of abstract logic, Williams (1989, 22) warns, that can be a deterrent to accepting a wider range of reasons for an individual's behaviour. She argues that individualism "locates the causes of social problems in individual failure or misbehaviour and identifies social change as being affected by individuals trying to maximise their personal self-interest." She uses the individualist example of a person's ill-health which is blamed on eating habits or lack of exercise rather than ceding the interconnectedness of "differential access to food...or environmental factors such as transport, work, housing, incomes, stress, pollution and so on" (ibid.). England (1993, 44), in arguing against the neo-liberals' blanket faith in the neo-classic economic model of the individual contends that "one needs to assume a misleading degree of emotional separation and atomism to deny the possibility" of social and cultural effects on market exchanges.

The neo-liberal concept of economic, rational man maximising self-interest through the market would erase contextual references of choice, leaving only decisions based on pure logic. Logic can conveniently be illustrated through mathematical models for which neo-classic economics is famous.

If we accept ideology as beliefs, attitudes and opinions which are the constituents of the filter through which neo-liberalism stakes its claims on the rightness or wrongness of social policy, neo-liberalist claims of neutrality becomes an illusion. Such illusions, if held to be true, can provide counterfactual 'evidence' of need and strategy which may derail the possibility of effective policy.

I have developed the case that the influence of the ideology of individualism shapes the definitions and strategies of neo-liberal policy in which procedural rights of the individual, guaranteed through an unfettered market system, are paramount. With its emphasis on individual initiative and responsibility, it is easy to see how the neo-liberal definition of need has

moved closer to one of "relief of destitution", away from universal welfare based on rights of citizenship (Pierson, 1991, 157).

The loci of responsibility—the state or the family?

Because it is assumed that an individual's plight is the result and responsibility of the individual, neo-liberals deny the state has an *obligation* to assist when the individual fails. For neo-liberals, the first defensive unit for the 'relief of destitution' is the family. It is the *failure* of the individual and the family that provides the only reason for government intervention. Even under these circumstances, however, Pierson (1991, 44) reports Hayek insisted this duty is not to be identified with the welfare state. Pierson concludes that for Hayek, "relief is not a statutory right of citizenship, but needs-based and discretionary" (ibid.). This tradition, of individual responsibility with first the family providing the 'safety net' following only then by the state, is the legacy passed on to the 'more market' liberals of the National Government.

This legacy is reflected in National's move from more universal health policies based on individual circumstances to a tightly targeted scheme based on family circumstances. Clearly, according to Boston (1992a 1), National wants to transfer to the 'nuclear' family and to voluntary agencies some of the state's responsibility to those in need. Boston cites the use of the 'core family' unit for determining eligibility for health benefits as evidence. Boston (ibid., 13) notes that although the individual has been retained as the unit for tax purposes, the 'core family' unit has been adopted for means-testing of all forms of social assistance.

Although it is paradoxical in my opinion on the one hand to declare the individual responsible for his or her needs and actions in the first instance and then to insist that the 'family' is responsible for assisting an individual who fails, it is nonetheless a hinge point of National's strategy. Paradox is compounded by complexity. Exactly what constitutes family in the Interim Targeting Regime and is it a reasonable representation of the family in the 1990s?

The Change Team on Targeting Social Assistance (Prebble 1991) has identified four possible compositions of the 'core family': (1) a couple with one or more dependent children; (2) a single adult with one or more

children under his or her care; (3) a couple with no dependent children; and (4) an unattached adult with no dependent children. Two key weaknesses of this strategy dilute possible positive benefits of the targeting regime.

The first weakness is National's problematic definition of 'core family'. National's definition has many critics, including women's groups, Maori and social service agencies, noting significant social and distributional implications. Based on the specific assumptions of what constitutes family, 'family' as defined by the Interim Targeting Regime has the effect of cordoning off other possible permutations such as reconstituted or extended families. The rigid definitions are said to "reinforce the notion of the nuclear family model" and "impede aspirations to strengthen Maori structures of extended family/whanau" (Auckland Methodist Mission 1991, 15). Boston (1992b, 82) notes the regressive nature of the Interim Targeting classifications for the 'core family' unit on effective marginal tax rates and the difficulty of applying 'reconstituted families' to National's eligible 'families' (ibid., 95). The 'core family' as defined, for example, would exclude households such as those enjoying a number of adults in the household including aunts or uncles or those in which children from various family members are cared for by one or more non-parent relative.

Another strategic weakness of National's program is its dependence on family and community structures which incorporate unwaged labour, such as that provided by unwaged family members or volunteers. Fuchs (1972, 9) cites this unpaid labour as one of the 'greatest' problems in identifying the true cost of health services. Williams (1989, 174) notes that policies which shift responsibility back to the community for care "rest on the assumption of women's availability to care." These assumptions may be particularly relevant given the possible characteristics of high-income Group 3 families many of whom may have both partners working outside the home. Given the concerns and criticisms listed above, why would National choose the 'core family' as its unit of assessment over the individual? Boston (1992a, 13) believes the most important reason is fiscal, "the 'core family' is much cheaper."

National's targeting strategy seems to come down to this: although the individual is best able to determine need, relying on the income of the family means the family becomes the vehicle through which negotiation of need

takes place. This is true whether need is fulfilled through the market or through government policy.

Social policy and need

The word 'need' has been used over forty times on the previous nine pages. Obviously, 'need' is an integral concept to social policies regardless of the ideological underpinnings of its definition. Need is quite a tricky concept in itself and determinants of health needs are no less complex. However, in order to supply the right kind of services, it is necessary to particularise need.

As originally conceived, National government's strategy for reform included establishing a list of 'core services' of which all New Zealanders would be assured. The Minister of Health's (1991b) stated intentions for this core was to ensure *an adequate minimum level of health care for all New Zealanders*. This can be looked upon, as described by Core Committee Chairperson Crosbie (1992), as a '*floor*' under which no one will fall. In other words, access to certain services would be guaranteed by government in the event of an individual (through the family) being unable to negotiate these services through the market.

This policy is in keeping with the neo-liberal leanings of the National government. Although the 'responsible party' for the neo-liberal is ideally the individual, neo-liberals do allow that the state in some circumstances can be involved. Even Upton (1987, 25-26) allowed that there could be 'little objection' to proffering state assistance to those that find themselves struck by unforeseen circumstances.

By acknowledging that the state *can* assist the individual in certain circumstances, then the process of delimiting the assistance becomes necessary. For National's health reforms, this is in effect what Crosbie has called the 'floor'. Yet as I will explore, the nature and characteristics of need, health and health care make defining a 'minimum level of health care' nearly impossible.

In the first instance, a 'floor' indicates the ability to define a baseline of need. Defining health need, however, is constrained by the same difficulties as defining need in general. As such, it is not a 'single target' but is comprised

of many individual interpretations of relative wellness and illness. Therefore, health care policies directed toward a 'single target' may be misdirected and may miss the target completely.

Hewitt (1992, 20) examines several perspectives of need as addressed by the welfare state and notes that the "explicitly normative principle of social policy is that welfare services are directed to meeting human need." The concept of need has a long and varied history of definition. Need, for the welfare state, has been defined as *absolute* or *relative*, giving rise to disparate ideologies that would satisfy basic needs or would provide a more egalitarian sharing of resources.

The first approach, Basic Need, seeks to set an absolute level of income, service, or entitlement. Booth and Rowntree's nineteenth-century studies of poverty (as cited in Hewitt 1992, 20 and 175) assumed this notion of Basic Need. Rowntree (1901), in his 1899 study of poverty in York, actually went so far as to describe the minimal nutritional requirements for physical efficiency in attempting to establish an absolute poverty level. An example of a definition of Basic Need used in today's welfare apparatus is the use of the United States' 'poverty level' to determine eligibility for certain welfare programs (such as Medicaid).

Hewitt (1992,178) contends that by assuming a distinction between real and imaginary needs, the exponents of the Basic Need approach seek to provide a theoretically sound footing for welfare policy. National's health reforms' 'floor' would be of this variety. However, Hewitt (ibid.) argues that Basic Need exponents fail to acknowledge that need is "culturally and ideologically drawn and in no sense absolute." Mack and Lansley (1985) believe that Rowntree, whose intention was to provide a scientifically based 'poverty level' was ultimately unsuccessful because Basic Need is, and always has been, based on the standards and expectations of the day.

Hewitt (1992, 175) offers two approaches for defining need, *intrinsic* or *procedural*. He argues that an intrinsic definition, an understanding of need by and of itself and of the Basic Need variety, provides criteria for allocating resources and has recently gained favour among new 'realist' policy-makers (such as those of the New Right). The second approach, a procedural approach to defining need, is "an ethic of rational and

democratic decision-making" (ibid.) which is proposed as a prior condition for defining needs. It is this second approach that provides a route to the definition of relative need and possibly to a new consensus for the welfare state. The notion of 'consensus', however, is itself heavily value-laden and influenced by the procedure used for determination.

In promoting the core services exercise as a key element of National's health care reform (Minister of Health 1991a), National stepped away from its neo-liberal foundations and a 'Basic Need' framework, returning to a *procedural* approach more identifiable with collectivist conventions. Haas (1994) argues that New Zealand's core services debate, however, not only suffers from characteristics inherent in the process but also reflects the capture of articulate special interest and the power of the medical profession.

Hewitt (1992, 176) notes that other theorists (Doyle and Gough, for example) believe that intrinsic and procedural definitions can be enjoined but warns that these definitions are "each based on different forms of universality" with Basic Needs (intrinsic) positing a universality of need shared by all prior to cultural and diverse forms of social existence. A universality of need as determined prior to social constructions would necessarily be minimal indeed.

The concept of relative need, shared by many welfare states, has led to descriptions of need based on an ability to participate and belong to society. The difficulty with definitions of absolute need is an implicit acceptance of extreme inequality. For example, Basic Need, when viewed alongside a strategy of part-charges, assumes that it is possible that those less economically advantaged do without while the economically privileged are able to purchase expensive, life-enhancing technologies. With past welfare policies aiming to provide a sense of participation and belonging, a move toward policies directed at more absolute standards may be behind the discomfort of many making submissions to *The Core Debate* (Minister of Health 1991b), a key document of the National Government's public participation exercise of determining need for health services.

Although it continues to explore issues of general guidelines, treatment effectiveness and protocols, the Core Services Committee has abandoned

the task of providing a specific 'floor' under which no one will fall (Core Services Committee 1994, 7). Remembering Hewitt's (1992, 176) warning that the *procedural* approach is still based on a form of universality of need, the Committee's failure may reflect New Zealand's discomfort with accepting the inequality inherent in such an approach. Chairperson Jones (Core Services Committee 1994, 7) acknowledges that a "simple list does not have the capacity to tailor services to the needs of individuals and communities." 'Tailoring' services to individuals has implications of relative need. As such, the demise of the exercise may also reflect the characteristics of the consensual process in which relative need may be endlessly aired.

The National Government's health care policies, particularly its goal to define core health services and its introduction of part-charges, appear to favour the *intrinsic* definition of a more basic level of health need, but convey a sense of the *procedural* definition by its process of determining the core services. Viewed from either perspective, the establishment of a baseline level of need would complement its philosophy of entitlements to health care benefits as put into effect by user pays.

Definitions of health and health policy

One of the primary goals of health policy is a healthy community. One of the ways the welfare state judges the effectiveness of its health policies is to determine whether the health status of its constituents has been raised, lowered or maintained through its health policies.

'Health' may not be easy to define. A definition offered by the World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity'. This definition implies that an adequate standard of health depends on many factors, including social and environmental (e.g. housing, empowerment, climate and so forth). Obviously such a definition involves many other areas of welfare state policy such as income transfers, education, housing, and labour policies. The contrast within the WHO's definition between 'well-being' and 'absence of disease or infirmity' is not accidental. The latter definition, based on biomedical science, is commonly used to measure the effectiveness of health policy. This is reflected in the popularity of health status indicators such as rates of heart disease, cancer,

tuberculosis, and infant mortality. Referring back to our approaches to need, WHO's definition would be *relative* while the biomedical definition is *absolute*.

Defining need for health services

Medical ethicists, health economists, medical practitioners and others concerned with health policy would all agree that 'health' has an extremely individual and cultural meaning not easily bounded by definition (Eyles and Donovan 1990; Callahan 1990; Fuchs 1972, Jones 1990). The difficulty in defining health is also prevalent in defining health need. As long as there might be a "cure tomorrow", those with chronic or terminal illnesses will want to retain life and will continue to 'need' more health care even though its efficacy might be in question. Cooper (1975, 51) argued that "need is not an absolute state but a matter of judgment and opinion." That opinion has, up to now, been in the hands of the practitioner and to a lesser degree the patient (*ibid.*). For health policy dictated by rationing, the potential for infinite need for health care is hugely problematic. This is particularly true where health insurance removes any fiscal restraint to obtaining more and more health care. This disincentive to avoid overusing health care services is termed moral hazard.

Paradoxically, unrecognised need for health services poses equally difficult choices for policy framers. Some might have a deadly disease and not seek care. Cooper (1975, 12) noted that research has uncovered a considerable 'iceberg' of sickness which would clearly merit treatment if ever divulged to a doctor or correctly diagnosed. In these cases, the effect of moral hazard arising from health insurance may be reversed, allowing persons who would otherwise forego care access to expensive medical diagnostics and treatment. The issue of moral hazard and its relationship to consumption of health services will be examined more thoroughly in chapter 3.

As we can see, defining an appropriate level of health care for the individual is difficult enough. However, this difficulty is further compounded in the state's attempt to set a minimum adequate level of health care because the priorities we set for ourselves are likely to be different than those we set for society. Ever mindful of the 'inappropriateness' of setting societal standards about individual desires and needs and concerned about equity

considerations, many societies, including New Zealand, continued to expand the eligibility for state-funded health care. If a government had unlimited resources with which to devote to health care, equity of access would not be a concern. However, since resources are finite; the line must be drawn.

The revenues the government uses to purchase and/or provide health services are extracted directly from the public. Callahan (1990, 58) reminded us that the claim to a right to health care means that "our neighbour has an obligation to provide that assistance necessary to meet our individual health needs." Brown (1991, 29) points out that the Right believes *fairness* means applying brakes on what is recognised as unlimited demand for health care so that health care does not continue to drain the earnings of the "hard-working, forgotten souls who foot the bill." In contrast, as New Zealand's public health services are funded through general revenues, when taxpayers are asked to submit to increased user pays for these same services they may feel they are in essence being asked to 'pay twice' (see chapter 5, Perceptions of health policy).

Even if we as individuals and we as a society were able to agree upon definitions of health need, health need as defined by public policy lies mostly within a Western medical model. A growing body of studies argues that increasing *health services* does not necessarily lead to increased *health status* (Scott, et al. 1986). Therefore, even if specific definitions of health were available, it is not entirely clear that the 'need' generated is truly needed after all. While it would not upset others if an individual paid for ineffective health care, it might be quite a different story if inappropriate or ineffective health care was paid for by the public purse. Accountability for how public funds are spent is certainly an issue in a world of finite resources.

It begins to become clear why there is great support for individual self-determination of health need expressed through the market. Because of the relativity of health need and the vagaries of the democratic process, democratic institutions cannot possibly claim to capture all the fundamentals of individual health need and are likely to be captured by special interests. While it would seem a move toward market solutions would remove some of the difficulties of state funding or provision of health care, it is equally true

that the characteristics of health need described above are inherent problems for the market as well.

A move toward the market imposes additional considerations on the allocation of health resources. While markets theoretically may be allocatively efficient, they do not address the problem of equity. The market is woefully insufficient in meeting the minimum health needs of individuals who are without the necessary resources to exchange for commodified health services. Inevitably, welfare states intervene in some way to correct this difficulty.

The markets and health care

The movement of many developed countries from highly organised welfare states to 'more market' economies can be seen to be counterfactual evidence of the historical incidence of perfect markets. In health care, this is particularly true as almost all the health systems of the developed world operate with some sort of governmental interference. Even the United States, often assumed to be the most market-oriented health system in the OECD, spends 42 cents of every health care dollar from its public purse (Borren and Maynard 1993, 15).

Just as there are no perfectly free markets in health care in the developed world, there are also few economies which are purely public acting completely independently of any market structure. Most economies lie somewhere in between the free market and completely public models, although the constituents of the "public/private mix", as termed by McLachlan (1982), varies widely.

With the emphasis in New Zealand on the health system becoming more market-oriented, it becomes increasingly important to understand the dynamics of the 'market'. A study of the economics of the market, which is highly dependent on price signals, is particularly useful in understanding the exchange and distribution of resources within the health sector.

Deviations from the perfect market model provide the justification for government intervention. However, the market's promise of allocative efficiency can be particularly attractive to policy analysts seeking to reduce some of the worst distortions of public provision of health services.

Manipulation of price has two major benefits for a public system of health service provision which is alleged to be overutilised and inefficient. By introducing or increasing price, consumers should react by reducing demand for services and therefore reducing the government's overall financial commitment. Equally, an allocation based on the pricing mechanism should provide more accurate information as to the types and quantities of health services really in demand. A reliance on the pricing mechanism, of course, presumes an ability to pay for services.

What is a market?

Donaldson and Gerard (1993) provide a definition of markets that is particularly useful in understanding the influence of market on health systems,

A market is simply an adjustment mechanism for supply and demand which permits the exchange of goods and services between consumers and producers without the need for government intervention.

One of the underlying caveats of the market model is the scarcity of resources. A resource can only be applied once and then it is consumed. Therefore, as resources are drawn into the administration of welfare systems and policy segments of health care systems, they are actually withdrawn as resources for the delivery of health care itself. Another caveat is that both suppliers and consumers act to maximise their own utility.

In a perfectly competitive market, suppliers compete for the trade of consumers and consumers provide signals to suppliers on which goods and services they desire and what prices they are willing to pay for them. For demand, an inverse relationship between price and quantity is assumed. Another way of looking at this model is to say that suppliers are willing to supply more product at higher prices at the same time that consumers demand less quantity. As the price goes up demand goes down.

Williams (1987, 6) points out that in 'textbook' markets money prices play "the central role in bringing supply and demand into balance, and in giving the appropriate signals to suppliers as to whether they should expand or

contract capacity."³ As the forces of supply and demand move in accordance with the model, some point will be reached at which the suppliers are supplying product at a price which optimises the number of consumers demanding product. This point, at the juncture of the supply and demand curves, represents the 'equilibrium' or 'market-clearing' point. Both suppliers and consumers are left allocatively satisfied. And all this has been accomplished without the supposedly overgrown and unwieldy administration of the welfare state.

Why, then, does it not work? Price signals, for a variety of reasons, may be "poor measures of value and cost in a market for health care" (Maynard 1987, 193). Although free (ie. unregulated) market solutions are assumed to be efficient, "the reality is that they do not work as well for some economic goods and services as for others" (Donaldson and Gerard 1993, 12).

Therefore, one reason for the breakdown of the market may be the nature of the good or services. Donaldson and Gerard (1993, 17) note that *health care* may not be considered a 'good', but "rather the demand for health care is derived from a demand for health improvements or health maintenance. In contributing to a consumer's utility, health improvements and health maintenance have *value in use*." It is *health* that is the object of need, not health care. As such health care may not be the direct satisfier to an individual's need, leaving it a somewhat opaque good which may be difficult to differentiate. The nature of health services as a product also leads the market to fail on the key conditions of a perfectly competitive market.

Market failure and the assumptions of the perfect market

As noted above, the competitiveness of free markets relies on certain conditions which allow the market to clear without intervention. The limiting assumptions of market models "represent only one of the possible kinds of processes underlying the production and distribution of goods and services" (Longino 1993, 167) These additional processes acting against or upon the conditions for a perfect or free market are termed *market failure*. For a perfect market, it is necessary that *all* the conditions are met.

³ Williams is particular to note 'money prices'. In health services, other costs are incurred by purchasers of medical services, including time and travel, which also play a part in consumption of health services.

Deviations from the standard conditions for a perfect model, these market failures, may justify government intervention. If one or more of the market's conditions are not met, attempts may be made by government to compensate. In the case of the market for health services, Donaldson and Gerard (1993, 26-27) reason that *extensive* government intervention in health care exists because *none* of the ideal assumptions of perfect markets work:

Market failure in the allocation of health care is so complete that extensive government intervention is more likely to result in the achievement of societal objectives than are market forces supplemented by minimal government intervention.

Indeed, historically market failure has been deemed so severe that central governments have provided a large proportion of all health services (Borren and Maynard 1993, 15).

Conditions of perfect market include the absence of externalities, perfect knowledge on the part of the consumer, certainty and a perfect balance of power between individual suppliers and consumers. Before explaining these conditions further, I propose two additional conditions of the market. The fifth condition I offer is that the consumer *has the wherewithal to participate*. The sixth, although obvious, is critical in understanding the difficulty of evaluating the effectiveness of health systems. To be fulfilled within the market, a need must be satisfied by a good or service which has been commodified; that is, an exchange (mainly for money in the case of Western economies) must be made.

Various instances of market breakdown have been discussed by health economists (see Taylor 1980; Maynard 1987, Danzon and Begg 1991, Donaldson and Gerard 1993). Richardson (1993, 1) offers a useful insight into the type of market imperfections giving rise to the need for intervention. He distinguishes between "imperfections which result from rigidities peculiar to a particular system" and "imperfections which are the inevitable outcome of the nature of the commodity, its production or marketing." It is the latter type he says categorises the market for health services and has been the standard justification for government intervention. It is these 'inevitable outcomes' to which I now turn.

Externalities

Taylor (1980, 61) defined 'externalities' as existing "whenever the activities of one individual or firm affect the utility or welfare of another individual or firm" without compensation from or to the party affected. Externalities, sometimes called 'spillovers', can occur on either side of the market equation, consumption or production, and can produce both negative and positive effects. These effects are "out of the individual's control...the costs and benefits of such spillovers cannot be accounted for in market transactions" (Donaldson and Gerard 1993, 21).

Medical care and public health measures aimed at preventing or reducing the incidence of infectious disease are a classic example of a positive externality (Taylor 1980, 61). Since the benefit of reducing risk of infection gained by society remains uncompensated, there is a tendency for the market to undersupply the product or service—in this case immunisations. Public health measures (for example, free or required immunisations for entry into schools and health education programs) are an option for government intervening to ensure that the market meets its socially optimal production level.

Even though certain medical procedures and public health measures benefit others, it can be argued that the benefit of most health services directly accrue to the individual (Danzon and Begg 1991; Taylor 1980). It is this confinement of benefit to the consumer that is the foundation of the 'benefit principle', often used to defend user pays measures. Certainly, New Zealand's health reforms reflect a belief in the benefit principle.

If we accept that the consumer is the primary beneficiary of health services, the importance of the externality argument for government intervention to overcome underproduction of personal health care services is weakened. Donaldson and Gerard (1993, 22), moreover, maintain there are negative externalities to the consumption of health care services in the form of iatrogenic illness. Iatrogenic illness, brought about because of medical intervention, prompts even more consumption of health care. Viewed from this perspective, "market transactions could lead to overproduction of health care" (ibid.).

In discussing externalities in these economic terms, it is important to remember that the person affected by a preventable but infectious disease because of the underproduction of the market and the person made more ill by the misapplication of medicine in the overproduction of the market could care less about market mechanisms. It is no comfort to either of them that the overproduction on the one hand could counterbalance the underproduction on the other in a model of health care utilisation.

Perhaps it is the consequence of either over- or underproduction of health services that gives rise to an additional type of externality that is unique to the health sector. Called the 'caring' externality, the importance of *other people's* health often is given considerable weight in arguments justifying government intervention in health care services. Borren and Maynard (1993,19) identify the value people place on other people's consumption of health care services as "a major cause of competitive market failure."

Although acknowledging the importance of the 'caring' externality, Taylor provides a perhaps more cynical view. He believes that the difficulty people have regarding the termination of life-saving measures represents a "kind of tacit 'insurance agreement'. It is not so much the positive external benefits we receive from these measures upon someone else, but rather the possibility that we might be in a similar situation some day in the future" (Taylor 1980, 64). If Taylor's view of the 'caring' externality has merit, the task of establishing a workable and fiscally viable minimum adequate level of health care is compromised.

Viewed from either perspective, health care services for other people mean a lot to us. The problem with the market, as Culyer (1972, 43) reminded us, is that "care for other individuals is not at all efficiently revealed by individual private contracting." In the case of National's health reforms, while part-charges may result in a clearer determination of individual health need (which is questionable given the failures discussed here), the value we as a society place on others' health (in the form of subsidies) acts against the effect of price signals provided by these charges.

Rather than general subsidies, in order to ensure a more socially optimal level of consumption, we could rely on the goodwill of those who are willing to seek out and subsidise the care of those who are sick. This method of

providing a socially optimal level of consumption, however, is "impractical and too costly, in terms of time and effort, for those who would like to contribute" (Donaldson and Gerard 1993, 39). If the transaction is rendered costless from the point of actual contribution, Donaldson and Gerard argue, more individuals would contribute. The most efficient way to do this is through some mechanism of public health insurance or taxation. Thus, National's Interim Targeting Regime, which lowers or eliminates the market price of health services to over 50% of the New Zealand public, provides compensation for at least part of the 'caring' externality.

The 'main point to understand', according to Taylor (1980, 70), is that lowering the market price "is one way of making private individual decisions more closely approximate the social optimum." Lowering of market price in New Zealand historically has been accomplished in varying degrees at the primary care level through the General Medical Subsidy (GMS). However, as will be seen in chapter 3 and through the findings of this study, manipulation of price has its downside. If it is too high, not enough persons can afford it; if it is too low, overproduction may result and costs may be difficult to contain.

Logically, if externalities were the only failure of the health services market, it would seem possible that subsidies could render a socially efficient optimum. However, as noted before, the health services sector suffers from several market maladies. A second, and powerful, condition of perfect markets is perfect knowledge.

Uncertainty and perfect knowledge

Perfect knowledge is one of the trickiest market conditions to correct in the consumption of health services. As already discussed above, ideologically the concept of the 'need' for health services can be quite murky. For a market to perform perfectly, however, consumers must know with certainty what they want, when they want it, and where they can get it (Donaldson and Gerard 1993, 21).

The importance of the perfectly knowledgeable consumer of health services has been explained by Donaldson and Gerard (1993, 15):

...fully informed and knowledgeable consumers will weigh up the costs and benefits of health care relative to other goods. They

will spend that amount of money on health care which maximises their well-being. This will result in the appropriate amount of resources being allocated to health care overall and to different types of health care (ie. there will be allocative efficiency). At the same time, health care producers, seeking to maximise profits, will produce consumers' most highly valued types of health care at least cost, so behaving in a technically efficient manner. This combination of technical and allocative efficiency ensures that consumers' well-being is maximised at least cost to society.

Certainly, health care does not fit this model condition. The lack of perfect information in the health services sector has two components, uncertainty and consumer lack of knowledge.

The first characteristic, uncertainty, comes about primarily because ill health is random and cannot be predicted. This randomness makes it difficult for anyone to budget for health care in the same way that he or she might for other commodities (Bowie 1990, 80). Additionally, the health care required to offset health problems may be expensive and unaffordable. Therefore, even the rational consumer may be caught unawares and may be unable to meet the financial demands of illness, reducing the ability to carry out strategies for health improvement. Risk-averse individuals, in order to reduce risk of financial calamity caused by ill health, may seek out insurance against these unforeseen costs (Borren and Maynard 1993, 16). Thus the market responds to its own failure, but this response leads to other impediments to a smooth running market - those associated with third-party payers and moral hazard which will more fully be examined in chapter 3.

Compounding the problem of unpredictability of need, efficacy of treatment is uncertain. Even though it may be possible to predict the prognosis and probabilities of chronic conditions in general terms, "at the level of the individual, future health status is likely to be uncertain" (Donaldson and Gerard 1993, 28). We simply cannot know for certain that we will benefit as others have from even most common treatments.

Possibly part of the problem of knowledge of future health status is the difficulty of knowing current health status. Earlier the problem of undetected illness was discussed. An assumption of perfect knowledge on the part of

the health consumer presumes that individuals are aware of their health status and are informed of all the options available for improvement (Donaldson and Gerard 1993, 22). On an even deeper level, the market model assumes the health consumer understands the relationship between health care and its contribution to health improvements (*ibid.*, 17). This assumption might be compromised if the consumer is not in a position to make a "cool, rational judgement at the time of purchase because he is ill, or because a close member of his family is ill" (Fuchs 1972, 6).

The theory of the market does not always assume that the right decisions are made but explains how mistakes in consumption could lead to better and more information and decision-making. For example, if I am new to a market (let's say for apples), it may take several opportunities of apple-buying to determine which apple is the best value for me. But I buy a lot of apples. Unlike foodstuffs, many medical services are infrequently purchased and the consumer cannot develop expertise (Fuchs 1972, 60).

Even If the health services consumer could normally distinguish states of wellness and illness with certainty, could rely on proper diagnosis, responded exactly as expected to treatment, and had repeated events from which to learn, it cannot be assumed the consumer would report improved health status. Health status, as we have learned above, is not only dependent on health services but many other environmental, social and cultural factors. At this point, placing confidence in the perfect knowledge of consumers of health services seems naive.

There are those that discount the importance of perfect knowledge in the marketplace. Danzon and Begg (1991, 6), early proponents of New Zealand's health reforms, argue that no one has perfect information in any market. However, the consequences of making the wrong choice in health care are unlike most other commodities. If I buy a car today and find it does not suit my needs, I may suffer a financial loss but I can sell it. On the other hand, with health care, errors in decision-making may bear serious consequences and the choice may be irrevocable (Donaldson and Gerard 1993, 23).

As an example, an asthmatic, used to congestion and difficulty breathing, may decide these symptoms are an asthmatic episode rather than

identifying them as symptoms of a more treatable infection. Because of his or her more common experience with asthma and less common experience with infection, the asthmatic may continue his or her regular course of medication without visiting the doctor for proper diagnosis.

Accepting that there is a degree of learning that goes on in every market sector, the issue then becomes the degree to which imperfect knowledge impacts choices and whether it is likely that knowledge will improve over time. Particularly, would an alternative funding method for health delivery necessarily give better results? Given the ubiquitous nature of imperfect knowledge in health care, does increasing the cost of the service improve the learning curve or increase the knowledge of the health consumer?

As we have seen, knowledge and certainty in the health sector is not only imperfect but may be imperfectible. The asymmetry of knowledge between consumers and producers of health services has been cited as one of the reasons that perfect knowledge is unattainable. There are very few industries in which the consumer is "so dependent upon the producer for information concerning the quality of the product" (Fuchs 1972, 5).

Perfect balance in power between supplier and consumer

Much has been written on the relationship between the patient and the practitioner. For a market to be perfect the relationship between the power of the producer and the power of the consumer must be equal—neither supplier or consumer can dominate the relationship. The only guiding principle in perfect market transactions is price. However, given the lack of perfect knowledge on the part of the consumer of health care services, the supplier is called upon to provide the information needed and to guide the consumer in deciding what kinds of and how much health care to purchase.

This relationship has been described as 'agency'. Uncertainty and the high cost of information in health care create this agency relationship (Borren and Maynard 1993, 17). The only rational choice left to consumers is to rely on the advice of the supplier, essentially forcing the suppliers of health care to assume the awkward role of 'demander', which places the suppliers in inevitable conflict (Williams 1987, 5).

The fact that the efficacy of certain health services cannot be measured by the consumer but rather must be interpreted by the doctor/agent also causes breakdown of the market. "Health care itself is normally of no value, but is linked to health improvements via a 'technological' relationship about which doctors know more than consumers" (Donaldson and Gerard 1993, 42). An obvious example of this interpretive relationship would be the results of blood tests after chemotherapy. The chemotherapy surely does not make the consumer 'feel better'. Only through blood analysis can the 'experts' be sure of the efficacy of treatment.

Fuchs (1972, 6) has charged that not only does the agency relationship exist, but that the profession does little to remedy the power imbalance, in fact, often taking 'positive action' to keep the consumer uninformed. This lack of professional enthusiasm for more fully informing patients may have been behind Bowie's (1990, 80) warning that failure to establish systematic strategies for informed consent might significantly impede efficiency gains in New Zealand health reforms.

On the supply side, the imbalance of power reduces the competitive nature of production. Fuchs (1972, 6) noted that consumers taking part in other markets where consumer ignorance is considerable can rely on the competitive behaviour of suppliers for protection. Once an agency relationship has been established, even a reasonably dissatisfied consumer is less likely to seek additional sources of production.

The combination of the agency relationship and the strengthening of the profession through restricted entry and exit have created the perfect culture for supplier-induced demand. In simple terms, doctors are called upon by their patients to advise on services either they or their colleagues provide. Once a patient enters the medical system decision-making is delegated to the doctor (Maynard 1987, 195). The doctor is the patient's agent because he or she is regarded by the patients as the 'expert', more knowledgeable about diagnosis, treatment and outcome, not because he or she knows the patient's preferences. The consequence of this delegation is uncertain but the doctor may act neutrally in the best interests of the patient or may use his or her agency to generate more employment and income (ibid.). The latter process is clearly conscious supplier-induced demand.

It is also possible for the doctor to unintentionally produce additional demand by over-prescribing treatments which may have questionable efficacy. This may take place because the doctor may be in ignorance of both the financial cost and the opportunity costs of each decision (Donaldson and Gerard 1993, 60). It may happen because the iatrogenic affects are not direct. It may also be because the doctor is not the source of payment and has no disincentive to overprovide treatment the cost of which may not be justified in terms of the benefits the patient receives (*ibid.*, 42). Increasing price at point of service to the consumer might have the advantage of forcing consumers to question their doctor more thoroughly regarding the necessity of procedures and pharmaceuticals.

Regardless of whether supplier-induced demand is an problem inherent in New Zealand health delivery, there is little argument that general practitioners are the gatekeepers of health services in general (Danzon and Begg 1991, 16). Understanding the role of general practitioners of the demand side of the market equation is important to understand why cost sharing at the level of general practice is seen to provide some incentives for cost reduction. If the 'gate' controlled by general practitioners is not wide open, not only will the share of general practice to the entire health services sector be reduced but it follows that other services would experience some reduction as well. However, wherever the agency relationship is strong, it is unlikely that an increase in price will have an optimal effect.

The asymmetrical power of the agency relationship which is the basis for supplier-induced demand is further strengthened by the difficulty of consumers to differentiate quality among suppliers. In a competitive market, poor quality suppliers are unable to attract trade and eventually leave the market. The inability of consumers to differentiate between 'good' and 'bad' suppliers of health services has lead to a regulation of supply including registration and licensing. The threat of supplier-induced demand has resulted in the profession establishing a number of measures which are not common in competitive industries such as codes of conduct, regulation and peer group review (Bowie 1990, 80). Thus, doctors are "empowered with a degree of market control which permits them to restrict entry to their professional, and therefore to restrict the competitive forces which act to minimise health care costs" (Donaldson and Gerard 1993, 23).

An agency relationship inherently implies the ability to participate in the health services sector. With markets, 'if you can't pay, you can't play'.

Ability to participate

The ability to participate in the marketplace is often discussed in terms of the opposition between allocative efficiency and equity. Allocative efficiency depends on consumers who are not only willing to pay for goods but who are able to pay (Donaldson and Gerard 1993, 16). Without the ability to participate, not only are market signals silent but those consumers unable to participate often suffer unconscionable consequences, so much so that those better off may be willing to pay for goods and services on their behalf (refer to the 'caring' externality above). This is a fundamental value of the welfare state which attempts to redress this lack of equity by various means including taxation, subsidies and provision.

If the only issue in the market failure of the health sector was redistribution of income, other strategies besides provision or subsidisation of health services could be used. An example would be direct transfers to lower income or chronically ill individuals to provide additional income with which to purchase health services. However, as explained here, the multifarious factors in health services interplay to cause systemic failure.

Commodification

As alluded to above, health care as defined by government or included in its official accounting would include only those services for which some form of money exchange has been made. In restricting measurement of health services to those commodified goods and services, government analysts cannot capture the value of caring services provided by friends, family and by individuals themselves. Certainly, these services go uncompensated. By measuring the 'value' of health services in terms of number of visits, pharmaceuticals or receipts for health services, such caring remains a hidden cost of health care.

A reliance on commodification also distorts any non-market measures taken by individuals to increase their own health status. Such measures might be a diet or exercise regime. Although it could be argued that a shift in the aggregate demand for different commodities (such as lettuce as opposed to cake) could act as a measure of weight-loss decisions, the link between the

substitution of health care services with green nibbles would be tenuous at best.

Why is the distinction between commodified and noncommodified goods important? In assuming that consumers will decrease their consumption by some factor given increasing prices for care, unless all the demand lies within the category 'unnecessary', it is plausible that consumers will have unfulfilled needs. Remembering the 'rationality' of the individual and given that their need still exists consumers are likely to substitute other goods, services or measures in order to fulfil the need. An example might be someone who was suffering stress and being treated by a doctor with various medications. Rather than accepting additional treatment at greater cost, the individual might begin stress-reduction strategies such as relaxation. Even though relaxation has effectively become a substitute for commodified medical services, because it is not commodified it remains hidden from any measurement of the effectiveness of user pays.

It could be argued that only those services that lie within the venue of the market are of interest. This is similar to the argument feminist economists (and others) use in criticising common measures of GDP which do not capture the value of noncommodified goods and services performed in the Third World. An apple plucked from one's own apple tree satisfies hunger equally as well as an apple purchased from the market, perhaps even more so if there was less cost involved. Only the apple purchased through the market, however, is 'valued'. The act of commodification begins to be confused with the act of satisfying a need.

On the supply side, if services previously exchanged through the market, such as home care for the elderly and intellectually handicapped, are provided by the 'family' or volunteer services of the community, the value of this care need not be included in any government accounting of its health care dollar. In effect, by relegating more care to the 'family', the government is shifting care of commodified services to noncommodified 'valueless' labour, making it easier to meet its objective to reduce its overall health costs.

From a policy point of view, learning what noncommodified substitutes are effective and most popular with consumers could be of vital interest.

Programs to encourage those substitutes could result in a true lowering of the proportion of health services to the GDP, not just a diversion of costs away from the public health sector. Encouraging such behaviour in a positive way could lead to the greater personal responsibility which has been a key goal of National's reforms.

Healthy health markets?

As described above, health services markets have distinct and unique characteristics which break down each and every condition of perfect competition. However, it may be unwise to completely forfeit the advantages of the market in providing some indications of allocative efficiency and strengthening personal choice. My view, after reviewing the arguments for and against government intervention in health care markets, is that the market should not be viewed as a venue but as a tool.

The market, balanced by an understanding of the limitations of its ideology, can be useful in providing insights into the nature of need and fulfilment in a world of finite resources. Including more market-based allocation mechanisms, such as cost sharing, can offer an interpretation of the choices we make to improve our own health and the health of our neighbours. Cost sharing as a market strategy for reform will be considered in the next chapter.

3

Cost sharing and the demand for health services

In chapter 2 we saw how the market for health services exhibits unique characteristics leading to strong arguments in favour of government intervention. These arguments are based on market failures which may cause a less than optimal supply and demand for health services. Possible strategies for alleviating the worst of the difficulties caused by the market failures include both supply- and demand-side intervention. However, increasingly governments are re-evaluating their roles in the funding and provision of health services.

In the Introduction, we reviewed New Zealand's dual strategy for controlling Vote:Health. On the supply side, one strategy is to restrict or eliminate the government's role as a service provider. Recent hospital closures are one result of these supply-side changes. Another supply-side strategy that complements the outright elimination of government-provided services is the purchaser-provider split. Part of the rationale for these supply-side changes is cost control.

Before going on to demand side techniques, it is useful to separate two issues of control: (1) control of *cost*, and 2) control of *expenditures*. To differentiate between the two, *cost* as used in this thesis will reflect the amount of resources required to produce health services. *Expenditure* is related to the total money price at which consumers are willing to purchase the product or service and rarely includes all costs involved in a transaction for health services (e.g. time and opportunity costs). Even without these nonprice costs, one of the arguments of the reforms is that the public provision of health care services makes it impossible to get a true picture of the cost of providing specific health services. Consequently, the reforms include supply-side strategies which will hopefully make it easier to establish per unit costs of provision. The user pays reforms are a demand-side strategy to push health care services more toward a market-defined demand for health care.

An increase in expenditure does not necessarily reflect an increase in costs. It could also signal an increase in demand at the same per unit or decreased cost. Or even an increase in demand at an increased cost. According to market theory, an increase in demand would eventually push the per unit price of supply down. However, as we have seen, market failure in health care means that the theoretical supply and demand relationship does not always hold true. An example of a country with very high expenditure as well as costs is the United States.

The work of Hollingsworth, et al. (1990) suggests that supply-side measures are far more effective at controlling *costs* than demand-side measures which are only somewhat effective in controlling *expenditure*. According to price/demand theory, demand-side techniques to control expenditures would result in a reduction of demand. Theoretically, a reduction of demand would force suppliers to decrease the price at which the product or service is being offered. However, as we have seen in chapter 2, the economics of health suggests that the price/demand relationship for health services is far more complex than a simple price/demand model with both supply and demand factors influencing the result.

The demand decision

Illness (or even a desire to maintain good health) may result in one or a combination of health-related actions (Statistics New Zealand 1993, 68). When people become sick, they must first decide whether to seek 'care'. 'Care' might mean formal medical care or complementary care. 'Care' might mean self-treatment with over-the-counter medications or home remedies. 'Care' might mean a few days off from work or school in order to give the body a rest. A consumer's decision as to whether something will be done entails weighing the anticipated expense against the expected gains.

If the benefits are expected to be high, formal treatment may be sought. But we are not at the doctor yet. If the decision to seek formal treatment is made, another weighing up may be done. Time costs, the availability of alternatives, easy and timely access are additional components of demand. Financial constraints, demographic variables, cultural influences and socio-economic characteristics also enter the equation (Statistics New Zealand 1993, 68; O'Dea, et al. 1993).

Demand-side techniques to control the overall health budget are about changing the behaviour of the consumers. With such an intricate web of factors influencing demand, finding a clearly effective or politically viable demand-side measure might be tricky. If we focus only on economic variables which affect expenditure behaviour, this means manipulating either income or price (Beck 1974, 131). Income can be manipulated; the welfare state has been doing this through various direct and indirect transfers for years. However, manipulating price by introducing higher point-of-service 'prices' to consumers may be a faster and more direct way to isolate the effect on demand.

Brook, et al. (1983, 1426) maintained that 'one of the few potential methods' for reducing *expenditure* (emphasis added) appears to be increasing the proportion of costs borne by consumers of medical care. Birch (1986) cites three rationales often used to support patient charges: (1) the income from patient charges increases resources for health care provision, (2) patient charges cut the cost of provision (by cost-recovery) and (3) increasing the price to the patient reduces 'overutilisation'. Each of these rationales, Birch maintains, "has implications for public expenditure compatible with...monetarist policies."

The first rationale is based on scarcity. With a capped budget for health care, user charges from patients obviously allows increased income with which to purchase a greater volume of resources. The second rationale, reducing the cost of provision, as Hollingsworth, et al. have concluded, is of limited effectiveness in controlling overall costs.

Reduced utilisation or demand diversion?

The third of Birch's rationales requires more discussion. As Ashton (1992a, 2) points out, it is unclear whether the objective of New Zealand's health reformers was to reduce economic or medical over-use of services. Creese (1991, 310) takes a somewhat broader view of this aspect of cost sharing, declaring that such increases in cost sharing "divert patients who either cannot pay, or who judge the services less desirable than some alternative, to other sources of care." In other words, increasing patient charges causes 'demand diversion' which from a conceptual view allows a more complete analysis of their effects.

Just how much of an increase in cost sharing results in what percentage decrease in demand? What is the character of this demand diversion? Is the decrease in demand uniform across income levels and medical conditions? Which patients are foregoing care because of cost? Are any particular subgroups especially and unfairly disadvantaged? Does the foregone medical care represent overutilisation as Birch (1986) has suggested? Is it just as likely that foregone care means cost-shifting instead of cost reduction?

The phrase 'demand diversion' implies that demand remains constant but is simply diverted into other services or activities. Given this, what other actions are health consumers likely to take to fulfil their requirements? Public or private-sector policies implementing a change in cost sharing raise a considerable number of complex questions for the policy-maker.

Researching the effects of cost sharing

Since governments (and health insurance companies) have been manipulating demand through pricing mechanisms, various research programs and studies have attempted to answer some of the questions above. Setting out to research the manipulation of the demand for health services has problems peculiar to the setting. One of the most difficult problems is the conceptualisation of the variables involved. This difficulty will be discussed in more detail in chapter 4.

A second serious difficulty is ethics. Ethically, researchers cannot intentionally and knowingly decrease the welfare of the persons involved in their research efforts. Twenty years of research into the manipulation of demand for health services have been unable to definitively answer whether increasing cost sharing reduces health status. If lowered health status is an expected outcome of research, an experimental design which sets out to establish a relationship between cost sharing and demand for health services is ethically flawed. Because of this ethical dilemma, nearly all of the research into price manipulation in health services arises from 'natural' experiments. A 'natural experiment' employs a non-experimental design examining changes to utilisation patterns before and after a government or entity decides to increase/decrease the portion paid by users of its health services.

The only large-scale research of 'experimental design', that is with one or more control groups and one or more experimental groups, has been done by the Rand Corporation in the United States. Called the Health Insurance Experiment (HIE), the experiment was a randomised controlled trial of alternative forms of health care financing done between November 1974 and January 1982 (Lohr, et al. 1986, S1). The design called for the more than 7,700 participants in 2,700 families living in six study sites to be randomly allocated to several experimental health insurance plans that differed in the amount of cost sharing borne by the families, including one that offered an essentially free point-of-service option.

The effects on demand were studied before and after the assignment of participants to new plans. Not unaware of the ethical implications of the research question, the researchers included a 'stop loss' provision which theoretically left no participant possibly worse off financially. However, this very provision has been criticised as potentially masking the effect of the change upon demand.

Since the HIE was one of the few studies available to guide policy makers on the effect of increase in cost sharing, it is likely the RAND experiment had some influence in New Zealand's reforms to user pays. Indeed, the HIE results are quoted in many of the policy documents and critiques of the reforms (see Minister of Health 1991a, Ashton 1992a and 1992b for examples).

Taken in isolation it would be easy to discount the results of the HIE as an 'American experiment' not easily transferable to the New Zealand context. However, results of other studies, both here and abroad, have been able to verify the general existence of a relationship between price at point of service and a reduction in demand. As Davis, et al. (1994, 115) have pointed out:

The impact of patient user charges or co-payments on levels of service utilisation has been well documented. It is well known that the higher the direct or net price of medical care, the lower the likely level of effective patient demand.

It is from this starting point that the various utilisation studies will be examined.

A survey of utilisation research

The results of numerous utilisation studies will be presented here according to the category of result. For easy comparison, the principal author(s), the country, entity involved and primary research question of each study summarised here have been cross-referenced in Appendix 1.

The results of various utilisation studies have very clearly established a link between an increase in cost sharing and a decrease in medical care. Brook, et al. (1983, 1432) using the HIE data, summarised "the more people had to pay for medical care, the less of it they used." Scitovsky and Snyder (1972, 6-7), calling their results "significant in every sense of the term", found that the use of physician services for their study sample as a whole fell by 24.1%. Beck (1974), in his study of changes to patient charges in Saskatchewan's public health system, also found a decrease across all income categories. Reporting the New Zealand experience, Davis, et al. (1994, 123) noted that "utilisation declined markedly and indiscriminately for all groups."

There seems little doubt that the strategy of manipulating demand for health services by increasing the price at point of service has the desired results, regardless of income, regardless of medical condition. Returning to the questions posed in the studies reported here, perhaps the broadest question to address is the degree to which the decrease is uniform across income levels and medical conditions.

For example, in the case of income, is the elasticity of demand within higher income levels the same as those within lower income levels? In the context of New Zealand's reforms, are those at the bottom end of Group 3 likely to respond differently than those at the top of Group 3? Ashton (1992a) raised similar questions in her critique of the Interim Targeting Regime, warning that those at the margin of Group 3 might find access restricted due to affordability.

As to medical conditions, are those with 'severe' illness more likely to seek treatment over those with 'trivial' conditions or symptoms? The issue here is whether user pays can eliminate the overutilisation without also decreasing the utilisation in cases of obvious or acute need for medical services.

Coupled with this latter question is the issue of efficacy of treatment. Is a strategy of cost sharing useful in eliminating ineffective treatment without also affecting the utilisation of effective treatment? (For example, use of antibiotics to treat viral infections would be an ineffective treatment as opposed to the effective use of antibiotics to treat bacterial infections.)

As Lohr, et al. (1986, Foreword) have noted of the HIE results, the empirical evidence suggests that

the decrease in utilisation from cost sharing is uniform neither across medical conditions nor across income groups....Reductions in the likelihood of seeking care were indiscriminate, occurring across a broad spectrum of conditions, regardless of whether or not medical treatment for the condition was deemed effective by medical professionals.

Effects across income

The results of the HIE suggest that substantial income-related differences in utilisation result from increased cost sharing. The effect on the poor seems particularly marked. Lohr, et al. (1986) report that poor persons seek care for a significantly lower number of illness episodes than do the non-poor and across a broader range of medical conditions. Brook, et al. (1983, 1431) went even further declaring the poor at 'elevated risk' to benefit from free care. Both Creese (1991, 311) and Beck (1974) note that the introduction of cost sharing in Canadian provinces led to a much greater reduction in utilisation by the poor, as much as three times greater than the non-poor in the study reviewed by Creese and by 12% higher in Beck's.

Foxman, et al. (1987, 433) argued that the decrease in utilisation was not unique to physician care. Results of their study using the HIE data showed that people in the lowest third of the income distribution used the fewest antibiotics, regardless of plan. Within the 'free' plan, the differences among income categories significantly diminished.

Although supposedly the Interim Targeting Regime as introduced effectively exempts New Zealand's 'poor' from its more severe cost sharing increases, Ashton's (1992a) warning of the possible differential effect of user pays reforms is appropriate for persons and families near the bottom of the Group 3 threshold. Past research tells us that although reduction in utilisation

occurs across income levels, lower income levels experience a greater demand elasticity than higher income levels. In New Zealand, data from the Household Expenditure and Income Survey shows medical expenditure varied by household income, with no more than 18% of households in the lowest income deciles reporting expenditures on medical practitioners' fees as opposed to 36% of households in the top income decile.

These results lend two possible conclusions: (1) either the poor are healthier which is not borne out by studies in health status, or (2) the poor delay or forego treatment during illness episodes for which they would benefit from medical care.

An alternative conclusion is that the non-poor with their greater ability to afford medical care are more indiscriminate in their decisions to seek care. Manning, et al. (1987, 262) argue "the probability of any use of medical services increases with income." However, as we have seen above, it is likely that even the non-poor are also effected by increases in user pays.

Perhaps of even greater concern is the general effect on children across all income levels. O'Dea, et al. (1993, 17) in reporting on the effect of the subsidies here in New Zealand, warned that the elasticities of demand seem particularly high in the case of Group 3 children. This finding is similar to other studies. Lohr, et al. (1986, S30), reporting findings from the HIE, noted that the deterrent effect of higher cost sharing arrangements was greatest for children for low-income families, while adults across all income groups were less affected.

Results from FORESEARCH (a private Auckland-based social research firm) indicate that GPs had seen an overall decrease in consultations from all groups of patients with the greatest decline from Group 3 adults and children (reported by Rotherham 1992). Although fewer GPs had noted a fall in visits from Group 1 and 2 patients, the number of consultations for children from Groups 1 and 2 seemed particularly affected .

Other differences in the effect have been found. An increase in cost sharing has also been found to affect the utilisation pattern of women more than men (Scitovsky and Snyder 1972, 7). Men reduced their use of physician services slightly less than women both in terms of per capita number of

visits and per capita costs, with women from the lowest socioeconomic group reducing their use the most.

In Scitovsky and Snyder's study of Stanford University employees, 'socioeconomic' group was tied to occupation. In addition to isolating the effect on women in the lowest socioeconomic groups, Scitovsky and Snyder were able to identify a difference in response by occupation. Those within in the study's lowest socioeconomic group, the nonprofessionals, responded more than the two other occupational categories to the introduction of coinsurance, reducing its use of physician services more (Scitovsky and Snyder 1972, 7).

As we can see from the studies above, it would appear that it is possible that three separate effects having to do with income might be found in the New Zealand context. Firstly, those persons on the lower end of the Group 3 income threshold may experience a greater decrease in demand for medical services. Secondly, children may be adversely affected to a greater extent than adults. Thirdly, women may exhibit a greater reduction in utilisation than men.

So far, we have discussed the seemingly incontrovertible facts that an increase in cost sharing creates a decrease in utilisation of medical services. While we can grant the likelihood of these results, we still are unable to determine whether the decrease is a negative or a positive result. As suggested by Lohr, et al. (1986, Foreword), if reductions were found predominantly in cases where care is considered unnecessary or inappropriate, "positive external benefit would be implied."

If no decrease in health status occurs, any decrease might actually reflect a previous overuse of medical services and overprescribing of pharmaceuticals. It might also decrease iatrogenic risk. In either case, the decrease would be a benefit for the New Zealand public in reducing the tax burden of *Vote:Health*. If only 'inappropriate' care is reduced, theoretically more resources would be available for 'appropriate' care and a much more efficient allocation would occur.

Ineffective/effective care; inappropriate/appropriate care

The difficulty with cost sharing for health care is that it appears to deter not only those patients who may need or benefit from treatment but also the patients at greatest risk for whom cost-effective preventative and curative interventions are available. The demand-diversionary effect of charges may bring about unwanted results: "it is not simply 'frivolous' utilisation that is being diverted" (Creese 1992, 317). Lohr, et al. (1986, S32) support that claim.

Cost sharing was generally just as likely to lower use when care is thought to be highly effective as when it is thought to be only rarely effective. For the average adult and average child, cost sharing was associated with a statistically significantly lower likelihood ($p < 0.05$) of at least one medical encounter for nearly all the effectiveness categories.

Birch's (1986, 180) conclusion is that although the empirical evidence suggests increases in cost sharing do lead to reductions in utilisation, "there is no reason to believe that it is the inefficient...utilisation that is deterred." Most utilisation studies have neglected to explore whether the reduction in care was for appropriate or inappropriate care. This may be understandable since, as argued by Scitovsky and Snyder (1972, 13) of their Stanford study, "nobody has ever clearly defined what is meant by 'overutilisation' or unnecessary services,' or even 'sniffle complaints' and 'necessary services,' much less suggested how to measure them."

The main body of evidence from the utilisation studies on whether patients discriminate between inappropriate or appropriate care comes from Lohr, et al.'s (1986) summary of the HIE data. The methods used by the HIE were unique to utilisation studies. A typology by symptom and treatment of the initial care-seeking episode was developed by using actual patient records. Episodes were then classed as appropriate or inappropriate based on the nature of the symptoms. Treatments were termed as effective or ineffective based on current medical knowledge of the known efficacy of treatments for specific conditions. Rather than evaluate every individual contact, the 'size' of an episode of care was based on the total treatment for a particular presentation of symptoms, including visits, tests and prescriptions and where warranted hospitalisation.

The evidence provided by Lohr, et al. (1986) offers three particularly noteworthy conclusions. The cost-sharing regimes in the HIE did not lead to rates of care-seeking that were more 'appropriate' from a clinical perspective; cost sharing did not have a selective effect, weeding out the inappropriate care (ibid., S36). The results showed that there was little that could be done by the doctors involved to reduce the total cost of the episode without sacrificing quality of care (ibid., Foreword). Perhaps most significantly, Lohr, et al. (ibid., S2) estimated that two-thirds of the decrease in expenditures occurred because some people sought no care at all, even when from a clinical perspective such care was both necessary and effective.

In the first instance, the consequences of reduced care appear to be two-fold. Often, cost sharing reduced medical contact for most conditions, including conditions for which medicine offers highly effective treatments such as vaginitis and pharyngitis (Lohr, et al. 1986, S25). Based on previous rates of presentation, the analysis also suggested cost sharing for specific services such as the use of diagnostic procedures and remedies for such problems as respiratory infections or accidental injuries produced a much lower utilisation rate (ibid. 1986, S48).

Secondly, although cost sharing produced a lower rate of utilisation for selected procedures and remedies, the HIE data suggests the effect of cost sharing on reducing the intensity of the episodes of care over all is not particularly strong. After evaluating the diagnostic procedures and treatments ordered by doctors, the RAND team concluded standard medical practice had been followed in most cases. Little room, if any, was found by the RAND team for a reduction in additional procedures and medications after the first medical contact.

Lohr, et al. (1986) concluded that once individuals made contact with the medical care system, the size of their episodes of care did not differ by the plan type to which they had been assigned. Manning, et al. (1987, 258) confirmed these results, noting that cost sharing primarily affects the number of medical contacts rather than the intensity of the contact. Keeler and Rolph (1988, 361) agreed that cost sharing leads to an overall decline in the rate of initiating episodes but suggested cost sharing might lead to somewhat smaller episodes when they occur. However, Keeler and Rolph

(ibid., 363) concluded that the similarity of the cost of episodes across plans was "unexpected and important" noting that the result confirms that cost sharing induces patients to have fewer illnesses treated. Although not a conclusion provided by Keeler and Rolph, their data also suggest the health care sector may not be considering or offering patients options for treatment of varying cost.

Given the indiscriminate nature of demand diversion, the third conclusion of the evaluation of the episodes of care is perhaps the most significant. Lohr, et al. (1986, S36) concluded that cost sharing can have 'untoward' effects in influencing people's decisions about when to obtain and when to forego medical care. Keeler and Rolph (1988, 363) put it somewhat more bluntly: "...cost sharing appeared to affect mainly patients rather than doctors."

It has now been established that the result of increases in cost sharing are likely to be indiscriminate. However, has any pattern of reduction been established among the types of care? Lohr, et al. (1986, S30) noted that cost sharing decreased the likelihood of contact more for acute and preventive diagnostic categories than for chronic conditions and suggested the reduction in these categories of care was stronger for children than for adults.

Effect on patient-initiated contact

Although evidence on the size and content of episodes of care have largely been provided by the HIE data, the conclusion that cost sharing mainly affects the initial contact has been suggested by other studies. Beck (1974, 137) reported that the decline in general practitioner services was 14% as opposed to the decline of 5% for specialist services, suggesting this was due to specialist services usually being a referral from the family practitioner rather than being patient-initiated. The evidence from utilisation studies would suggest that demand diversion is greatest where medical contact is patient-initiated, such as visits to the GP (Davis, et al. 1994, 115).

If the effect of price is greatest upon services which are patient-initiated, it could be expected that general practitioner services in New Zealand would show a decline after the increase in direct charges. Although individual general practitioners have reported decreases in their practices (FORESEARCH as reported by Rotherham 1992), the available statistics for

GP consultations and number of prescription items do not support the belief that there has been a significant drop in the use of primary health services (O'Dea, et al. 1993, 12).

Given the empirical evidence of cost sharing on demand diversion, the increase in expenditures for general practitioners is somewhat startling. This may be explained, however, by the number of families entitled to either Group 1 or Group 2 status who were the 'winners' of the reforms. It has been estimated by Ashton (1992b, 160) that approximately 47% of all households fall into Group 3. Nearly all the rest fall into Group 1 with some residual in Group 2.³

Another possible explanation for the increased expenditures for general practice services is supplier-induced demand. If one accepts the reasonably clear evidence that demand falls as cost sharing increases, an increase in the demand might be explained by physicians creating additional demand to offset the decline (Newhouse, et al. 1981, 1507). Results of a Colorado (USA) study on supplier-induced demand suggests inducement does exist and takes the form of providing more highly intensive medical and surgical services, greater quantities of surgical services and ordering more laboratory tests (Rice 1983, 803). Although O'Dea, et al. (1993, 5) recognise this possibility, they argue it is unlikely that supplier-induced demand is a major problem in New Zealand for general practitioner services but present no real evidence to support their claim.

Just as empirical evidence has shown that increases in cost sharing lead to a reduction in demand for health services, studies have indicated that free care increases utilisation. Newhouse, et al. (1981) found that free care increases per person medical expenditures nearly 50 per cent. Although it might seem as though an increase in general practice expenditures which may be caused by a decrease in cost sharing for Group 1 is counter-productive to the overall goal of decreasing *Vote: Health*, some studies have shown that free care allows earlier, less expensive care, saving expenditures at the hospital level. Newhouse, et al. (1981, 1501) comment that those who argue free ambulatory care decreases hospitalisation characterise cost sharing as 'penny-wise and pound-foolish'.

³ Indeed the number of Group 2 families was so small that it was administratively costly and was eventually merged with Group 1.

Effect on hospital services

The relationship between a decrease in demand for primary care and an increase in demand for hospital services was suggested by one of the early empirical studies on cost sharing. Data from the California Medicaid experiment led researchers to conclude that while the imposition of a one-dollar copayment for physicians' services did lower demand for ambulatory care, the resultant increase in the demand for hospital services meant that the overall program cost *increased* rather than decreased (Helms, et al. 1978, 193). Concern over increased hospitalisation occurring because of decreased primary care also surfaced in Birch's study of the changes in Great Britain's National Health Services (1986, 176). The researchers at RAND echoed Birch's concern, warning that the reduced likelihood under cost sharing that low-income persons will seek treatment for acute conditions or preventative care should be a particular policy interest.

Whether hospital utilisation is actually increased by a decrease in ambulatory and primary care visits is unclear. Researchers are reasonably in agreement that cost sharing affects hospitalisation visits to a far lesser degree than primary care. Scitovsky and Snyder (1972, 11) found that the decrease in both medical and surgical hospital visits was less than primary care and was not significant statistically. Results from the HIE research were similar. Newhouse, et al. (1981, 1506), noting that per patient costs were the most rapidly rising component of hospital expenditure and the focus of cost-containment efforts, declared that manipulating cost sharing at the hospital level had neither a systematic or statistically significant effect on cost per patient.

Effect on prescription demand

Although it has been suggested that increased cost sharing beyond the primary care level is not as successful at diverting demand, it does appear that prescription demand decreases with increases in cost sharing.

The HIE data once again provides the basis of most of the empirical work done on the effect of cost sharing on pharmaceuticals. The HIE data provided five crucial insights into the effect of cost sharing on pharmaceutical use:

- (1) cost sharing produced a lower probability of use among all adults (Lohr, et al. 1986, S43);
- (2) persons with more generous insurance were more likely to use antibiotics (Foxman, et al. 1987, 434);
- (3) drugs to treat pain and those used to treat respiratory and other acute infections were significantly more likely to be used on 'free' plans than those requiring a copayment (Lohr, et al. 1986, S44);
- (4) as in the case of primary care, cost sharing did not discriminate between appropriate and inappropriate drug use (Foxman, et al. 1987, 436);
- (5) the effect of cost sharing on pharmaceuticals was less likely to be the cause of decreased use but rather the effect of cost sharing on seeking medical help at all (Lohr, et al. 1986. S49).

The last two insights are crucial. Since most pharmaceuticals are obtained through a doctor's prescription, if persons who need medical services are deterred from consulting their doctors because of cost sharing, they also forego any possibility of obtaining appropriate and effective drugs.

There are some indications that the findings from the HIE hold true for the New Zealand market. The Auckland research firm FORESEARCH (Rotherman 1992) surveyed 145 pharmacists in the year after the changes to direct charges and found that three-quarters felt there had been a decrease in the number of customers seeking to fill prescriptions. These pharmacists reported that biggest drop was from those on higher incomes and adult patients in general. Customers were also asking pharmacists to split prescriptions so as to split the charges.

Findings from the FORESEARCH report, based on survey data, have not been clearly verified by other research. Davis, et al. (1994, 120), commenting on data obtained in the Waikato region, reported the data on prescriptions did not show any clear patterns. To date, the effect of cost sharing on pharmaceutical use in New Zealand remains unknown.

Implications of cost sharing studies

Demand diversion produced by cost sharing has been found at all levels of medical care. Cost sharing, however, has not been shown to be an effective strategy to decrease inappropriate or ineffective care at any level.

The majority of utilisation research also agrees that it is the initial contact, initiated by the patient, that sustains the greatest effect. In those areas of medical care which entails a doctor's decision, the effective decrease is often significantly less.

Creese (1991, 316) in commenting on the effect of cost sharing in Swaziland, noted that the overall drop of 17.4% represented a substantial number of patients moving away from modern medicine to "unrecorded sources of care or no expressed demand." One very large disadvantage of all utilisation studies which report on throughput or output is their inability to comment on the 'unrecorded sources of care' and unexpressed demand. Assuming that the need remains, is it likely persons with legitimate needs for health services go unattended? If that is the case, overall health status must surely eventually be affected. If health status is not affected, does this mean that modern medicine really offers so little that it does make a difference in the aggregate? Another possibility is that demand is being met elsewhere. But where? It is possible that people affected by cost sharing seek other as yet 'unrecorded' means to alleviate their distress such as complementary or folk medicine.

Cost sharing and health status

Part of the answer may be found in the HIE data. Lohr, et al. (1986, S2) followed the families involved in their study for three years and observed changes to a limited number of specific health measures (i.e. hypertension, diabetes, degenerative bone disease). Their overall conclusion was that cost sharing did not appear to significantly reduce health status, but that cost sharing may have had a deleterious effect on the health of the poor sick of their research population.

In their summary writeup of the research results, the RAND team did not appear to be totally comfortable with this result. They listed a number of factors which may have influenced the apparent result that health status is not generally compromised by cost sharing. First, the time interval between studies may not have been long enough for effects on long-term health status to appear. Second, the methods used in the research may have had a strong selective effect. Lastly, iatrogenic effects of ineffective care when studied in the aggregate may have cancelled out the benefits of effective care (Lohr, et al. 1986, S37-S38)

Previous criticisms had been supplied by Relman (1983, 1453) who suggested that the measures of health studied were quite limited. He also charged that the determination of medical adequacy was inadequate. Foreshadowing the RAND team's own concern of a strong selective effect, Relman (1983, 1453) argued that most of the observations made were on relatively healthy adults under the age of 65, "a population less likely to require or benefit from medical care than the very young, the elderly, or the disabled, all of whom were excluded from the study."

Instead of answering the question of whether cost sharing decreases health status, the HIE produced more questions. Are the methods used by the RAND team, reviewing patients' records and tracking specific medical conditions and treatments, sufficient to measure changes in health status? With evidence of at least some differential affect on health status between poor sick and non-poor healthy, what might be the implications for health status on other subgroups of the population—the elderly, children, the chronically ill or disabled? Can it be shown, as Hadley's (1982) results would lead us to believe, that improving access to medical services provides significantly better results in health status? If that is the case, could it be argued that there are circumstances where moral hazard is benign? In the New Zealand context, how strong would be the influence of insurance coverage on demand diversion? Is it possible that cost sharing affects the health status of Group 3 families without insurance more than those without?

The effects of insurance

Beck (1974, 136) has indicated that medical care insurance removes income barriers to services. In the case of Group 3 families, this would suggest that there might be a difference not only in the way families with insurance access health services but also in their long-term health status. To some degree, statistics bear out this relationship. In 1993, New Zealanders with health insurance were more likely than those without to use a GP, specialist, private hospital or dentist (Statistics New Zealand 1993, 106). Higher health status has also been reported to be related to health insurance (Statistics New Zealand 1993, 31).

It may be that in New Zealand, unlike the United States where health insurance is often part of employment benefits, families with insurance coverage are also high-income families. As high-income families, these individuals could also have characteristics that advantage health status such as educational attainment and employment. However, with the likelihood of moral hazard, insurance coverage is definitely suspect in increasing the number of medical contacts. If greater use of medical services is a key to better health status, as Hadley (1982) would have us believe, the effect of insurance on health status could be significant.

The greater use of services and higher health status of the insured might indicate that the extra services sought largely fall into the 'appropriate' and 'effective' category. This is also suggested by the fact that the greater use of services of families receiving free care in the HIE did not appear to reflect unnecessary or inappropriate treatments.(Lohr, et al. 1986 , Foreword).

A question for policy is whether moral hazard is benign. If so, the higher utilisation of medicine by insured families should cause no alarm. However, if this is not the case, a high proportion of families within Group 3 with insurance could prejudice any objectives of reduced health expenditure and efficient allocation of resources.

Implications for study design and results

A review of the literature on utilisation studies produces serious questions for the assumption and design of my research. Ethical considerations are far less serious for 'natural' experiments than for those with a true experimental design. Even though the HIE study included a stop-loss provision so that theoretically no family or individual would suffer a financial loss through its participation in the study, admittedly at least some of the participants suffered lowered health status attributable to the increase in cost sharing. In other words, some of the HIE's participants were harmed by the research. 'Natural' experiments, which some view not as 'academically rigorous', seem to be able to provide valuable insight into the policy implications of cost sharing without the thorny ethical dilemmas of an experimental design.

The weight of empirical evidence would suggest the assumption of an inverse relationship between price and demand for health services, at least

at the primary care level, is reasonable. The concept of demand diversion, however, takes us one step further in our analysis of the complexities of this relationship. If demand remains, what alternatives might be used by the person seeking to improve or maintain health? Given that at least some of the alternatives would be of a noncommodified nature, what research strategy could be employed to explore the existence and popularity of these alternatives?

Most of the empirical evidence is of no assistance in answering these questions. The effects of an increase in cost sharing have been removed from the context of the decision to fulfil need. Previous studies indicate that health care demand is extremely complex and interwoven. Central assumptions of reduced utilisation appear to be reliable, but the multifarious nature of health imposes nearly impossible demand on researchers seeking to tease out the contextual details of the decision. Alternative methodological strategies may be useful in advising understanding of these issues. The next chapter reports the methodology used in this study to research the effects of cost sharing on the health-seeking behaviours of Group 3 workers and their families.

4

Mixing my methodologies: critical perspectives and survey research

The first three chapters of this thesis have laid the foundations for the research which is to follow. Chapters 1 and 2 particularly have established the basis for my theoretical perspective. Chapters 2 and 3 discussed constraints which influence the methodology of all research into the effect of increased cost sharing on demand and which have influenced my methodology.

In this chapter, I will explain in detail the underlying reasons for the approach I chose in my research. I will more fully expose my theoretical perspective which, shaped by certain constraints, guided my choice of method. The research question is operationalised and conceptualised. Methodological considerations are then discussed in relation to the method used to gather and analyse the data.

To date, most research studies into the effects of cost sharing have been empirically based using numbers of visits or health services receipts as the unit of measurement. The methodology I chose for my research departs substantially from this pattern by seeking the knowledge of actual consumers of health services. Why I did not choose to follow the path of my predecessors is largely the result of my theoretical perspective.

Theoretical perspective

My perspective is based on the following assumptions:

- (1) access to health services is a right rather than a privilege as I believe a healthy population is a logical responsibility of government.
- (2) in providing access, the government should address financial *and* structural disadvantages arising from socio-economics, culture, ethnicity and gender,
- (3) the health services are now focused too much on financial disadvantage (ability to pay), retrenching from the government's earlier

commitment to universal health care which more easily addresses structural disadvantage, and

- (4) people are concerned about how government's decisions affect their lives and health, evidenced by the large number of submissions on the health reforms and the massive media coverage surrounding the introduction of the targeting regime.

My work is a value-oriented exploratory inquiry with the goal of improving access to health services of those persons who may have found their access restricted due to the increase in direct charges. I cannot identify a specific paradigm which is an exact fit. My perspective is an eclectic blend of the goals and principles of both positivist and interpretive paradigms. For example, I fully appreciate the work of action researchers but do not share the vigour of those who combine research with social action. Although I do not call this work 'feminist' because it broadly examines the effect of the increase on all workers, not just female workers (see criteria for feminist research established by Stanley and Wise 1983), I am a feminist and am allied with other feminist researchers in distrusting the idea of researcher as 'expert' and 'objective'. I agree with the concerns that positivist methodologies inherently remove the phenomenon under study from the historical, social, cultural and ethnic context in which it occurs (Corner 1991; Duelli Klein 1983).

The critical perspective

The paradigm which most closely describes my theoretical outlook is the critical perspective. Sarantakos (1993, 35) describes the critical approach as seeking to uncover 'myths and illusions', exposing "real structures and present reality as it is." Critical theorists propose that humans, although they have a creative capacity to adjust and react, are restricted or oppressed by social factors and conditions. Critical theorists are focused on the 'why' and criticise positivist methodology as missing the detail which underlies action. Critical science is performed with the belief that objectivity is a myth and that research that employs values is not only acceptable but preferable. In accepting that research can never be 'value free', critical scientists insist on acknowledging values and bias within research.

Sarantakos (1993, 42) provides a long list of criticisms of positivist methodologies, some of which I share. Sarantakos suggests positivist

research methods indicate a belief that social phenomena exist *outside* rather than *in* the interpretations of individuals. He warns that a dependence on quantifiable data does not capture the real meaning of social behaviour and fails to distinguish the difference between the *appearance* and the *essence* of social events.

Corner (1991, 719), in her critique of nursing research methodologies, agrees with Sarantakos, criticising quantitative methods for 'reducing' people to measurable objects independent of their social, historical and cultural contexts. Both Sarantakos (1993) and Corner (1991) charge that the primary purpose of quantitative science is the quantification and measurement of reality, with the intent to remove the researcher from the researched. The result is a hierarchical relationship, identifying researchers as the 'experts' rather than the research participants who are described as 'objects' or 'subjects'.

Critical scientists, agreeing with these criticisms of positivist methodologies and quantitative methods, most often employ qualitative methodologies. The benefits of qualitative methods are attractive. Sarantakos (1993, 45) describes the paradigmatic umbrella of qualitative methods as 'interpretive', trying to capture reality as it is seen and experienced by respondents or participants. Qualitative methods insist on equality between the researcher and the researched, where respondents are part of the process, not incidental to it.

Departing from the critical perspective

I have already described my main data gathering method as a self-directed survey. The data obtained from the participants have been subjected to statistical analyses. These methods are nearly always associated with quantitative methodologies. Why, then, have I described critical science, a paradigm surely lying on the interpretive side of the paradigmatic continuum, as coming the 'closest' to my theoretical perspective?

While I share ideological underpinnings of the critical paradigm, I disagree with its fairly strict adherence to qualitative methods. I agree with Jayaratne (1983, 153) that the strength of quantitative methodologies is their ability to collect enough information so conclusions may be drawn that are meaningful and that advance theory. I view some of the requirements of

'micro-sociological' qualitative science such as a small number of participants and no statistical analysis as impractical from a policy perspective in that they are open to criticisms of generalisability. I depart from the interpretive paradigm in that I believe that quantitative methodologies, such as the survey, can be structured so that they, too, can be and have been valuable tools for social action. To inform social policy, it is an unfortunate fact that the pervasiveness of a phenomenon is important. How *many* people are experiencing difficulties (or benefits) from social policies? Are there differences between subgroups that can be discerned? What is the magnitude of these differences? While I agree that structural disadvantage of culture, gender and ethnicity must be integral to research, I believe that resources *are* finite and therefore care must be used to optimise the public purse when preparing research for policy purposes.

Because of my goal of affecting social change, I wanted the method I chose to be useful to policy framers. I did not want to produce research that was for the sake of knowledge but rather I wanted my research to be a conduit through which the knowledge of the 'user community' (Reinharz 1983, 172) could be transmitted to induce change. While providing valuable insight into individual cases of social phenomena, qualitative measures often do not provide the overview so necessary in informing policy. Quantitative methods are far more practical in providing the type of information policy-makers find useful (Jayaratne 1983). Although I certainly share concerns about quantitative measures, my choice of a survey as phase one of my research was political.

Quantitative measures, however, often give up the 'detail' for the sake of the overview. Although I am interested in the price/demand relationship in an economic sense, I am even more interested in what has influenced the specific decisions people have made. This question has not been addressed in the research on the effects of cost sharing to date. Researchers can't even begin to arrive at the *why* from looking at surgery consultation records.

To be acceptable as a policy study, I wanted my data and results to be as independent as possible from my bias. However, my theoretical perspective means that my research had to be directed to the those facing the changes of social policy. I wanted the 'actor's perspective' (Corner

1991, 719). It was not acceptable to me to review the number of visitations through the eyes and/or records of doctors or pharmacists. I was working for a research design that would soften the quantitative pitfall of 'context-stripping' (Duelli Klein 1983, 91).

Research constraints

Unfortunately, my choice of methodology has been guided not only by my theoretical perspective, but also by constraints which eliminated certain methods while making others more suitable. First and foremost, I needed a practical solution to my research problem.

As a mother of a toddler and an unwaged full-time student dependent on my partner's income and a grant from Massey's Graduate Research Fund, timing and cost of the study was important. Available data was also a constraint; when I began this research project, no statistics were available on the change in demand for health services comparing pre- and post-reform. Although I wanted to 'get below the surface' there was no surface from which to explore. A macro-sociological approach seemed the most appropriate starting point.

The first task, then, was clearly establishing a research question which would seek to discover if any general patterns were emerging. From these general patterns, a more specific look at the underlying reasons for specific actions could be investigated. Guided by my theoretical perspective, goals and my research question but limited by my constraints, I could then proceed to design a method which would be both political and practical.

The research question

Given the lack of data, my research question needed to be broad enough to allow exploratory research but narrow enough to provide useful information. Rather than generating 'hypotheses' in the traditional positivist sense, I wanted my research question to enable me to establish a series of 'research assumptions'. These assumptions were based on my own experience with cost sharing (as an American, as a New Zealand resident and a member of Group 3), and evidence provided by other utilisation studies. It has also been guided by the perspectives of need, ideology and the market reviewed in chapter 2. Finally, my research assumptions were also influenced by media reports of reduced primary care visits (e.g. Rankin

1992), 'sicker' people seeking help (e.g. WharaWhara 1992) and reported concerns regarding changing pharmaceutical behaviours (e.g. Ross 1992).

The final research question that evolved -

What has been the effect, if any, to the health-seeking behaviour of working persons (primarily Group 3) of the increase in direct charges at the primary care level (including pharmaceuticals)?

Research assumptions

With the weight of available evidence on cost sharing favouring a decrease in demand occasioned by an increase in point-of-service price, my first research assumption was that there would be a change in health-seeking behaviour which could include a reduction in demand for primary and secondary services. I hypothesised the reduction in demand would occur inversely to income. I also assumed there would be an observable change in pharmaceutical use. Although I made no specific hypothesis regarding the influence of insurance coverage, I suspected there would be differences between those families with insurance coverage and those without. Based on my perspective that the 'need' to improve or maintain health instigates a health-seeking episode remains even if the satisficer takes a noncommodified form, I assumed people are compelled to *some* type of action. Rather than focusing strictly on reductions in demand for conventional medicine as the total reaction to increased charges, I hypothesised demand could be diverted into other action, including complementary care and self-treatment. Finally, I hypothesised that demand could be diverted from appropriate and effective care causing lowered health status. Based on these research assumptions, I hoped to obtain information on components of primary care demand, surgery consultations, pharmaceutical use, demand diversion to other forms of care such as complementary medicine, self-treatment or other tactics for self-care.

To review, my research assumptions were:

- (1) There *would* be an observable change in the demand for conventional medical services, specifically family doctor's consultations and pharmaceuticals.

- (2) Demand would be diverted from appropriate and effective conventional care as well as inappropriate and ineffective care, causing lowered health status.
- (3) Income would have an inverse relationship to decreased utilisation (the higher the income the less the reduction).
- (4) Some difference would be found between the health-seeking behaviours of families with insurance coverage and those without.
- (5) Other factors, such as health status and gender, might influence to type and magnitude of the demand response.
- (6) If the demand for conventional medical services showed a decrease, the 'need' prompting the desire for a satisficer would remain but would be *diverted* into other actions such as complementary care, self-treatment or healthier lifestyles.

Given the lack of data, I decided the most practical research design for the above research question and assumptions was a study with two phases, a survey of wage-earning families, followed by more in-depth interviews to fill in the contextual details of health-seeking decisions.

Research design

Reflecting on my theoretical perspective and research method, I find like Duelli Klein (1983, 89) that they are dialectically related. This study is strictly exploratory. I developed a mixed methodological design in which the 'user community' is the unit of analysis. Simply put, I decided to ask Group 3 families whether they felt they had reduced their visits to the doctor and then to assess their health status in relation to their current patterns of utilisation.

Mixed methodologies

The method intended to answer these questions included a quantitative first phase followed by a qualitative second phase. The purpose of the two-stage design was to first provide the breadth of the problem and then to obtain some of the contextual detail of specific experience. I hoped to obtain enough data in the first phase to identify patterns and trends the detail for which could be further teased out in the interviews.

The survey would be conducted by a self-administered questionnaire containing both fixed-alternative and open-ended questions. As the

respondents were to be solicited through purposive sampling, the sample would be nonrandom and nonparametric. Data would be coded and then subjected to simple nonparametric statistical tests for correlation and difference.

The participants for the interviews were to have been solicited from the first phase. These volunteers were to have been interviewed at their homes or a place of their choice, hopefully with any other family member involved in health-seeking decisions of the family. The interview was to have been unstructured and taped.

As it happened, only the first phase of this research was actually carried out. Once the survey questionnaires had been distributed, personal circumstances called me away from my research project for nearly a year. Although respondents did volunteer for the second phase, by the time I returned to this project, I determined too much time had expired from the onset of the changes to accurately capture feelings and experiences at the time of the change. Reviewing the information I obtained from the questionnaire, I also realised that the data already obtained, if properly utilised, would be sufficient to address my research question and to provide support for or to disprove my research assumptions.

Concurrent with establishing my research methods, I began to systematically define the key concepts included in my research questions and assumptions.

Conceptualisation

The key concepts of this research are

- 1) health-seeking behaviour
 - A) primary care
 - B) complementary care
 - C) alternative care
- 2) working persons
- 3) family
- 4) income
- 5) health status

Health-seeking behaviour as conceptualised by this research is any action, conventional or otherwise, which has been precipitated by episodes of ill health, injury or a desire to maintain good health. For the purpose of this study, *primary care* is considered first-level ambulatory care usually provided by a family doctor. *Complementary care* encompasses other forms of commodified care such as naturopathy, osteopathy, an employer's occupational health nurse or other first-line health professionals. *Alternative care*, although it can refer to complementary care, more specifically in this research includes noncommodified actions such as self-treatment or changes in lifestyle behaviours. The key to *health-seeking behaviour* is the initiation of contact by an individual rather than referral by a health professional.

Working persons are defined as persons in waged employment who responded to my request through their employer to participate in the study. Since Group 3 faced with increased charges at all levels were the obvious 'losers' of the reform, wage-earners were targeted as my study population. Initially, this included persons with Group 2 or Group 3 membership but was reduced to Group 3 (see below). *Families* were defined as the number of persons living within a household dependent on the income reported by the respondent as household income. The unit of analysis for the research was, in the main, families; a separate analysis was also done on male and female wage-earners as two distinct subgroups.

Household income and *wage-earner income* was reported by respondents via ordinal categories beginning with the category <\$15,000, increasing every \$5,000 up to >\$45,000. Ordinal categories were used in order to increase response for this particular personal question.

Health status was self-assessed using a scale from 'always healthy' to 'generally unwell' with two additional categories, 'living with chronic illness/pain' and 'living with a disability'.

Indicators of health-seeking behaviour

Indicators of a change in health-seeking behaviour were largely self-reported and based on the personal memories of the respondent for the year following the increases in user pays. Indicators of a change in behaviour included foregone visits, an increase/decrease in health habits,

utilisation of alternatives to allopathic medicine, utilisation of pharmaceuticals, visits to Accident and Emergency and payment habits. Respondents were asked to report the frequency of these behaviours, ranging from 'frequently' to 'never'. They were also asked to assess whether they felt these behaviours had become more common for them since the increase in direct charges.

Pretest and pilot testing

Typically, pretesting and pilot testing a survey is done to test the validity of the survey questions in addressing the research question and to uncover any confusing and difficult questions. Although this certainly was one objective, the pretest and pilot test in this study performed a much more integral part of the research design in establishing the specific questions to be included on the survey instrument.

Pretest

In the pretest, seven volunteers completed an initial model of the questionnaire in my presence. These volunteers were selected through snowball sampling and were all members of Group 3. They included other students, my partner's professional colleagues and support staff at the University, members of a support group for active adults with arthritis, and a women's social club. For the most part, the pretest volunteers were known to me.

The initial questionnaire included more than 60 items and contained large numbers of open-ended questions. As my volunteers completed the questionnaire, we assessed each question, discussing whether they understood what I was asking, whether the question was too intrusive, and any resistance to or difficulties they had answering.

The feedback I obtained through the pretest lead to several changes in the questionnaire. I eliminated many questions which the volunteers found to be either confusing or too difficult. I included new questions based on the advice of the pretest volunteers. Other questions were rewritten in order to make them easier to understand. Certain open-ended questions were modified to fit the fixed-alternative form. Also due to the concerns of the pretest volunteers, I designed an ordinal scale for reporting income in order

to reduce the nonresponse of this particular question. Finally, I reduced the size of the questionnaire.

Once these changes were made, I revisited three of the pretest volunteers and sought their opinion on the model of the questionnaire to be pilot tested. At this stage, the volunteers again completed the questionnaire but under conditions which would be more like those of the final group of respondents. After completing the questionnaire, we discussed the time it took for completion and any questions they still felt were confusing or uncomfortable. The questionnaire was again shortened, this time to 40 items on four pages.

Pilot test

After adjustments were made, new volunteers were then asked to complete the questionnaire under conditions similar to those I expected for the final survey respondents. No set number of pilot test volunteers was established, the objective being to test to saturation until no additional useful information was forthcoming. Pilot test volunteers, all members of Group 3, were found through networking and word-of-mouth and were persons unknown to me. They were recruited through friends, fellow students and pretest volunteers. Each pilot test volunteer wage-earner completed the questionnaire at a place of their choosing (most often their homes), with their partner if applicable. Each test was timed and after completion I discussed any questions which they felt were problematic or confusing. After three pilot tests, I determined that I was no longer obtaining new information useful to the structure of the questionnaire or the wording of the questions and proceeded to design the final questionnaire.

The final questionnaire

In order to keep the interest of the respondent, questions of various types were included. Some questions were open-ended; the fixed-alternative questions were modelled on Likert scales, or sought either nominal, ranking or ordinal data. The questions were divided into seven categories:

1. Household information, including family composition, number of working adults and household income

2. Effect of changes in direct costs on working adults, including forgone visits, increases/decreases in health-seeking habits, and utilisation of complementary and alternative therapies
3. Effect of changes in doctor's charges on seeking medical help for families, including forgone visits, increases/decreases in health-seeking habits, utilisation of complementary and alternative therapies as well as changes in relationships with the family doctor
4. Effect of changes in prescription charges, including increases or decreases in fulfilment behaviour and over the counter medications
5. Method of payment for health care, including any increases in delayed payments
6. Changes in family's health status
7. Perception of changes in direct charges for health care

Once final adjustments suggested by the pilot tests were made to the questionnaire, the questionnaire was distributed as described below. A full copy of the questionnaire is included in Appendix 2.

Survey distribution

Selection of participants

Having decided to seek out only persons in waged employment and desirous of distributing the survey to a variety of income levels, I determined that the most cost-effective method of distribution would be to contact employers in the Manawatu to solicit their assistance. These participating employers would be asked to distribute a 'research packet' to each of their employees via whatever method would ensure complete distribution. Each questionnaire packet was separately enclosed in an envelope and included an informational letter, the survey itself and a self-addressed freepost envelope for return.

On the advice of a senior member of the Palmerston North business community, I drew up a list of employers who were known to be involved in the community and were likely to be willing to help with a research project on the effect of the health reforms on their employees. From this list, I chose employers from a variety of industries whose employees would hopefully represent a wide range of income levels, educational attainment, ethnicity, occupations and so forth. I contacted the employers I had chosen by mail, with an introductory letter and a summary of the project (see Appendix 3.).

Although I have not included the list of specific employers assisting in this project, a list by type of industry has been included in Appendix 4.

Distribution

The 18 employers on my final list for distribution used various methods, including distributing the surveys personally, with pay packets or with other memoranda.

The introductory letter explained the research and established the rights of the participants if they chose to assist. A copy of the introductory letter is included in Appendix 5. A disclaimer was included in the letter informing the employees that this was an independent research project under the auspices of Massey University and that their employers were only assisting in the distribution. The self-addressed free post envelope was enclosed to make it easy for the participants to return the self-administered questionnaire.

Data collection

Approximately 1,300 questionnaires were delivered to employers agreeing to distribute the questionnaires. This number was derived from the number of questionnaires requested by participating employers rather than an exact number of possible responses. A total of 146 questionnaires were returned. Although it is unknown how many questionnaires actually were distributed, it is estimated the response was in the range of 11 - 12%. I recognise that this is a low response rate but feel this is acceptable for direct mail with no direct follow-up. Since the intention of this study was exploratory, I was not too concerned about response rate but rather wanted to secure a sufficient number of responses to be able to detect trends and to validly perform some nonparametric statistical tests.

Method of data analysis

The survey included both fixed-alternative and open-ended questions. All fixed-alternative questions were coded for inclusion into an electronic spreadsheet. Open-ended questions were analysed for content, collapsed according to similarity of response then coded for inclusion into the electronic spreadsheet. Due to the richness and variety of response, the responses to two questions were not collapsed as fully and have been

included in Appendix 6 and 7. The electronic spreadsheet was then imported into the statistical program Minitab.

Using Minitab, the data was first tallied and cross-tabulated using all 146 questionnaires returned. Data was subjected to nonparametric tests for correlation and subsample variance. Although statistical significance is usually presumed to be $p < .05$ or greater, the priority of the subject matter and the possibility of clinical significance influenced me to report findings of $p < .10$ or greater.

Numerous relationships at a 90% probability level or greater were uncovered, some of which could not be fully explained by theory or by the raw data. Examination of the raw data showed 17 respondents reporting that their families were in possession of a Community Service Card during the period of the study. These families would not have experienced the same demand effects as those experiencing an increase in the direct charges for physicians' services and pharmaceuticals nor did they fall into the Group 3 category. These questionnaires were eliminated from the sample. Eliminating these questionnaires strengthened the probabilities shown in the chi-square analyses of various relationships under study and eliminated some of the unexplained relationships within the larger sample. Based on the stronger relationships within the second data set, a final sample of 129 was selected for the analysis included in chapter 5 and 6.

This final sample set was then analysed using nonparametric applications available in Minitab. Descriptive statistics were provided by tallying the responses for each question. Cross-tables were produced between responses to questions and such factors as income, health status, insurance coverage and gender. Any relationships which were suggested by visual inspection of the cross-tables were explored through chi-square analysis and Spearman's rank-order tests for correlation. Additionally, the Kruskal-Wallis analysis of variance was used to identify differences between subsamples. Because of the small sample size and differences in data type (ordinal, categorical and interval), multi-variate analysis was not recommended. Results of these tests were then compared with the theoretical expectations and any anomalies were explored.

The results of the descriptive analyses are reported in chapter 5. All results suggested by tests for correlation are reported in chapter 6.

Ethics and informed consent

No particular ethical problems arose for this research. All standard ethical practices of alerting research participants as to their rights not to participate and to withdraw at any time were followed (see introductory letter in Appendix 5.). Because the questionnaires were self-administered and were returned at the discretion of the participant, the actual receipt of the completed questionnaire acted as receipt of informed consent. Since I was looking for a broad response, no demographic data regarding ethnicity was asked; therefore, no ethical problems regarding ethnicity were expected. Since all questionnaires were anonymous at the choice of the participant, no ethical difficulties surrounding confidentiality were expected to arise in Phase One.

As originally designed, confidentiality would have been a consideration of Phase Two and had been carefully thought through. However, only families volunteering to be part of Phase Two would be interviewed. Since Phase Two was not completed, any questions regarding ethical issues of this phase are moot. I communicated with the second phase volunteers that this phase had been disrupted by my personal circumstances.

Arrangements were made for any participant to be provided a summary of the results upon request and inclusion of an address. Additionally, to acknowledge the assistance of participating employers, employers were also provided an opportunity to request a summary of results.

Appropriateness of methodology

The test of whether a specific methodology is appropriate for any research is whether it is able validly and reliably to answer the research question. To examine the appropriateness of the methodology used in this research, it is first necessary to provide an overview of the results and a more critical analysis of what we can learn from the 'user community' about how they responded to an increase in direct charges. The next two chapters set out to convey the user community's information about the changes in their health-seeking habits post-reform. Chapter 5 provides general information about the user community, describing who they are and what they believe

has been their response. Chapter 6, guided by the evidence from other research surveyed in chapter 3, goes one step further and reports any patterns discernible from the data obtained. Once the findings of the research have been reviewed, the question of appropriateness of methodology will be revisited.

5

Overview of survey population

In chapter 4, I reviewed not only the research question and methodology but also how I defined the research concepts embodied in the question. The concept 'working persons' is perhaps the cornerstone concept of the research in that it directed the selection of participants for the questionnaire. Other research concepts such as 'family', 'health status', 'health-seeking behaviour' and 'income' were operationalised as observable or construct variables supplied by the working persons who chose to become involved in this study. Hence, the operationalisation of the concept of 'working persons' was critical to the success of this project.

The 'working persons' of the survey sample are all members of Group 3. This was not the original intention; Group 2 members would also be 'working persons' but in the low- to middle-income brackets. However, a number of direct charges remained unchanged for Group 2 members while others, mainly charges for Group 2 adults, were actually decreased. Since price for Group 3 increased and price for Group 2 decreased, according to economic theory the influence on demand between the two groups should have been in opposite directions.

Once I had obtained data from both Groups 2 and 3, I determined that the charges faced by Group 2 were so different that Group 2 deserved separate analysis. Because of the small number of responses from Group 2 and because I was interested primarily in the effects of an *increase* in price, I eliminated Group 2 families from the data set.

This effectively changed my target population from 'working persons' to 'working persons' in Group 3. As we will see in this chapter, when compared with national averages, in many instances such as income, insurance and family composition, the survey population differs significantly. If the target population equated to all New Zealand households, the conclusion would inevitably be that the survey population is not representative of the target population. However, because the survey

population became more narrowly specified, comparisons to the characteristics of Group 3 would be more instrumental in establishing representativeness than comparisons to the national population. By now, it should be clear that Group 3 is the 'other' category of the targeting regime. As such, the question becomes, 'just what sort of characteristics would these families be likely to exhibit?'

A descriptive summary of the 'working persons' who became the final sample of this research follows, including a synopsis of the sample in terms of income, insurance coverage, health status, family size and composition and gender. Where possible, these characteristics are compared to national statistics. Once the characteristics of the survey sample have been described and their relevance to the research question discussed, changes to health-seeking behaviours of both wage-earners and families are summarised as well as their attitudes about the changes in user pays. Finally, the question of representativeness is discussed in further detail.

Description of sample

A description of the sample is vital for validity and representativeness. To meet the requirements of the former, the final sample must be validly chosen so that answers to the research question can be obtained. All families included in the final sample reported wages and salary income and at least one working adult in the family.

Although no claims to representativeness for this exploratory nonrandom sample can be assumed at the outset, if the characteristics of the survey sample are similar to the characteristics of the Group 3 target population some measure of representativeness may be claimed. Economic theory suggests that income and insurance coverage would be instrumental variables in the demand response of the survey population. In addition to their importance to the research assumptions, the similarity of these features in survey sample to those in Group 3 are critical to any claim of representativeness of the survey sample. Because of their significance to both the research assumptions and representativeness, descriptions of the survey sample's income and insurance coverage are offered first.

Income

In addition to the price of a commodity, income is a factor in a simple demand equation. The relationship between income and health service utilisation is not clear, however, and is interwoven with employment, education attainment, marital status and a host of other factors (O'Dea, et al. 1993). Regardless of the complexity of the demand relationship, income has been isolated as an important aspect of the responsiveness to increases in the price of health services.

Generally, income may be derived from any number of sources such as social welfare benefits, superannuation or income earned through paid occupation. However, to meet the criterion imposed by the concept 'working persons', the survey respondents must have income from an occupation *sine qua non*. Both household income and individual wage-earner's wages or salary were surveyed. As will be explained below, household income was then divided by the number of household members to arrive at a per capita income figure.

Household Income

Respondents were asked to report their income via an ordinal scale showing increments of \$5,000, beginning with less than \$15,000 and ending with more than \$45,000. Table 5.1 shows the distribution of the survey sample's income.

Table 5.1
Household income

	N	%
≤\$15,000	1	1
\$15,100 - \$20,000	4	3
\$20,001 - \$25,000	7	6
\$25,001 - \$30,000	13	10
\$30,001 - \$35,000	17	14
\$35,001 - \$40,000	13	10
\$41,001 - \$45,000	18	15
≥\$45,001	51	41
Total	124	100

I did not carry the categories out further since \$45,000 is near the top of the government's eligibility for Community Services Cards. Due to the fact that 41% of responding families reported income in excess of \$45,000, in hindsight it is unfortunate that additional income categories were not included.

Although the ordinal nature of the data makes it impossible to derive the exact median household income of the sample, the median would fall within the income range \$41,001 to \$45,000. New Zealand's median range for household income from all sources (including social welfare benefits and Guaranteed Retirement Income) is \$32,000 to \$39,999 as reported by the Department of Statistics (1992b). This places the median income range for the survey sample slightly above the median for all New Zealand households.

The nature of the data also does not allow a computation of the average household income of the survey sample. However, if a standard distribution curve were assumed, the average would be somewhat close to the median. This would place the average within the same income range as the mean, \$41,001 to \$45,000. When Guaranteed Retirement Income and social welfare benefits are excluded from the computation, the national average household income is approximately \$32,500. Therefore, the household income of this survey sample is uncharacteristically high for New Zealand households with working persons.

Initial statistical tests for correlations between income and other variables presented relationships with high probabilities but which were not readily apparent from the raw data. Two linear trends appeared simultaneously through income categories up to \$35,000 and from \$35,000 and over. A review of the raw data suggested the total number of household members might be causing these two separate trend lines within the overall income categories. To control for family size, new data was created dividing the total number of family members by household income. Since income was reported using an ordinal scale, income was represented by the higher of the two numbers in each range and a new range was created to represent incomes over \$45,000. The number \$50,000 was arbitrarily chosen to represent this income category. It must be kept in mind that the per capita

income as represented has been manipulated from ordinal data and is only a representation of the true per capita incomes of these families.

Although the per capita income figures shown in table 5.2 may act as a guide, the mechanics of constructing the variable in this fashion may have rendered the results less robust than other methods. Using the mid-range number between the two range limits rather than the higher limit would have 'averaged' the income ranges and introduced less distortion. I chose the upper limit in order to eliminate the difficulty of how to 'average' the lower and highest categories.

One of the effects of manipulating household income with number of family members as was done here was to create several very small subsamples. The tests used for correlation and difference reported in chapter 6 are less sensitive to small samples. In retrospect, a weighted scaling may have been a more appropriate technique to represent per capita income. As such, the per capita income distribution shown below and tests performed with this variable should be viewed somewhat warily.

Table 5.2
Per capita income

	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
\$5,000	1	.8	\$13,400	1	.8
\$6,000	1	.8	\$15,000	12	10
\$6,300	2	1.6	\$16,700	7	6
\$7,000	2	1.6	\$17,500	6	5
\$7,500	1	.8	\$20,000	9	7
\$8,000	2	1.6	\$22,500	6	5
\$8,300	2	1.6	\$25,000	20	16
\$8,800	1	.8	\$30,000	5	4
\$10,000	11	9	\$35,000	4	3
\$13,000	5	4	\$40,000	1	.8
\$11,700	4	3	\$45,000	1	.8
\$12,500	19	15	\$50,000	1	.8
			Total	124	99.8

Wage-earner income

The wages or salaries of the respondents are shown in table 5.3. The median wage or salary for the respondents of this research was \$30,001 to \$35,000. Although the wage categories compiled by the Department of Statistics (1992c) do not allow easy comparison of median wages, the average wage rate of all New Zealand workers for 1992 was \$30,160. Based on this comparison, it would appear that working persons in the higher wage brackets were overrepresented in this research.

Table 5.3
Wage-earner's income

	<u>N</u>	<u>%</u>
≤\$15,000	4	3
\$15,100 - \$20,000	8	7
\$20,001 - \$25,000	17	14
\$25,001 - \$30,000	20	17
\$30,001 - \$35,000	22	18
\$35,001 - \$40,000	11	9
\$41,001 - \$45,000	12	10
≥\$45,001	27	22
Total	121	100

Generally, the wages or salaries earned by the women involved with this study were significantly lower than the men with 63% of the women and only 45% of the men in the study earning within the four lowest wage categories. The disparity in income between men and women echoes the national income statistics. In 1992, The average annual income for men was \$34,060 as opposed to \$25,376 for women. The fact that the wage-earning women in the survey report lower incomes than the men reinforces the likelihood of finding gender differences in both health status and access between the men and women of the survey population.

Insurance coverage

Families with insurance coverage represented 77% of the respondents. This result was surprising. The 1992 New Zealand Yearbook (Department of Statistics 1992a, 124) reports that 45% of the population was covered by health insurance, a figure much lower than that of the survey sample.

It is possible that the high number of insured families is due to the survey population being drawn from only working families. Cameron and Trivedi's (1991) work on the role of income in the choice of health insurance would suggest that as families with relatively high incomes, the survey participants would be more able and more likely to purchase insurance coverage.

Although we know from the survey results that 74% purchased insurance through their employers, the survey did not specifically ask whether the employer contributed in any way to the premium. We do know that only 18% reported purchasing insurance privately while 8% obtained insurance through other sources. Responses to an open-ended question on employer-provided health services included free and subsidised health insurance so we also know at least some of the survey population had special incentives for health insurance coverage (see section below on employer health-related services). However, beyond these few responses, specific data on the number of respondents with insurance subsidies by their employers were unavailable from the questionnaire.

A small discrepancy appears in the percentage of those responding to the question of whether their insurance coverage included their families with only 71% indicating family coverage. The approximate 6% difference may be explained by the way the question was asked; it appeared that single person families included in the study did not tick this box as they would have been the only insured.

Respondents were also asked whether they had made any changes to their insurance coverage because of the change in direct charges. As shown in table 5.4, three-fourths of the respondents reported no change in their insurance coverage at all. Although only 3% were motivated to purchase insurance due to the increase in charges, when these respondents are added to the number increasing their insurance, those persons motivated to increase their insurance coverage as a result of the changes climbs to 20%.

While only a small number decreased their coverage (5%), at least two of the respondents indicated that this change had been made because they could no longer afford the premiums. This could be explained in part by the insurance companies responding to increased user charges by increasing

Table 5.4
Changes to insurance cover

	<u>N</u>	<u>%</u>
Increased existing insurance	19	17
Decreased existing insurance	5	5
No change	82	75
Purchased insurance	3	3
Total	109	100

their premiums. According to economic theory, the additional increase in premiums might have had a demand effect operating separately from the increase in part-charges. Adverse selection suggests that those persons assessing their risk of going to the doctor as low might have chosen to accept this risk and terminate their insurance rather than pay higher premiums.

Family size and composition

Family composition has been identified as an important factor in the likelihood of having expenditures on medical practitioners' fees with couples with children having the highest expenditures (Statistics New Zealand 1993, 74). Dovey, et al. (1992, 190) note that health care utilisation per capita decreases as family size increases. If this is true, the number of children should be a factor in the demand equation.

A criticism of National's targeting regime was the definition of family which rested on a 'nuclear' family concept and did not allow for extended or 'recon-stituted' family relationships (Boston 1992b, 95). Many New Zealand house-holds, particularly Maori and Pacific Island families, might include family members who are not consanguineously related to or in the legal custody of the wage-earner(s) of the household. An example would be a family which includes children living with and dependent on an aunt or uncle's income or elderly relatives dependent on younger extended family members' incomes. In order to capture the additional effect of extended family, the questionnaire asked respondents to enumerate the number of wage-earning females, wage-earning males, children under 5 years of age, children 5 and over attending school, full-time tertiary students, and other

adults dependent on household income. Relationship to the wage-earner was not asked or identified.

The questionnaire did not deal separately with child support payments. Support payments might be reported as 'household income'; it is also possible that noncustodial parents listed their children as they would be dependent on the noncustodial parent's support payments to some degree. Since child support can be as much as 40% of the noncustodial parent's after tax income, the influence of child support on the demand response would justify further exploration.

Wage-earners

Two-thirds (66%) of the survey population reported more than one wage-earner. National statistics for 2-parent families report both parents are engaged in paid employment in only 21% of all households (1991 Census). The fact that the survey population is composed of three times more 2-income families than nationally may account for the slightly higher median income of the survey population. The high incomes of the survey population could be a result of the ability to aggregate incomes.

Families reporting male wage-earners made up 85% of the sample while the number of families with female wage-earners was only slightly lower at 80%. Department of Statistics' (1992c) labour force participation rates for men and women as of June 1991 were 73%; and 54% respectively. The percentages reported in this study only include working persons. 'Labour force participation', as defined by the Department of Statistics, includes people not currently working who are actively engaged in looking for work or about to start work. After excluding those looking for or about to start work, the actual national percentage of men and women in waged employment would be lower. Thus, the survey population's percentage of working men and women would be much higher than the national averages. Male and female subgroups are further delineated in table 5.5.

Although the actual percentage of sole wage-earners in the male and female subgroups are approximately the same, sole wage-earning males were responsible for more dependents. The 1991 Census data indicates 40.3% of the working parents in all 1-parent families were men as opposed to 59.7% for women. However, nationally, as the income climbed the

percentage of male solo parents opposed to female solo parents did also. The figures arising from the study may reflect the overall higher incomes of the survey population.

Table 5.5
Family composition in gender subgroups

	Male	Female
	(%)	(%)
Sole wage-earners	17	15
Children but no other adults	23	16
Children and adult dependents	32	5
Only adult dependents	18	11
No dependents (living alone)	27	68

The most startling difference between the female and male sole wage-earners of the survey sample is the large percentage of females who reported living alone (68%). This is compared to 1991 Census statistics which reported the percentage of women living alone was only 19% as opposed to only 6% for men. This comparison would not be entirely valid because the census data includes persons in all income brackets and would include unwaged adults (including elderly women). When the difference in men and women living alone are compared with the difference in wages, the impact of family size and composition on overall demand response of the survey population may be influenced by the lower incomes of sole wage-earning women.

Comparisons of household type to national figures are only somewhat possible. According to the Department of Statistics (1991 Census), only 5% of all households in 1991 were comprised of one adult with one or more children, with men heading 1-parent families representing only .5% of the population. Given those numbers, the survey percentages of 23% for 1-parent families headed by men and 16% for 1-parent families headed by women are significantly greater than the national averages. However, since national income statistics do not separate heads of households with waged income from households whose income derives from social welfare benefits, comparison would only be exact if the beneficiary population exhibited the same household size characteristics as the waged population. Regardless, it is probable that the survey population has a higher than

average number of solo male heads of household, making higher than average wages or salaries.

Children and other dependents

Families with children living at home and excluding tertiary students comprised 39.53% of the survey population. Only 14% of these families reported having children under the age of five while 32% of the families reported having children over the age of five and attending school. Families with tertiary students comprised nearly 15% of the sample. Once families with tertiary students are included in the total, the percentage of families with children represented in the sample would be slightly higher. The data also showed that the sizes of families participating in the survey were not large; three was the largest number of children reported for any single family within the survey population.

Once again, because national statistics compiled by Department of Statistics report household composition based only on amount of income rather than source, the representativeness of the sample to national figures is difficult to discern. If persons 60 years or over (past child-bearing years) from all income brackets are excluded, 10% of the remaining households report children under the age of 5 while 20% report children 5 to 14 years of age. This combined total of 30% is still well below the percentage of families in the survey population reporting children 0-14 years of age. Although caution should be exercised in relying on national figures that have been constructed quite differently than the survey, it would appear that families with children are overrepresented.

Children within a family might impact demand response in at least two ways: (1) children usually need significant medical services as they go through school, including treatment for childhood diseases as well as for accidents and (2) children can be a significant influence on the distribution of family financial resources. Families of similar incomes but reporting no children would have different patterns of spending than families with children. Therefore, it would be expected that the number of children would increase the number of doctors' visits across all income categories. It would also be logical to expect that families reporting no children may experience greater disposable income and therefore fewer difficulties with increased doctor's charges. However, given the generally high incomes of the survey

population, it is also possible that family size is not of great significance to the demand equation. With the inclusion of a per capita income variable, the significance of family size as it relates to income was tested.

Health status

Health status was assessed in different ways throughout the questionnaire. The responses to an open-ended question which asked respondents to generally describe the health of their families were collapsed into 10 categories shown in table 5.6. Individual wage-earners were also asked to rate their own health via an ordinal scale. Respondents were also asked to assess whether their families' health was 'better', 'worse' or had experienced 'no change' since the change in the direct charges.

It is to be expected that a high percentage of the sample would assess their own health as 'good' or better. A recent Statistics New Zealand survey (1993) reported 91% of the survey participants rated their health as either 'excellent' or 'good'. As shown in table 5.6, this number was very similar to that reported by individual wage-earners, with 93% assessing their health as either 'always well' or 'generally healthy'.

Survey respondents did not rate their families equally as healthy with only 82% describing their family's health as 'good' or better. This figure increased to 90% when those assessing the health of their families with responses such as 'pretty good' are included. The fact that the rating of family health status is generally lower than that of individual health status is not surprising when the averaging effect of individual family member's health status is taken into account. When asked to rate their family's health as better or worse since the changes in direct charges, over 91% of the respondents felt there had been no change in the family's health with only 6% declaring that it was worse.

Responding to an open-ended question asking whether they had felt any effect of the changes in user pays on their health, nearly 80% of the wage-earners felt the changes had little or no impact on their health. The remaining 20%, who indicated the changes in direct charges had an impact, most commonly cited barriers to seeking primary care or follow-up care. Typically, this group was concerned with affordability, indicated by responses such as 'only go when necessary' and 'can't afford to go'. These

expressions of affordability would imply income is an important factor of the demand equation.

Table 5.6
Health status

Family health status	<u>N</u>	<u>%</u>
Excellent	15	12
Above average	19	16
Fine, fit	2	2
Good, average	62	52
Pretty good	10	8
Below average	2	2
Good with specific family members unwell	3	2
Under control with medications	1	1
Chronically ill	4	3
Other	2	2
Wage-earner health status		
Always well	22	17
Generally healthy	95	75
Generally unwell	3	2
Living with chronic illness or pain	4	3
Living with a disability	2	2
Family health status - post reform		
Better	5	4
Worse	7	6
No change	115	91

A small number (3%) of respondents who reported little or no impact on their health, specifically cited insurance as the reason the changes had little impact. Although this percentage is indeed small, the fact that this was a voluntary response suggests a possible relationship between insurance coverage and responsiveness to price changes. If moral hazard is present in this survey population, those with insurance coverage would be less responsive to increases in direct charges than those without. The

association between insurance coverage and the changes in direct charges will be further explored in chapter 6.

Health-seeking behaviours post-reform

Wage-earners' behaviours

Employer health-related services

Thirty-two percent of the respondents reported that their employer offered some type of health services. Slightly over two thirds (68%) of the 32% reported actually using the services provided by their employers. In answer to an open-ended question, services provided by employers, beginning with the most commonly cited, were

- (1) occupational health nursing,
- (2) access to a gymnasium,
- (3) qualified first aiders,
- (4) free health insurance,
- (5) discounted health insurance,
- (6) periodic medical checkups,
- (7) preventative care (such as hearing and eye tests, smears),
- (8) flu injection subsidy,
- (9) smoke free areas for tea and coffee breaks.

Answers to this question were the only indication of employer subsidies toward health insurance.

Contact with physicians

When asked whether they had foregone visiting a doctor since the changes in direct charges, slightly over one half (54%) responded they had 'never' foregone doctor's visits. Of those who reported doing so, 7% responded 'frequently', 23% responded 'sometimes' and 15% 'rarely'. Wage-earners were not directly asked if this was a *result* of the changes in direct charges at this time but were asked for an overall assessment later in the questionnaire. Therefore, it is not possible clearly to state these changes were due to increased part-charges.

A slim majority of the respondents (54%) indicated they 'rarely' saw a doctor when they experienced workloss due to illness. Of the remainder, a higher number (approximately 26%) reported 'always' or 'frequently' visiting the doctor while 19% reported 'never'.

As established in the review of previous studies (e.g. Lohr et al. 1986), a reduction in doctor's visits does not necessarily result in lowered health status, especially if the reduction is in unnecessary doctor's visits. However, the same studies showed that very few visits can be classified as 'unnecessary'. As one possible check on whether the wage-earners of the survey sample were experiencing lowered health status as a result of decreased utilisation, wage-earners were asked if they felt they were going to work unwell more often since the changes in direct charges. Twenty-one percent felt this was the case. This result, coupled with the number reporting decreased utilisation, would suggest that some wage-earners at least temporarily experienced lowered health status that resulted in being unwell at work. In addition to the health implications for the worker, more workers reporting to work unwell would also have productivity implications for the employer.

Health-seeking alternatives

Wage-earners were asked to assess their frequency of alternative health-seeking behaviours (see table 5.7). The least popular alternative was complementary therapies with nearly two-thirds (65%) reporting they 'never' sought these therapies as an alternative to visiting the doctor. The most frequently reported alternative was seeking the advice of the chemist (47% if both 'frequently' and 'sometimes' responses are added together).

Table 5.7
Alternatives to Doctor Visits

	frequently (%)	sometimes (%)	rarely (%)	never (%)
Stayed home from work	8	28	18	46
Used over-the-counter medications	9	35	15	41
Solicited advice of chemist	9	38	23	31
Sought complementary therapies	10	20	6	65

Only 35% of the respondents reported they had elected to stay at home instead of visiting a doctor ('frequently' plus 'sometimes'). This roughly corresponds with those who reported 'frequently' or 'sometimes' foregoing doctor's visits (35% as opposed to 30%). One explanation of these results

is the possible perceived (and actual) cost of purchasing complementary therapies as opposed to the relatively cost-free chemists advice.

Respondents were also asked to report any lifestyle changes they had made in the past year. The most popular behavioural change was diet, followed by exercise and stress reduction (see table 5.8).

Table 5.8
Changes in lifestyle behaviours

	(%)
Changed diet	30
Began regular exercise	22
Reduced stress	20
Reduced alcohol consumption	9
Other	8
Quit smoking	5

It is important to remember that the prevalence of smoking and alcohol consumption of the survey population prior to the increase in user pays is unknown, making it impossible to report the percentage of smokers or drinkers within the survey sample who changed their behaviour. It may be that the survey population had a very low incidence of smoking and drinking behaviours at the outset. Because the previous behaviours are unknown, the results reported above would have limited use.

Respondents were also asked to evaluate the influence the changes in direct charges had made to the changes to their lifestyles. Approximately two-thirds indicated the changes were not very important or not important at all in these decisions. Only 14% reported the changes were the 'main reason' or 'weighed heavily' on their decision, with 19% reporting the changes were 'important but less than other factors'.

Family's health-seeking behaviours

Use of Accident and Emergency Services

One of the reasons given for instituting charges at the hospital outpatient level was to deter the public from using more expensive but free to the user public hospital care (Ashton 1992b,160). Although public hospital outpatient care was not addressed by the questionnaire, inappropriate use

of Accident and Emergency (A&E) services did not appear to be a significant problem for this group, with only 5% reporting they had used A&E for minor health problems. Of the small number of families using A&E for minor health problems, only three families reported decreasing their use of such services. This suggests that although the problem of inappropriate A&E use was small within this survey population, the increase in charges did have some effect on behaviour.

Contacts with family doctors

Data from Statistics New Zealand (1993) found that nearly two-thirds of all *individuals* surveyed reported five or more contacts with a doctor within the past year. This survey asked how many visits the respondents' *families* had made to their *family* doctors over the study period. Over half (57%) of the families represented in this survey reported less than six visits to their family doctor within the year of the study. Another 19% had seven to nine contacts with family doctors while 24% had ten or more visits. With the average size of the sample families at 2.82, the survey sample overall reported a much lower utilisation rate than the overall average for the population. If it weren't for the generally high health status of the general population (as reported by Statistics New Zealand 1993), it could be assumed that the high health status of the survey population would keep medical contact down below the national averages. The only explanation for the difference which I can offer would be the difference between the two survey populations—the survey population being comprised of a much more targeted group of high-income, *working* individuals and their families. With the evidence on the impact of age, income and employment status on health status, differences in the utilisation patterns of the two groups should be expected. Also, the survey population was comprised of many single individuals with no families which may have pulled down the average visits per family since the individuals would have had to visit their doctors more than five times.

Asked whether they were paying more or less to see the doctor, 58% affirmed they were paying more. Possibly signalling the masking effect of health insurance or the low number of families with children in the study, 20% indicated there had been no change in the amounts they were paying. An alternative explanation would be that the doctors in question changed their fee schedules so that patients would experience no change in direct

charges. When asked if respondents felt any increase experienced was due to the reforms, nearly 49% felt it was while 12% did not.

Given the attendant publicity surrounding the changes in direct charges, a surprisingly large number (20%) of respondents reported they did not know if they were paying more overall for the family's medical care while 39% said they did not know if the reforms were responsible for increased family practice expenditures. The large number of 'don't know' answers to both of these questions may be an indication of the confusion surrounding the onset of the changes in direct charges or, again, the masking effect of insurance reimbursement.

Of those reporting that they were paying more for doctors' visits, 78% cited the reforms as the reason for the increase. Another way of looking at it is that over 20% of the persons reporting paying more per doctor visit believed the increase was related to some other factor. Since 5% of the respondents reported decreasing their insurance, it is possible that some of this result can be explained by respondents feeling increased deductibles are behind the increase. Slightly over one-half of the 5% reported paying more for doctors' visits and can be included in the 20% believing their increase in doctor's fees were unrelated to the increases in direct charges.

This means that approximately 17% experienced an increase but did not attribute the increase to the health reforms. If it can be assumed that the source of the increase would not have influenced health-seeking behaviour, the fact that individuals attributed the increase in price to factors other than government imposition should have no bearing on the magnitude and direction of the demand response. If, however, it is possible that individuals react more positively or negatively to different sources of change (i.e. market adjustments as opposed to changes imposed by government), how individuals perceive the change might influence demand response. As will be noted in the section below on perceptions to the changes, nearly 80% the respondents reported negative feelings about the increase in direct charges. If demand response to an increase in price is modified by the feelings one has toward the source of the increase, the largely negative response to the changes may have indirectly influenced individual demand response. Although this survey was not designed to elicit these types of

differences, the relationship of perceptions of change and demand response may warrant further investigation.

Other possible reasons survey participants attribute to the increase were not explored in this study. Based on the previous confusion in the answers to whether they had paid more for doctors' visits, possible reasons for this unexpected result would be errors in completing the questionnaire or lack of experience or knowledge of the changes in direct charges.

Respondents were asked whether they found themselves more or less willing to seek their family doctor's advice. Twenty-seven percent indicated they were now less willing to seek advice from their family doctors while 72% indicated there was no change in their attitudes about seeking help.

When asked if they had delayed or foregone treatment, 27% of the respondents to this study indicated they had delayed or foregone treatment within the year following the changes in direct charges. Twenty-one percent of those who had delayed or foregone treatment (or approximately 6% of the entire survey population) reported the delay caused further problems as opposed to 79% (or 94%) who said it had not. This result is roughly consistent with results from Scitovsky and Snyder's 1972 study (at 24.1%) and is supported by the conclusions of Brook (1983), Beck (1974) and the 1994 New Zealand study of Davis et al.

The survey also asked respondents whether their relationship with their doctor had changed since direct charges were reformed. An overwhelming number of respondents (97%) reported that there had been no change in their relationships with doctors.

Respondents were asked to rank which changes in the direct charges had more impact on their family's health. The changes in pharmaceuticals led, followed by doctors' charges as shown in table 5.9.

Table 5.9
Impact of changes to direct charges

	(%)
Pharmaceutical charges	62
Doctor charges	46
Hospital stays	43
Hospital outpatient charges	32

Changes in prescription behaviour

After the changes in direct charges to prescription items, concerns arose as to whether New Zealanders in Group 3 would be able to afford prescriptions given them by their family doctors (Ashton 1992a,23). Data from several of the studies presented in chapter 3 suggest that although there is a decrease in expenditures on pharmaceuticals, prescription utilisation is less responsive to increases in cost sharing than primary medical services (Lohr, et al. 1986, S39-S50; Foxman, et al. 1987). Both Lohr, et al. and Foxman, et al. argue that the decrease is indirect, related more to a reduction in the number of medical consultations rather than a decrease in patients filling prescriptions once obtained.

This study, while tending to verify the relationship between reduction in visitations and decreased prescription use, also found a slight change in prescription behaviour. This may have occurred because of the magnitude of the change in cost for prescriptions; as Ashton (1992a, 23) notes, Group 3 adults and children experienced price increases of 33% and 300% for pharmaceuticals.

When asked what effect the changes in prescription charges had on their family's health, slightly over 70% indicated there had been no effect. This figure is 10% lower than the number of wage-earners reporting the null effect of the changes on their own health. Of the balance, many respondents expressed concern over the increased cost of medications while others spoke of seeking alternatives and illnesses lasting longer. Individual responses to the question of how the increase in pharmaceuticals affected family health suggested at least some of respondents initiated decreased visits *because of anxiety over the high cost of prescriptions* rather than the increased charges for consultations.

Respondents were also asked to report their behaviours once a prescription had been obtained. Although the survey population indicated a high compliance overall, with 74% of the respondents immediately and completely filling the last prescription their doctors had given them, the data also shows respondents sometimes used other alternatives. Three other alternatives were surveyed: (1) leaving part or all of a prescription unfilled due to cost, (2) 'keeping back' some of a prescription for future use and (3) requesting generic substitutes.

Keeping back medications for future use was the alternative most often reported by respondents (44% reporting they 'frequently' or 'sometimes' did this) as well as the alternative reported to be done more often since the increase in direct charges (11%). While this may be acceptable in the case of medications for pain and symptomatic relief, it would be unadvisable with certain types of medications such as antibiotics. This question was not specific to the type of medication kept back and warrants further exploration.

With the exception of keeping back medicines for future use, well over half the survey population in each category reported they never engaged in alternatives to exact and immediate compliance with prescriptions. The least popular alternative was requesting generic substitutes (79% reporting they 'never' asked for generics). With such a high number 'never' engaging in these alternative behaviours, it is not surprising that respondents were more likely to answer 'no change' or 'doesn't apply' when asked whether the changes in prescription charges motivated them to change specific prescription behaviours.

Perception of changes

The last section of the survey asked respondents to report their feelings and opinions of the reforms, using open-ended questions or ordinal scales with space for additional comment. Many of the responses were quite emotive and largely negative. With few exceptions, the results shown above do not indicate a dramatic change in health-seeking behaviours. Therefore, it may be that the reforms may have had a greater impact on people's feelings about the reforms than on actual changes to their health-seeking behaviours.

The question "How did you feel when the health reforms were announced?" elicited feelings of concern, resignation, anger, and confusion as well as a small number of expressions of support for (6%) or indifference to (13%) the changes. Because responses were quite varied, the answers to this question were not collapsed as completely as others and are presented in Appendix 6.

The most common expression was that of anger. Other responses categorised as 'negative' included concern for others and for the respondents' own families as well as the feeling that taxes should take care of charges for health services. Others were dubious about the advantages and effectiveness of the targeting regime and the health reforms in general.

Responses were classified as 'neutral' if they expressed unconcern or ambivalence to the changes. 'Positive' responses ranged from 'ok, not bad' to 'agree wholeheartedly'.

Realising the mostly negative press (see Walsh as quoted by Davis, et al. 1994, 124), may have influenced first impressions of the reforms, respondents were asked if their opinions had changed over the first year with over 15% reporting a change. Those who explained the nature of the shift in their opinions commented on confusion over the changes to the reforms over the first year and concern over the effect of specific charges and on specific groups. Others spoke of fears of lower quality of hospital services and the cost of the reforms. Positive responses included more awareness of the costs of medical care, and relief that some of the charges initially set were reduced.

Although asked to list advantages or benefits, 60% of the respondents to this question chose to list disadvantages or provide negative comments. Advantages were identified by only 27% of the respondents while 13% gave neutral responses. Again because of the variety of response, answers were not easily collapsed and have been included in Appendix 7.

Two of the last survey questions asked respondents the strength of their agreement or disagreement with two main themes of the reforms expressed through an ordinal scale. More respondents either 'disagreed' or 'strongly disagreed' (56%) that 'Health should be the primary responsibility of the

individual rather than the State.' than "agreed' or strongly agreed' (35%), with the remaining 9% were undecided.

A small majority of people agreed or strongly agreed (56%) that people would be more careful about unnecessary use of health care services if made to pay for them while only 31% disagreed or strongly disagreed and 13% remained undecided. Several respondents mentioned abusing the system while others cited overuse of antibiotics. Many respondents on both ends of the scale, however, took issue with the word 'unnecessary' claiming 'unnecessary' use of health services is rare or nonexistent. Others expressed concern that people would be less likely to seek out 'necessary' services echoing findings from several studies suggesting that the effect of cost sharing neither discriminates between necessary and unnecessary care nor between 'ineffective' and 'effective' treatments (Lohr, et al. 1986).

Finally, respondents were questioned on their willingness to pay more taxes to return charges to their pre-February 1992 levels. Although a small majority indicated they would not pay more taxes (56%), the remaining 44% were divided between those willing to pay more taxes (28%) and those who were undecided (16%).

Representativeness of survey population

Although the characteristics of the survey population have been compared where appropriate and possible to national statistics, the question of the representativeness of the survey population to the target population remains. If the characteristics of the survey population reflect the attributes of the target population, conclusions drawn from this survey can be generalised to the target population as a whole.

Who is Group 3?

At the beginning of this chapter, we asked what sort of characteristics would Group 3 families be likely to exhibit. As a category defined by the lack of specific characteristics, it is difficult dependably to specify features which one might expect. The 14-page informational booklet "The Community Services Card" supplied by Income Support barely mentions Group 3. Income Support describes Group 3 as "those defined as high income families" announcing that "people in Group 3 do not qualify for a card" (see Appendix 8 for a copy of the page in question).

A more thorough understanding of the characteristics of Group 3 was unavailable at the time this research began and remains largely unavailable today. The characteristics described in the previous paragraph, of course, are too broad for any useful interpretation of the survey respondents' attributes as they relate to Group 3 as a whole. However, in order to facilitate a more productive interpretation of the results of this research, certain assumptions based on logical deduction about Group 3 may be offered.

At this point, it must be kept in mind that Ashton (1992a) estimated the percent of New Zealand households falling within the Group 3 category to be 47%. Income from Group 2 families could easily be sourced from wages or salaries but eligibility for partial family support would entitle them to a Community Services Card and lower user charges. Because entitlement to Family Support is not only based on income but also on family size, further refining the income range for Group 3 by its relation to Group 2 eligibility is very difficult. Group 2, according to Income Support, are 'middle-income families' (see Appendix 8). Boston (1992b), in his critique of the interim targeting regime, defines middle-income families as those between \$20,000 and \$40,000. Boston's designation, which is probably as useful as any others, would then place families with incomes over \$40,000 as 'high-income' families. Wherever the exact threshold is placed, since all families holding a Community Services Card were eliminated from the final sample set, it would not be surprising to find that the average and mean household incomes for the survey sample are higher than the national average or median of all New Zealand households.

Just as the entitlement of families receiving family support for Group 2 benefits would tend to push the household income for Group 3 higher than the national average, it seems likely that the same would hold true for the median wage bracket of Group 3 members over the median wage bracket for all New Zealand workers. Although the high median wages/salaries was unanticipated, it might be explained as a structural result of the eligibility requirements for the wage-earning members of Group 2.

The work of Cameron and Trivedi (1991) on income and insurance coverage suggests another logical characteristic of Group 3. If it can be

accepted that Group 3 represents 'higher-income' families, Cameron and Trivedi's research suggests that it could be reasonably expected that these families would have a higher than average incidence of insurance coverage. Remembering that only 47% of New Zealand families were expected to belong to Group 3, it would not be surprising to find the incidence of insurance coverage within the survey sample to be higher than the overall average of 45%.

From this we can conclude that although the attributes of the survey population are often quite different from comparable national statistics, they might actually be somewhat more representative of the target population of the research. Certainly, further clarification of the specific characteristics of Group 3 would enhance the generalisability of results of any research study looking only at the changes made by Group 3 occasioned by their increases in direct charges.

Conclusion

The research question asks what effect, if any, have the increases in direct charges made on the health-seeking behaviours of working persons and their families. Several effects were found which indicate that the increase in direct charges has created financial barriers to access for some of the Group 3 working persons and families of the survey population.

Over 58% of the families reporting said they were paying more for health care since the charges were increased. Of those, however, only 78% cited the reforms as the reasons they were paying more. The data suggest that overall, slightly over one-quarter of the survey population experienced some decrease in primary care. Twenty-seven percent claimed to be less willing to seek the advice of their family doctor; an equal number reported delayed or foregone treatment during the year following the reforms. Access seems to have become restricted for slightly over one-quarter of the survey population.

The decrease in utilisation of family doctor consultations was not followed by a similar change in prescription behaviour. The questionnaire as designed would not have picked up the flow-on effects of the decrease in doctor consultations as also decreasing the number of prescriptions fulfilled. However, anxiety over the cost of prescriptions may have contributed to

delayed or foregone doctors' consultations. Concern over the cost of prescriptions as part of the treatment for an illness episode is confirmed by the first-place ranking given by 64% of the respondents when asked which charge impacted on their families the most. It is also interesting that although people generally did not report any significant change in their prescription behaviour, 30% claimed that the increase in prescription charges had an effect on the health of their families. This figure is considerably higher than the number claiming the increases to part-charge for doctor's visit had an effect on health status.

Even though over one-quarter of the survey population reported reduced access, only 11% of the sample reported that decreased utilisation had an effect on their health status. Although overall health status of the survey population does not appear to have changed in proportion to reduced access, the fact that 21% of the wage-earners report going to work more often unwell should be a concern.

Regardless of the effect of the increase on decreased utilisation of medical consultations, no strong evidence exists that the respondents sought alternative ways to satisfy their need to better their health. In fact, the data would suggest that an increase in direct charges has a greater impact on conventional medical demand than on lifestyle behaviours. This would mean the government's objective of motivating individuals to be more responsible for their own health remains unmet.

This survey population is comprised of high-income households. It may be that the effect of the increase would have been stronger if more households within the lower income brackets of Group 3 were included in the final sample. The effect may be, as Ashton (1992a, 11) has suggested, more serious to those on the threshold of Group 3. However, high incomes may be characteristic of Group 3 as a whole. Specific research aimed at incomes near the margin would be useful to verify the veracity of Ashton's concern.

This simple overview of the data affirms that issues regarding our health and health care are very personal and emotive. Actions are not strictly governed by economics but by a host of other factors. For example, themes of concern not only for affordability for the respondents but for others can be

seen throughout the open-ended responses and give weight to the argument that health care has *extrinsic* as well as *intrinsic* values.

However, complex questions remain as to whether any specific pattern can be discerned. Can the 'losers' of the reforms be more specifically delineated? Within Group 3, are there unexpected losers? Has the user pays regime put in place in February 1992 disadvantaged certain subgroups in Group 3 more than others? Are different subgroups responding in different ways, seeking different alternatives? What factors seem to be the greatest influence in determining how or why an individual might react to the increased charges? It is to these questions we now turn in the next chapter.

6

Influences on demand responsiveness to changes in direct charges

The previous chapter addressed the most basic question of this study. What effect, if any, have the increases in direct charges had on the health-seeking behaviours of working persons in New Zealand? We were told by over one-quarter of the survey population that they had foregone or delayed doctors' visits and were more reluctant to seek consultation but that their pharmaceutical behaviours were less affected. We also learned that the percentage of respondents feeling that the increases affected lowered health status was much lower than the percentage that had made changes in their health-seeking behaviour.

The analysis in this chapter goes one step further and more clearly addresses the research assumptions regarding the demand response of subsamples of the survey population. It has become clear that price is only one component of the demand for health services. Insurance coverage, income, health status, family size and composition, availability, gender, and even age are just some of the factors influencing demand (see chapter 3 for a more thorough discussion of these factors). In New Zealand, many of these factors have been found to have influenced the demand for health services within the year after the onset of the changes in direct charges (Statistics New Zealand 1993).

In this chapter, we more thoroughly analyse the attributes of the survey population which seemed to be the greatest influence of those factors studied. Characterised by unexpectedly high incomes and a higher than average incidence of insurance, these attributes led to refocussing the analysis to explore how these characteristics might have induced the survey population to react in the ways they reported.

Beginning with a brief review of the links found among insurance, income, health status and gender inherent to the survey population, the interconnections between the four factors and the health-seeking

behaviours we would expect to find follows. Individual tests for correlation and difference have been labelled and an inventory is provided in Appendix 9. Various changes to the survey population's health-seeking behaviours are evaluated in light of the influence of these factors. After these findings are summarised, their validity and reliability are debated. Finally, the advantages and disadvantages of this particular methodology in answering the research question will be argued.

Demand factors with the survey population

This section begins by reporting the correlations that were found among factors of demand within the survey population. The interrelationship of health status, insurance and income are particularly highlighted, with family composition and gender included in the analysis. These interrelationships are then examined in light of what previous studies tell us we might expect about how these characteristics interact to a change in cost sharing.

The insurance factor

As reviewed in the general overview, the percentage of the survey population with insurance coverage is very high. Economic theory, corroborated by empirical studies, suggests a positive relationship between insurance cover and income (Cameron and Trivedi 1991). Insurance cover within the survey population was found to be highly correlated with household income ($p < .01$; Test 1). It might be reasonable to expect an association between per capita income and insurance coverage. However, the lower the per capita income the more likely the impact of children on the need for health insurance. Per capita income yielded no significant correlation with insurance coverage (Test 2).

To some degree, this is curious. Per capita income should take into account the number of children within the household. One would expect that the higher the per capita income, the more able a family would be to afford insurance. However, because children often require more medical care, just as easily a low per capita income may reflect a number of children and a higher motivation of the household to have medical insurance. A check on the influence of children on insurance cover yielded no significant results for the survey population. The number of children within the family did not appear to influence a family's insurance coverage (Test 3).

Additionally, 74% of those covered obtained insurance through their employers. Although the rate at which these employers have subsidised their employees' coverage is unknown, we know that at least some of the participants benefit from free insurance and it can be assumed that many more have at least enjoyed the benefits of lower premiums through being part of an insurance group. The combination of the amplitude of insurance coverage and the unknown element of free or subsidised health care may yield not particularly robust results for the tests of correlation between insurance coverage and income in this study group.

Moral hazard, the 'disincentive' to moderate overuse of health services arising from medical insurance or third-party payments, is assumed to be a manifestation of health care systems in which insurance is a dominant feature (Donaldson and Gerard 1993, 31-15). For this survey population, which falls disproportionately into bands of high incomes and insurance cover, moral hazard would be suspected. Insurance coverage proved not only to be a statistically significant but also a pervasive influence in ways that would suggest the presence of moral hazard among the survey population.

The relationship between insurance and higher health status in New Zealand has also been well established (Statistics New Zealand 1993, 31). The data from this study corroborate these findings. Individual wage-earners with insurance cover were more likely to report higher levels of health status than those without ($p < .10$; Test 4). For example, only 3% of those respondents reporting no insurance coverage answered 'always well' as opposed to 22% of those with insurance coverage. Family health status, however, did not follow this pattern ($< .25$, Test 5).

'Adverse selection' implies that consumers of health insurance who are very healthy may gauge their risk low and purchase health insurance with higher deductibles. Within this survey, type of coverage was not explored. The only data on insurance coverage of this type is whether or not the family was covered by insurance during the study period. In New Zealand, cost is not the only motivation for purchasing health insurance. Many New Zealanders may have purchased health insurance in order to avoid the long waiting lists for surgery and specialists in the public health system. Even though they may be healthy and have low expectations of health service

utilisation, the combination of risk aversion and a choice between the public or private hospital systems makes owning insurance attractive. The implications of health status on insurance coverage within New Zealand may not be as strong as in market-driven health markets like the United States. The fact that family health status was not significantly correlated with insurance coverage supports the argument that adverse selection may not be a significant characteristic of health insurance within New Zealand. It may be that any possible correlation may be blunted by the existence of the High Use Card, available to family members with chronic health problems.

While the survey population may not choose their health insurance coverage based on their health status, the amplitude of insurance coverage in the survey population combined with Hadley's (1982) findings that more medical care produces higher health status suggests that insurance coverage has a strong effect on whether the survey population reported good health. According to the theory of moral hazard, more medical care should be expected of persons with insurance coverage. If moral hazard is present and Hadley's findings are corroborated, we might expect to see a relationship between number of doctors' visits and health status. However, as will be discussed in the section on Utilisation of conventional medicine, higher health status was correlated with fewer, not more, doctors' consultations.

The income factor

In chapter 5, I reviewed the income characteristics of the survey population. Participants reported higher household incomes compared to the national median although individual wage and salary figures did not deviate substantially from the national average. This may be due, in part, to the number of two-income families in the sample. I argued that while the household figures might be higher than equivalent national statistics, they might actually be indicative of the incomes of persons in Group 3. Further clarification of the specific attributes of Group 3 would greatly help any fruitful analysis of the patterns of this Group's overall reactions to the increase in direct charges.

In addition to the relationship between income and insurance coverage reported above, Statistics New Zealand (1993, 30) has proposed a strong positive relationship between family income and health status. The

relationship between both household and per capita income and family health status within the survey population is not high (Tests 21 and 64). One possible explanation of the difference between this study and others is the nature of the ordinal income data, the highest income category of which included all incomes above \$45,000. Statistics New Zealand (1992b), for example, carried out its income categories through \$76,000. Since the highest category of household income on the survey was >\$45,000, the per capita income figures for this group would not be defined within a \$5,000 range as were the others. Alternatively, since household income and insurance coverage have been found to be correlated within the survey population, it is possible that insurance coverage among the 46% with higher incomes is diluting the effect of higher incomes.

In addition to the effect of household income on health status, here in New Zealand, it has been shown that people with individual incomes of less than \$15,000 were much more likely to rate their health as 'poor' or 'not so good' than those with higher incomes (Statistics New Zealand 1993, 30). This is suggested by the findings of Hadley (1982) who suggested that earned income has an inverse relationship with adult mortality rates. In other words, one might expect lower mortality rates from higher waged individuals, producing a positive relationship between higher wages and higher health status. The question would be the direction of causality - does poor health cause lower income or vice versa?

The data from this survey population, however, do not support the relationship between wages and health status (Test 20). The difference between these results could be in the nature of the data. The subsamples of lower incomes brackets within the survey population were comprised of small numbers which may have compromised the test. The subsample of <\$15,000 is too small to draw conclusions.

The apparent influence of insurance on health status across all income levels clearly needs to be further researched in the current shift to increased cost sharing. Further clarification of the prevalence and types of insurance coverage as well as the subsidies provided by employers should be researched in relation to the effect of insurance coverage on Group 3 health-seeking behaviour.

Health status and gender

Statistics New Zealand (1993) has reported gender differences in income, the percentage of workloss, the utilisation rate of primary care and related matters. Nearly two-thirds of those responding to the survey were men (women-33%; men-67%) and some differences in health-seeking behaviours were reported by gender.

Bird and Fremont (1991, 114-115) in their study of gender and health discuss many studies reporting gender differences in health status. Statistics New Zealand (1993, 29), however, has noted no significant difference in self-assessed health status between men and women. For this study, health status was significantly related to gender with men generally reporting higher health status ($p < .05$; Test 58). One possible explanation of the differing results may be found in Hadley's (1982) finding that earned income was negatively associated with mortality rates of working age persons. The wages or salaries earned by the women involved with this study were significantly lower than the men ($p < .001$; Test 59) with 63% of the females but only 45% of the men in the study earning within the four lowest wage categories. While wages did not appear to have statistical significance within the survey population, if earned income is inversely related to health status as Hadley suggests, it is possible that the overall lower wages of women in the study population have influenced their lower self-assessed health status, or that their lowered health status has contributed to their lower wages.

The importance of interaction

It is reasonable to assume from the data that the income, insurance coverage, health status and gender of the survey population often combined to play significant roles in the way various respondents and their families responded to the increases in direct charges. A 'web' is a good description for the strands of information provided by the 'user community' of this survey. One strand seems to lead to another which seems to lead to another. How these factors relate discretely and interdependently to influence the demand decisions of the survey population are discussed below. Because only bivariate analysis has been done on the data, possible interconnections between factors can only be suggested. Further research using a larger sample size on the interactions of these factors must be done to further untangle the web.

Health-seeking behaviours

Utilisation of conventional medicine

Insurance, income, health status and gender all appeared to influence the changes the survey population made in their utilisation of conventional medicine. This section explores how the different characteristics within the survey population may have advantaged certain subgroups while disadvantaging others. Overall, these relationships seemed to be stronger in individual behaviours reported by the wage-earner. This may be due to asking the wage-earner to report the family's health status as a whole, in effect averaging individual family members health status. Nonetheless, even with this averaging effect, certain patterns of family health-seeking behaviour have been found in the survey population.

Differences were found between income subgroups in the annual number of doctors' visits for families ($p < .01$; Test 27) with higher income groups reporting higher numbers of doctors' visits. The percentages of families with fewer than four visits for the five lowest income groups were all over 50%. In contrast, only 16% of families in the highest income level reported fewer than four visits.

Although differences were also found between per capita income and number of doctors' visits ($p < .001$; Test 28), the raw data was less clear as to the linearity of the relationship but suggested the lower half of the per capita income range experienced fewer visits overall. Since the number of children was positively related to the number of doctor visits ($< .10$; Test 29), the correlation found between per capita income and number of doctor's visits could be reflective of the composition of the family rather than the actual household income. Dovey, et al. (1992, 190) have reported a trend for lower health care utilisation as family size increases, regardless of income. One possible implication is a lower number of annual visits per family member for larger families in the survey population. While the number of children in the survey families was shown to be positively correlated with the total number of the family's visits to the doctor, the actual number of visits per family member was not reported.

In addition to the influence of higher incomes on the total number of doctors' visits, if moral hazard is present, generally higher numbers of doctor's visits

from those with insurance coverage could be expected. In this study, 50% of families without insurance coverage had visited the doctor fewer than four times in the past year while 72% of those with coverage reported consulting the doctor four or more times ($p < .10$; Test 9). Since insurance coverage is also related to higher health status in this survey population (and therefore less 'need' for health services), these findings would tend to corroborate the presence of moral hazard in this survey population.

Even though the insured subgroup reported generally higher numbers of doctors' visits, foregone or delayed doctors' visits due to cost by family members did not appear to bear a strong relationship with insurance although those without coverage indicated a 10% higher incidence of foregone doctors' visits (Test 8). In light of the evidence presented on the greater impact of increased cost sharing on children (O'Dea, et al. 1993; Lohr, et al. 1986), it would not be unexpected that the adult wage-earner would report fewer incidences of foregone visits than the survey families, over 40% of which are comprised of one or more children. Referring back to the results reported in chapter 5, only 7% of the wage-earners reported 'frequently' foregoing visits while another 23% reported 'sometimes'. When totalled, this 30% is quite close to the 27% reporting foregone visits for their families so it is unclear whether children of the survey population are being more disadvantaged by increased cost sharing.

Even though men were more likely to report higher health status, women were more likely to report foregone doctor's visits for themselves, with 38% of the women respondents reporting sometimes foregoing doctor's visits to 15% for the men ($p < .05$; Test 61). The difference was particularly marked in the percentage of males reporting 'never' foregoing a doctor's visit which was over 20% higher than that reported by women. It may be that the higher utilisation of medical services by women provide them more opportunity to forego services than men. It may also be that the type of treatments sought by the survey populations' men, who reported slightly higher health status than the women, are more unexpected and urgent.

Because they report lower health status than men, the higher percentage of women foregoing visits to surgeries is a concern. If considered in light of Hadley's (1982, 8) findings that medical care is positively related to mortality rates, it is possible these foregone visits could be contributing to lowered

health status. Although the results from this survey are insufficient to make this connection, the relationship between women's greater tendency to forego doctor's visits due to cost and the effect of the consequent lowered utilisation on health status should be further explored.

Whether wage-earners had foregone doctors' visits appears to be influenced by wages ($p < .07$; Test 23), per capita income ($p < .10$; Test 24) and household income ($p < .002$; Test 25) with persons with lower incomes less frequently and those with higher incomes more likely to report 'never' foregoing doctors' visits. This finding is consistent with the relationship between workloss and surgery visitations. Although wage-earners in all per capita income subgroups were more likely to report that they rarely or never saw a doctor when they miss work days because of illness, wage-earners with higher per capita incomes reported 'frequently' visiting the doctor more often than the low-waged groups ($p < .08$; Test 26). Unlike foregone visits for the family, insurance cover appeared to strongly influence whether the wage-earner had foregone doctors' visits with 20% more of those with cover indicating they had not foregone doctors' visits at all within the study period (40% for those without cover against 60%; $p < .05$; Test 7). What unwell wage-earners are doing as an alternative to visiting their doctors, however, remains unclear as will be discussed below in the section on alternatives to family doctors.

Household income was also associated with *willingness* to visit the family doctor ($p < .07$; Test 30) with a higher percentage of low-income families being less willing to visit the doctor since the increases in direct charges. This test is consistent with the result of fewer overall visits by lower-income families (Test 27 above) and by the wage-earner's willingness to forego doctor's visits (see Test 25 above).

The positive relationship between higher household incomes and health status when compared to the inverse relationship between household income and the number of doctors' visits and willingness to consult poses a major policy problem for the targeting regime. These results confirm Hart's (1971) Inverse Care Law which states that medical care is inversely related to health status and need for medical care. It also reinforces Ashton's (1992a) concern that the people at the thresholds of Group 3 might be experiencing barriers to health services because of affordability.

Whether those barriers are affecting health status remains unclear. The raw data showed that the few families reporting foregone visits did not report significant lowered health status. This raises the question as to whether the health services for those particular incidences of ill health could fall into the 'inappropriate' or 'ineffective' category. If this is the case, the greater overall access to health services of the insured survey population may be diluting the government's objective of reducing 'unnecessary' care.

The issue of necessary or unnecessary care is particularly important. Logically, persons with better health status would need and seek fewer health services. However, Hadley would claim the relationship is reversed. Persons reporting more medical care are advantaged by higher health status. Therefore, even though some of the treatment provided might fall into the 'ineffective' or 'inappropriate' category, Hadley would argue that the moral hazard involved in seeking such care is outweighed by the fact of higher health status. Is higher health status related to fewer visits or is more medical care related to higher health status?

For this study, health status and number of doctors' visits followed a logical pattern ($p < .04$; Test 49). Nearly 48% of the 'always well' reported fewer than four doctors' visits for the year following the reforms. The percentage of the generally well reporting less than four visits fell to 33% while those with lower health status reported much higher numbers of doctors' visitations. Usually, as explained in the section on the effect of income, health status is strongly correlated to income. However, the correlation between health status and income was not strong while the relationship between health status and insurance was mixed (see Tests 4 and 5). The strength of the relationship between insurance and health status suggests the influence of insurance on at least the health status and health-seeking behaviours of the wage-earner.

Utilisation of health service alternatives

As O'Dea, et al. (1993) have pointed out, quantity is a function of price of the commodity, price of substitutes and consumer's income. If an alternative good is perceived to be at lower cost than the commodity in question or becomes so because of an increase in price, it is likely the lower-cost alternative will be chosen, all other things being equal. Applied to wages

earned, for example, if the perceived cost of foregone wages for days spent recuperating at home is less than the expected total cost of the few hours off for medical consultation, the medical consultation itself and its resultant prescriptions, the wage-earner may choose to stay at home to recover rather than visiting the family doctor.

Possible alternatives to consultations with family doctors might be self-treatment with over-the-counter medications, recuperation at home without advice from a doctor or chemist, consulting a chemist rather than visiting a doctor, continuing to work unwell and a host of other complementary therapies such as naturopathy and osteopathy.

This economic explanation, of course, somewhat simplifies a decision that is undoubtedly influenced by the severity of the symptoms and availability of sick leave provisions. An important component of health services demand is the perception of illness and the effectiveness of treatment. In the case of wages, for example, if the wage-earner perceives the illness can be quickly treated and the severity or discomfort of the untreated illness may mean more days of workloss, the wage-earner rationally would seek medical care. Therefore, the price/demand relationship is unclear and may be influenced by the worker's expectations.

Although insurance cover did not appear to influence workloss days (Test 9), far fewer of those with insurance cover as opposed to those without cover reported going to work unwell more often since the onset of higher direct charges ($p < .01$; Test 10). Nearly 38% of those without cover reported going to work unwell more often opposed to only 16% of those with cover. Since wage-earners without insurance cover reported both lower health status and more foregone visits (see above), these results would not be unexpected. In fact, these results might support Pauly and Held's (1990) claim that there are circumstances in which moral hazard is 'benign'.

Interestingly, 15% of those with cover reported that the question of going to work unwell did not apply to them opposed to 0% of those with no coverage. A possible explanation of this is the overall higher health status (lower number of days unwell) of those with coverage.

Also because of moral hazard, a difference between those with cover and without might be expected particularly in the case of self-treatment behaviours such as staying at home and over-the-counter medication use. The application of moral hazard suggests that those alternatives for which third party payment or reimbursal can be expected would tend to be favoured over treatments for which consumers pay 100% of the cost. With the dominance of insurance cover across all income categories of the survey population, it could be expected that alternatives not typically covered by insurance (such as over-the-counter medications as opposed to prescriptions) would not be particularly attractive substitutes for partially subsidised medical care. Wage-earning respondents not covered by insurance did not appear to use alternatives to medical treatment more often than insured wage-earners (Tests 11 through 13) except in the case of seeking advice from chemists. This behaviour was reported with much higher frequency among those without insurance cover ($p < .10$; Test 14). When considered with the uninsured's higher rate foregone doctor's visits and overall lower number of consultations, it may be that the uninsured are using their chemists as a low-cost substitute to going to the doctor, or to assist in deciding whether a medical consultation is necessary.

Income also appeared to have no relation to whether wage-earner's reported using alternatives to doctors' consultations (Tests 31 through 38). When these results are considered with the results regarding insurance coverage and use of alternatives, it may be that the personal preferences of the individual are stronger in these cases than either income or insurance coverage.

Health status factored into whether wage-earners were likely to visit the doctor if they experienced workloss and staying at home for self-treatment. Those assessing their health as 'generally unwell' were more likely to report that they more routinely visit their doctor if their illness causes workloss ($p < .10$; Test 50). This result is somewhat in conflict with the finding that those who were less well also reported 'staying at home instead of going to the doctor' ($p < 0.02$; Test 51) more often than those with higher health status. These two findings, at first glance, may be contradictory. However, it is possible that with a greater number of illness episodes, the less well may have greater opportunity to engage in many different behaviours surveyed.

Wage-earners who were less well also reported greater use of over-the-counter medications ($p < 0.07$; Test 52). The 'always well' were the least likely to have initially used over-the-counter medications for self-treatment with 62% reporting they never engaged in this practice (as 'always well' they may never need to use over-the-counter medications). The 'generally well' and 'generally unwell' were quite different with only 38% of the 'generally well' and 0% of the 'generally unwell' reporting never self-treating with over-the-counter medications. It is possible that the results are due to the comparatively smaller size of the 'unwell' subsample (only 2% of the entire sample as opposed to 93% of the 'well'). Other than bias introduced by the small number in the subsample, no specific assumptions of the reasons for the difference can be offered beyond greater opportunity. However, these differences in behaviour could prove fruitful research area for determining the effect of health status on pharmaceutical use with implications for policy alternatives looking to reduce pharmaceutical consumption - and the effect of reduced pharmaceutical use on health status.

An interesting result is the increased willingness of the less well to seek complementary therapies such as osteopathy, naturopathy, and so forth ($p < 0.047$; Test 53). The 'always well', 'generally well', chronically ill or disabled had high percentages (50% or higher) of respondents who reported never using complementary therapies while the 'generally unwell' reported much higher percentages of utilisation of complementary therapies with no respondents indicating never using them.

Most likely this result is due to the small number of the 'generally unwell' subsample. However, it may be that the less well are likely to have had more contact with conventional medicine and possibly fewer positive results on an individual basis. This may have motivated them to seek other alternatives to care. Another possible reason is the strong association between insurance coverage and higher health status reported in other studies (see the effect of insurance coverage on health status above). Although this survey population did not demonstrate a high correlation between health status and insurance (Test 4), two-thirds of the 'generally unwell' did not have insurance coverage. Therefore, theoretically, the absence of the masking effect of insurance reimbursements or direct payment

would bring the cost of conventional and complementary forms of health services nearer to equal.

Although women in the survey population report foregoing doctor's visits more often (see above), it is also possible that they are finding alternatives to conventional medicine to treat their illnesses. For example, women reported higher use of over-the-counter medications ($p < .05$; Test 61) and seeking advice from the chemist more often ($p < .03$; Test 62) than men. In the case of over-the-counter medication, the percentage of men reporting 'never' using over-the-counter medications as an alternative to going to the doctor was twice that of women.

Although by and large the percentage of women reporting more frequent use of alternatives was higher than men, no statistically significant difference in the weighting of the importance of the changes in direct charges on seeking these alternatives was found (Test 63). The raw data does show a very slight tendency for women to grant the changes more importance in their decisions than men.

Pharmaceutical use

Foxman, et al. (1987) have suggested that the demand for prescriptions is less responsive to increases in cost sharing and more indirect than the demand for primary medical care. Even so, concerns have surfaced (Ashton 1992a, 23) that the 33% (for adults) and 300% (for children) increases in the direct charges for pharmaceuticals would cause a significant decrease in the demand for drugs needed to treat chronic illnesses, particularly for certain subgroups of the population. The data do not suggest a significant decrease in overall demand for the study population (see previous chapter). However, certain patterns in pharmaceutical compliance and behaviours were found within subgroups of the survey population.

Following the pattern that higher-waged individuals were less likely to forego doctor's visits, a positive relationship between wages and prescription compliance also exists within the survey population such that individuals with higher wages or salaries were more likely to have completely and immediately filled their last prescription ($p < .10$; Test 39). Such a relationship was not found between household or per capita income

(Tests 40 and 41). No specific reason for this conflicting result can be offered other than the more even spread of waged incomes reported and the likelihood of a higher priority of the health of income-earners to the household.

Insurance cover had a strong influence on pharmaceutical compliance with a far lower percentage of those without insurance cover reporting they filled their last prescription immediately and completely. Over 78% of those with cover reported immediate and complete compliance with their last prescription as opposed to only 59% of those without insurance cover ($p < .05$; Test 15). However, other behaviours asked in the section of the survey regarding pharmaceutical use did not demonstrate a relationship between insurance cover and refusing a prescription due to cost, hoarding prescriptions or asking for generic substitutes (Tests 16 through 18). The latter result may be explained by the strength of the agency relationship between patient and doctor. In the specific case of generics, individuals may be unfamiliar with generics (as attested to by the response of one participant "What are generics?").

Health status was not a strong indicator of pharmaceutical compliance (Tests 54 through 56) except in the case of hoarding prescriptions for future use ($p < .02$; Tests 57). The majority of the 'always well' (64%) reported never engaging in this behaviour whereas the percentage for the 'generally well' was only 36%. The only other category of health status with a high percentage reporting never hoarding was the chronically ill (75%). This may be due to the chronically ill more rapidly reaching the stop-loss figure for pharmaceuticals, after which the direct charge would be significantly reduced. The U-shaped association between health status and pharmaceutical use should be of particular concern to clinicians. This result is particularly interesting when considered with the greater tendency of the less well to use over-the-counter medications.

The implications of the association between health status and pharmaceutical behaviour should be of interest not only to policy framers in terms of pharmaceutical consumption but also to medicine. The central question to be answered is whether patients who do not comply with directions of use (i.e. take the entire prescription as directed for the duration directed) contribute to their continuing lowered health status. The data from

this survey are not sufficient to answer these questions. However, if later research found that patients do not suffer lowered health status when they do not comply with the directions of certain pharmaceuticals, it is logical to investigate incidences of overprescribing to patients who present themselves to their physicians more often as unwell.

Changes in insurance

Health status was the only characteristic of the survey population found to be related with changes in health insurance ($p < .01$; Test 49). Health status, as discussed above, was strongly correlated with the incidence of insurance cover (see Test 5). Although over 69% of those responding reported no change in their insurance cover, those noting themselves as 'always well' or 'generally well' were most likely to increase or purchase insurance. This result is counter to what one would expect of a risk-related insurance industry in which adverse selection plays a role in the amount of insurance cover a family would have. It is possible since hospital charges were initially part of the user pays package, families reacted to this new charge by adjusting their insurance for greater coverage of very expensive out- or inpatient hospital care. While health status influenced changes in insurance, income did not appear to make a difference (Test 48).

Reactions to policy change

The research question asks what effects the increases in cost sharing have had on the health-seeking behaviours of Group 3 wage-earners and their families. While not technically a 'health-seeking behaviour', the questionnaire asked respondents to report their feelings about the health reforms and their agreement with two of its central assumptions. This was done because how people feel about how health services are provided may impact their behaviour. As Eyles and Donovan (1990, 118) have commented, "policy does not only allocate resources but also shapes consciousness." Although it would not be possible through this survey design to obtain the kind of contextual detail that would allow a researcher to link negative feelings with certain reactions, I was interested in whether there was a difference in the way subgroups within the survey population responded to the policy questions.

Answers to the policy questions, although largely negative and emotive, when cross-tabulated with income produced no significant differences

between subsamples with the exception of willingness to pay more taxes to return to previous benefit levels (Tests 42, 43, 45 through 47). Economic theory suggests that universal benefits such as the health benefits prior to the reforms often benefit the middle- and high-income earners more than the economically disadvantaged because middle- to high-income earners would be paying for these services anyway through their taxes. In the case of universal benefits such as health services and education, middle- and high-income earners may be able and willing to pay for services via a private market. However, if the services are provided for all persons regardless of ability to pay, it could be argued that middle- and high-income earners benefit even more than low-income earners (see Boston 1992, 84). This would be particularly true if the tax scheme were not progressive (taxing increasingly higher percentages according to higher incomes). In theory, middle-income earners are advantaged by universal benefits and, realising their gain, logically would support universal benefits.

In light of this theory, if the survey population's middle- and high-income earners felt universal health benefits were more attractive than a targeted regime reinforced by private insurance, they would tend to support higher taxes in order to return to universal benefits. However, in this study per capita income appeared to bear a nonlinear relationship to willingness to pay taxes, with the middle-income levels reporting much stronger opposition to higher taxes for increased health benefits ($p < .10$; Test 45). This may be due to the masking effect of health insurance since most of the families in these income levels in this study were covered by private medical insurance prior to the reforms. Since most of the families were covered by health insurance prior to the reforms, it may also be that these families have a preference for privately provided health services to be reimbursed by their health insurance.

A relationship was found between the incidence of insurance cover and the willingness to pay more taxes with those with coverage more likely to be willing to pay more taxes than those without ($p < .10$; Test 19). Logically, those without coverage who are experiencing reduced access to health services may see additional taxes as a less painful and costly way to ensure better access than purchasing health insurance. On the other hand, for the insured group the actual cost of insurance may be viewed as more expensive than a possible increase in taxes. One of the original goals of

the health reforms was to require compulsory insurance (Minister of Health, 1991a). It is interesting to speculate whether compulsory insurance would have changed the result of this relationship.

Possible biases in survey or sample

Reporting of income

The raw data and results suggest a bias arising from the way income was asked and by the preponderance of higher income families in the sample. Forty-one percent of the respondents reported income in excess of \$45,000. The large percentage in this highest bracket most likely skewed the results of tests of correlation for income. On the other side of the scale, table 5.1 shows that only five respondents reported incomes in the lowest two income brackets, resulting in those categories being small subsamples in relation to the overall sample size. These smaller subsamples would have made the results for these samples less robust.

Because additional income categories were not included, the responses for these families were necessarily treated as a group and any differences between persons closer to the \$45,000 and those much higher were left unreported. In retrospect, both an active attempt to recruit more lower-income families and inclusion of additional income categories would have been useful in reducing the impact of this bias.

The most serious threat to validity inherent in the research design is the lack of control of the spread of respondents over income categories. By choosing employers from a variety of industries representing a wide range of wage scales, I was hoping to obtain a relatively even spread of incomes throughout the sample. However, although the employees from those industries might include a reasonable spread of income, no specific attempt was made to encourage low-income earners. However, any specific encouragement of one income category over others may have lead to other threats to validity or bias.

Finally, the decision to divide the number of family members by the highest rather than the middle income figure from each income category would have biased the results on per capita income. In retrospect, dividing the number of family members by the middle income figure would have provided a better 'averaging' effect in each income category. Also, as

shown in table 5.2, the manipulation of household income into per capita income provided several subsamples with fewer than four respondents, particularly in the lower per capita income categories. These low numbers, particularly when used with the Kruskal-Wallis test for difference between samples may have introduced bias and more certainly would have made specific tests less robust.

Oversampling of insured

The survey population is well-insured. Over 76% of the respondents reported having insurance at the time of the changes to direct charges. As discussed elsewhere, the link between health-seeking habits and insurance is well established as is the link between health status and insurance coverage. According to economic theory, it would be expected that the preponderance of insurance coverage would mute the price/demand response in that those who were insured could expect partial payment or repayment for covered health services via their health insurance carrier. Although specifically seeking out respondents for the sample which are not insured would have decreased the bias introduced by the incidence of insurance coverage, doing so would most likely have entailed greater resources than were available at the time.

Throughout the survey, several of the responses resulted in a small number of responses for certain categories. This was particularly true when the entire 146 responses were included. Although small samples were to remain a problem for certain questions, eliminating those persons who reported holding a Community Service Card eliminated some of this bias. Statistical analysis on the remaining small samples (or the consequent large samples) could introduce bias, rendering the statistical tests less robust.

Both income and insurance were treated as separate subgroups to determine differences particularly between income categories and insured/uninsured. Where possible in the analyses, if bias has been suspected, it is reported in the analysis and suggestions of possible influences have been included.

Threats to validity and reliability

Validity

Ultimately, the final test of validity of a research method is whether it addresses the research question. In the case of the quantitative study, does it measure what the method was designed to measure? In this study, does the survey accurately measure demand diversion? The answer lies in one's theoretical perspective. For those of us willing to accept the authority and knowledge of the user community, the answer would be yes. For those of us whose drive for objectivity seeks to separate knowledge from the knower, the answer might be no. One argument *for* the concurrent validity of the results is the apparent agreement with other utilisation studies.

The study also would appear to have content validity in that it attempts to explore a number of aspects of the problem, particularly noncommodified alternatives to conventional care. Having approached this research with the belief that the issues are so complex that definitive answers may never be established, I remain convinced that complete content validity may be unattainable. However, only through research on alternatives can the research question begin to be unravelled.

This project also would meet the demands of construct validity. By methodologically triangulating certain phenomena (for example delayed or foregone doctor visits with being more or less willing to visit a doctor), construct validity was verified. Finally, the results *do* point to demand diversion, one component of which is reduced utilisation of primary care services.

The interpretation of the results could also threaten validity. It has already been established that demand decisions for health services are quite complex. Many factors are correlated in ways which make definite claims of causality injudicious. Although the bivariate analysis reported here does not claim causality and only suggests the correlation between two variables or the difference between subsamples, a warning of the possibility of the interaction of other variables is prudent.

Due to the particular makeup of the survey population, it can possibly be argued that the survey is a more valid indicator of the difficulties and incidence of moral hazard than demand diversion caused by the increase in

direct charges. Indications from the raw data themselves suggest a high degree of moral hazard. 'Price' in this instance would not reflect the direct charge at point of service due to the expectation of reimbursement. In other words, rather than producing accurate results on the impact of the changes to health-seeking behaviour, the results could reflect the presence of moral hazard.

To eliminate the effects of insurance, a more precise research design would be necessary; certainly a more equal number of uninsured persons should be included. Although the results are in accordance with the theories of health economics, particularly those surrounding moral hazard, nonetheless the simple effect of an increase in direct charges may have been masked by the large number of respondents with insurance coverage. By and large, however, the results indicate an overall decrease in primary care utilisation which is in accordance with the results produced by other studies.

Until the characteristics of Group 3 are further clarified, the results of this particular exploratory sample can by no means be said to be representative in any sense of the word. It can only be stipulated that these particular families, all within Group 3, experienced these particular difficulties at a particular point of time.

Reliability

Reliability is probably the most critical concern for a study of this nature. Undoubtedly, this research is time and context specific. The answers rely on memory and subjective perceptions which can be flawed and opinion which can be changed according to circumstance. However, information gathered from the pretest and pilot test implied a high degree of reliability for the majority of the individual questions.

The general consistency of results across indicators would also suggest equivalence reliability. As an example, self-assessment in health research is a reliable indicator of certain correlations, including the number of doctor's visits an individual might make in one year. It seems reasonable to extend the concept of self-assessment to an indication of whether and how people have responded to the direct charges. It is reasonable that individuals would know and be able to report whether they have changed

their health-seeking behaviours because of the change in direct charges. Granted, the severity of the response may appear different depending on the specific circumstances under which the respondent answered the question, but the respondents should be able to reliably report whether there were incidents where they had delayed or foregone treatment. Other factors (such as time, availability and so forth) may have played a part in the exact circumstances; however, reluctance over payment could be an easily remembered event.

Attempts were made, through the design of the questions, to check for reliable answers throughout. Several inter-item correlations were performed to determine the reliability of the survey and were found to be consistent. Although inter-item tests for reliability were positive for the most part, in at least one case (question 33), the raw data indicated that the instructions to a question were confusing, leading to responses that were difficult to cross-tabulate. The general reliability of responses was so questionable that no further manipulation of this question occurred.

The handling of the open-ended questions could also create concern over reliability. Except for questions 35 and 37, however, the responses seem to relate quite well to a limited number of categories. In the end, the two questions which were less easily collapsed were divided into very few categories and were provided in richer detail as Appendices 6 and 7.

A final threat to reliability is the number of questions left blank (nonresponse). If the blank spaces are included in the total number used to arrive at percentages, results would obviously be inaccurate. Minitab handles nonresponse by subtracting them from the total number of records in the database, using that number to derive its general statistics and other test results. Therefore, percentages reported are the accurate percentages for the number of persons responding to a particular question. In most cases, the questionnaires were completed in full. A few questions were structured on purpose with the idea if the question did not pertain, the respondent would leave the question blank. Even with the length of the questionnaire, unanswered questions were not a particularly large problem for this study.

Advantages and disadvantages of research design

Regardless of the specific advantages or disadvantages of survey methodology, the most distinct advantage of my research design was practicality. It was 'doable' in every sense. Given the resources with which I had to work and the time in which the research was to take place, I knew I would be able to complete the project.

In the main, utilisation studies have employed a design which studies surgery records or health service receipts. Although clearly such methodology does not have to rely on memory or opinion, it also completely misses the chance to ask the respondents what they think and know about the phenomenon in question. Surveys, on the other hand, are useful when the knowledge of particular individuals is the research object. Surveys can promise great validity, particularly so when followed by statistical analysis.

For me, the advantage of statistical analysis lies in interpretation. By looking at the raw data in cross-tables, certain patterns can be discerned. If the patterns are linear, a researcher may be able to accurately summarise the data. But a summary of data does little to tell us what the strength of those patterns might be. And what about non-linear effects? Statistical analysis may be able to assist the researcher in picking up patterns that are less clear or that suggest further analysis.

The survey, followed by a more qualitative interview phase, offered the advantages of both quantitative and qualitative measures. Quantitative measures such as the survey are better at reporting the breadth of a problem; they can 'put a problem on the map' by showing its pervasiveness (Reinharz 1992, 79). Reinharz (1992, 76) also reminds us that because of the widespread acceptance of the objectivity of survey research findings and their ability to provide answers to pressing social problems, surveys are often used in public policy research. Jayaratne (1983) defends the practicality of quantitative measures such as the survey in that the numbers they generate can be understood and interpreted by government agencies and policy makers. However, because survey questions are mostly fixed-alternative with prescribed choices for response, they can often be weak in providing individual detail.

Qualitative research, on the other hand, offers a vehicle to explore the dimensions of a phenomenon for a particular person or set of individuals. Although the second phase of the research was not carried out, the questionnaire itself provided ample opportunity for individuals to provide additional information. To avoid oversimplifying complex issues by forcing responses into too few categories, open-ended questions were included throughout each section of the questionnaire. Respondents were also asked to attach a separate sheet if they had any more information or stories they could add regarding their experience with the changes in direct charges. Many took the opportunity to comment. Their responses were particularly useful in establishing the reliability of the fixed-alternative questions which were companions to their comments.

A final advantage of the research project as completed is its departure from the norms of other quantitative demand studies. By selecting the user community as the units of analyses, this research offers an alternative method with which the results of previous studies may be triangulated.

Even without statistical tests for correlation and variance, information provided by the respondents provides an interesting and worthwhile profile of one user community's response to the increases in direct charges. The descriptive statistics arising from the survey are reported in chapter 5.

In the end the statistical analyses, results and discussion of which have been presented in the chapter perhaps has proven more useful in identifying areas that warrant further investigation. In that light, as a piece of exploratory work into the nature and character of the demand response to New Zealand's increase in direct charges, this project has been successful.

Summary of findings

The findings in chapter 5 suggest at least a portion of the first research assumption regarding reduced utilisation is valid. Nearly 30% of the survey population reported they were going to the doctor less than before the increases in user pays. However, whether as research assumption two proposes this reduced utilisation is affecting health status is less clear. Specific individuals did report that foregone or delayed visits caused greater problems, but these incidences were few. It may be that iatrogenic effects of conventional medicine is somewhat counterbalanced by its

positive effects. It may also be, as in the HIE, that the period assessed is too short to pick up long-term effects of reduced utilisation.

The findings in this chapter suggest that at least three of the research assumptions hold true. Differences were found in the way the insured and the uninsured approached the changes in direct charges. Respondent families of different income levels also reported differences in the way they reacted to the changes. Although the effects of health status and gender were slightly less varied, these two factors also played a part in the demand response.

The data suggest a high degree of moral hazard for this survey population. Expected associations between insurance coverage and such factors as wage-earners' health status and utilisation of conventional medicine were strong with the insured subsample reporting more doctors' visits and fewer foregone doctors' visits. The insured also reported better pharmaceutical compliance. The uninsured subsample more often sought the advice of chemists and reported going to work unwell more often.

Differences in the way families at different income levels approached the changes are also evident. Income was found to be positively related to health status, the number of doctors' visits and fewer foregone visits by the wage-earner. Those with higher household incomes professed less reluctance to visit the doctor because of the cost. Individuals with higher wages were found to exhibit greater pharmaceutical compliance than their lower-waged counterparts.

Health insurance also proved to be of some influence in the effects on the health-seeking behaviours of the survey population. Higher health status was related to a lower number of doctors' visits and the incidence of insurance coverage. The unwell subsample in the survey population reported more often visiting the doctor if their illness was causing workloss, staying at home instead of visiting the doctor to self-treat and using more over-the-counter medicines and complementary therapies.

Family composition and gender of the wage-earning respondent also influenced the respondents' health-seeking behaviours. As would be expected, families with more children reported a higher number of doctors'

visits. Women wage-earners not only reported more foregone visits but also were more willing to use over-the-counter medications and advice of the chemist.

The last research assumption, that demand would be diverted into other health-seeking actions, is not as strongly evidenced by the results of this study. Some demand diversion, as reported in chapter 5, was reported by the survey population. However, patterns of demand diversion were not easily discernible except in the cases reviewed above.

The results of this survey have directed attention to specific factors that may be heavily influencing the efficacy of the user pays regime. My feeling is that this research has only begun to address the question of the effect of the changes in direct charges on the working population here in New Zealand. The purpose of this research has been exploratory. In that sense, it is not disappointing that the results do not provide a more complete untangling of the factors of demand diversion caused by the increases in direct charges. Many possible avenues for exploration have been suggested by the information provided by the survey population.

Because so many questions about the factors of demand in Group 3 are to be more fully discovered, conclusions and the implications for policy must necessarily be cautiously submitted. Those that can be made from this research are offered in chapter 7. What is perhaps more important are the recommendations for further research which will also be found in that chapter.

7

Conclusions and implications for health policy

Chapter 1 briefly summarised the National Government's dual strategy for addressing the ills of New Zealand's health services. Specific objectives of the key demand-side strategy of rationalising user charges were set out in the Minister of Social Welfare's *Welfare that Works* (1991, 59-60). Rationalising charges for access to health services was expected to:

- (1) better meet the social goal of ensuring access to those on lower incomes.
- (2) produce a "more even spread of use across both primary and secondary health sectors".
- (3) curb the excessive use of services which had been provided free of charge, forcing patients and doctors to 'take account of prices when making decisions about the use of health services'.
- (4) curb the use of hospitals "as a cheap alternative to a visit to the doctor."
- (5) strengthen the incentives provided by the price mechanism with a side benefit of encouraging New Zealanders to focus on healthier lifestyles rather than medical treatment.
- (6) highlight the price of services at the time the service is contemplated, enabling patients to more easily participate in decisions about the efficacy of treatment.

Although the market for health services is such that any simple inverse relationship between supply and demand cannot be expected, the available evidence supports the idea that certain relationships between price and utilisation can be consistently anticipated. This chapter will review the case for and against National's targeting regime regarding its potential to meet National's objectives and the general objective of maintaining a healthy society.

This thesis has looked at health, health-seeking behaviour and public policy. A regime defined by income necessarily relies on a healthy workforce; a strategy that ultimately erodes the income potential of its workers is counterproductive. So in addition to the objectives stated above,

an *a priori* objective for National's health program is the continuing health of the members of Group 3, the group least sheltered by the policies of the State. How increased part-charges have influenced the health-seeking behaviours and health status of Group 3 has been the specific research interest of this study.

Ideology, equity and efficiency

Chapter 2 described the neo-liberal ideological foundation which informed National's 'more market' policies. Faith in the 'rational economic man' model of market behaviour is clearly evident in the choice to rely on increasing user pays to act as market signals for health care services. How much confidence may we, as a society, place in the ability of the market to efficiently and equitably distribute health resources in order to meet the need of a healthy workforce?

Ensuring access: equity as an object of National's policy

An objective of National's targeting regime is to 'ensure access' to those on lower incomes. This objective originates from the social policy concern over equity. National's ideological reliance on the market holds no promise for equity concerns because the market is mechanistically unable to address equity. Equity is an issue for the welfare state, hence, the Interim Targeting Regime's inclusion of subsidies for Groups 1 and 2. The question of equity is not resolved, however, just because the regime assists certain individuals and their families. The problems of the targeting regime in meeting the goal of 'ensuring access' are two-fold.

The first problem is created through the new targeting structure which significantly increases user charges for Group 3. By setting thresholds according to income and family size and by establishing stop-loss provisions, National hoped to avoid building barriers to access according to affordability. If the regime's effect has been to restrict access of certain subgroups within Group 3, as this study has reported in chapters 5 and 6 and other studies reported in chapter 3 would suggest, the balance of equity over efficiency remains upset. It may be possible to respond to equity concerns through an even more finely targeted system of user charges, manipulating the system until concerns over financial access are addressed. However, as we have seen in the discussion of need in chapter 2, the fundamental questions of how structural and contextual differences

weaken the possibilities of a market-oriented policy ever clearly addressing equity issues remain.

The second problem of ensuring access is its negative consequences on meeting the policy's efficiency objectives. National's Interim Targeting Regime included decreasing the prices at point of service for health services for some families. According to Ashton's early estimate (1992a) decreased charges affected slightly over one-half the entire population. Regardless of whether access was actually improved, the fact that over 50% of the health consumers were effectively removed from the pricing mechanism of the market certainly dilutes the possibilities of the mechanism to meet the other objectives outlined above.

Efficiency objectives and user charges

What about efficiency? As we have seen in chapter 2, the market for health services is rife with 'market failures' which impact its ability to perform efficiently. Acknowledging these failures of the market, is it possible that the market is still a more useful tool for increasing the efficient allocation of resources than allocating health services through more universal policies of the State? This is really the crux of the issue for determining the Targeting Regime's effectiveness in meeting National's other objectives

Meeting efficiency objectives of the Targeting Regime

The evidence on cost sharing indicates that increasing the price people pay at point of service reduces the demand for services. If the goal is to reduce the overall expenditure for health services, a strategy of increasing user pays holds promise. However, the evidence does not support the efficacy of cost sharing as a cost containment strategy. Increased costs of administering a targeting program may at least partially offset any gains made in cost containment. Cost sharing does not mean 'more for your dollar', it *may* mean less dollars being spent. However, decreasing the overall health spending is not one of the specific objectives outlined for the targeting regime in *Welfare that Works*. Let us look at each of National's efficiency objectives in turn, examining the Targeting Regime's potential to meet the objective.

A more even spread of services

The objective of 'a more even spread of services' is reasonably indecipherable and confusing in the first instance. Structurally, the demand for health services above the primary care level is more often the decision of the doctor than the consumer. As we discovered in chapter 3, studies have shown that increasing price has very little effect on consumers' decisions above the primary care level. Additionally, increasing the price to the patient seems to have very little effect on the treatment decisions of doctors.

The agency relationship inherent in health services may be at fault. With the majority of services beyond the primary care level being decided by the doctor as agent for the patient, expecting a significant and direct effect of imposing charges on the patient in the case of pharmaceuticals, diagnostics and secondary care is unwise. Increasing charges at all levels may, however, have an indirect and perhaps unwanted effect. As the families in this study reported, anxiety over flow-on charges such as pharmaceuticals are not likely keep people from purchasing pharmaceuticals and other services once prescribed, but may keep people from seeking effective and appropriate primary care in the first place.

If this goal is meant to include a more even geographic spread of resources, market theory would tell us that supply should follow demand. In areas where the demand is greatest, there should be greater supply. Evidence of this corollary is the closure of many small rural hospitals. The 'market' in some areas of the country has proven insufficient to support the continuation of such facilities

Curb the excessive use of services

It is important to sort out two separate effects of the targeting regime in discussing this objective. Decreasing the charge at point of service for over 50% of the population should have the same effect as any other third-party payer scheme; it should be expected that access (and utilisation) within this group would actually increase. This, then, would be a form of moral hazard for the over 50% of the population receiving the benefit of decreased charges.

It must be assumed that the advantages of the pricing mechanism touted as a benefit of the targeting regime are to come about through the other 50% of

the population experiencing an increase. With only approximately 50% of the market operating under the pricing mechanism, it is unlikely that this goal is reasonable. Additionally, since this study confirms moral hazard exists for the insured population (47%), it would appear moral hazard would affect nearly 100% of the population.

Even if there were not concerns over the 50% not participating in the market, characteristics of the market for health services which cause market failure are not eliminated by increased cost sharing. The agency relationship may be particularly responsible for diluting the possibility of meeting this objective. By forcing patients and doctors to 'take account of prices when making decisions about the use of health services', it is hoped that 'excessive' use of services will be curtailed. However, as evidenced by the studies reported in chapter 3, the impact of increasing user charges on doctors is unreliable as a method to reduce 'overprescribing'. Patients, trustful of their doctor's expertise, will usually accede to a doctor's recommendations without question. The high compliance behaviour exhibited by the survey population of this study is an example of the strength of the agency relationship over the pricing mechanism.

Even if increased part-charges resulted in lessening the impact of the agency relationship (which is somewhat doubtful given the loyalty expressed by patients for their family doctors in this study and as reported by Statistics New Zealand [1993, 75]), the average consumer of health services would be unable to assess whether the price of a specific treatment outweighed the anticipated benefit. The characteristic of imperfect knowledge inherent in the health services is particularly influential in making it difficult to ever assess the 'suitability' of treatment.

Evidence of imperfect knowledge was found in this study. Only 58% of the survey population acknowledged paying more for health services. Some 42% missed the fact that the targeting regime had increased their charges for health services *ipso facto*. While this may be due to the muting power of insurance reimbursement, it may also be true that individuals may not have had an opportunity to visit the doctor and therefore learn of the price increase. The lack of opportunity to increase market knowledge is a problem particularly prevalent in health services. If you haven't had an opportunity to experience an effect, it is unlikely the effect will change your behaviour.

The market failure caused by uncertainty also affects this objective. Effectiveness of drugs and treatments are expressed in 'chances' and 'probabilities'. Even generally efficacious drugs or treatments are occasionally ineffective or can cause iatrogenic effects. Even if individuals had perfect knowledge about their disease or condition and about the cost-effectiveness of treatments or drugs offered, the effectiveness of any particular treatment is still uncertain due to the individuality of the human body.

Curb the use of hospitals

The fourth goal, curbing the use of hospitals "as a cheap alternative to a visit to the doctor" is also suspect. The part-charges for hospital care were a very contentious issue of National's scheme. The charges included both out-patient and in-patient treatment. Eventually, in-patient charges were eliminated. This leaves only the out-patient charges.

Out-patient treatment could take two forms: (1) treatment order by a family practitioner or specialist to be performed at the public hospital, or (2) primary treatment available through hospital clinics or Accident and Emergency. The same increase in price would be likely to have different effects for hospital care that is ordered through a doctor or initiated by the patient.

Because of the characteristics of the agency relationship (the gate-keeping role of family doctors) and imperfect knowledge, it is less likely that treatment or tests ordered by a family doctor or specialist would experience the same magnitude of reduction as patient-initiated care. Nor is any reduction likely to be the direct result of increased charges. Rather, as evidenced from studies reported in chapter 3, it is more likely that any decrease in the use of hospital services of this type is directly due to the reduction in utilisation at the primary care level. Although hospital services were not part of this study, survey respondents reported their pharmaceutical behaviours did not exhibit a similar reduction to patient-initiated primary care.

Even if increased charges at the hospital level may lead to some decrease in utilisation, the effect of an overall reduction of primary care may actually

counteract the benefit of reduced hospital utilisation. The study of Helm's, et al. (1978) on the effect of introducing a co-payment for California Medicaid leads to concern that the effect of decreased utilisation at the primary care level will result in an actual increase in total health care expenditures as 'sicker' people seek treatment, often beyond the point of simpler, less costly medical care.

Whether increasing cost sharing results in an increase or decrease in the use of hospital services, it may be that any reduction within Group 3 would be insignificant. For example, characterised by high incomes and the prevalence of insurance, the survey population did not prove to be heavy users of Accident and Emergency services. While it is possible that the insurance coverage in Group 3 makes it feasible for Group 3 members to choose private or public hospital services, this is only shifting costs from the public sector to the private. It does not address the issues or more value for money or of the percentage of health services as a percentage of GDP.

Because of Group 3's ability to purchase treatment from the private sector, increasing costs for hospital out-patient treatment do have the capability of reducing the government's commitment to provide these services. However, with over one-half of the population's access actually improved, National's 'target' group for this objective may be misplaced.

Encourage healthier lifestyles

Since increasing cost sharing does result in demand diversion, it seems reasonable to expect that strengthening the price mechanism would provide incentives for New Zealanders to adopt healthier lifestyles rather than rely on medical treatment. Yet again, empirical evidence does not support a relationship between increasing cost sharing and changing to 'healthy habits'. Increasing cost sharing, however, is a negative incentive and not very effective according to the results of this survey. Very few of the respondents reported they made changes in their lifestyle habits in the year following the increases in part-charges. Even fewer indicated the charges had any influence on their decisions.

Enabling patients to participate in treatment decisions

The last objective, highlighting the cost of services to enable patients to more easily participate in decisions about the efficacy of treatment, has

similar problems to the third objective. Given the combined strength of agency and imperfect knowledge, although increases in part-charges might make consumers more aware of the cost side of the equation, they would still be inadequately informed of the benefits of treatment in order to make a purely 'rational' decision of its value.

As discussed above, a large number of individuals were not even aware of the increases in the cost of health services, the catalyst expected to change health-seeking behaviour. If a catalyst is not felt, is it likely to change behaviour? If this lack of knowledge was solely due to opportunity, then it is inevitable at some point individuals would have realised health care was costing them more. With such a high number of survey respondents participating in insurance plans, however, it is possible the effect of reimbursement for services and products weakens the catalytic effects of price increases.

The study did not investigate this particular question. However, it does seem reasonably clear that patients can and are making the decision not to seek care at all. Unless patients initiate medical contact, the question of participation in treatment decisions is moot.

What we can expect from an increase in user charges

At this point, it seems as though the possibilities for National's pricing strategy to meet any of its objectives are pretty grim. Based on market failure alone, it would appear increasing user charges offer no particular advantages. Yet, National placed itself in a politically vulnerable position by introducing the Targeting Regime. Surely increased charges must have some benefits.

Decreased utilisation of primary care

Although its exact relationship to meeting market objectives of increased efficiency and more transparent cost is murky, evidence from this and other studies indicate that increasing charges at point of service does lead to decreased utilisation. Regardless of the relativity of need, the multifarious nature of health and health status, increasing the cost at point of service can reliably produce lowered utilisation. It is also true that resources are finite and the need for health services appears to be infinite. It can also be

accepted that primary care physicians are the 'gatekeepers' to more and more expensive health services and products.

If applied with skill, knowledge and reasonable expectations it may be possible that increased cost sharing can be used as a tool to check the infinity of health care demand. Other options to ration health care, like long queues for service or a specific list of core services, are available but may be even less efficient, equitable or popular than an increase in user pays.

Shifting public resources to those who need it

If public resources are finite and a policy goal is to ensure access to those with lower incomes, it makes sense that those who can afford health care without the help of the State pay more while those who cannot are provided assistance. However, targeting regimes may not meet the goal of 'fairness' as Group 3 families pay twice for medical care - through their taxes and at their doctors. With a growing emphasis on expensive, higher technology diagnostics and treatment, a continuing commitment to universally provided health services is certain to become more and more costly. In a world of finite resources either the supply or demand of services must be restricted.

On the supply side, a specific list of services to which all New Zealanders have access could be fashioned, but this has been discussed as an impossible task. On the demand side, rationing health services can be affected through queues but the unacceptably long queues of the public health system prompted numerous governments to propose health reforms.

Another way to address the question of supply and demand is to use the tool of the market to assist in determining priorities and to provide alternatives to the public health system to which at least some of the demand could be diverted. In effect, a policy of targeting could 'divert' demand from the public sector to the private, one which would not involve resources or policies of the State. This does have the effect of reducing the State's expenditures on health services even though it may simply mean a shift from the public to the private sector.

However, once the market is more intimately involved, equity concerns surface. Certain suppositions regarding Group 3's ability to afford health

care are inherent in National's targeting regime. The reliability of these suppositions were investigated by this research.

Factors influencing effectiveness

This research sought to detect the effect, if any, of the increase in direct charges at the primary care level (including pharmaceuticals) to the health-seeking behaviour of working persons (primarily Group 3). The question was framed with certain underlying assumptions.

I assumed there would be an observable change in demand for conventional medical services, particularly away from family doctors. I also assumed both appropriate and effective care as well as inappropriate and ineffective care would be diverted, possibly reducing health status. It also seemed logical that demand would be affected by factors specific to the individual or the family which would cause certain subgroups within the survey population to be less or more sensitive to the changes than others. I expected those in higher income brackets would evidence less reduction in services. Based on evidence of moral hazard, I anticipated workers with insurance would experience different rates of reduction than those without. Believing in the relativity of health and health need, I assumed factors such as gender, family size and composition and health status would likely figure into changes in demand. Finally, I believed that 'need' remained even though demand was not satisfied through conventional means. For the most part, the assumptions behind this research have proven to have merit.

There is certainly some evidence of reduced utilisation of conventional family practice. Nearly 30% of the survey population reported they were going to the doctor less than before the increases in user charges. A similar percentage reported foregoing services which they felt were warranted, indicating that at least some 'appropriate' and perhaps 'effective' care was being reduced. However, whether this reduced utilisation is affecting health status is less clear. Specific individuals did report that foregone or delayed visits caused greater problems, but these incidences were few.

The data also indicated there were definite differences in the way certain subgroups experienced the changes in direct charges. Certainly, those with insurance reported far less diversion than those without. Those with higher

incomes were less likely to report foregoing consultations or changing their prescription behaviours.

Men as a subsample were less likely to report foregoing doctors' visits than women. Whether men's significantly higher wages earned or their overall lower utilisation of doctors in the first place is a factor in this difference in demand diversion is unknown.

Health status also seemed to figure into the demand equation of the survey population. Those with higher health status reported less diversion from conventional medical services. Whether higher health status is a function of less demand reduction or whether less demand reduction is a factor of health status is unknown.

What can these factors suggest in terms of future directions for the targeting regime? What can this study offer in terms of insight into how the targeting regime might better meet its objectives? Perhaps the single most influential factor in the survey population's response to their increased part-charges is whether they benefited from insurance coverage.

Moral hazard

Perhaps the greatest threat to the usefulness of National's specific targeting regime is the possibility that the majority of members of Group 3 maintain health insurance. As evidenced by the difference in utilisation patterns in this study and others reported in chapter 3, insurance reimbursement has the potential to blunt the effect of any increase in user charges. This study evidences a major role for moral hazard in the reactions from Group 3 to increases in pricing. If insurance is muting the effect of price, nearly all of National's objectives for the targeting regime are in jeopardy.

The fact that insurance is so prevalent in the survey population also makes it even more difficult to sort out the specific effects of an increase in price. More research on the impact on price from a larger number of uninsured Group 3 families would be enormously helpful in establishing the impact of moral hazard on the goals of reform.

Implications for future research

This nonrandom study performed well as an exploratory study: it produced more questions than it answered. The research showed there is much scope for additional research into the effects of the targeting regime on the health-seeking behaviours of Group 3. Some of the questions arising from this study are listed below.

Who is Group 3?

Methodologically, possibly the single most important topic for future research should be the characteristics of Group 3. Without a further defining of factors such as income, insurance coverage and family size and composition, any study looking to extend its results to Group 3 at large is disadvantaged. Statistical analysis of such characteristics done through a random survey methodology would be immensely useful in setting up the population which is really the target of such research.

The effect of insurance on demand response

As already established, the most influential factor in demand response appeared to be whether respondents and their families enjoyed the benefit of insurance coverage. This single aspect could provide the site for several studies in the different ways people respond to part-charge increases. Further definition of the types, sources and subsidisation of coverage is necessary. Specific areas for research would include the influence of insurance on the perception of change, the potency of the muting effect of insurance on demand response, its affect on seeking nonsubsidised alternatives, and the impact of a patient's insurance status on doctors' decisions regarding pharmaceuticals and other levels of care.

Another fruitful area of research would be why people with health insurance report higher health status. Is it because of the market dynamics of insurance attracting a clientele with specific characteristics (such as educational attainment, employment, and younger age) or does having health insurance lead to greater access that leads to higher health status? The answer to this particular question would have implications for benign moral hazard for New Zealand's third-party payment system as well.

The effect of increased part-charges on doctor-initiated care

In order to declare the administrative cost of cost sharing to be worth while, the effects of increased cost sharing on such doctor-initiated care as prescriptions needs to be separated from the effect of reduced utilisation of primary care. Research such as the HIE which separates contact into 'episodes of care' would be better able to separate the effect of increases on contact initiated by the patient and those initiated by the doctor. Such an approach, using the treatment protocols suggested by the Core Services Committee, might also be better able to examine the issue of whether increased part-charges discriminate between 'appropriate/inappropriate' care and 'effective/ineffective' treatment.

For example, doctors are definitely the gatekeepers for prescription utilisation. Shortly after increased part-charges prescriptions were imposed, Ross (1992, 1) reported an increase in the volume of medicines sold. This was due to doctors' prescribing practices in assisting patients to reach maximum limits as quickly as possible and by doubling up on prescriptions so that they would be included in one part-charge. If the demand effect of increased charges on prescriptions can be separated from the demand effect of reduced primary care utilisation, it may be possible to more clearly gauge the success of the charges on possible reductions in expenditures on prescriptions. The differences between prescription behaviours across health status should also be investigated.

The report of anxiety over the anticipated cost of prescriptions compounding the reduced utilisation at the primary care level is a concern. A more qualitative study which has the advantage of being able to report the context of these decisions may be able to provide us more information on the seriousness of the demand diversion from primary care.

Continual monitoring of health status

There remains a need to continually monitor the overall effects of reduced utilisation on health status. The health status of Group 3 needs to be studied separately from those individuals receiving substantial subsidies. Qualitative studies including focus groups and personal interviews may be of help in determining where the specific threats to the health status of Group 3 may be under National's targeting regime.

The research reported in this study was unable to present a clear picture of the effect of increased part-charges on the health status of Group 3 children. With the weight of other empirical evidence, it would be advisable to specifically monitor the health status of Group 3 children. The research did point to a greater reduction in utilisation by women who also reported overall lower health status. Careful monitoring the health status of Group 3 women would also be warranted.

The effect of health status on health-seeking behaviours

Health status was a factor in the health-seeking patterns of the survey population. Those with lower health status were more likely to engage in alternatives to conventional medicine such as self-treating with over-the-counter medications, use of complementary therapies and hoarding prescriptions. Whether this comes about because of greater opportunity is unknown but the fact that those who report lowered health status also report less overall dependence on conventional medicine has implications for continuing health status and for the impact of increased part-charges on this group.

The impact of lowered utilisation on the worker

Even though a large decrease in health status overall was not reported, it is of concern that so many workers reported going to work unwell. Illness in the workplace has implications for productivity. Although it might be difficult to assess the influence of reduced utilisation on such behaviour, research attempting to look into this area is recommended.

Incentives for healthy lifestyles

The research does not support the idea that increasing user charges provides enough incentive for individuals to seek out healthier habits. Only 30 % reported any change in their healthy behaviours and of that number only 11% said the charges made any difference in their decisions. Although it did seem to have some effect, any effect must be looked upon as a byproduct rather than an effect. If healthier lifestyles are a goal of the health policy, it may be that other measures, such as public education, would be more useful.

The effect of nonmonetary costs on utilisation patterns

This study only addressed monetary costs of treatment. As discussed in chapter 2, other non-monetary costs influence people's choices to seek medical care. The effect of non-monetary costs on demand should also be studied with the purpose of determining if the costs are significant enough to keep certain subgroups from seeking care when needed. If costs such as time to access care are substantial and are inappropriately diverting demand, it may be appropriate to subsidise treatment for these cases regardless of general entitlements established by family income.

Effect of perception of change on policy cooperation

The respondents to this study were largely negative about the changes in part-charges. Over 50% of them disagreed that the individual is primarily responsible for his or her own health. At the same time, approximately the same percentage believed that increasing user charges would decrease use of medical services. This may be an indication that the policy of targeted user pays, while unpopular, is believed to work. People's beliefs affect how they react to policy change. For a policy to be ultimately effective, it is helpful to have the support of the people it affects. Qualitative study of static or changing perceptions regarding the targeting system may be of help in assisting the government not only in refining policy but in presenting any changes to the public. Policy which has the support of the public is more likely to succeed.

Monitoring the 'threshold'

Since various income levels did show different utilisation patterns, there is support for Ashton's claim that the thresholds may be set too low. The user charge thresholds have been adjusted once already. Constant monitoring of the thresholds may be necessary to ensure access. For the targeting regime to be truly effective and equitable, means-testing in a way that does not jeopardise access is necessary.

Concluding thoughts

The strongest impression I came away with from doing this study is the extreme complexity not only of human health but human nature as well. Through the research process I often despaired of ever obtaining clear information which could be of use to policy-makers. It was only when I pictured health and health policy as a web that I was able to begin sifting

through the various information the respondents and their families had provided. It was not until I realised that this research is not about separation but connections that I began to understand what the survey participants were telling me. How each of us responds to changes in the way we access our health care depends on our own history and the context of our actions.

In this sense, it seems virtually impossible to design a policy which is flexible enough to address the individuality of need. However, the individuality of need is an insufficient reason to abandon social welfare policy to the market. I believe it is important to remember that the market has no feelings, no inclinations of rightness or wrongness. We, as a people, are the only ones capable of making those decisions. The market may provide some help in guiding or implementing our decisions but in the market for health services its failures are so great that it should be looked upon only as a 'tool' and not as a venue for determining how we fulfil the health needs of our population.

Appendix 1

Studies surveyed in chapter 3

Studies surveyed in Chapter 3

Principal author(s)	date of study	entity involved	
<i>Health Insurance Experiment (HIE)</i>			
Newhouse et al	1981	RAND HIE	use of services, differences in ambulatory/hospital utilisation
Brook, et al	1983	RAND HIE	effect of free care
Lohr, et al	1986	RAND HIE	probability of episodes; effective/ineffective treatment; selected drugs and procedures
Manning et al	1987	RAND HIE	effect of reduced ambulatory care on secondary care expenditure
Foxman et al	1987	RAND HIE	nature and use of antibiotics
Keeler and Rolph	1988	RAND HIE	episodes of treatment
<i>Other USA</i>			
Scitovsky and Snyder	1972	USA private plan	introduction of 25% copayment on comprehensive prepaid plan
Helms et al	1978	California Medicaid	introduction of copayments for previously free services to Medicaid beneficiaries
Hadley	1982	USA statistics	relationship between mortality rates and medical care use
<i>Canadian</i>			
Enterline et al.	1973	Quebec CAN	changes to utilisation after introduction of compulsory insurance
Beck	1974	Saskatchewan CAN	effect of co-payments on use of physician services by poor families
<i>British</i>			
Birch	1986	British NHS	effect of increases to user pays in NHS; effect on policy objectives
Birch	1989	British NHS	effect of changes for dental care on elderly
<i>New Zealand</i>			
FORESEARCH	1992	New Zealand	survey of physicians and pharmacists post-reform
O'Dea, et al	1993	New Zealand	estimating a demand model for user pays
Statistics New Zealand	1993	New Zealand	Household Health Survey results
Davis et al.	1994	New Zealand	comparison of GP-patient encounter data collected before and after reforms

Appendix 2

Questionnaire

An Investigation of the Consequences of New Zealand's Health Reforms

This questionnaire includes questions for the main income earner and for the person who make decisions regarding your family's health care. To complete the questionnaire, it may be necessary for you to ask another family member for help.

The information requested below is for the period since 1 February 1992. This was the date that direct charges for family doctors, prescription medicines and hospital outpatient care were first changed and the use of Community Services and High Use Cards was initiated. Additional changes were made in July 1993 merging Group 2 with Group 1. If you were in Group 2 prior to July 1993, please answer for the time period February 1992 to June 1993.

Please tick (✓) in the box provided against your response unless otherwise indicated. If you need more space than provided, please attach an additional sheet.

Household information

1. Please write in the space provided the number of persons dependent on your total household income (if there are no persons in a given category, write 0):

	adult wage-earning females	_____
	adult wage-earning males	_____
	children under 5 years of age	_____
	children 5 and over attending school	_____
	full-time tertiary students	_____
	other adults dependent on household income	_____
	total number of people	_____

2. Please mark the scale with an 'X' indicating your *household* income before taxes for tax year 1992-1993.

3. Did your family hold a Community Services Card in either 1992 or 1993?

No ☐
 Yes ☐

If yes, which group were you in?

Group 1 ☐
 Group 2 ☐

4. Are there any others living in your household who have

a Community Services Card ☐
 a High Use Card ☐

5. Generally, how would you describe the health of your family?

Effect of changes in direct costs on working adults

The following questions should be answered by the main income earner in your household.

6. Are you

female ☐
 male ☐

7. Do you consider yourself to be

always well ☐
 generally healthy, with occasional minor ailments ☐
 generally unwell ☐
 living with chronic illness/pain ☐
 living with a disability ☐

8.
 - a. Did you have medical insurance during the period 1 February 1992 to 1 July 1993?

No ☐
 Yes ☐
 - b. If yes, how long had you had such coverage?

_____yrs _____mos
 - c. If yes, how was your insurance purchased?

Privately ☐
 Through my employer ☐
 Through a professional association or group ☐
 Other (please state) _____ ☐
 - d. If your family was also covered by medical insurance during that period please tick box.

☐

9. Have you made any changes in your coverage because of the change in direct charges for primary care and hospitalisation?

Increased existing insurance ☐
 Decreased existing insurance ☐
 No change ☐
 Purchased insurance ☐
 No insurance coverage ☐

10. Does your employer offer any health services (such as occupational health nurse)?
If yes, please describe. No []
Yes []

11. Since 1 February 1992, have you ever decided not to visit your doctor solely due to cost?
Frequently [] Sometimes [] Rarely [] Never []

12. How many workdays were you absent in 1992? _____ days

13. How often do you see your doctor when you are ill and have to miss work?
Frequently [] Sometimes [] Rarely [] Never []

14. Do you believe you have gone to work unwell more often since the increase in direct charges?
No []
Yes []
Doesn't apply []

15. There are many ways people treat themselves instead of going to the doctor. Please note whether you have taken any of the actions described below.

a. In the past year, have you stayed home from work to get over your illness instead of visiting your doctor?
Frequently [] Sometimes [] Rarely [] Never []

b. In the past year, have you attempted to treat yourself with over-the-counter medications because of the expense of going to your doctor?
Frequently [] Sometimes [] Rarely [] Never []

c. In the past year, have you sought the advice of your chemist instead of going to your doctor?
Frequently [] Sometimes [] Rarely [] Never []

d. In the past year, have you sought complementary therapies (massage, chiropractic, osteopathy, nurse practitioner, physiotherapy, etc) instead of going to your doctor?
Frequently [] Sometimes [] Rarely [] Never []

e. Do you believe your use of alternatives has increased since the changes?
If not, why have you used these alternatives?
No []
Yes []
No change []

16. a. In the past year, have you instituted any 'healthy lifestyles' changes to decrease your risk of becoming ill? (Tick all that are appropriate.)
quit smoking []
began regular exercise []
reduced alcohol consumption []
changed diet []
reduced stress []
Other (please state) _____ []

b. If you ticked any of the above, how important were the increases in direct charges to your decision in making these changes?
Main reason []
Weighed heavily []
Important, but less than other factors []
Not very important []
Not important at all []

17. Please mark with an 'X' on the scale below *your* wages or salary before taxes for the tax year 1992-1993.

Effect of changes in doctor's charges on seeking medical help for your family

18. Have you ever used Hospital Accident and Emergency services regularly for minor health problems?
No []
Yes []

19. Has your use of Hospital Accident and Emergency services changed since February 1992?
Increased []
Decreased []
No change []

20. In total, how many visits did members of your family make to your family doctor in calendar year 1992? Less than 4 []
4 to 6 []
7 to 9 []
10 or more []
21. a. Are you paying more or less per visit for your family to see your doctor than before February 1992? Paying more []
Paying less []
No change []
Don't know []
- b. Do you believe this is a result of the changes in direct charges? No []
Yes []
Don't know []
22. a. Do you find yourself more or less willing to seek your doctor's help for your family since the change in direct charges? More willing []
Less willing []
No change []
23. Since 1 February 1992 did you delay or forgo taking any family member to the doctor due to the expense? No []
Yes []
- If yes, did the delay cause more serious problems? No []
Please describe. Yes []
24. How has your relationship with your doctor changed since direct charges were changed in 1992? Please describe any changes. It is better []
It is worse []
No change []

Effect of changes in prescription charges

25. The last time your doctor wrote you or a family member a new prescription, did you immediately fill the entire prescription? No []
If yes, what was the total cost of the prescription(s)? Yes []
\$ _____
26. a. Have you ever refused a prescription or chosen to leave part or all of a prescription unfilled due to its cost? Frequently [] Sometimes [] Rarely [] Never []
- b. Are you finding yourself doing that more or less often since the charges were increased? More often [] Less often [] No change [] Doesn't apply []
27. a. Have you ever kept some of a prescribed medication for future needs? Frequently [] Sometimes [] Rarely [] Never []
- b. Are you finding yourself doing that more or less often since the charges were increased? More often [] Less often [] No change [] Doesn't apply []
28. a. Do you ever ask about generic substitutes? Frequently [] Sometimes [] Rarely [] Never []
- b. Are you finding yourself doing that more or less often since the charges were increased? More often [] Less often [] No change [] Doesn't apply []
29. How do you feel about the changes in prescription charges?

Method of payment for health care

30. How do you usually pay for doctor's visits and prescriptions? Payment at time of service []
Payment over time []
Other _____ []

31. Apart from insurance, has your method of payment been affected by the change in direct charges? No []
If yes, how did it change? Yes []

Changes in your family's health status

32. Would you rate your family's health as better or worse since the changes in direct charges for health care in February 1992? Better []
Worse []
No change []
33. Of all the changes in direct charges, which do you feel has had the greatest impact on your family's general health status? Doctor charges []
Pharmaceutical charges []
Hospital outpatient services []
Public hospital stays []
Changes in family's health unrelated to changes []

Perception of changes in direct charges for health care

34. How did you feel when the health reforms were announced?
35. Have your views changed since they have been introduced? No []
If yes, how? Yes []
36. Please describe any advantages or benefits you see to the changes in direct charges for health care services.
37. Do you agree or disagree with this statement: Health should be the primary responsibility of the individual rather than the State. Strongly Agree [] Agree [] Don't know [] Disagree [] Strongly Disagree []
Why?
38. Do you agree or disagree with this statement: If people are made to pay for health care, they will be more careful about unnecessary use of health care services. Strongly Agree [] Agree [] Don't know [] Disagree [] Strongly Disagree []
Why?
39. Supporters of user pays often give as a reason for the reforms the increased costs of medical care. If direct charges for doctor's visits and for pharmaceuticals were returned to their pre-February 1992 levels, would you be willing to pay more taxes? No []
Yes []
Don't know []

Thank you for your time.

Please read carefully!

Do you have a particular experience with the changes in health charges that you would like to relate? Please feel free to write it up and send it in with this questionnaire. Or, if you prefer to tell your story in person, please include your name and a contact address and phone below. I will be contacting several families at a later date in order to set up interview times.

Name	Contact Address	Contact phone
------	-----------------	---------------

Please feel free to give me any feedback you might have on any part of this study by enclosing a separate sheet. I value your opinion on the nature, structure and necessity of this research.

Appendix 3

Introductory letter to employers and
summary of project

«DATA employer list»

20 August 1993

«name»
«address1»
«address2»
«address3»

re: Effects of the health reforms

Dear «salutation»:

You have been suggested by other business or community leaders as an involved member of the community who may be open to assisting me in my research on the health reforms. I am currently working on a Masters in Social Policy at Massey University. I am particularly interested in the effect on salary and wage earners and their families of the changes in direct charges for health care services and pharmaceuticals.

I would appreciate your help in allowing me to distribute a 4-page questionnaire to your organisation's employees through whatever means is most convenient. These questionnaires are self-administered and are intended to be completed at home. A summary of my research is on the reverse side of this letter. A copy of the questionnaire to be pilot tested next week is attached for your review. Following a pilot test there may be minor adjustments to the questionnaire. If you are willing to assist me in this research, I would like to begin distributing questionnaires starting 1 September.

I appreciate and wish to minimise the possible inconvenience the distribution of these questionnaires might cause. I would be happy to organise distribution by any system most suitable for your particular circumstances. Those employees completing the questionnaires will be able to return them by free post.

I will telephone you in a few days to discuss distributing my questionnaire. In the meantime, if you have any questions or feedback on this study, please do not hesitate to contact me [REDACTED] I can also be contacted during the next week (23.8 - 27.8) from 9:30 through 11:00 am at 356-9099 x5433. Thank you for your cooperation.

Sincerely,

Beth Haas
Masters Student

P.T.O.

An Investigation of the Consequences of New Zealand's Health Reforms

Studies in Australia, the United States and elsewhere have indicated that there is a change in the use of health services as the price of those services to the patient increases. Anecdotal evidence here in New Zealand would indicate that increased charges may have created financial barriers that have changed pharmaceutical use and utilisation of general practitioners. Whether the changes have actually resulted in decreased health or in changes in the way New Zealanders seek health services has not yet been resolved. The objectives of my research are three-fold: 1) to confirm or disprove the anecdotal evidence of increased charges creating financial barriers to access to health services; 2) to find out how the reforms might have changed the way wage and salary earners seek health services for themselves and their families; and finally, 3) to determine whether the participants of the study feel the increase in charges have actually resulted in decreased health status.

Appendix 4

List of employers assisting,
by type of industry

**List of employers assisting,
by type of industry**

Manufacturing

- industrial chemicals
- primary food processor
- clothing
- steel fabrication

Retail

- building supplies
- plumbing supplies
- department store
- clothing
- auto parts and service

Distribution

- automobiles
- office supplies

Building and construction

- home builder
- heavy construction

Other

- utility supplier
- educational institution

Appendix 5

Introductory letter to potential respondents

(Massey letterhead)

Date

Dear income earner:

My name is Beth Haas and I am a Master's student in Social Policy at Massey University. Attached is a questionnaire which asks about the effect of the recent changes in health charges. This questionnaire is part of my Master's research study.

I have obtained permission from your employer to allow me to distribute this questionnaire in the hopes you will help me by answering the enclosed questionnaire. The questionnaire takes approximately 30 minutes to complete. **You are under no obligation to answer any of these questions.** However if you choose to do so, a freepost envelope has been included for its return. If you would like to respond but feel more comfortable responding in person, please feel free to call me [REDACTED]

Please read the box on the back page carefully. Unless you choose to provide your name and address, your questionnaire will be anonymous. If you take part in this stage of the study, you have the right to:

- * refuse to answer any particular question, and to withdraw from the study at any time
- * ask any further questions about the study that occur to you during your participation
- * provide information on the understanding that it is completely confidential to the researcher.

If you have any questions or concerns regarding this study, I can be contacted through my department at the following address:

Beth Haas
Department of Social Work and Social Policy
Massey University
Palmerston North

If you cannot reach me or you wish to talk with my supervisors, Stuart Birks and Nicola North, they can be reached as follows:

Stuart Birks	Nicola North
Department of Economics	Department of Management Systems
Massey University	Massey University
Palmerston North	Palmerston North

My research will be published in its entirety as a Master's thesis and will be available through Massey University. In addition, I intend to submit articles on the results to both public and professional media. Finally, I will make the results available to the Minister of Health, the Regional Health Authorities and other interested parties.

Thank you for your assistance with this project. If you wish for a summary of the results, please enclose a note with your address in the freepost envelope along with your completed questionnaire.

Regards,

M Beth Haas

Appendix 6

Typical answers to question 34

Typical responses to Question 34

Responses	N
Negative responses	
angry, annoyed, very angry outraged, 'shit', irate	13
concerned for others	8
not pleased, unhappy, sad	5
indirect tax increase	4
concerned for own family	4
sceptical	4
anxious, worried, uncertain, nervous	3
bureaucratic excuse to interfere	3
resigned	2
amazed, shocked	2
confused	2
let down, disappointed	2
mainly concerned with hospital charges	2
concerned/annoyed about paying twice (taxes/health)	2
bitter - taxes should meet costs	2
government out of touch with people	2
coverup - trying to make it seem beneficial	1
exploited, conned	1
government 'cop out'	1
more revenue for government	1
sick	1
concerned about certain charges	1
don't like higher script charges	1
a bit steep	1
rather harsh	1
presented as fait accompli	1
split NZ society	1
ultimately damaging to society's health	1
community should help certain groups	1
medical insurance necessary	1
when does it stop	1
glad had medical insurance-concerned over costs	1
upped insurance	1
income thresholds too low	1
concerned for future of public health system	1
cost-cutting exercise; letting people down	1
typical of 'user pays' mentality	1
dubious about effectiveness	1
standards would drop	1
no real reform	1
too fast	1
too many cuts	1
too much money spent on advertising	1

Responses	N
Neutral responses	
not too bothered	3
indifferent	3
not worried; not concerned	3
unaffected	2
confused over beneficial outcome but positive	1
can afford it - lucky	1
not interested	1
Positive responses	
ok, not bad	3
about time	1
very pleased	1
agreed wholeheartedly	1

Appendix 7

Typical responses to Question 36

Typical responses to Question 36

Response	N
Negative response	
no advantages	29
no advantages for individual but lots for government	4
no advantages for consumer/public	2
confusion	2
health services should be free to all	2
medical insurance now necessity	1
only disadvantages	1
'commercial approach' unsatisfactory	1
no advantages - we pay enough in taxes	1
pockets of administrators benefit - staff worked to exhaust	1
cost of administration too great	1
costs of administration will soak up savings	1
Advantage or benefit	
we become responsible for our own health because of cost	3
government making money	2
greater efficiency	2
more accountability for health bodies/professionals	2
better for tax payer	1
decrease use of medications for minor ailments	1
people will not waste drugs	1
quicker to get in to see doctor	1
will stop unnecessary visits	1
people will try to live healthier lives	1
less burden on government-reduced taxation	1
some people will be paying less	1
better prioritising of spending	1
hopefully less spent on overheads and more on nurses, etc.	1
hospitals doing more day surgery	1
less waste	1
Neutral response	
not sure	3
agree with user pays but not so much for health	1
weed out overusers but middle-income paying for it	1
people will wait until problem is serious	1
no problem with user pays but need to get value for money	1
good for insurers	1
no advantages for respondents	1
can't think of any	1

Appendix 8

Group 3 eligibility:
page 2 of "The Community Services Card",
provided by Income Support Service

What is the Community Services Card?

From 1 February 1992 a new range of charges for health services came into operation. They aim to target subsidy assistance towards low and middle income groups. Those in the high income group pay a bigger share of the costs of health services.

The three groups of income levels have different levels of health charges:

- *Group 1 – those defined as low income families;*
- *Group 2 – those defined as middle income families; and*
- *Group 3 – those defined as high income families.*

People in Groups 1 and 2 qualify for concessionary rates and the Community Services Card is the means for people to access their entitlement. They present this card when they visit their doctor (GP), pharmacist or hospital to obtain the concessionary rates.

Group 1 cards give a greater amount of health care subsidy than a Group 2 card.

People in Group 3 do not qualify for a card.

Group 1 cards are given to:

- *Low income earners without children*
- *People with dependent children who get full family support*
- *People who receive a War Veteran's Pension*
- *Full time students with or without children*
- *Recipients of income tested social security benefits*
- *National Superannuitants*

Group 2 cards are given to:

- *People with dependant children who get partial family support*

Appendix 9

Summary of tests for correlation
and difference between subsamples

Summary of tests for correlation and difference between subsamples

Test #	Variables	Type of test	N	p<	Comments
1	Household income and insurance cover	Kruskal-Wallis analysis of variance	124	.006	$H=20.02$; $df=7$; small sample (<\$15,000)
2	Per capita income and insurance cover	Chi-square	124	.25	$\chi^2=27.141$; $df=23$; too many small samples for KW
3	Number children and insurance cover	Chi-square	129	<.25	$\chi^2=1.31$; $df=3$
4	Insurance cover and wage-earner health status	Chi-square	126	.05	$\chi^2=8.626$; $df=4$
5	Insurance cover and family health status	Chi-square	120	<.25	$\chi^2=8.584$; $df=9$
6	Insurance cover and wage-earner doctor visits	Chi-square	126	.10	$\chi^2=7.541$; $df=3$
7	Insurance cover and family foregone visits	Chi-square	124	<.25	$\chi^2=1.2$; $df=1$
8	Insurance cover and number of visits	Chi-square	127	.10	$\chi^2=6.827$; $df=3$
9	Insurance cover and workloss	Chi-square	90	<.25	$\chi^2=16.441$; $df=14$
10	Insurance cover and reporting to work unwell	Chi-square	128	.01	$\chi^2=9.579$; $df=2$
11	Insurance cover and staying at home	Chi-square	126	<.25	$\chi^2=3.185$; $df=3$
12	Insurance cover and over-the-counter meds	Chi-square	127	<.25	$\chi^2=.307$; $df=3$
13	Insurance cover and use of complementary therapies	Chi-square	127	<.25	$\chi^2=.315$; $df=3$
14	Insurance cover and advice of chemists	Chi-square	127	.10	$\chi^2=7.391$; $df=3$
15	Insurance cover and pharmaceutical compliance	Chi-square	127	.05	$\chi^2=4.631$; $df=1$
16	Insurance cover and refusing a script	Chi-square	128	<.25	$\chi^2=2.612$; $df=3$
17	Insurance cover and hoarding medications	Chi-square	129	<.25	$\chi^2=1.978$; $df=3$
18	Insurance cover and asking for generics	Chi-square	128	<.25	$\chi^2=2.218$; $df=3$
19	Insurance cover and willingness to pay taxes	Chi-square	123	.10	$\chi^2=5.471$; $df=2$
20	Wages and health status	Kruskal-Wallis analysis of variance	118	.21	$H=5.83$; $df=4$; 3 small samples
21	Per capita income and family health status	Kruskal-Wallis analysis of variance	115	.191	$H=28.79$; $df=23$; several small samples
22	Per capita income and wage-earner health status	Kruskal-Wallis analysis of variance	122	.143	$H=30.37$; $df=23$; several small samples
23	Wages and wage-earner's foregone doctor's visits	Kruskal-Wallis analysis of variance	119	.072	$H=13.08$; $df=7$; small sample (<\$15,000)
24	Per capita income and wage-earner foregone visits	Kruskal-Wallis analysis of variance	122	.017	$H=38.58$; $df=22$; several small samples
25	Household income and wage-earner foregone visits	Kruskal-Wallis analysis of variance	122	.002	$H=22.24$; $df=7$; small sample (<\$15,000)
26	Per capita income and visits occasioned by work-loss	Kruskal-Wallis analysis of variance	122	.078	$H=33.37$; $df=23$; several small samples
27	Household income and number of visits	Chi-square	122	.005	$\chi^2=43.271$; $df=21$
28	Per capita income and number of visits	Chi-square	122	.01	$\chi^2=103.185$; $df=69$
29	Number of children and number of doctor's visits	Chi-square	127	.10	$\chi^2=14.928$; $df=9$

Test #	Variables	Type of test	N	p<	Comments
30	Household income and willingness to visit doctor	Kruskal-Wallis analysis of variance	121	.068	$H=13.24$; $df=7$; small sample (<\$15,000)
31	Household income and staying at home	Kruskal-Wallis analysis of variance			
32	Household income and over-the-counter meds	Kruskal-Wallis analysis of variance			
33	Household income and use of complementary therapies	Kruskal-Wallis analysis of variance			
34	Household income and advice of chemists	Kruskal-Wallis analysis of variance			
35	Per capita income and staying at home	Kruskal-Wallis analysis of variance	121	.567	$H=21.22$; $df=23$; several small samples
36	Per capita income and over-the-counter meds	Kruskal-Wallis analysis of variance	122	.191	$H=28.79$; $df=23$; several small samples
37	Per capita income and use of complementary therapies	Kruskal-Wallis analysis of variance			$H=$; $df=$; several small samples
38	Per capita income and advice of chemists	Kruskal-Wallis analysis of variance	122	.134	$H=30.69$; $df=23$; several small samples
39	Wages and prescription compliance	Chi-square	119	.10	$\chi^2=12.354$; $df=7$
40	Household income and prescription compliance	Chi-square	122		$\chi^2=31.138$; $df=16$
41	Per capita income and prescription compliance	Chi-square	122	<.25	$\chi^2=21.675$; $df=22$
42	Per capita income and who responsible for health	Kruskal-Wallis analysis of variance	119	.285	$H=25.32$; $df=22$; several small samples
43	Per capita income and user charges reduce use	Kruskal-Wallis analysis of variance	119	.756	$H=17.12$; $df=22$; several small samples
44	Per capita income and willingness to pay taxes	Chi-square	118	.10	$\chi^2=54.217$; $df=44$
45	Household income and who responsible for health	Kruskal-Wallis analysis of variance	119	.947	$H=2.21$; $df=7$; small sample (<\$15,000)
46	Household income and user charges reduce use	Kruskal-Wallis analysis of variance	119	.718	$H=4.52$; $df=7$; small sample (<\$15,000)
47	Household income and willingness to pay taxes	Chi-square	118	<.25	$\chi^2=18.531$; $df=14$
48	Health status and changes to insurance	Chi-square	116	.01	$\chi^2=31.138$; $df=16$
49	Health status and number of doctor's visits	Kruskal-Wallis analysis of variance	124	.036	$H=10.33$; $df=4$; one or more small samples
50	Health status and wage-earner visits due to workloss	Kruskal-Wallis analysis of variance	122	.099	$H=31.138$; $df=16$; one or more small samples
51	Health status and staying at home	Kruskal-Wallis analysis of variance	123	.016	$H=12.26$; $df=4$; one or more small samples
52	Health status and over-the-counter medications	Kruskal-Wallis analysis of variance	124	.070	$H=8.7$; $df=4$; one or more small samples
53	Health status and use of alternative therapies	Kruskal-Wallis analysis of variance	124	.070	$H=9.69$; $df=4$; one or more small samples
54	Health status and pharmaceutical compliance	Kruskal-Wallis analysis of variance	122	.099	$H=31.138$; $df=16$; one or more small samples
55	Health status and refusing a script	Kruskal-Wallis analysis of variance	122	.099	$H=31.138$; $df=16$; one or more small samples
56	Health status and asking for generics	Kruskal-Wallis analysis of variance	122	.099	$H=31.138$; $df=16$; one or more small samples
57	Health status and hoarding medications	Kruskal-Wallis analysis of variance	126	.018	$H=11.94$; $df=4$; one or more small samples
58	Gender and health status	Chi-square	126	.05	$\chi^2=10.288$; $df=4$

<u>Test #</u>	<u>Variables</u>	<u>Type of test</u>	<u>N</u>	<u>p<</u>	<u>Comments</u>
59	Gender and wages	Chi-square	121	.001	$\chi^2=28.253$; $df=7$
60	Gender and foregone doctor's visits	Chi-square	126	.05	$\chi^2=8.598$; $df=3$
61	Gender and over-the-counter medications	Chi-square	127	.05	$\chi^2=8.744$; $df=3$
62	Gender and advice of chemist	Chi-square	127	.025	$\chi^2=9.059$; $df=3$
63	Gender and weight of charges on behaviour changes	Chi-square	96	.25	$\chi^2=5.872$; $df=4$
64	Household income and health status	Kruskal-Wallis analysis of variance	115	.649	$H=5.09$; $df=7$; small sample (<\$15,000)

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