THE FREE CHILD HEALTH CARE SCHEME:

Implications for New Zealand General Practice

Susan M. Dovey, MPH

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Abstract

Background

The Free Child Health Care Scheme was introduced on July 1, 1997. It provided increased government subsidies for general practice consultations and fully subsidised doctor-prescribed medicines for children aged less than six years old.

Thesis

The central thesis of this work is that health policy affecting general practice cannot be adequately understood by analysis from a single academic approach but requires transdisciplinary research, integrating historical, economic, epidemiologic, and policy perspectives. This thesis is examined by evaluating the Free Child Health Care Scheme and analysing its implications for New Zealand general practice.

Objectives

1. To assess the need for health policy specifically directed at young children.
2. To review the significance of fee-paying to general practice.
3. To understand the implications of the Free Child Health Care Scheme in an historical context.
4. To evaluate the Free Child Health Care Scheme using:
    a. A researcher-initiated plan funded by the Health Research Council (HRC).
    b. A project plan commissioned by the Transitional Health Authority (THA).
    c. A household survey commissioned by the THA.
5. To investigate the symbolic and practical implications of the Free Child Health Care Scheme for New Zealand general practice.

Methods

A review of literature documenting the development of medicine, general practice, and general practice in New Zealand provided material to assess the symbolic significance of fee-paying in general practice. A further literature review established existing knowledge of the effect of changes in copayment on utilisation of health services.

The researcher-initiated and THA-commissioned evaluations used a controlled before-and-after framework to examine utilisation during one-year periods before and after the start of the Free Child Health Care Scheme. The researcher-initiated evaluation used only the Dunedin RNZCGP Research Unit databases for the same purpose. All available relevant routine data sets were used for the THA evaluation.

The THA-commissioned survey provided a consumer's view of the policy. Standard survey analysis techniques were used. Descriptive statistics were first computed. Bi-variable analyses tested associations between key variables and logistic regression analyses identified factors significantly associated with important outcomes.

Results

Patient payments to doctors have been symbolically important in establishing the primacy of doctors' accountability to patients. The Social Security Act 1938, the Accident Compensation Corporation Act 1974, and the Free Child Health Care Scheme 1997 encapsulate the different philosophies of general practitioners and politicians regarding accountability for health services and health outcomes.

The HRC and THA evaluations identified no significant impact of the Free Child Health Care Scheme on the workload of general practitioners. The household survey showed that most carers of children under six years old received the Scheme favourably. To a disproportionate degree, the Scheme failed to reach North Island families and children with private health insurance.

Conclusion

Regulations affecting patient fees are of central interest to New Zealand general practitioners for reasons related to the philosophy of their profession. The Free Child Health Care Scheme had little impact on the workload of general practitioners but held many implications for the core general practice philosophy of professional independence. Evaluations of the Scheme commissioned by the THA had little utility for the organisation but were used by the Health Funding Authority and probably influenced a political decision to retain the Scheme. The household survey suggested that the Scheme may systematically exclude some of the country's most disadvantaged children.

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List of Abbreviations

Accident Compensation Corporation	ACC
Accident Rehabilitation and Compensation Insurance Commission	ARCIC
Auckland Birthweight Collaborative	ABC
British Medical Association	BMA
British National Formulary	BNF
Central nervous system	CNS
Computer Assisted Telephone Interviewing	CATI
Controlled before-and-after (study)	CBA
Crown Health Enterprise	CHE
Community Services Card	CSC
Diagnosis Related Group	DRG
European Union	EU
First Past the Post	FPP
Full Time Equivalent	FTE
General Medical Services	GMS
General Practitioners Association	GPA
Goods and Services Tax	GST
Gross Domestic Product	GDP
Group Health Cooperative (of Puget Sound)	GHC
Health Benefits Limited	HBL
Health Funding Authority	HFA
Health Research Council of New Zealand	HRC
High Use Health Card	HUHC
Household Economic Survey	HES
Household Health Survey	HHS
Independent Practitioner Association	IPA
International Classification of Primary Care	ICPC
Interrupted Time Series (study)	ITS
Licentiate of the Society of Apothecaries	LSA
Member of Parliament	MP
Member of the Royal College of Surgeons	MRCS
Mixed Member Proportional	MMP

National Health System (of the United Kingdom)	NHS
New Zealand Health Information Service	NZHIS
Odds Ratio	OR
Organisation for Economic Co-operation and Development	OECD
Organisation of Petroleum Exporting Countries	OPEC
Randomised controlled trial	RCT
Regional Health Authority	RHA
Royal New Zealand College of General Practitioners	RNZCGP
Small for gestational age	SGA
Statistical Package for the Social Sciences, Version Ten	SPSS-X
Sudden Infant Death Syndrome	SIDS
Transitional Health Authority	THA
United Kingdom	UK
United States of America	US
World Health Organisation	WHO

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Many other researchers were involved in various parts of the evaluation and these are named in relevant parts of the thesis. I wish to especially acknowledge Dean Eidler for initially proposing a project to evaluate the Free Child Health Care Scheme, Darryl Mackenzie for advising on and undertaking many of the statistical analyses, and Leeann Morton for her indefatigable support as my research assistant on this project.

I gratefully acknowledge the contribution of my colleagues in the Department of General Practice, Dunedin School of Medicine, and the Robert Graham Center of the American Academy of Family Physicians in Washington, D.C. I am privileged to have enjoyed the practical and moral support of such a talented group of people while undertaking this work.

Finally, I thank my family and friends for their great tolerance of my antisocial and otherwise unproductive lifestyle while this research was undertaken and this thesis written. Without the help of all these people, this work would never have been completed.

Statement of personal contribution

The ideas presented in this thesis developed during the period I was involved in attracting funding to evaluate the Free Child Health Care Scheme and while conducting the projects. I was principal investigator heading the research teams for two of the projects reported in this thesis and was therefore the project planner, co-ordinator, funding negotiator, and lead report-writer. I was involved in planning the household survey conducted by ACNeilson Ltd for the Transitional Health Authority. I obtained permission from the Health Funding Authority to retrieve and analyse these data. I conducted the entire household survey analysis and most analyses of the RNZCGP Research Unit data.

The evaluation reported in Chapter Six was the work of a team of researchers from throughout New Zealand who were brought together by the author to produce an evaluation report for the Health Funding Authority. Professor Ed Mitchell and Dr John White from the Auckland Medical School agreed to use the data they had already collected for the Auckland Birthweight Study to assess the impact of the Free Child Health Care Scheme on the group of infants in this study. They also took the lead in obtaining emergency department data and analysing this for the evaluation. Mr Des O'Dea managed the interactions with Statistics New Zealand to obtain data tabulations from the Household Economic Survey and the Household Health Survey. He, Dr Terri Green, Ms Jackie Cumming and Mr Alister Penrose provided the economic analysis for this evaluation. The other evaluation team members were all engaged in discussions, planning, and review of draft reports and during these processes I learned a great deal from them.

Chapter One

About the Free Child Health Care Scheme

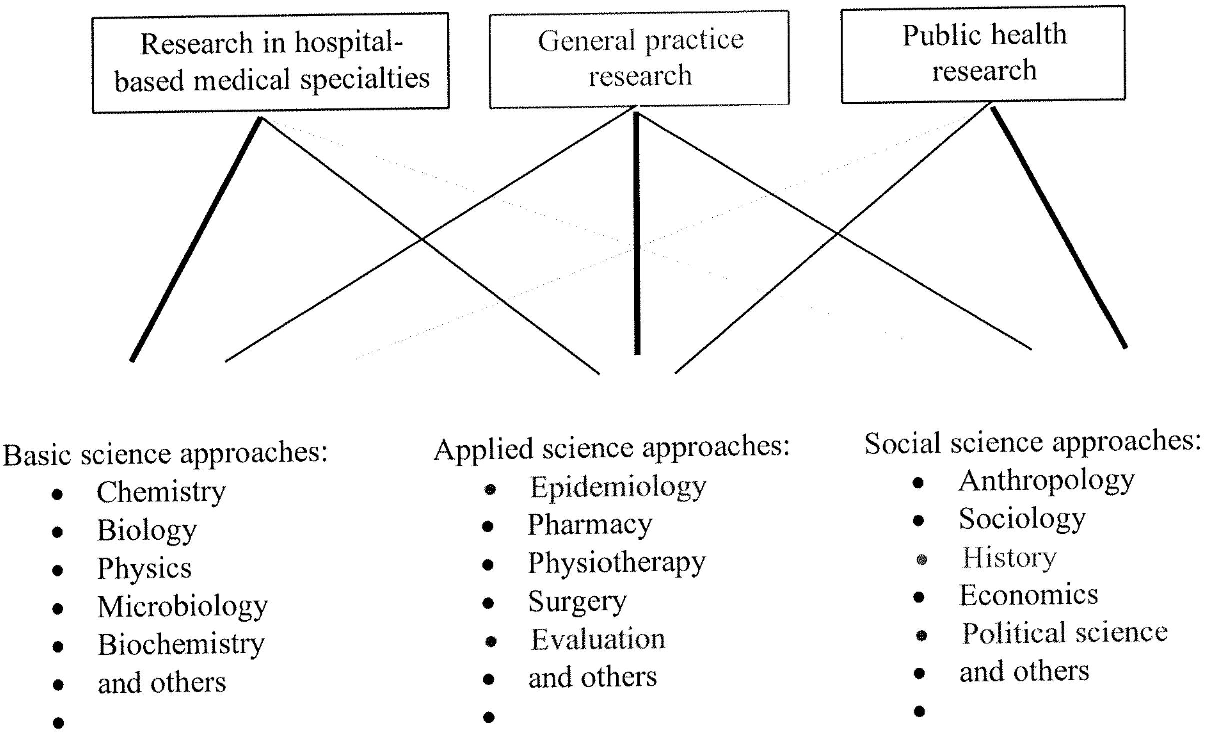
1.1. Introduction and thesis framework

The central thesis of this work is that health policy affecting general practice cannot be adequately understood by analysis from a single academic approach but requires transdisciplinary research, integrating historical, economic, epidemiologic, and policy perspectives. This thesis is examined by evaluating the Free Child Health Care Scheme and analysing the impact it had on New Zealand general practice in the first year of its operation.

The first three chapters provide the historical background and philosophical context of the work. Chapter One introduces the Scheme and describes the development of the New Zealand health system in an effort to convey the nuances of the political environment that enabled the introduction and implementation of this particular policy. The methods used in this chapter include a review of archives relating to the Scheme held by the Ministry of Health, a review of the literature about the New Zealand health system, politics, and the political players of the 1990s, and an interview with Mr Jim Bolger, Prime Minister when the Scheme was introduced. Chapter Two presents a rationale for government's commitment to such a policy. Published demographic and relevant child health statistics and legislation are reviewed to develop two justifiable explanations for such a policy, although the Free Child Health Care Scheme may be attributable to neither justification. Chapter Three explains the meaning of the policy for New Zealand general practice by tracing the development of the medical discipline, its professional organization, and the role of fees and charging.

Chapter Four describes the research methods used in the primary research undertaken for this thesis. Figure 1.1 locates the domains of this project (highlighted in colour) among some of the many possible approaches to general practice research. First, this project is general practice research. Second, it is evaluation (of three different types). Third, it is policy analysis. As well, medical history is invoked to enhance understanding. The research approaches are hierarchical. Thus the primary approach of general practice colours the second-level approach of evaluation. In turn, the policy analysis presented in this thesis will be barely recognisable as such by policy analysts because it is undertaken under the constraints of first, general practice research, and second, evaluation.

Figure 1.1. Context for the methods of general practice research adopted in this thesis



Chapters Five, Six, and Seven report the analysis of primary data collected to evaluate the Free Child Health Care Scheme. Chapter Five aimed to describe the impact of the Free Child Health Care Scheme on the workload of general practitioners. Data from the Dunedin Research Unit of the Royal New Zealand College of General Practitioners (the RNZCGP Research Unit) were analysed within the framework of a controlled before-and-after study. Chapter Six aims to provide policymakers with information about the effect of the Free Child Health Care Scheme – focusing on utilisation of health services and attempting to draw out implications for the health of New Zealand children. A "utilization-focused" evaluation approach was used for this investigation (Patton, 1996), which was broadly scoped and encompassed every available data set in New Zealand. This project was political in conception and conduct. Chapter Seven takes a traditional epidemiological approach to analysing data from a nationally representative survey of households containing children aged less than six years. The aim of this analysis was to define parents' perceptions of the Free Child Health Care Scheme, including whether it had influenced the pattern of their children's health service use.

Finally, Chapter Eight draws the content of the previous chapters together to provide a summary of the work, a conclusion about the impact of the Free Child Health Care Scheme, and recommendations for the future.

1.2. The Free Child Health Care Scheme

The Free Child Health Care Scheme is the subject of this thesis. The Scheme is a regulation that was introduced on July 1, 1997. In 1994, the 1994/95 *Policy Guidelines for Regional Health Authorities* (Minister of Health, 1994) had stated that:

> "[f]or children, significant health gains can be achieved from investments in early life which reduce mortality and morbidity and increase length and quality of life" (p 84).

Amidst the political turmoil of 1996/97 arising from a changed electoral system and a reforming health system dealing with unexpected costs and consequences (Fougere, 2001), the Free Child Health Care Scheme emerged as a device to make this investment. The Scheme came into being through a unique set of political circumstances. Its origins generated threats to its continuation that health policies usually do not carry. The same origins also lent it unusual supports. Both these effects are assessed in this chapter.

The Free Child Health Care Scheme provided a greatly increased government subsidy ($32.50) for general practice consultations with children aged less than six years and fully subsidised doctor-prescribed medicines for these children. Before the Scheme subsidies for children aged less than six years were $25 for children aged less than five years in families with Community Services Cards (CSCs) or High User Health Cards (HUHCs), $20 for children aged five years in families with CSCs or HUHCs, and $15 for children in families without CSCs. After the Scheme's introduction general practitioners were still able to charge for consultations with children aged less than six years, but they were expected to do so only in exceptional circumstances. Although medicines were free, they could still attract a dispensing fee – usually an amount of around $2.00. In-patient and out-patient care provided by public hospitals remained free.

1.2.1. Cost of the Free Child Health Care Scheme

Total health expenditure in New Zealand rose from around $7 million in 1925 to around $8.4 billion in 1999, with publicly funded expenditure increasing at a higher annual rate (5.8%) than private expenditure on health (3.7%) (Ministry of Health, 2000). General taxation provides about 77% of all healthcare expenditure and charitable, voluntary and private sector providers (including general practitioners) deliver more than 50% of health services, by value (Creech, 1999). In 1996, the estimated cost of the Free Child Health Care Scheme was $65 million (about 1.3% of the total health budget). This calculation assumed a higher subsidy than actually eventuated and was based on predictions of a 20% increase in consultations. Campbell (1997a) compared this amount to the cost government was planning to spend on another public project:

> "... making primary health care free for almost every young child in New Zealand will cost barely two-thirds the amount ($94 million) that the politicians are spending on their new building at Parliament!"

In 1998 the budget for the Free Child Health Care Scheme increased to $69 million, still only 1.2% of Vote: Health.

1.2.2. Beneficiaries of the Free Child Health Care Scheme

A month before the Free Child Health Care Scheme was introduced Campbell (1997a) postulated that the main beneficiaries of the Scheme would be general practitioners, adults in families with young children, and finally young children themselves. General practitioners, especially those serving socio-economically deprived areas, were known to often provide their services to young children at no cost and under the Scheme they would receive payment for those services. Doctors were not a popular beneficiary group. Campbell (1997a) calculated that doctors already had a mean annual income from government health subsidies of $121,000 – well above the national average income of $32,000.

Adults in families with young children would benefit because not having to pay for their child's care would free up income to pay for their own health care:

> "...kids may subsidise their parents' access to the health system." (Campbell, 1997a).

Finally, Campbell proposed that children aged less than six years would benefit because following the introduction of the Scheme they could see their doctors earlier and more often than previously.

Campbell (1997b) did not identify politicians as possible beneficiaries of the Scheme. However he quoted Kirton, who pointed out that as well as the common childhood ailments having earlier medical management, he expected that the Scheme would also achieve earlier intervention for children suffering physical and sexual abuse. It was suggested that earlier access to health care should then positively impact on measures of progress toward some of the child health goals established in 1990. If this happened, benefits would accrue to politicians, who could win favour with their constituents by demonstrating positive health outcomes arising from this policy. Specific health benefits were expected to result from the policy but were not actually listed, either in this article or in documentation archived at the Ministry of Health.[1]

The extent to which these groups actually benefited will be examined in Chapters Five, Six, and Seven.

1.2.3. Political context of the Free Child Health Care Scheme

Why the Free Child Health Care Scheme was introduced is a complex question that probably relates more to the political than the health background of the policy. In the context of ten years of health policy that had seen public health expenditure increasingly targeted towards those who could show that they could not afford to pay for it, the Free Child Health Care Scheme was a startling development when it was introduced on 1 July 1997. Except for its being applicable only to children aged less than six years, it was untargeted. It applied equally to all children in the age group, regardless of family size, income, location, or any other factor that might affect access to health care. The environment that allowed such a policy to be introduced owed its existence partly to reform in the electoral system (see Appendix One). Since 1996, changing political environments have continued, at times reluctantly, to support the Scheme.

The Free Child Health Care Scheme that became a reality on 1 July 1997 was not in the health policies of any political party leading up to the 1996 elections. When the election results indicated that no single party had secured enough votes to form a government, both National and Labour parties began negotiations with the New Zealand First party, in an effort to form a coalition government. The idea to improve health care access for young children by making doctors' consultations free was a policy plank of New Zealand First. Separate coalition agreements were drafted (Boston et al., 1997). With the Labour party, the agreement was that new ministerial responsibility for children would be established. Additionally the Labour/New Zealand First agreement included a commitment of both parties to evaluate policies generally for their impact on children. General practice visits would initially be free for children up to five years old, with a commitment to later extend free visits to children up to 12 years old (Boston et al., 1997). The agreement with the National party included only the commitment to provide free general practice visits for children aged up to five years old. The negotiation between the New Zealand First and National parties turned out to be the successful one.

To understand how and why the Free Child Health Care Scheme might affect general practice, it is critical first to understand the political context to the Scheme. It was part of an arrangement made under the coalition agreement produced by a new electoral system – Mixed Membership Proportional (MMP). Relevant theoretical and actual changes in New Zealand's electoral system from a First-Past-the-Post (FPP) system to MMP are reviewed in Appendix One. This section examines the political environment that created and has to date supported the Free Child Health Care Scheme.

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[1] In 1998, the author requested and was granted access to all the material relating to the Free Child Health Care Scheme archived at the Ministry of Health in Wellington. This material included memos, email, letters, and related documentation. A search was made specifically to find mention of the intended health goal(s) of the policy, but none was found.

By 1996 it was publicly acknowledged that the pursuit of the market philosophy in health, followed since 1992, had not only failed to produce improvements in the performance of the health system but had also given rise to some unwanted adverse effects (Ham, 1997). After the new coalition government was established guarded optimism was expressed for its approach to health policy (Ham, 1997). Child health and investment in primary care were recognised priorities. Collaboration engendered by the ideals of a new electoral system replaced the competition ideal of the market. Rather than wholesale reform, further adjustments to the health system were to be made incrementally and pragmatic goals replaced philosophical ones. Ham (1997) observed:

> "... the vogue for competition seems to have passed, and healthcare reform is entering a new phase. As this happens, not only is the content of the agenda for health policy changing but there are also signs of greater humility on the part of politicians about their ability to improve performance. The conviction that policy objectives can be better achieved by turning existing systems upside down has given way to a more sober appreciation of the limits of political action. Further changes are planned, but more in a spirit of tackling key problems and working with professionals and managers on possible solutions rather than imposing radical reforms across the board."

Section 1.3 explains the motivation for this statement by tracing the development of the New Zealand health system and describing the philosophical directions it has taken during the twentieth century.

1.2.3.1. Early political threats to the Free Child Health Care Scheme

The Free Child Health Care Scheme was unusual for a health policy in that it was not designed to meet any predefined *health* goal. The assumed goal of the policy was that it should improve the health of young children, but this was not stated, either in advance of the Scheme's introduction or during the first year it was operating.[1] Failing to identify specific policy goals meant that it was not made as a health policy should be made (according to standards of the time (J. Eastwood, Ministry of Health: personal communication)). Had it been introduced by a government wishing to meet a specific goal related to child health, it would have been developed (*after* a government had been established) by the Ministry of Health in response to the question "*what can we do to improve child health?*" This hypothetical basis of the policy did not happen. Rather, its most obvious purpose was to represent the political agenda of the New Zealand First party (Campbell, 1997a; Dovey et al, 1999).

The origin of the Free Child Health Care Scheme as a policy championed by the minority party in the 1996-97 coalition government meant that it was under threat from the outset. There would be an advocate for the policy in government only as long as the coalition agreement remained intact or if the New Zealand First party was at least a participant in any government that might followed the dissolution of this agreement. As the conception of the Free Child Health Care Scheme was clearly linked to the National/New Zealand First Coalition Agreement, it was under threat outside the umbrella of that Agreement. By November 1997, it seemed clear that the National/New Zealand First coalition government was nearing an end:

> "As each poll slams home, it becomes a matter of which partner will score a few brownie points with the public by being seen as the executioner of this hated coalition. Will Winston Peters jump, or will National push him off the tandem and pedal away alone..." (Campbell, 1997b).

Both coalition partners appeared to want the coalition dissolved and were striving to end it, but on their own terms (Campbell, 1998). After J. Shipley became Prime Minister and leader of the National party, National made little effort to maintain the coalition. At the National party conference in 1998, Shipley advocated changing the electoral system back to an FPP one. At this conference, National's coalition partner was barely acknowledged. Its achievements were not merely begrudged, but issues raised by New Zealand First were also ignored (Clifton, 1998).

The coalition government collapsed in August 1998, ostensibly over disagreement between Peters and Shipley about the purchase of the Wellington airport. Campbell (1998) thought that Peters probably never intended to push the Wellington airport dispute to the stage where his role in government would be ended. He had no strategy to deal with the issue other than to protect majority domestic ownership and he provided simply an intuitive, emotive response to the political disagreement with Shipley when he walked out of the cabinet meeting intended to resolve it. He had been humiliated verbally inside the Cabinet room, while being given some reason to suspect that the deal was not entirely legitimate. In addition, he believed (mistakenly) that a New Zealand First walkout would stop the sale proceeding, for want of a quorum (Campbell, 1998).

After the demise of the coalition, the National party decided to form a minority government and govern alone for the remainder of their term. The party's hold on political power was tenuous. In the 1996 election National had withdrawn from competing two seats in Wellington, but even if they had won those seats as well, they still would have held less than half of the electorate seats. Easton pointed out that had the 1996 election been held under the traditional FPP system, the National party would have had to form a coalition government (Easton, 1997b).

Shortly after the coalition collapsed, the Minister of Health (W. English) stated publicly that *"...no one ever said that free visits for GPs were high on our [i.e. the National party's] priorities"* (TV1 News, Tuesday, 8 September, 1998). The Free Child Health Care Scheme was clearly in some danger.

At about the same time, health system restructuring was entering a critical stage (see Fougere (2001) for a discussion of the "systematic chaos" in the health system of the time). The combination of these two events (restructuring and the collapse of the coalition government) created a time of accentuated threat for the Free Child Health Care Scheme. The coalition agreement had outlined the process by which the health system as it was in 1996 would be restructured to remove the four Regional Health Authorities (RHAs) and replace them with a single purchasing agency (Ashton, 1999). The pathway to this final structure included a year when the four RHAs remained in existence more or less as before, but with delegated authority under a single agency, the Transitional Health Authority (THA). The Free Child Health Care Scheme was introduced just before the THA was established. Six months after its establishment, a tendering process resulted in the author being principal investigator in a University of Otago team commissioned by the THA to evaluate the Scheme. This evaluation is reported in Chapter Six. Six months after negotiating the evaluation contract (and part way through the project) the life of the THA ended, and the HFA was born. Within public health service agencies, this process was labeled "transformation" (Health Funding Authority, 1998; Fougere, 2001). It involved transforming out of existence the positions of two thirds of the personnel previously employed by the RHAs and the THA, including all those who had participated in commissioning the evaluation of the Free Child Health Care Scheme. There remained no institutional knowledge of the commission. The final transformation stages happened around the same time as the coalition government was disintegrating. So when the Minister of Health indicated his intention to consider withdrawing Ministry support of the Free Child Health Care Scheme (TV1 News, Tuesday, 8 September, 1998), there seemed to be no one in any of the usual ministerial advisory posts to advise him of the evaluation.

The University of Otago evaluation team was somewhat taken aback at the prospect of the subject of their work disappearing altogether before their report was due for completion. According to the terms of the contract between the THA and the University of Otago, the researchers could not discuss their work with any news media representatives, despite being repeatedly approached. After the September 8 news broadcast, the researchers advised the Minister of Health directly of the evaluation in progress and requested that he delay any decision on abolition of the Scheme, at least until the evaluation was complete at the end of 1998. The Minister agreed to this request. In November 1998 the researchers presented to the HFA a report on the evaluation (Dovey and Tilyard, 1998). HFA managers had reviewed drafts of the document and made suggestions regarding revisions to enhance the presentation. They did not challenge the report's findings. On presentation of the evaluation report, the Minister of Health released a statement indicating his response to the document and reversing his earlier suggestion that the Free Child Health Care Scheme would not receive continued support by the National government:

> "The main finding from the independent review is that existing information systems can't provide conclusive evidence that the policy has had either a positive or negative impact. The recommendation is that the scheme be continued until at least 1 February 2000 while more rigorous research is completed. I have accepted that recommendation and no change is planned for the policy." (http://www.executive.govt.nz/minister/english/ben112 98_2.htm)

1.2.3.2. Personalities involved in the Free Child Health Care Scheme's conception and implementation

It is a characteristic of politics that the personalities of individuals should often have important impacts on policy (Blank, 1994). The Free Child Health Care Scheme was a policy in which individual people, shaped by the politics of their parties, played major roles. Health policy in general was a contentious area for the new coalition government. When the coalition was assessed after one year, journalist G. Campbell commented favourably on the "transparency" of the new government. He chose to draw attention to health policy development and the disagreements between Health Minister English and Associate Health Minister Kirton, as an example of the effectiveness of the new government:

> "[w]hen Neil Kirton and Bill English were feuding this year, it was taken as evidence of a coalition in disarray ... Yet, through that conflict, the public learnt a great deal more about the different costs and options in health than it ever knew before – or since. Heat let in the light." (Campbell, 1997c)

Neil Kirton

Neil Kirton is widely regarded as the architect of the Free Child Health Care Scheme. He was a New Zealand First Member of Parliament (MP) and one of the 47 first-time MPs in the House in 1996. Before he held the post of Associate Minister of Health in the New Zealand First caucus, he had a background in health as former manager in the Princess Margaret Hospital in Napier and as contract manager at Waikato Health in the early days of the health reforms. He had once been a National party activist, working as campaign manager for Michael Laws. He was *"a pleasant, uncharismatic person..."* and his key advisors (besides Michael Laws) were Dr Rosy Fenwicke and Lauretta Alessi, two *"fairly dynamic health insiders"* (Campbell, 1997b). His Catholic upbringing is regarded as an influential factor on his political views (Campbell, 1997a).

Kirton was the standard bearer in the coalition for the New Zealand First party. While others in his party made compromises with their coalition partner, Kirton remained firmly in support of the New Zealand First policies (particularly in health) on which his party had campaigned, yet he was ejected from the party a bare year after his appointment. Kirton blamed Peters for failing to provide adequate leadership for the party. He regarded New Zealand First's strategy to develop policy *"across the spectrum"* as an important political mistake.

> "With hindsight, New Zealand First should have staked out a few areas: such as health, preschool education, employment. It should have taken the entire portfolio in each case..." [Quoting Kirton] (Campbell, 1997b)

The implementation of the Free Child Health Care Scheme rested on the negotiation of an agreement between the government and general practitioners. While the Scheme at face value related only to the exchange of general practice consultations for a higher government subsidy when young children consulted, Kirton intended to use the contract for this exchange as a vehicle to obtain more from general practitioners than implementation of the Scheme itself required. Campbell (1997a) explained:

> "In return for raising the child-care subsidy, Kirton has some fresh paperwork in mind for doctors, some extra data to be collected. ... Sitting behind the current deal is a commitment to provide certain sets of information. The whole episode struck him [Kirton] as "an opportunity to get a commitment by doctors to manage patient information about children, and eventually centralise it, so we have a national register of children." Such a register could, in time, help to co-ordinate immunisation programmes. The need to entice general practitioners in this direction explains why Kirton didn't force their heads down the toilet."

This excerpt demonstrates the opportunistic behaviour expected by agency theory from principals, although usually anticipated on the part of agents rather than principals (Gorringe, 1987).

Kirton rapidly gained a reputation for his aggressive promotion of child health issues. His behaviour was consistently characterised as "difficult" by some (J Bolger, personal communication[2]; Campbell, 1997a). The Minister of Health (English, National party) and his Associate Minister (Kirton, New Zealand First party) frequently disagreed (Ashton, 1999). Among those who disliked Kirton was Dr Clive Stone, head of the General Practitioners Association:

> "It became all about him [Kirton] saying, look what we've carried out, isn't that good, aren't I a wonderful politician, I haven't broken a promise." [Quoting Stone] (Campbell, 1997a)

Others admired the new young politician for "*not selling out in health*" (Young 1997) and represented his attitudes positively:

> "Since taking power last year, he has proven he is serious about his policies. He has chewed up and spat out health bureaucrats who have not shown enough enthusiasm for implementing his goals. His pet goals for child health, including a national child-health database, are certain to be pushed with the same grunt" (Young, 1997).
>
> "Kirton is the only NZ First politician to emerge with honour from the shambles of 1997" (Campbell, 1997b).

Kirton was a list MP. He had no constituency base. This made it difficult for him to remain in Parliament after being ejected from his party. He has had no further significant influence on national health policy since 1997.

Winston Peters

Winston Peters was leader of the New Zealand First party and therefore responsible for the Free Child Health Care Scheme policy. The character of his involvement in New Zealand politics over an extended period affected the development and implementation of the policy.

The National party held power before the 1996 election. In many ways the New Zealand First Party was an ideal coalition partner for the National party. Philosophically, the two parties shared centrist views but occupied different places on

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[2] Two years after the former Prime Minister had left national politics to become the New Zealand ambassador in Washington DC, I asked Bolger directly how he had got on with Kirton. He told me that he had found him the most difficult politician he had ever worked with.

the political spectrum, with New Zealand First tending towards a more socialist position than its partner (James, 1997). The Free Child Health Care Scheme was a logical political plank of a minority party wishing to gain votes, sponsored by a "populist" politician (Hames, 1995). The New Zealand First leader, Peters, was an ex-National Party Cabinet Minister who had long held the label of "populist" (Hames, 1995). He had won the Tauranga seat in 1990 for National with the largest majority of any member in Parliament, but had had a stormy career as a National party politician. He was sacked from Cabinet on October 2 1991 and in his role outside Cabinet he attacked government policy. He was opposed to the interim targeting regime of the health reforms and used emotive and inaccurate statements to attract popular support. For instance, he claimed in 1996 that 1,500 health administrators were being paid between $80,000 and $140,000; Upton later gave the correct figure as 57.

Peters was expelled from the National Party in 1993. Before the 1993 elections he maintained that he could continue to win Tauranga for National but the party vetoed his nomination. He remained very popular in Tauranga with a constituency that included blue-collar workers, but generally consisted of disaffected elements from middle New Zealand. In addition, he was popular with more affluent elderly people. Following his expulsion there was a by-election in the Tauranga electorate. None of the other major political parties fielded candidates and Peters won by a majority of 10,887 votes. At the time Peters had no party, no candidates, and no policies.

On 18 July 1993, at Alexander Park raceway in Auckland, the New Zealand First party, headed by Winston Peters, was formally announced. Fifteen policy principles were articulated. They included investment in health, education, and employment. In social policy the stance of New Zealand First was between the Alliance and National parties – more willing to spend money than National party governments but unlike the Alliance, not advocating an expanded state sector. While the Alliance would draw its main support from disillusioned Labour voters, New Zealand First's constituency was primarily disillusioned National party voters. New Zealand First also had two distinct and almost opposite constituencies - Maori and the wealthy elderly.

The 1993 election resulted in a hung parliament on election night. New Zealand First had captured 8% of the total vote through its candidates in 84 of the 99 seats: the Alliance had captured over 18%. New Zealand First had performed strongly in the three Maori seats it contested. Henare, winning the Northern Maori seat for New Zealand First, had strong views on Maori issues and on the Treaty of Waitangi that were well outside the mainstream views of most voters. New Zealand First's 1993

Maori policy had scarcely mentioned the Treaty. Leading the National party, Bolger turned towards the Alliance party on election night to form a coalition government. Anderton, leader of the Alliance party, was a known quantity who had shown himself capable of negotiation on previous occasions. Peters, by contrast, had defined himself almost entirely in terms of what he was against. He has been called an archetypal opposition MP – not a government MP.

> "The political style that had brought Peters his popularity was based almost wholly on being against things. If he made it into Cabinet he would suddenly have to be part of a government that was forced to take responsibility and make hard decisions in an extremely difficult economic environment. Subconsciously Peters may have been recoiling from that prospect" (Hames, 1995; p107).

After final vote counting, the Waitaki seat turned back to National on special votes, leaving the National party with 50 seats in a parliament of 99, and thereby averting the need for a coalition government. National was confirmed in office, although with a precarious margin.

In the run up to the first election to be conducted under the new MMP electoral system in 1996, the country again contemplated the formation of a coalition government. Political pollsters predicted that there would be some formidable difficulties for New Zealand First becoming a coalition partner in government, or entering into formal co-operation with the governing parties (Hames, 1995). With the exception of the new element introduced by Henare, New Zealand First was seen as largely a vehicle for its leader. This view, the absence of a whipping system in the party, and Peters' repeated statements that party parliamentarians would not be required to vote for manifesto policies all suggested that the party would be an unstable coalition partner in an MMP parliament. However, there was a mood shift in the electorate towards softer social policies – a desire for a kinder, gentler approach that would look after more of the casualties of the social system of the earlier 1990s. New Zealand First's policies related well to the new mood. The party had a softer social policy than both National and Labour. The Free Child Health Care Scheme was a logical policy for New Zealand First as it accommodated the changing mood of the electorate.

Holding the balance of power, there was concern throughout the coalition government period that Peters was ill equipped for this role. His main achievement in his first year as Treasurer was to block the purchase of a new frigate:

> "Peters knows the value of scoring moral points in the defence area, while yielding to the right on economic policy" (Campbell, 1997c).

Peters continued to hold his reputation for being unpredictable, and was identified as an underdog:

> "He thrives on being written off. He has no wealth, and no expensive lifestyle tastes. He doesn't detectably hanker after social or intellectual status. He was genuinely shocked by how quickly his relationship with Jenny Shipley went down the plughole." (Clifton, 1998)

After years of personal antipathy between Peters and Bolger while Bolger led the National party and Peters was a National MP, in the coalition they worked well together (Clifton, 1998). The coalition fell apart only after Shipley assumed leadership of the National party in 1997.

1.2.4. Health care access and the Free Child Health Care Scheme

The relationship between health and health service use is not straightforward. While it is generally accepted that health service use is not the most important contributor to health experience, it nevertheless is a critical secondary component. First order health requirements are food, shelter, clothing and social support (Maslow's Hierarchy (Acton and Malathum, 2000)). After these basic requirements for life have been provided, formal health services play an important role in protecting and improving health. In a review of factors affecting health outcomes, Andrulis (1998) concluded that removing barriers to health care access was the single most important thing governments could do to help poor people achieve similar health outcomes to wealthier people. Health care access is especially important to the health of young children because good access helps to ensure that children are protected by immunisation from life threatening or debilitating illness. As well, routine health monitoring by trained professionals can identify potentially harmful health problems at a stage when early intervention can avert later costly and damaging effects. So while health behaviours and access to basic living necessities are important, expanding health service cover also contributes to improved health status. In New Zealand, early intervention in primary care has been shown to be effective in reducing avoidable hospital admissions for asthma and diabetes (Coster and Gribben, 1999) and the New Zealand government has recognised that:

> "access to good health and health care … [is] critical in ensuring children are given the best possible start in life" (Ministry of Health, 1999).

Access is a multidimensional component of primary health care. It is usually assessed by a proxy measure – utilization. The two terms are not synonymous. Access implies ability to use health services if necessary, and access can be good even when health services are not used. In this circumstance, lack of utilization is associated with lack of need. Utilization, on the other hand, is a measure of the use of services regardless of need. It is an expression of more than access. Measuring utilization provides a conservative measure of access because it does not account for people with good access who do not use services. The research projects reported in Chapters Five and Six use measures of utilization as proxies for access. The research reported in Chapter Seven measures access in terms of parents' perceptions. Utilization and perceptions are both valid proxy measures of access in light of the fact that access itself is almost impossible to measure. It was access to health care that the New Zealand government sought to enhance through the Free Child Health Care Scheme – not utilization, per se. Changes in utilization were however expected as a product of changed access and the government and researchers agreed that utilization should be measured to assess impact of the Scheme on access.

Access is of key importance to governments because adequate access to health services has been shown to significantly influence health outcomes, an ultimate responsibility of governments (Zuvekas and Weinick, 1999). Access is also important to general practitioners because it influences the likelihood of patients consulting when they are ill (Kuder and Levitz, 1985), and of receiving treatment when they consult (Moy et al., 1995). Measuring utilization is a process of interest to both government and medicine. Indicators relating to access to health services are also regarded as indicators of the quality of that care by both physicians and managers (Campbell et al., 1998a).

1.2.4.1. Barriers to health care access

A number of barriers lead people to use health services less than they should. Barriers may be financial, cultural, geographical, perceptual, or arising from inadequate information, poorly structured systems, or gender stereotypes (Burton et al., 1999; Inglis, 1991). The impact of these barriers may be magnified for young children when their need for health services is first filtered by the perception of need held by the adults responsible for their care.

There is widespread agreement that the most serious barrier to obtaining adequate health care is financial (Hughes and Halfon, 1996). Across all age groups, the 1996/97

New Zealand Health Survey (Scott, 1999) found that cost was the most common reason reported for failing to attend a general practice when a consultation was considered (Statistics New Zealand, 1997). A total of 6.4% of children had needed to see a general practitioner in the year prior to the survey, but did not do so, most commonly because of cost (58.2% of reasons for not seeing a doctor). The Free Child Health Care Scheme was designed to affect health care access by reducing financial barriers to access but not, of course, physical, cultural or perceptual barriers.

There is limited research evidence about the direct effect of consultation fees on children's health care consultation rates (or access). One study in the United States (US) showed that children had a lower standard of health when they initially presented for a preventive health visit if a co-payment was required for the visit than if children had access to a free healthcare programme (Clarridge et al., 1993). In another US study (Oppenheim et al., 1994), 32% of parents indicated that cost was a consideration in choosing health care for their children. Hohlen et al (1990) found that when physicians received higher payments for consulting with children, children's access to their services improved. Differences in culture and expectations of the health systems may limit the application of these findings to New Zealand. Apart from direct fees for visits with doctors, there are other financial costs associated with visiting a doctor: transport to and from the practice, and charges for prescriptions and investigations.

1.2.5. General practice context to the Free Child Health Care Scheme

From the outset, implications of the Free Child Health Care Scheme for New Zealand general practice were considerable because general practitioners provide more health care to young children than any other health care provider group (Statistics New Zealand, 1997). The Free Child Health Care Scheme was important to general practitioners in a personal, practical sense because it had potential to directly impact their workload and income and indirectly to affect the view of general practice held by their patients. Chapters Five and Six present the results of research that addresses the key issues of importance to general practice that were actually or potentially influenced by the Free Child Health Care Scheme – access by different patient groups to general practice (or workload issues) and payment for services. The view patients' parents held of general practice after the introduction of the Scheme is researched in Chapter Seven. Apart from the pragmatic concerns of general practitioners over their livelihoods, reasons for these matters being of central concern to general practice are discussed in the context of general practice history in Chapter Three.

1.3. The development of the New Zealand health system

Section 1.3. describes the development of the New Zealand health system in an effort to convey the nuances of the political environment that enabled the development of the Free Child Health Care Scheme. This section traces first the development of the New Zealand health system and then discusses the changes in philosophical direction underlying changes in health system structure throughout the twentieth century.

1.3.1. Changes in health system structure

1.3.1.1. The health system in colonial New Zealand

The earliest evidence of the New Zealand government perceiving their role in the protection of their nation's health by providing health services was in 1882 when a plan to introduce a national health insurance scheme was brought before the New Zealand legislature. The Liberal Opposition rejected the proposal but in 1883 a similar plan was successfully introduced in Germany, and eight other European countries (including the UK) followed suit between 1888 and 1913. Lovell-Smith (1966) attributed the success of the national insurance plans in Europe to their achievements in maintaining and protecting the health of a relatively impoverished workforce in industrial societies. The same imperatives did not arise in the still mainly rural New Zealand society until the middle of the First World War.

Although New Zealand established the first Ministry of Health in the world in 1900, the State played only a minor role in healthcare provision at that time (Hay, 1989; p15). The original moves toward establishing a national health system had come not from government, but from hospital boards. Hospital boards were the key organisational structure in New Zealand's early health system. The first hospital boards were established in Dunstan and Cromwell in 1878. Their purpose was to maintain hospitals, provide "outdoor" medical services and to administer charitable relief (Lovell-Smith, 1966; p 18). They were funded by voluntary subscriptions, matched by government subsidies. This system of healthcare financing, with high levels of independent practice and private direct funding of medical care, existed until the entire health system changed following the economic depression of the 1930s. Toward the end of the 1930s the State became deeply involved in healthcare provision, particularly hospital care and public health, for reasons summarised by Hay (1989):

> "The principal consequence of the Depression was the inability of patients to purchase doctors' attention... Legislation ensured the availability of, and payment for, medical care whilst formalizing economic relations between the providers and recipients of care which were to stand for many years."

1.3.1.2. The Welfare State period

Following the 1930's economic depression, New Zealand elected the first Labour government with a majority of 27 seats in Parliament. In a time of world-wide recession, the previous government had balanced the budget and by 1935 an economic recovery was under way. Despite this success, the government had *"alienated the sympathy of mortgagees, bondholders, old age pensioners, the unemployed, wage earners and even mortgagors".*[3] The people of New Zealand wanted an early return to prosperity and security from privation. The new Labour government responded to the electorate with early planning for the social legislation it introduced in 1938 (Lovell-Smith, 1966; p 31).

The first revolutionary change to the New Zealand health system occurred from 1938 to 1942 when the Social Security Act 1938 was enacted and then incrementally implemented. The implications of the Act for New Zealand general practice were significant, strongly relate to the Free Child Health Care Scheme, and are discussed in Chapter Three. The Social Security Act created a welfare state in New Zealand. The term "welfare state" is generally used to describe governments that provide services such as education, public health, pensions, income maintenance, and housing (Ham and Hill, 1993; p 25). It is an important concept in both political and medical arenas of New Zealand society. New Zealand developed a different form of welfare state from similarly named systems in other countries (Jones, 1997). New Zealand and Australia are the only western countries not to have formal two tier welfare systems.[4] The Social Welfare Act of 1938 created:

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[3] Lipson, L. *The Politics of Equality.* Chicago, 1948. Cited in Lovell-Smith (1966).

[4] A two-tiered welfare system has one set of benefits related to past work history and income, and another available to all, but usually means-tested.

> "... what New Zealanders, and a good few observers from outside as well, liked to call the most comprehensive and possibly most generous welfare system in the world at the time." (Jones, 1997; p 37).

Whereas the intention of the first Labour government was to bring health care under full state control, subsequent National governments had different priorities. The decades following the Social Security Act were characterised by the integration of separate public and private strands into a "mixed" health system, unique in the world. Protection of private health care providers occurred in two spheres – private hospitals, and the maintenance of general practitioners as private doctors. Despite their nationalisation under the Social Security Act, hospital administration remained in the hands of local hospital boards in the 1940s and there existed no national system for managing them. Through first modifications to the tax system and then through legislation in the Hospital Amendment Act of 1951, local hospital boards were phased out. The government, through the Department of Health, assumed financial and managerial control of public hospitals finally in the 1957-58 fiscal year. From early colonial days in New Zealand there had been a vigorous private hospital sector. By the 1950s most small hospitals had closed, but larger private hospitals still played an important role in providing health services. Successive (National party) governments were committed to keeping private hospitals opened because they took the view that it was cheaper for the government to ensure that patients who used private hospitals received health services than it would have been to provide those additional services in public hospitals. Government paid a direct daily patient subsidy and provided low interest loans for "innovations and new equipment" (Hay, 1989; p 137). Patients paid the difference in the cost of their care. Government paid for all health care in public hospitals.

The welfare state conceived in 1938 functioned reasonably effectively without major structural change up until the 1970s. During the 1970s and 1980s the welfare state became severely stressed by both external and internal pressures. There were a number of concurrent international crises. The Organisation of Petroleum Exporting Countries (OPEC) raised the price of its oil, creating a dramatic effect on the western economies that had become dependent on its petroleum since the Second World War. The New Zealand government continued to prop up the local economy to sustain the high living standard New Zealanders were used to, building an increasing load of overseas debt in doing so. The guaranteed market in the United Kingdom (UK) for New Zealand exports disappeared when the UK joined the European Union (EU).

These external events combined to create a rising unemployment rate[5] and the welfare system was further challenged by substantially increased payments to the elderly through changes to the national superannuation scheme (Easton, 1997a; p 273).

General practitioners had adapted to the health care system created by the 1938 Social Security Act in ways described in Chapter Three. In general, however, the emphasis of the public health services in New Zealand through the boom years of the 1950s to the 1970s was in expanding high technology, high status hospital services. While public expenditure on primary health care services was constrained by legislation, growth in government expenditure on health inevitably resulted from increasing emphasis on hospital-based care. Around the world, health care costs were expanding more rapidly than governments could meet them. In New Zealand, the cost of health services increased at about 2% more than the overall rate of inflation between 1961 and 1981 (Smith, 1981). At the same time, the effectiveness of increased government expenditure on health diminished. This effect was mainly attributed to the New Zealand population having more health needs as it aged. A broader range of health services was demanded of the public health system and made available.

The New Zealand government (in common with the governments of most other developed countries) lacked structural mechanisms for controlling expenditure on health services. However, subsidies for general practice services were divorced from the forces of inflation. Consequently, although they retained consistent dollar amounts with few alterations over time, they increasingly diminished in value in real terms. By the 1970s it was again commonplace for general practitioners to charge a fee for their services, on top of the subsidy provided by government, and free general practice care was not usually expected by patients nor given.

1.3.1.3. The health system reforming period

The most recent round of health reforms had its early beginnings during the Labour party's term of 1972-1975 when a system of regional health authorities was proposed in a white paper (*Health Service for New Zealand,* 1974). These government agencies were to co-ordinate private and voluntary providers, including general practitioners. The fee-for-service system of payment for general practitioners was to be replaced by a contractual arrangement between doctors and the proposed health authorities. Sustained resistance from hospital boards and general practitioners eventually

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[5] Unemployment was almost non-existent in 1930 but the unemployment rate rose from 1.4% of the

resulted in the introduction of a softer scheme in 1983, and existing health bodies were voluntarily amalgamated into area health boards (Scott, 1994).

The time of the Labour party's return to government in 1984 is generally regarded as the start of "the New Zealand experiment" (Boston, 1992b; Salmond et al, 1994; Kelsey, 1995), a period of ideologically driven reform in New Zealand government. State sector reforms, complete revision of farming subsidies, and an overhaul of government's role in education and social welfare all happened before the health system was substantially changed.

In 1988, a Taskforce on Hospital and Related Services released a report condemning wide regional variations in health services and poor integration of primary and secondary health care (the Gibbs Report (Gibbs et al., 1988)). It criticised lack of accountability and incentives for management, and poor information systems. The proposed solution was to devolve health funding to six regional bodies that would purchase primary and secondary health services from public and private providers through competitive contracts. The report was largely dismissed as extreme. Labour ministers backed away from full implementation of the Task Force's ideas and focused instead on governance problems with the area health boards.

The Health Benefits Review in 1986 (Scott et al., 1986) and the 1988 Gibbs Report (Gibbs et al., 1988) signalled the intentions of successive governments to tackle health system reforms but change was unpopular, the proposed changes seemed extreme, and little actually changed before 1998. In 1990, the National party, under Prime Minister J. Bolger, formed a government with a 39-seat majority. Within three months, the new National government established another Task Force to advise on options for redefining the roles of government, private sector and individuals in the funding, provision, and regulation of health services. The details, broadly mirroring the Gibbs report, were released alongside the 1991 budget by the new Treasurer, Ruth Richardson, in a green and white paper entitled "Your Health and the Public Health" (Upton, 1991). The "health reforms" of the 1990s are generally regarded to have come into effect on 1 July 1993, the implementation date for this green and white paper. On that date, four RHAs replaced the fourteen Area Health Boards, through which most of Vote: Health had been managed since 1984 (Boston, 1996; Ashton, 1999). The RHAs received "bulk funding" calculated on a population basis to buy health services from public and private providers.

labour force in 1971 to 4.5% in 1981.

There were two stages to the first three years of the Bolger administration (Bolger, 1998). In the first stage, the period up to the 1991 Budget, a range of social welfare benefits were cut, abolished or more tightly targeted. Richardson's 1991 Budget was the last of its reforming line. After that, unnerved by the sharply contracting economy in the first half of the year, and alarmed by the hostile public reaction to its social policy changes (Boston, 1996), the government made no further social welfare changes. The second phase of the Bolger administration was dominated by a continually improving economy, beginning around the time of the 1991 Budget. The improving economy was a major political boost for the government but it never succeeded in persuading enough New Zealanders that the tough fiscal measures of the National government's first year had been fair or justified. Two unpopular policies remained – superannuation and the new regime of charges for public health care.

The 1992-1993 health reforms had disestablished the Department of Health and created a streamlined Ministry of Health with responsibility for policy development. Public hospitals were converted into Crown Health Enterprises (CHEs) and given the task of:

> "secure[ing] for the people of New Zealand ... the best health ... that is reasonably achievable within the amount of funding provided." (Bolger, 1998)

Health system restructuring was overseen by a National Interim Provider Board, chaired by businessman Ron Trotter, and a Policy, Regulatory and Implementation Unit, headed by a Treasury technocrat located in the Department of the Prime Minister and Cabinet. These changes attracted concerted opposition from the medical and nursing professions. The Medical Council challenged the primacy of profit and business over ethics and access.

After three years, the four RHAs were disbanded and replaced by a single purchasing agency (Ashton, 1999; Fougere, 2001). The coalition Agreement of 1996 proposed this restructuring and outlined the process of establishing a new interim agency, the THA. The significance of this particular health structure alteration for the Free Child Health Care Scheme and its evaluation is described in section 1.2.3. (above). The mission of the new single purchasing agency, the HFA was:

> "to allocate resources that secure the best health and independence for all New Zealanders" (Health Funding Authority, 1998).

However, the HFA was not free to make all decisions on how this is to be achieved. It is doubtful whether the Authority would have decided that the best way to achieve improved health for young children was to provide them with free health care.

Generally, the medical profession was cynical about the purpose and consequences of continued health reforms. Dr P Mackay, Chair of the New Zealand Medical Association summarised the views of many general practitioners in 1999 when she wrote:

> "... when it became clear that the RHAs were to be centralised and downsized, staff from the RHAs began leaving in droves lest they not have a job in the new organisation. Five years' accumulated knowledge and experience and relationship-building was gone and the new organisation (THA) had to start very much from scratch. Restructuring continued for another year and many of the employees of the THA seemed to spend a lot of energy applying for jobs elsewhere and worrying about their futures, rather than getting on with their work. Consequently IPAs and CHEs have had to teach and reteach a stream of ignorant new people about their organisation and often about the health sector generally. This was costly in time and temper. Invariably each new manager had some great new idea about how things could work and it took a lot of patience to explain that the 'new' way had been tried before and rejected." (Mackay, 1999)

1.3.2. Changes in health system philosophy

To place a discussion of the Free Child Health Care Scheme in context, the dominant social theories driving the developments and directions of the New Zealand health system are examined in this section.

1.3.2.1. The philosophy of colonial New Zealand

Colonial governments in nineteenth century New Zealand pursued public policies guided by the principle that economic prosperity must rest on and promote human welfare (Lovell-Smith, 1966; p 10). Despite this, there was also an expectation that individuals should be able to independently make their own choices. In 1882 when a plan to introduce a national health insurance scheme was brought before the New Zealand legislature, the Liberal Opposition rejected it on the grounds that:

> "It will sap the independence of the people so relieved." (Lovell-Smith, 1966; p 11).

Early New Zealand society had its share of academic and cultural achievers but lacked the wealthy business houses and philanthropists who had traditionally supported the provision of healthcare for the needy in Europe. This, combined with the resentment of the new settlers towards the relics of feudalism and the class system they had left behind in Europe, nourished the development of a national philosophy:

> "... which became more pronounced with each successive generation, that it was the responsibility of the community as a whole, and not the function of charity, to provide for the health needs of the community" (Lovell-Smith 1996; p15).

Early New Zealand culture prompted social, and in particular health, policy summed up by the fundamental principle of "universality", that is:

> "Any scheme which savours of a poor man service, of charity, which subdivides the people into two groups, those able to pay private fees and those unable to do so, which differentiates in the minds of the doctor either consciously or unconsciously between patients, would be foreign to the ideals and aspirations of the government in particular and the people of New Zealand in general." (Lovell-Smith, 1966; p 59).[6]

1.3.2.2. The philosophy of the Welfare State period

By the end of the 1930s, governing social philosophies had changed from the early encouragement of individual independence to a more socially cohesive model that reflected the rise of social solidarity and community responsibility that was occurring throughout the developed world. Jones attributed the generosity of the 1938 social welfare system to two factors arising from this changed social climate. First, the then Prime Minister (J Savage) strongly believed that New Zealand was an exceptional country in which nothing was too good for her people. Second, in the mid-1930s it was also one of the world's wealthiest countries. Given these factors, Jones interpreted the 1938 social welfare scheme as:

> "... a humanitarian creation of a country that had reason to believe that the problem of economic scarcity had been solved. They could afford, or so it was argued, the most generous welfare system in the world. Walter Nash, the Minister of Finance, could proudly state in the New Zealand Parliament in 1946 that real income per head in New Zealand had expanded by 60% between 1935 and 1945. It was clear that New Zealand had created a welfare system for a rich country." (Jones, 1997; p 40)

The distinctive social philosophy of the early-mid twentieth century gradually waned until a new and equally distinctive philosophy started to permeate all levels of society in the late twentieth century.

1.3.2.3. The philosophy of the reforming period

The ideology guiding reform in the New Zealand public sector has been variously labelled "managerialism" (Boston et al., 1996), "pure neo-liberal economic theory"

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[6] Sentiments that applied equally to all "welfare" activities – education, income maintenance, justice.

(Kelsey, 1995), "market liberal" (Ashton, 1992) and "radical monetarism", "New Right" or "neo-conservative" (Easton, 1997b). Generally, these theories were as different as they could be from the theory of social welfare that guided the first Labour government. In particular, they were based on individualistic philosophies rather than the social cohesiveness values that characterise earlier welfare policies. Light (2001) has summarised the contrasts between the welfarism of the first part of the twentieth century and the "New Right" philosophies adopted by most developed western countries in the 1980s by listing "New Right" attitudes to various social welfare strategies:

- Welfare and social programs are not the fruits or necessary accompaniments of economic growth: they impede it.
- Those who use them are not so much needy as lazy and dependent.
- Welfare programs are handouts, a sign of moral weakness by the state and the recipient.
- Patients should pay user fees; welfare recipients should work; university students should pay their own way.
- Government-run services are inefficient, bureaucratic and unresponsive; they need the challenge of competitors to wake them up and shed their wastefulness.
- More broadly, the state is inefficient, incompetent, and inflexible; competition, deregulation, and privatisation should replace state functions.

Following the release of two Treasury briefing papers in 1984 (New Zealand Treasury, 1984) and 1987 (New Zealand Treasury, 1987), a micro-management approach by government was adopted in many spheres of government activity. The first paper, called "Economic Management", was about restructuring the economy. The 1987 document, "Government Management", was about restructuring the state. Kelsey (1995) refers to the first paper as *"a textbook application of micro-economic theory to the New Zealand economy"* and to the second as *"an extraordinary ideological tract"*. These documents set the tone and general economic approach that would be recommended by Treasury and adopted by successive governments throughout the 1990s. An environment where money was exchanged according to decentralised contracting was the preferred public management style. The key theories promulgated in these documents, guided policy development under "New Right" governments and are described below.

Managerialism

Managerialism describes the process that brought marketing and business management concepts and techniques to New Zealand public policy in the 1980s and

1990s (Duncan, 1995). It is associated with neo-liberal, individualistic economic reforms (Rees, 1995) and has been defined as

> "[a] set of beliefs and practices at the core of which burns the seldom-tested assumption that better management will provide an effective solvent for a wide range of economic life." (Pollitt, 1990).

Managerialism is associated with two distinct claims: (1) that efficient management can solve almost any problem, and (2) that practices appropriate for the conduct of private sector enterprises can also be applied to public sector services. Learmonth (1997) proposed that the shift toward managerialism occurred in the UK's National Health Service (NHS) both as a pragmatic response to perceived failures in the system and as part of a shift toward "New Right" ideology in the public service generally. Managerialism in health systems introduced a new language and worldview to the health sector. It also established the dominance of managerial decision making over clinical decision making and redefined performance from patient related outcomes to financial efficiency (Doolin and Lawrence, 1998).

Decentralisation accompanied the rise of managerialism in the health sector. Decentralisation purports to promote the role of local populations in influencing decisions and determining priorities, although in the UK little evidence of this having actually happened could be found (Milewa et al., 1998). The brand of managerialism practised in many western democracies is described as "Taylor-istic" (Learmonth, 1997). That is, it attempts to control the organisation so that it works as efficiently as possible. It does this by calculating the processes involved in performing tasks so that these can be made more efficient and then applied to all workers. Based on these principles, Hood (1991) has produced a set of doctrines about managerial definitions of appropriate management practice. These are shown in Table 1.1.

The managerialism theory typically emphasises efficiency and value for money, and views patients as processing units or as customers who have a quasi-commercial relationship with health service funders and providers. Learmonth (1997) contrasted patients' values of a health system where their individual needs are respected and in which the foundation of a positive (but unmeasurable) relationship between patients and doctors is nurtured with managerialism. The latter approach does not recognise these values unless they ultimately result in increased revenue.

The contribution of managerialism toward the development of general practice is perhaps most obvious in the UK, where the 1990 GP Contract outlined the

Table 1.1. The doctrines of managerialism

Doctrine	Meaning	Typical justification
Hands-on professional management	Active, visible, discretionary control of organizations from named person at the top "free to manage."	Accountability requires clear assignment of responsibility for action, not diffusion of power
Explicit standards and measure of performance	Definitions of goals, targets, indicators of success, preferably expressed in quantitative terms.	Accountability requires clear statement of goals; efficiency requires "hard look" at objectives.
Greater emphasis on output controls	Resource allocation and rewards linked to measured results.	Need to stress *results* rather than *performance.*
Shifts to disaggregation of units.	Break up of formerly "monolithic" units.	Need to create "manageable" units.
Shift to greater competition.	Moving to term contracts and public tendering procedures.	Rivalry as the key to lower costs
Stress on private sector styles of management practice.	Move away from "public service" ethic.	Need to use "proven" private sector management tools.
Stress on greater discipline and parsimony in resource use.	Cutting direct costs, raising labour disciplines, resisting union demands, limiting "compliance costs" to business.	Need to "do more with less."

Adapted from: (Hood, 1991)

government's new approach to primary care. Following the acceptance of this Contract, general practitioners were treated as professional independent contractors who were subject to managerial controls (Warwicker, 1998). Purchasers of health care were expected to specify in their contracts factors related to volume, cost, and quality. Standards were adopted with very little provider participation and consequently doctors did not alter their behaviour significantly in an attempt to meet these imposed standards. In hospitals, quality standards imposed by managerial approaches to health service regulation also had little impact on service delivery (Baeza and Calnan, 1997). The Contract prescribed general practitioners' activities in a way they had never before experienced and tied their income to their performance of certain clinical (mainly preventive[7]) measures:

> "Newly registered patient checks had to be carried out within 28 days of patients registering with the practice. GPs had to obtain details on their past medical history, social factors, lifestyle, their current state of health, measurements of height, weight, blood pressure and urinalysis. Other obligations comprised a medical audit, annual reports, targets for immunisation and cervical cytology cover." (Warwicker, 1998)

Transaction-cost theory

Transaction-cost theory was another way that "New Right" arguments for change were expressed. According to transaction-cost theory, functions are best performed by outside contractors when uncertainty is low. That is, contracting should be used when the supply of a good is highly contestable, when transaction costs are low, when there are constraints on opportunism, and when the quality and quantity of the goods or services can be easily measured. In-house provision is likely to be more efficient where there is a high risk of opportunism, substantial uncertainty, conflicts of interest and complex transactions. Direct provision reduces the need to identify and accommodate all the complexities of the task (or goods) in advance, allows for greater flexibility to deal with new issues as they arise, and may reduce the risk of opportunism. The problems with in-house provision are that large, unwieldy organisations may evolve in which the behaviour of individuals is difficult to monitor and their individual productivity hard to measure. Governments are normally reluctant to contract out functions such as tax collection, policing, and military services, where opportunism could become rife and threaten the integrity of the state.

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[7] Reflecting the prime importance to the UK government of the population-based prevention and health promotion approaches, and diminishing the importance of the general practice model of care in which the needs of individual patients (for "healing" care) take precedence (see Chapter Three).

Conversely, services such as rubbish collection and catering lend themselves to contracting-out because they produce a straightforward, measurable product and the risk of misrepresentation is small.

Health services are complex functions, so transaction-cost theory suggests their provision by state-employed staff rather than by privately contracted doctors is preferable. This argument particularly applies to general practice services. Specialist medical services are often more measurable (such as the number of operations performed, tests carried out, etc) while the primary care function is much less tangible – difficult not only to measure but also to define. Therefore, contract arrangements for health service provision in New Zealand (between the State and general practitioners, who are generally private providers) appear to be counter to the postulates of this theory.

There are two powerful reasons for transaction-cost theory not having performed well when applied to regulating the relationship between general practitioners and government. The first is that influence of historical precedent may be stronger than the imperatives of this relatively new theory. General practitioners have always been private providers in this country, resisting previous attempts by government to bring them into the fold of government employees. Although most general practitioners in the twenty-first century have no personal experience or even understanding of the professional struggles of the 1930s and 1940s, they still carry a legacy of belief that their professional independence from government is important. Secondly, the arguments for the primacy of their responsibility to their patients (discussed in Chapter Three) make it unlikely that general practice will ever be widely provided in New Zealand by government-employed practitioners. Because of an acceptance by both government and general practitioners that general practice services should be provided by independent contractors, there have been many contracts between general practitioners, general practice organizations, and government agencies in the 1990s.

As well, there are problems in the health system with information about health services and health status outcomes. The need for better information systems in health care and the proper role of the State (versus doctors) in providing these improved systems has been a vexed issue internationally. Information imperfections lead to significant transaction costs (searching, negotiating, and monitoring) which in turn confer a negative externality on parties involved in the exchange (Ferguson and Keen, 1996). Other governments (especially the UK government) have made a much more substantial financial contribution to improved information systems in general practice than has the New Zealand government. In New Zealand, government's use of the private financial investments of general practitioners to fulfil contract-monitoring tasks is strongly suggestive of opportunistic behaviour, as by this process the government implicitly benefits from investments in information technology made by individual general practitioners. Recognising this, IPAs have negotiated to be paid additional amounts from the government to support the maintenance and improvement of computer systems in general practice.

The specific policy case of the Free Child Health Care Scheme fits better with the theory of transaction-cost economics than does the provision of general practice services broadly defined. In this special case, no measurable health outcomes were written into the terms of the contract and the services to be provided were simply consultations between young children and general practitioners. Date and time of contact and identifiers of patient and doctor were easily documented at each encounter. Encounters could then be monitored using the same infrastructure and processes as were already in place for monitoring other subsidies. The content of the consultation was not at issue and nor were health outcomes.

Public choice theory

A third "New Right" theory is the public choice theory. This theory maintains that voters constantly seek more public services (constrained only by their willingness to pay taxes), and that politicians, parties, and bureaucrats are willing to supply these because of their self-interest in power and popularity. From this perspective, the origin of the Free Child Health Care Scheme is a classic demonstration of public choice theory. It appeared to be designed to please the electorate and attract votes for the New Zealand First party that they would not otherwise have gained. It appealed to a large section of the electorate. In the years leading up to the policy's implementation, many middle class voters had been excluded from benefiting from the targeted policies pursued by successive governments. The Scheme was the first new government service in many years that they would be able to take advantage of. By making it relatively untargeted, the maximum number of people was affected by the policy.

Public choice theory predicted that families would abuse the scheme by seeking free health care for trivial or inappropriate reasons. Lacking any financial barrier, parents would “free-ride”. That is, they would use more health services than they were entitled to or needed, and in the process other people would be denied access to these same services. General practitioners might indulge in “rent-seeking” behaviour. That is, knowing that they would be paid, they might unnecessarily generate extra consultations by young children, whose parents would be willing to be coerced in this manner because they were not paying. In Chapters Five, Six, and Seven the validity of each of these statements will be tested using the results of empirical research.

Agency theory

Agency theory is a general model of social relations involving the delegation of authority (Kiser, 1999). This theory is primarily concerned with contracting for labour and the supply of services (Boston et al., 1996; p 21). Like public choice theory, it is predicated on the belief that individuals choose actions that maximise their personal utility (Denis et al., 1999). In New Zealand the restructuring of executive government from 1984 to the late 1990s followed a consistent pattern based on the ideas of agency theory. Across the breadth of government functions, this pattern usually involved “de-coupling” policy from service delivery, decentralization of management, new financial accounting systems, contracting for service provision, and monitoring managerial performance (Wistrich, 1992). Following the start of the health reforms in 1992, agency theory drove a move toward explicit contracting for health services. The process in the health sector was an extension of the new approach to specifying and assessing the performance of departmental chief executives introduced by the fourth Labour government in 1988. Although the contracting process enhanced the accountability of chief executives to their portfolio ministers, Boston (1992a) made a case for delegation of authority also having introduced unanticipated constitutional issues. In health, these issues relate to the extent to which elected government officials might delegate to private individuals (general practitioners) the responsibility of the Crown to protect the health of New Zealanders.

One of the reasons that contracting in the health system was difficult to initiate was that information systems were poor. Existing funding arrangements were “rolled over” in 1993 while information systems were being established. Several technical problems with contracting emerged. High transaction costs and capital sunk in equipment and staff dictated that contracts should be long term, yet the government almost exclusively offered only short term contracts in an effort to avoid inhibiting the emergence of a competitive health market.

Initial strategies to improve accountability in the UK health sector (following agency theory) resulted in an increased managerial presence but by the early 1990s, professional managers in hospitals were being replaced by doctors-turned-managers. In contrast to managers, doctors retained enormous public support. Their active involvement in management led to a strengthening of their position. Hunter (1992) argued that:

> "... paradoxically, this could make it more difficult for doctors to challenge doctors' work practices. Medicine's traditional preoccupations and its resilience to change are likely to remain as strong as ever thereby disappointing advocates of a health and social care system located in a broader policy framework which emphasises health gain and a holistic approach to health."

From 1992, general practitioners in New Zealand had to accommodate new government requirements for specific contracts that were intended to spell out exactly what the government was paying for. Most general practitioners had never before been faced with a contract that defined what they did; many found the language of the contracts they were presented with was unfamiliar and sometimes it was unintelligible. The clash between the culture of clinical care in general practice and the culture of micro-managed government services was often extreme (Fougere, 2001). Independent Practitioner Associations (IPAs) developed as the main vehicle for the New Zealand government to require contractual accountability of general practitioners. However they also became a means for general practitioners to subvert the government's intentions, to protect professional interests. Jacobs (1997) pointed out that

> "... the IPAs absorbed the changes initiated by the State, and managed the contracting, accounting and budgetary administration responsibilities that were created. This allowed individual GPs to continue practicing as before and provided some collective protection against the threat of state intrusion into GP autonomy. The creation of IPAs also provided a new way to manage the professional/financial tension, the contradiction between professional motivation ... and the need to earn a living."

1.3.3. Benefits and costs of restructuring and changing philosophies

Although health system change has been disruptive, it has also provided benefits such as the emergence of new providers delivering health care in different settings and in different ways, improved information systems, and strong medical groupings that engage in political activities. The strengths of the restructured New Zealand system have been recognised as its inclusiveness, the consultation that occurred in developing it, and the reporting systems developed to monitor change (Signal and Durham, 2000). Innovation and improved flexibility and efficiency were evident within a few years of the 1992 "start" of the health reforms even though competitive tendering, initially proposed in 1991, was still in its infancy five years later. The public has received some aspects of "New Right" philosophies positively. Notable reactions include a rise in consumerism in health care that has accompanied the adoption of managerialistic approaches in public health. Patients now express their dissatisfaction with health services more readily than in the past (Beardwood et al., 1999).

Even considering these advantages, implementing the late twentieth century ideologies in health care management and changing health system structures have been associated with considerable financial and personal cost. The overall costs of health system changes have been offset by the benefits (above) and both have been difficult to assess or measure. For instance, efficiency gains were expected to cover the future costs of directors' fees, new layers of management, accounting procedures, public relations and debt recovery without eroding the resources available to provide actual health services, but whether such balance has been achieved has been difficult to decide. Prior estimates of the financial costs and benefits of changes to the health system were very inaccurate, despite these changes being proposed and justified primarily on economic grounds.[8] The establishment cost of the new health system for the first year (1992) was originally predicted in 1991 to be $15.7 million but had escalated to $82 million by December 1992. The government initially predicted revenue gains from user part charges of $95 million a year. By July 1992 these were revised down to $14.4 million. The abolition of charges for in-patient hospital services in April 1993 as the result of public outcry reduced this again. By 1995 it was evident that the experiment of turning public hospitals into market-oriented CHEs had failed. In their first year, CHE expenditure exceeded revenue by 11%. The government wrote off $300 million in CHE debts and injected another $100 million into hospitals in the 1994 budget. A further $534 million was allocated to the CHEs later in the year. Although the new contracting environment encouraged the development of improved information systems, public information on CHE operations was difficult to find. Despite coverage by the Official Information Act, in

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[8] Inaccurate cost predictions were also made of the Free Child Health Care Scheme. It was predicted to cost $61 million in its first year when it reality it cost at most $57 million (see Chapter Seven).

the competitive commercial climate of the time almost all data were deemed confidential.

Aside from the costs associated with changed management structures in hospitals, considerable and unanticipated transaction costs have been associated with formal contracting for other health services as well (Howden-Chapman, 1993; Ashton, 1998; Fougere, 2001). A proliferation of paperwork through the pursuit of contractually defined health care in the 1990s eventually led to concerted resistance on the part of general practitioners and retraction of demands for information on the part of government agencies (Rasiah, 1999).

With chief executives receiving financial output and efficiency-linked incentives, the quality of health care appeared to have become a subordinate consideration to the main goal of management - cutting costs and preventing waste. Public confidence in the health system was eroded during the 1990s by payments of performance bonuses to Chief Executive Officers of CHEs at a time when surgical operations and services at the same institutions were suspended for lack of funds. Individual inequities received extensive publicity and doctors objected to the perception that the new health system forced them to make clinical decisions based on economic criteria (Feek et al, 1998).

The international reputation of the New Zealand health system also began to decline. In 1994 the Australian Medical Council reported risks of *"a climate in which the essential elements of collegiality, quality health care and education are impossible to maintain"* (The Accreditation Committee, 1994) and warned that New Zealand medical graduates faced losing their favoured status in Australia. Demoralisation, stress, underfunding, and new opportunities in the private sector created critical shortages of key medical staff in some parts of the public health system.

1.4. Summary

Chapter One has introduced the central topic of this thesis, the Free Child Health Care Scheme and provided context to discussions in the following chapters by summarizing the structural and philosophical developments of the New Zealand health system.

The Free Child Health Care Scheme is a policy that has survived the dissolution of the coalition agreement, from which it arose. This chapter has described the wider political environment in which the health and political intervention, the Free Child Health Care Scheme, was introduced. The political turmoil of the mid-1990s placed the Scheme at some threat. The Chapter has described some specific threats and possible mechanisms by which the Scheme survived them. The power of individuals to make lasting changes to the New Zealand health system was documented in the actions of Winston Peters and Neil Kirton in forming the Free Child Health Care Scheme. Neither of these politicians has since regained the authority that allowed them to successfully advocate for the Scheme in 1996 and 1997. Beneficiaries of the Scheme were expected to extend throughout all levels of New Zealand society – including not only the young children to whom the Scheme was directly related, but also their parents and other family members, the health care professionals who care for them (particularly general practitioners), and politicians as well. The Scheme's relationship to improved access was reviewed and the meaning of the term "access" was clarified: it is not the same as measured or perceived "utilization", although utilization is the proxy measure that best reflects access.

A review of the history of the New Zealand health system has shown how the current contrary (or "complementary" (Scott, 1994)) system of mixed public and private funding of general practice has evolved. It has also demonstrated that major structural changes to the New Zealand health system are usually underpinned by philosophical views of politicians, who presumably reflect the dominant philosophical views of the times. Thus, generally in the century and a half of the health system's operation in this country, there has been a change from early individualistic philosophies to social cohesiveness philosophies in the early-mid twentieth century and, since the 1980s, back again to philosophies distinguished by their individualistic assumptions. The Free Child Health Care Scheme fits well with the traditional principles of social welfare that attribute responsibility for the health of New Zealand children to New Zealand society. Its fit with the "New Right" theories guiding public policy more recently is less obvious, although transaction-cost theory provides an adequate justification for its introduction and public choice theory suggests some possible reactions to the Scheme.

With this background, Chapter Two describes the health care and political environment for New Zealand children. The chapter's purpose is to impart an understanding of the logic for introducing a policy such as the Free Child Health Care Scheme.

Chapter Two

About Children: why was the Free Child Health Care Scheme needed?

2.1. *Introduction*

Chapter Two addresses the question: "why was a policy such as the Free Child Health Care Scheme thought to be needed?" It explores the past, present and future health status of the children of New Zealand, with particular reference to the role of government and general practice in protecting and promoting their health. The chapter develops a rationale for the Free Child Health Care Scheme in terms of children's needs and demonstrates how the information available to politicians in 1996 might persuade them to actively intervene to promote health care access for young children.

The chapter contains two main elements. The first is a presentation of available current and historical statistics on child health status in New Zealand. The second explains the development of child-related policy in New Zealand, with a focus on child health policy. The chapter summary then considers both the logic and the politics in support of establishing a Free Child Health Care Scheme in 1997. By this process, the chapter will address the above questions.

2.2. *Child health status in New Zealand*

Children are important to any society (and therefore to the political regulators of that society) because they are vital its future strength and success (Aynsley-Green et al., 2000). Childhood encompasses specific groups: newly born babies (neonates), infants, children, and adolescents. Each stage is characterized by different levels of emotional, neurological, and physical development, and each demands policies, services, and support tailored to reflect these differences. In the political arena, children are usually defined as "young people within the 0-14 age group" (Department of Health, 1990). The Free Child Health Care Scheme affects health care specifically for children aged less than six years,[9] so it is this group that the discussion in this chapter will focus on. Section 2.2 presents a summary of available child health statistics in New Zealand to provide context to the heightened political awareness of child health issues that preceded the introduction of the Free Child Health Care Scheme. This section also discusses the type of health problems children encounter, to inform a conclusion relating to the importance of general practitioner care in protecting and promoting children's health.

2.2.1. New Zealand child demography

In 1996, 7.7% of the total population, and 33.6% of children aged 0-14 years, were aged less than five years old. Children aged 0-14 years currently comprise about 23% of the New Zealand population. The proportion of children in the population has fluctuated throughout the twentieth century in line with fluctuations in childbearing rates, the number of people in the reproductive age groups and the ages at which people have children (Statistics New Zealand, 1999). After World War II, the child population of New Zealand increased considerably, but has declined since 1976. This decline is expected to continue throughout the first half of the next century so that by 2051 only 15.5% of the population will be aged less than 15 years. However, the proportion of children in the total population is still currently higher in New Zealand than in Australia, Canada, France, Sweden, the United Kingdom (UK), and the United States (US), and is projected to remain higher throughout the next 50 years (Statistics New Zealand, 1999).

In 1996 the ratio of boys:girls for children aged less than five years was 1.06, reflecting a birth rate that is higher for boys than girls. Historically, death rates and overseas migration have had little effect on the demographic profile of New Zealand children.

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[9] Although it is likely that there are downstream effects on other children, especially in families with older children as well as under-six-year-olds.

New Zealand children belong to a variety of ethnic groups. Between 1986 and 1996, the proportion of Pakeha (Caucasian) children in the New Zealand child population fell from 72.6% to 62.4%, while the proportion of Maori, Pacific Islands, and Asian children increased correspondingly.[10] The greater proportion of children in the Maori and Pacific Islands populations reflects both a higher concentration of women of childbearing age in these racial groups, and a higher fertility rate. Maori and Pacific Islands children in 1996 were more likely to be of pre-school age than European children (Statistics New Zealand, 1997).

In 1996, most children (66.8%) lived in large urban centres of 30,000 people or more. European children were the least urbanised, with 80.2% living in urban areas, compared with 98.1% of Pacific Islands children, at the other end of the spectrum. The distribution of children throughout New Zealand mirrors the distribution of the whole population, with 77.4% of children living in the North Island. Regionally, in 1996 Gisborne had the highest concentration of children (27.7% of the total Gisborne population) and Otago the lowest (19.7%). Gisborne also had the largest proportion of Maori children (58.6% of all children in the region were Maori), while throughout the South Island more than 80.0% of children were European (Statistics New Zealand, 1997).

2.2.2. New Zealand child health statistics

Child health statistics are performance indicators for both politicians (as moderators of society) and general practitioners (as healthcare providers) because they "*... indicate how well we look after the most vulnerable*" (Philp, 1999). This section traces infant mortality statistics over the past decade, and discusses common causes of mortality and morbidity among young children. The effectiveness of politicians as protectors of the health of the people of New Zealand, and of general practitioners as health service providers most often consulted by New Zealand children (Statistics New Zealand, 1997), is thereby examined.

2.2.2.1. Infant mortality

Statistics on infant mortality are the sum of neonatal deaths (liveborn infants dying before the 28th day of life) and post-neonatal deaths (liveborn infants dying between

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[10] From 20.0% in 1986 to 24.5% in 1996 for Maori; from 5.6% to 7.6% for Pacific Islands; and from 1.7% to 5.0% for Asian children.

the 28th day and the first year of life). Infant mortality rates are usually calculated as neonatal and post-neonatal deaths per 1000 total live births. Infant mortality rates, although crude, provide an internationally comparable measure of child health. Mortality rates among children are highest during the first year of life. In 1996, 417 New Zealand infants died in their first year, for an infant mortality rate of 7.3. Of the 635 New Zealand children aged 0-14 years old who died in 1996, 65.7% were less than a year old (NZHIS, 1996). Baby boys are more likely to die than baby girls[11] and the mortality rates in 1996 were higher among Maori, at 11.6 per 1,000 live births, than the general population (7.3).

In most war-free nations, the infant mortality rate has dropped continuously throughout the twentieth century. New Zealand's rate fell from 22.59 in 1960, to 16.72 in 1970, 13.00 in 1980, 8.31 in 1990 (Thorns and Sedgwick, 1997), 7.3 in 1996 (NZHIS, 1996) and 7.00 in 1998.[12] In 1980, the New Zealand infant mortality rate was ranked equal to that of the US but higher than most other developed countries, including Australia and Canada. In 1994 and 1995 the New Zealand infant mortality rate was still lagging behind that of our neighbours Australia and Japan. Despite the country's ranking improving slightly through the 1980s and 1990s (from 19th in 1980 to 17th in 1998), prior to the introduction of the Free Child Health Care Scheme concern was expressed locally at the country's poor performance on this measure and other child health statistics (Young, 1997). Figure 2.1 shows how New Zealand's infant mortality rate compares with that of other similar nations of the Organization for Economic Co-operation and Development (OECD). Although the infant mortality rate continues to fall, it is not falling as rapidly in New Zealand as in other countries. In 1998, New Zealand had the fourth highest infant mortality rate of the 21 OECD countries, better only than Greece, Portugal, and Turkey (Carroll, 1998).

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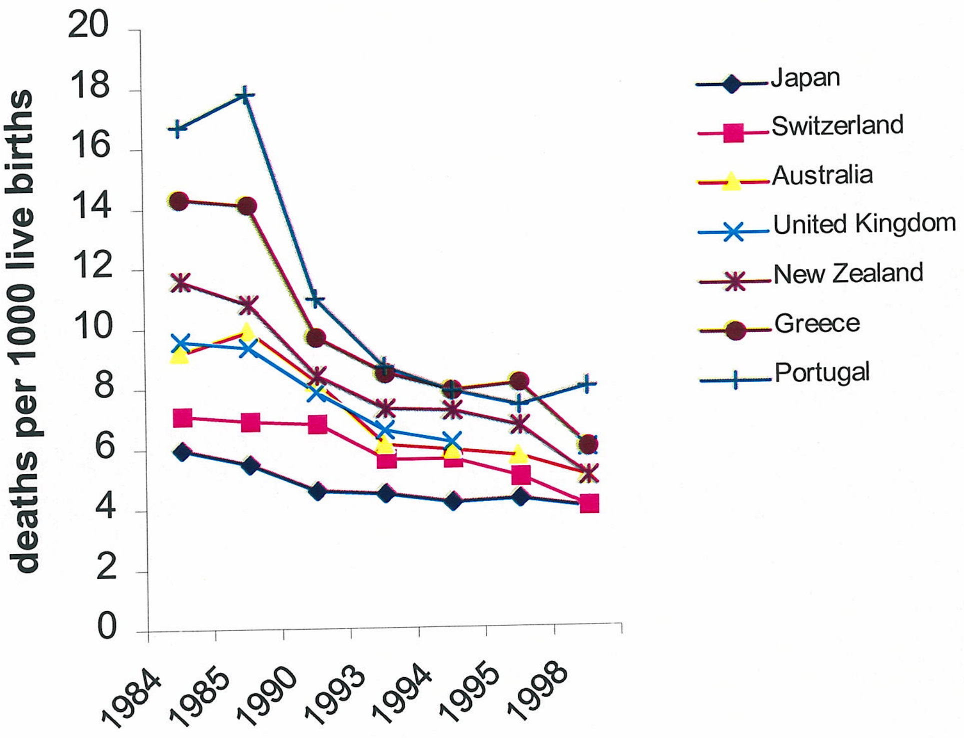
[11] In 1997 there were 5.8 female deaths per 1,000 live female births and 7.3 male deaths per 1,000 live male births.

[12] 1998 is the latest year on which published figures are available from the World Health Organization (http://www.WHO.org)

Figure 2.1 Infant mortality rates in selected OECD countries, 1984-1998



Throughout the 1990s sudden infant death syndrome (SIDS) was the most common cause of death among New Zealand infants, accounting for about 29% of all deaths of infants under one year old (Statistics New Zealand, 1997).[13] Other major causes of infant death were congenital anomalies (28% of infant deaths) and perinatal conditions (27%). Injury and poisoning caused nearly half (47%) of all deaths among children aged 1-4 years, in 1992-1994.

Since 1990, the government has repeatedly placed efforts to reduce SIDS high on its health policy agenda (Department of Health, 1990; Public Health Commission, 1993; Child Health Committee, 1998; Ministry of Health, 1998b). A detailed review of 429 post-neonatal deaths in southern New Zealand from 1979 to 1984 had concluded that there was no obvious under- or over-diagnosis of SIDS and that the southern New Zealand SIDS rate was 6.3/1,000 (Nelson et al., 1989). This was the highest rate in the world at the time and contrasted with a reported Hong Kong SIDS rate of only 0.04/1,000. Responding to this research, the 1990 government's policy goal was to reduce the 1987 SIDS rate by 10% by 1995 and by 20% by 2000 (Department of Health, 1990). To achieve this goal, four objectives related to the SIDS rate were stated:

1. to increase side and back sleep positions at 6 weeks to 80% by 1995 and 90% by 2000
2. to reduce maternal smoking in pregnancy by 10% by 1995 and by 20% by 2000,
3. to increase full breast feeding at 3 months of age to 60% by 1995 and 70% by 2000,
4. to develop by 1995 health system structures and processes to ensure co-ordination and management of well child nursing services.

The SIDS rate in the last decade has decreased by more than the 1990 goal, as shown in Figure 2.2. (Ministry of Health, 1998b) but the reduction has been uneven across racial groups. The non-Maori rate decreased 60% between 1984 and 1994, but the Maori rate decreased only 13%. Access to general practitioners is one of the means by which objectives (1), (2), and (3) could be secured, but there are no data from general practice to show that general practitioners' advice in these areas increased after 1990. The SIDS rate is the only statistic by which progress toward achieving the goal has been measured.

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[13] Between 1992 and 1994.

2.2.2.2. Hospital admissions

On average, 1.2 intensive care admissions can be expected per 1,000 children per year (Ratcliffe, 1998) and admissions to other hospital departments are more common. Hospital admission rates for primary care sensitive conditions provide an indicator of reduced quality of general practice care. The responsibilities of politicians to create an accessible public health service and the responsibilities of general practitioners to provide timely and appropriate care when called upon are both shown to be wanting in this situation. Further, there is evidence that hospital care itself is less safe for children than for adults. A past failure to acknowledge the special needs of children in medical research has resulted in frequent administration of untested treatments to children in hospitals. In the UK, Aynsley-Green, Barker et al. (2000) have estimated that 50% of drugs given to children in general hospitals, 60% given to them in specialist centres, and 90% given to seriously ill neonates are not licensed for use in childhood.

Hospital statistics derive from administrative records and relate to the number of discharges made – not the number of people admitted or discharged (Statistics New Zealand, 1999). From 1988 to 1995, there was an average annual increase of 5% in the hospitalization rate for all children aged 0-14 years. In 1974, children had a hospitalization rate of 89.6 per 1,000 population but by 1995, this rate had more than doubled to 197.5 per 1,000 (Statistics New Zealand, 1997). In 1995 the publication schedule for hospital discharge data changed. Prior to 1995, discharges were reported by calendar year and after 1995, financial years (1 July to 30 June) were used (NZHIS, 2000). The 1995 year is therefore the financial year from 1 July 1995 to 30 June 1996, and there is overlap with 1995 calendar year reports. The 1996 year for hospital statistics reports discharges made from 1 July 1996 to 30 June 1997 (the year before the introduction of the Free Child Health Care Scheme) and the 1997 year reports discharges from 1 July 1997 to 30 June 1998 (the year following the introduction of the Free Child Health Care Scheme).

Boys are more likely to be admitted to hospital than are girls (Statistics New Zealand, 1997). Statistics for 1995, the latest year available to politicians and planners developing the Free Child Health Care Scheme, showed that for infants in their first year of life, perinatal conditions were the most common reason for hospital admission, followed by respiratory conditions (14% of infant hospitalizations). In the same year (1995), respiratory conditions were the most common reason for hospital admission (26%) for children aged 1-4 years, followed by injuries and poisoning.

Respiratory conditions are usually primary care sensitive – that is, adequate, appropriate, and timely primary care for respiratory illness should usually avert the need for hospital admissions for these conditions. To a lesser degree, injuries are also primary care sensitive conditions.

2.2.2.3. Use of outside-hospital health services

The 1996/97 Household Health Survey (Statistics New Zealand, 1997) showed that general practitioners are the health professionals New Zealand children visit most often. In this survey four out of five children aged less than 15 years had visited a general practitioner at least once in the 12 months preceding the survey interview. Of these, 21.3% had visited a doctor six times or more during the year. For most (60.6%) children, their last general practice visit was for a short-term illness, but 12.3% consulted because of a chronic illness or disability, 11.3% for immunisation, and 11.4% because of injury or poisoning. As well as general practitioners, children received advice from pharmacists and nurses, and older children visited dentists. Although published data are limited, consultations with children have been shown to provide about one quarter of the workload in general practice (Palmer, 1988) and 30% of the workload in emergency departments (McIver, 1991).

Other research to describe the pattern of health service use among children is sparse. One recent Australian study of 173 infants living in middle socio-economic areas of Melbourne found that the mean number of total healthcare contacts in their first year of life was 32.1 (Goldfeld and Wright, 1999). Of these, 31% (mean 9.8 contacts per child) were general practitioner visits and 41.5% were visits to other primary health care providers for immunisations, routine check-ups, or questions about the child's health. Although the rate of consultation to other healthcare providers was significantly ($p<0.001$) higher in the first six months than the second, rates of general practice consultation were consistent throughout the first year. A study of two inner London general practices concluded that children were more likely than adults to attend emergency departments out of hours for primary medical care (Hull et al., 1998).

Dow (1998) has drawn attention to the failure of New Zealand's health services to adequately provide for the special needs of children since the health system's earliest configuration. His work suggests that New Zealand has trailed Australia and other countries in this respect, and he proposes that this may be because of the country's small and dispersed population.

2.2.2.4. Inequalities in child health status

a. Racial inequalities.

Racial inequality in health status is widely documented for adults and is emphasised among children of different races. The health of tamariki Maori has special significance because of the Crown's obligations under the Treaty of Waitangi to ensure that Maori have the opportunity to enjoy the same rights and privileges (including the right to good health) as non-Maori (Durie, 1994; Dow, 1997). The government established as a policy goal in 1990 the intention to improve the health status of Maori children to at least a level comparable with non-Maori children (Department of Health, 1990). As a means of measuring progress toward this goal the government intended to have all child health statistics and performance indicators include Maori numbers and rates by 1995. In line with this intention, in the latter half of the 1990s hospital statistics adjusted to include separate reports for Maori. As well as improved information on the health status of Maori children, the 1990 government (Department of Health, 1990) aimed to improve Maori health by setting objectives in three other areas. These were:

1. reducing Maori failure rate on school entry hearing screening tests to 8% by 1995 and 5% by 2000,
2. reducing the 1987 Maori SIDS rate by 15% by 1995 and by 30% by 2000, and
3. having Maori representation on all regional and national child health committees by 1995.

By the pre-election period in 1996 these goals appeared to have had little impact on the health of Maori children (Statistics New Zealand, 1997). Despite an overall reduction in infant mortality, in 1995 the Maori infant death rate was 2.3 times higher than for non-Maori. Between 1992 and 1997, the SIDS rate fell overall (Figure 2.2) but for Maori infants was still 4.5 times that of non-Maori children and the death rate from respiratory conditions in 1997 was 2.7 times that of non-Maori children.

Throughout the 1990s, Maori and Pacific Island children were more likely to be admitted to hospital than their Pakeha counterparts (Grant, 1999). There is some evidence that Maori tended to defer accessing health services and this may have contributed to their higher rate of hospital admission (Comari and DeBoer, 1995). Lack of rapport between doctors and patients of different cultures has also been reported (Davis et al., 1997; Grant, 1999) and may be an additional barrier to primary health care access. In 1995 the hospitalisation rate among Maori children was 88% higher than the national rate and it was 39% higher for Pacific Island infants (Carroll, 1998). The primary care sensitive conditions of injuries, poisoning and respiratory diseases were the most common causes of hospitalisation for children overall, and infectious diseases were the most common admission reason for Pacific Island children (Child Health Committee, 1998).

Maori and Pacific Island children tend to belong to larger families than European children (Ministry of Health, 1998b), suggesting they have access to a smaller share of the economic resource of their families than their European peers. In 1996, 26.0% of Maori children and 38.7% of Pacific Islands children lived in families with three or more siblings, compared with 14.4% of European children (Statistics New Zealand, 1999).

Availability of primary health care practitioners is generally lower in areas with high Pacific Islands and Maori population densities (Malcolm, 1996) and efforts made before the Free Child Health Care Scheme to improve access to general practice services did not appear to be effective in Auckland (Gribben, 1996). There is no more detailed research describing the use of general practice services in other parts of New Zealand, mostly because there is little information about the ethnicity of their patients in most general practice records. Research from the Dunedin RNZCGP Research unit in 1995 showed that recording patients' ethnicity was a low priority for general practitioners and even where Maori were identified, no standard coding system for ethnicity was used (Tilyard et al., 1998). From a public health perspective, it seems relatively straightforward to collect this information from patients as they consult. From a general practice perspective however, this is not the case. An earlier New Zealand study showed that asking patients about their ethnicity in general practice can compromise the patient doctor relationship (Kljakovic, 1993). This situation has implications for the formation of child health policy. Despite general practice being the site of most health care contacts by children, the statistics that were used to inform policy throughout the twentieth century were mainly hospital statistics. General practice statistics were difficult to access and usually lacked reliable information about ethnicity.

b. socio-economic inequalities

Poor health is more commonly found among children in families with prolonged low income, poor housing, low educational and vocational attainment of parents, and other social and economic disadvantages (Fergusson et al., 1990; Yoshikawa, 1994). It has been estimated that around 5% of New Zealand families are at high risk of adverse health because of their social and economic disadvantage, and a further 45%

are at moderate risk (Child Health Committee, 1998). Social disadvantage is an issue for general practitioners because they are often asked to intervene on their disadvantaged patients' behalf with government agencies such as housing and social welfare (McKenzie, 1998). During the 1990s several New Zealand studies confirmed the poor access to primary health care of disadvantaged populations in this country (Gribben, 1992; Malcolm, 1996; Malcolm, 2000). Malcolm's (2000) analysis of general practice use in Auckland showed that the Independent Practitioner Association (IPA) ProCare, serving relatively socially and economically advantaged patients in Central Auckland, had an annual consultation rate per person of 5.9 and a population per full time general practitioner of 1,135. By contrast, the Mangere Health Resources Trust, serving a disadvantaged population in South Auckland, had an annual consultation rate of less than 4.6 per person, and a patient population of 1,840 per general practitioner.

Children are more prone to poverty than any other age group in the population. In the UK, the proportion of children born and brought up in households with less than half of the average income tripled in the 1980s (Watt, 2001). In New Zealand in 1996, 23.4% of all children did not have a parent in paid work (Statistics New Zealand, 1999). The parents of 9.6% of children in two-parent families and 66.5% of children in sole-parent families were in paid employment. Infants and pre-school children in sole-parent families were more likely than older children to be in families unsupported by a salary or wage. A total of 41.2% of Maori children and 37.9% of Pacific Island children had no parent in paid work in 1996. By comparison, 13.8% of European children did not have a parent in paid work. Compounding risk of poor health among children in socially disadvantaged families is their relatively lower use of health services:

> "Little is known about how families and whanau experiencing multiple disadvantage use preventive services, but it appears that universal preventive and parent support programmes are not well accessed by this group. Many of these families and whanau make high use of late intervention, reactive services such as accident and emergency visits, and hospital treatment. Their participation in routine well child contact with a key health professional, such as a general practitioner or well child nurse, is less common than families and whanau in better circumstances." (Child Health Committee, 1998)

Most New Zealand children (76.4% in 1996) live with two parents but there is an increasing trend toward sole parent families (Statistics New Zealand, 1999). Children in sole-parent families are considerably more likely than those with two parents to have family incomes in the lowest quintile of all family incomes – 84.5% of all children in one-parent families were in the lowest two quintiles by income in 1996 (Statistics New Zealand, 1999). European children are less likely than Maori or Pacific Islands children to be in families with incomes in the lowest quintile. More than 50% of children live in households with incomes below the median for the country (Statistics New Zealand, 1999). These households spend a greater proportion of the family income on housing than households above the median for income (31.4% of the weekly budget compared to 14.4%), leaving less for other essential services, such as health services.

In 1996, the proportion of Maori and Pacific Islands children (41.2% and 29.0%, respectively) living in sole parent families was higher than for European children (16.6%) (Child Health Committee, 1998). Among pre-school children, 43.3% of Maori, 30.5% of Pacific Islands and 15.1% of European children lived in sole-parent families. One-parent families tended to be smaller than two-parent families, with an average of 1.7 children per family compared with 2.0 children in two-parent families in 1996. Overseas studies of the general health of children in single parent households have found that it generally differs little from the health of children living with two parents (Bolden, 1980; Kurt and Walking, 1983; Jennings and Sheldon, 1986). Specific health problems (behavioural problems (Douglas, 1970) and accidents (Roberts and Pless, 1995)) have however been found more commonly in children of single-parent households. Compared with children in other households, children in single-parent families have been found to consult more often in general practice and to have higher rates of infections and accidents. Lower immunisation rates and more home visits have also been reported among children living with only one parent (Fleming and Charlton, 1998).

The availability of a car is an important factor in determining access to health services. In 1996, 91.0% of all New Zealand children lived in families with at least one car but only 80.9% of Maori children and 79.4% of Pacific Islands children lived in such households. The proportion of children in families with access to a car increased progressively with family income (Statistics New Zealand, 1999). Pre-school aged children were more likely than older children to be in families without household access to a car (10.5% of children aged less than five years lived in a household without a car compared to 8.9% of older children).

2.2.3. Common reasons for children's health service use

2.2.3.1. Respiratory conditions

Respiratory conditions are common among young children. Their intrathoracic airways are vulnerable to obstruction because of their narrow calibre (Cochran, 1998). Some infections, such as respiratory syncitial virus, adenovirus, and pertussis seem capable of inducing respiratory symptoms that persist over an extended period of weeks or months. Respiratory symptoms are also induced or aggravated by other factors such as exposure to cigarettes and premature birth.

Although only a small proportion of young children have asthma[14] (Martinez et al., 1995), recurrent cough and wheeze are common among the problems infants present with in general practice (Cochran, 1998). Asthma medications benefit only those children with asthma, so they are ineffective for the majority of early childhood respiratory conditions (Stick et al., 1995). However, they are frequently prescribed because

> "... most doctors would want to offer the benefits of treatment to the minority of wheezy infants whose unpleasant symptoms can be relieved." (Cochran, 1998)

In the situation where parents must make an out-of-pocket payment for their children's medications, general practitioners may be less likely to prescribe drugs of likely ineffectiveness than in situations where these drugs can be tried without financial cost to families. In making medications free for young children under the Free Child Health Care Scheme, less constraint by general practitioners in prescribing asthma medications was expected but because of the infrequency of asthma among young children, little added improvement in health status might result. The evidence to support actual changes in prescribing patterns is presented in Chapters Five and Six.

Among the ten health goals set by government in 1990 to improve child health was the goal to significantly reduce child death and disability caused by asthma (Department of Health, 1990). Specifically, the government set out to:

1. reduce asthma hospital discharges by 10% by 1995 and by 20% by 2000;
2. to reduce time lost from school due to asthma by 10% by 1995 and by 20% by 2000;

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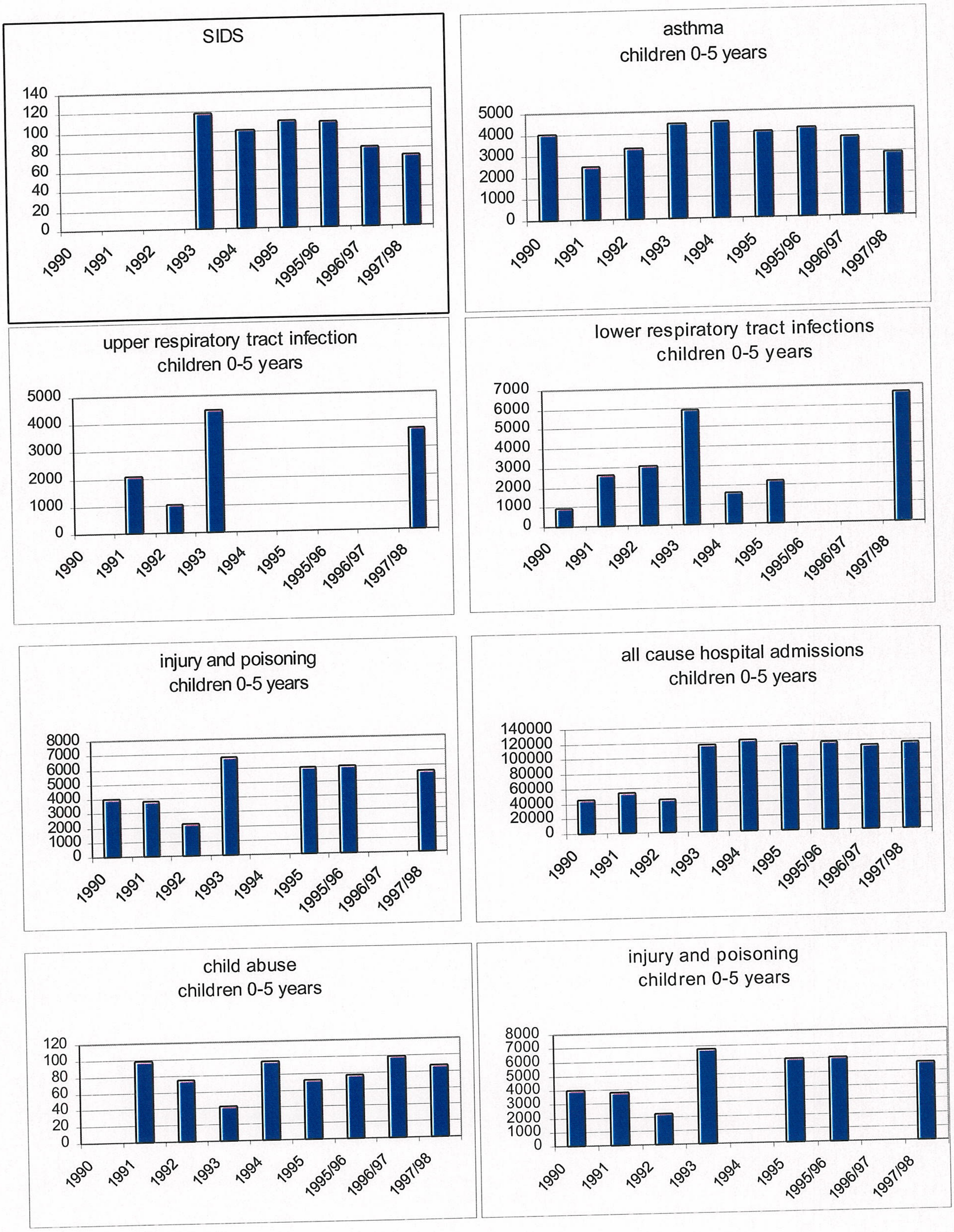
[14] In infants, the diagnosis of "asthma" cannot be made by peak flow measurement. Respiratory symptoms that will respond to treatment with asthma medications – oral bronchodilators, inhaled bronchodilators, and low dose corticosteroids – are usually diagnosed as asthma on the basis of their responsiveness.

Figure 2.2: 1990-1998 changes in hospital discharges for key conditions affecting children. (Some data are missing due to changing codes from year to year).



3. to increase the proportion of children with moderate or severe asthma who have an identifiable management plan to 50% by 1995 and 75% by 2000.

Progress towards these goals has been difficult to monitor due to radical restructure of the health system in the decade of the 1990s (discussed in Chapter Three), changing responsibilities for managing health information, and lack of an infrastructure that supports gathering national statistics on the chosen outcome measures. Significantly, the implementation of strategies to achieve these specific policy goals fell mostly to general practice, yet only hospital statistics were available to estimate the impact of policy change. In 1998, documents on child health policy could cite some hospital statistics[15] but they were unable to make any comment on progress toward implementing management plans among children with moderate or severe asthma. Figure 2.2 shows changes in the number of hospital admissions for asthma and upper and lower respiratory tract infections, during the 1990s. Although stable in the first half of the decade, the number of hospitalisations for asthma in 1997/98 was 27% lower than the number of children admitted to hospital for asthma in 1990 and the number had decreased in each of the three previous years. No such diminishing trend was apparent for other respiratory tract infections.

Child death rates from acute and chronic respiratory disease between 1990 and 1994 were higher in New Zealand than in Australia, Japan, the United States, Canada, and the UK (Ministry of Health, 1998b). This suggests that New Zealand was not employing all available strategies to reduce the effects of respiratory disease on children's health. In Auckland, the rate of hospitalisation for pneumonia among Pacific Islands children was stable for the years 1993 – 1996 at 14.0 per 1,000, a rate more than 5 times higher than the rate for European children (Grant, 1999).

Acute and chronic otitis media are other respiratory tract infections with particular significance for children because they may cause long term, and sometimes very serious, problems. The effects of early mild to moderate childhood hearing loss include delay in receptive and expressive language development, reduced academic achievement, and disturbed emotional and social development (Public Health Commission, 1994). Various studies have confirmed that otitis media is very common, with over 80% of children having at least one episode in their first year of life and nearly all children having experienced the illness by their third year (Zielhuis et al., 1990; Public Health Commission, 1994). The prevalence of otitis media with

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[15] That asthma accounted for 5,869 hospital discharges in 1995 and that 2 child deaths resulted from asthma.

effusion at age five years is about 8% of all New Zealand children. Many components of the national well-child screening schedule relate to hearing, speech and language development. The 1990 government established the goal to reduce hearing loss in children in the under five years age group at school entry to 8% or less by 1995 and to 5% or less by 2000 (Department of Health, 1990). Although the goal for 1995 was achieved for children overall, for Maori and Pacific Islands children, failure rates rose between 1993/94 and 1994/95 to an extent that made the 1995 goal unachievable for children in these ethnic groups. By 1996 the goal for 2000 also looked unlikely to be met (Crampton and Weinstein, 1997). In 1995 the Public Health Commission recommended that the government seek ways to improve health services access as the best means to achieve reductions in child hearing loss:

> "The single most significant means by which rates of child hearing loss will be reduced in New Zealand is to improve the accessibility of primary and secondary health care services including screening, referral, health promotion, and primary prevention to Maori and Pacific children" (Public Health Commission, 1995)

2.2.3.2. Injuries and poisoning

Injuries such as cuts, scrapes, and bruises are common effects of unsafe conditions young children encounter in their daily lives. Most often, these problems are minor and dealt with entirely within the home setting. However, injuries and poisoning can have serious health affects and they are a major cause of mortality and hospital admissions among New Zealand children (Statistics New Zealand, 1999). New Zealand compares poorly to other developed countries in child injury deaths (UNICEF, 2001). Overall, the number of child deaths from injury in OECD nations halved between 1970 and 1995. At the beginning of this period, Australia and New Zealand had similar rates, but by 1995 Australia had cut its 1970 rate by 60%, while New Zealand's fell by only 40%.

About a third of families in one study reported at least one emergency department or general practice visit was required for treatment of an injury afflicting at least one child aged less than six years, in their household in a year (Clamp and Kendrick, 1998). A relatively simple intervention was the subject of this study - general practitioners giving safety advice to parents – and it was shown to be effective in making children's living environments safer. Interventions of this type depend crucially upon families having access to their general practitioner, in order to receive this advice. The Free Child Health Care Scheme may have offered New Zealand children greater opportunity to benefit from such interventions after 1 July 1997. The

Clamp study produced another important finding – benefits from an untargeted child safety programme were found in low- and higher-income families to about the same degree. Moller (1997) has argued that an untargeted approach to injury prevention would lead to widening inequalities in health but Clamp's study results suggested otherwise.

One of the ten child health goals set by the 1990 government related to childhood injuries and poisoning (Department of Health, 1990). The goal was to reduce the unintentional injury death rate among children 0-4 years to 18/100,000 by 1995 and to 10/100,000 by 2000 and to reduce unintentional injury hospital discharge rates by 10% by 1995 and by 20% by 2000. The government aimed to develop and implement child unintentional injury prevention policy to this end. The death rate for all children aged 0-14 from unintentional injuries including road traffic injuries and poisonings was 16/100,000 population per year for the years 1990-94. Government strategies to address this problem included regulatory initiatives to remove environmental and product hazards, home visiting, and development of injury surveillance mechanisms. Figure 2.2 shows that by the measure of hospital admissions, strategies implemented during most of the 1990s failed. The number of hospitalisations for injury and poisoning in 1997/98 was 41% higher than the number in 1990 and had been higher in most of the intervening years for which comparable data were available. General practice was not directly implicated in any of these policy manoeuvres although general practitioners' contribution to an injury surveillance programme would be crucial.

2.2.3.3. Physical violence

Although New Zealand children are not among the millions of children killed, injured, or made homeless as the result of wars (Southall and Abbasi, 1998) they are at risk of the effects of physical, sexual, and emotional abuse that affect the millions of other children around the world who have been caught up in family violence. Estimates of the number of families experiencing domestic violence depend on definition, circumstances, and the method of inquiry, but even the lowest figures show that this is a common and serious problem with long term adverse effects on children (Hall and Lynch, 1998; Webb et al, 2001).

A goal for public health policy in 1990 was to reduce the incidence and effects of child abuse in New Zealand (Department of Health, 1990). Progress was to be measured by reducing hospital discharges for child abuse by 10% by 1995 and by

20% by 2000 and reducing the 1995 reported incidence of child abuse by 10% by 2000. As for asthma, measures by which to assess progress toward these goals were scarce. Between 8 and 12 children die annually as a result of domestic violence and this number seems to be increasing rather than decreasing (Ministry of Health, 1998b). In 1997, 13 children (7 of them preschoolers) died as a result of deliberately inflicted injuries. Figure 2.2 shows that throughout the 1990s there were fluctuations in the number of hospital admissions for conditions coded as child abuse. There is no clear indication of either an increasing or declining trend in such admissions.

General practitioners play an important role in uncovering this usually hidden social disease and protecting children from harm because frequently domestic violence manifests early as "legitimate" health problems among younger family members. Attention deficit disorder, for instance, has an increased incidence among children of violent families (Woodward et al., 1998). The Free Child Health Care Scheme, in removing one of the barriers to health care access, also may remove a barrier to recognition and protection of young children from domestic violence. The research in this thesis was unable to examine this effect, however, due to its reliance on routine data collections that fail to specifically code encounters where domestic violence is an overt or suspected reason for the encounter with the health system.

2.2.3.4. Immunisation-preventable diseases

In New Zealand, children are offered vaccinations in a routine schedule from age 6 weeks to 11 years, in order to provide immunity from diseases that have caused significant morbidity and mortality in the past. General practice is the co-ordinating point for most childhood immunisations. Vaccines include protection against smallpox, poliomyelitis, diphtheria, pertussis (whooping cough), tetanus, measles, mumps congenital rubella, and hepatitis B. BCG against tuberculosis is also available. Successful immunisation programmes have been an important health-promoting strategy internationally (World Health Organization, 2001). Perhaps the most notable success of immunisation has been with smallpox, now virtually eradicated around the world. General practice consultations for childhood immunisations also offer an opportunity for well-child checks. At these checks, growth and development, hearing, and vision are observed and interventions can be instigated if a need is identified.

The 1990 government included in their health policy a goal to increase use of child health screening and immunisation to a level that would ensure that 60% of pre-school children are fully immunised by 1995 and 70% by 2000 (Department of

Health, 1990). A 1996 survey of vaccine coverage levels in the northern region of New Zealand indicated that in this region at least, these goals were far from being reached (Ministry of Health, 1997b). At two years of age, full immunisation had been achieved by 45% of Maori children, 53% of Pacific islands children, and 72% of other children.

Despite the likelihood that immunisation goals set in 1990 have not been met, there was an overall decline in the incidence of immunisation-preventable diseases in the 1990s, compared to the 1980s. Measles epidemics occurred less frequently but measles immunisation coverage by 1996 was not yet sufficiently high to prevent epidemics altogether (Tobias et al., 1997). Measles, mumps, whooping cough, and rubella became notifiable diseases on 1 June 1996 so more information on the incidence of those diseases is now available than previously. The crude incidence indicator of hospitalisation rates jumped substantially in 1997/98 compared with the early part of the decade, as shown in Figure 2.2., possibly because of the changed status of common immunisation-preventable diseases. However, most immunisation-preventable diseases are still treated in general practice and do not feature in hospital statistics. Statistics on measles incidence in 1997 show an incidence rate of 184.5 per 100,000 children. This is 115 times higher than the measles hospitalisation rate of 1.6 per 100,000 in the same year (Tobias et al., 1997).

2.3 Children and government policy

The health of a society's children is an important indicator of the overall health of the society. For both long- and short-term reasons, politicians in western democracies have an interest in maximising the health of their nation's children. In the short term, the humanity of a government's regime can be directly measured by the way vulnerable groups in society, including children, are treated. Political commentator I. Hassell (1999), considering statistics such as those presented in the previous section, made the following assessment about New Zealand children:

> "We want to believe that children thrive in this country but the evidence continues to mount that a lot of them do not. They have a high rate of injury and death by accident, a low rate of immunisation."

Despite their lack of voter status and the relatively low level of health-related spending they generate, public policymakers have traditionally focused on children as one of society's vulnerable populations (Forrest et al., 1997). The literature on vulnerability describes it in three dimensions (Flaskerud and Winslow, 1998; Delor and Hubert, 2000):

1. higher risk of exposure to crisis situations (exposure),
2. fewer resources to cope with these situations (capacity), and
3. greater likelihood of being subjected to serious consequences as a result of these crises (potentiality).

Unlike many other vulnerable population groups, children are generally perceived as blameless for the adverse circumstances they may suffer. The country's social obligations (carried explicitly by elected officials) may therefore arguably be more profound for children than for others in society who find themselves in difficult circumstances, at least in part because of their own actions.

In the long term, politicians have an interest in promoting and protecting health in childhood because it has been shown that a child's early health status can affect later health (Hertzman and Weins, 1996; Holland et al, 2000). Factors such as low birth weight or inadequate situation early in life have a lifelong impact regardless of what happens in the intervening years. A healthy adult population can better serve the economic and social needs of a country than an unhealthy one. Despite this, governments have been slow to intervene on children's behalf. Aynsley-Green et al. (2000) offer the following comments on the UK government's support of children:

> "They are our guarantee for the future, yet one in three children live in poverty, with major effects on their health. Although healthy children become healthy adults, much adult disease has its origins in early life, and events in childhood and adolescence have long term sequelae that determine adult wellbeing. There would seem to be an irrefutable case for giving child health high priority in the government's philosophy, policy, and strategy, and in allocating resources. ... Although social policy interventions to reduce poverty are important in areas such as obesity, diabetes, cardiovascular risk, injury prevention, and mental health, other interventions in early life are likely to be more cost effective than at any other age. The need for urgency in addressing these issues is supported by the fact that in many areas, key indicators for youth health are going the wrong way – these include obesity, smoking, suicide, and exercise."

In 1997, the New Zealand government acknowledged the dearth of primary health care policy when the Minister of Health described the "no model model" as the government's strategy for guiding primary care (Burton et al., 1999). By this approach, the Minister implied a reluctance of government to constrain the development of the primary care sector by legislation and regulation. Over the years, health policy choices had established increasingly separate health "systems" for primary and secondary care (Scott, 1994), with the primary sector retaining a much stronger private funding component, and therefore attracting less interest from public policy-makers. Similarly, a specific emphasis on children has been generally lacking from government policy. In this section, policies with major impact on children are considered for their influence on child health.

There are opposing views as to the role of policies relating to children in the general health policy milieu. One view is that child health policy is generally a safe political arena. Most people accept that every child has the right to a healthy development and much of their health care can be delivered with relatively little resource compared with resources needed for health care for people in other age groups (Watt and Entwistle, 1996). People like children. Public opinion surveys have suggested that people in the developed world, including New Zealand (Department of Health, 1992a; Statistics New Zealand, 1999), generally think that children should be given preference in situations in which health care may be rationed (Watt and Entwistle, 1996). In the UK in 1995 philosophical debate about the priority of children's health needs followed the case of a child with leukaemia being denied publicly funded treatment that was considered unlikely to succeed. Several newspaper articles expressed the view that this child's right to an expensive treatment should have priority over health care expenditure on other groups in the community (specifically, people wanting cosmetic surgery, people with AIDS, health system managers and bureaucrats) (Entwistle et al., 1996).

However, children do not vote. For this reason policies relating to children tend to be ranked lower in importance to politicians than policies affecting adults (Kelsey, 1995). Children do not have the support of many powerful and vocal lobby groups.[16] The lobby group, Children's Agenda, has been most outspoken in New Zealand in advocating for a few crucial structures to be established to ensure that deliberate attention was paid to children as public policy is developed. However children, especially children as young as 0-6 years old, also do not make their own decisions

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[16] There are only two lobby groups in New Zealand that specifically address issues related to children's health. These are "Children's Agenda" (spokesperson: Ian Hassall) and "Child Poverty Action" (spokesperson: Susan St John)

about health care access and treatments (Entwistle et al., 1996). This has resulted internationally in a situation where many governments fail to accord the needs of children the priority they deserve. A recent UNICEF report (2000) states:

> "The time of early childhood should merit the highest priority attention when responsible governments are making decisions about laws, policies, programmes, and money. Yet, tragically, both for children and for nations, these are the years that receive the least."

Policy instruments are the means by which governments attempt to put their policies into effect. Hood (1986) has proposed that the policy instruments available to governments can be broadly described as:

> "... the use of the information in their possession ("Nodality"), their legal powers ("Authority"), their money ("Treasure"), or the formal and informal organisations available to them ("Organisation")."

In applying this taxonomy, most child health-related policy in New Zealand has been implemented by means of "Treasure" and "Organisation" instruments, and in particular the voluntary organisation instrument of family. Voluntary policy instruments generally entail little or no involvement by government (Howlett and Ramesh, 1995; pp 82-4). Governments often decide deliberately that they will do nothing about a problem they recognise, because they believe others can do it better. With respect to children, governments have traditionally been reluctant to intercede in decisions regarded as appropriately in the domain of the family. The primary advantage of promoting family as an instrument of public policy is that it does not cost the government anything, unless it chooses to provide grants and subsidies. However, reliance on family may promote inequalities because many children do not have families with adequate financial resources or emotional commitment to look after them. Furthermore, New Zealand society's view of children's status has changed over the years. A century ago, children were traditionally regarded as the property of their parents, with little or no personal autonomy. Now the State assumes a responsibility to protect children, even from their parents. Appendix Two describes the legislation and regulation that has been introduced over the years with a primary goal or expected side-effect being the protection and promotion of the health of New Zealand children.

2.3.1. Children and international policy

First, what is meant by "health" in New Zealand public policy has been established by New Zealand being party to a number of major international agreements such as the Ottawa Charter for Health Promotion 1986 and the World Health Organisation's (WHO's) International Health Regulations 1969 (Ministry of Health, 1998a). This partnership indicates the New Zealand government's acceptance of the broad model of health proposed by the WHO. WHO's health model is based on the notion that economic, political, social, psychological, and environmental factors all influence health. Some signatories, including the European Union (EU) and the UK, have a legal requirement to carry out environmental impact assessment of legislation and it has been suggested that similar procedures should be advocated for health impact assessment (Lock, 2000). In New Zealand, documents produced by government departments (such as (Public Health Commission, 1993; Ministry of Health, 1997a; Ministry of Health, 1997b; Child Health Committee, 1998; Statistics New Zealand, 1999)) implicitly adopt the WHO's broad-based definition of health. In 1998 there was a formal, explicit expression of this understanding when the Public Health Commission developed a framework for conducting health impact assessments for projects covered by the Resource Management Act 1991 (Public Health Commission, 1998). Most legislation does not receive this attention, however.

In 1993 the New Zealand government ratified the United Nations Convention on the Rights of the Child that was adopted by the United Nations General Assembly in 1989 (Ministry of Health, 1998a; The U.N. Convention on the Rights of the Child, 1994). The Convention has more than 50 articles covering virtually every domain of children's lives. Article 24 is the most directly relevant to health care. Specifically, Section 2 of Article 24 requires governments to take "appropriate measures" to ensure certain objectives, among them

> "The provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care." (Melton, 1999)

There is a compelling argument that the need for more health services (and therefore higher levels of public health expenditure) increases as people age, leading to observations such as: *"[w]hen push comes to shove, money has gone into things like adult waiting lists and mental health*" (Young, 1997) rather than child health initiatives. New Zealand, as a signatory to the Convention on the Rights of the Child made itself accountable to the world for increasing its emphasis on the health needs of children.

2.3.2. Children and financial policy

Much government policy has influenced child health indirectly through the route of financial support to families. The earliest example of legislation with a child health impact was the Neglected and Criminal Children Act 1867. This Act provided institutional care in industrial schools for the children of impoverished or irresponsible parents, and gave training to enable children to work to support themselves at sea, on farms or as domestic servants from the age of 12 to 13 years (Kelsey, 1995; p12). Children were also indirect beneficiaries of the first extension of government pensions to include people other than the elderly, when in 1911 widows with children became eligible for state support. Until this time, widows who could not earn a sufficient income while looking after their children were often forced to give their children up to institutions and might see them again only rarely. The protection of widows' children fitted with government policy to 'save the children as an asset to the State'. Widows with children still received much less money from State pensions than elderly people (Kelsey, 1995; p 31).

In 1926, the Labour party first developed a separate health policy that directly impacted child health when they established "baby clinics" at which free care was available to mothers and infants (Hay, 1989; p 63). Little further development in child health policy occurred until after World War II. In Europe during the War, rationing and nutrition studies contributed to an understanding of children's needs that governments had failed to acknowledge earlier. Several European countries considered universal Family Benefits essential in the postwar era (Kelsey, 1995; p 99). The New Zealand government likewise accepted a responsibility to play a direct role in protecting children and maintaining their health. In the Social Security Amendment Act 1945, a universal Family Benefit was granted for the education and maintenance of children. It replaced the earlier means-tested family allowance that had been paid to poor families since 1926 (and renamed Family Benefit in 1938) and was now to be paid out on behalf of every child from birth to 16 years. The universal Family Benefit was paid to 485,000 children in the first year, at a time when the whole population of New Zealand was less than 2 million (Kelsey, 1995; p 105-6). Initially the benefit excluded the small minority of children who were children of widows and war pensioners and who therefore already received a benefit on that basis. It also excluded children born out of wedlock. The universal intention of the scheme highlighted the position of these children and as soon as the Social Security

Amendment Act was passed, questions surfaced over what 'universal' in fact meant. The Act was rapidly altered to include children who escaped earlier inclusion.

During the 1960s there was a policy shift from concern over the psychological welfare of children in the 1950s to the social justice movement of the late sixties which claimed 'a better deal for children' in terms of their legal rights (Kelsey, 1995; p 170). In 1969 the Status of Children Act provided for the equal status of all children regardless of birth. Following this, the Royal Commission's report in 1972 advocated that New Zealand should renew and enlarge its commitment to social security and include direct benefits for children in changed policy. Historically, the evolution of social security in New Zealand has veered between support for the old and support for young children (Kelsey, 1995; p 5). The Royal Commission on Social Security in 1972 affirmed the place of social security in a wealthy nation and accepted moves throughout western society to strengthen the rights of all children to equal opportunity (Kelsey, 1995; p 8).

In 1979, adjustments to the government's superannuation scheme saved $114 million and these funds were made available to double Family Benefit payments to $6 per child weekly. The increase was significant and the cost to the public purse was $150 million annually for almost one million children. The Family Benefit was not indexed to rising costs or wages and so had lost real value over the years. In the International Year of the Child in 1982 the New Zealand Committee for Children requested a further rise from $6 to $9 in vain. Although Family Benefits were continually eroded by inflation, their symbolic role was important in New Zealand society. The Social Welfare Department maintained the early principle that the Family Benefit came with no strings attached. The purpose of the Family Benefit was to promote the welfare of children: it was not to be diverted as a tool to control the behaviour of parents. Several attempts were made to use it in this way:

- In the early 1970s the Social Welfare Department disagreed with suggestions that in view of the dangers of worldwide population growth, the Family Benefit should be withdrawn after the second child. It similarly rebuffed suggestions that benefits be withdrawn to punish parents whose children played truant from school.
- In the 1980s, medical specialists were concerned about New Zealand's increasing child mortality rates and the reluctance of Pacific Island women to seek antenatal medical care. They proposed that the Family Benefit could be paid from the 24th

week of pregnancy as it was in France, to encourage expectant mothers to have medical checks. This proposal was rejected.

- In the Netherlands the Education Act of 1990 effectively made childhood immunisation compulsory as no child could be admitted to school without written proof of vaccination against smallpox (Ottewill, 1996) and in a similar vein, withdrawal of the Family Benefit when children remained un-immunised was proposed in New Zealand.

The Social Welfare Department countered all these proposals by arguing that it was it was not their responsibility to punish women and children who did not take up public health services. Rather, it was the responsibility of the Health Department and health services to attract women and children to medical care. The cancellation of a benefit paid to a family already deprived (of public health services, by definition) would aggravate the existing adverse affects on the child's well-being.

The financial status of families is importantly related to the health of children in those families, so public policy directed at altering family income has an indirect impact on child health. By the end of the 1970s the New Zealand public had come to understand that their country was no longer a wealthy one. Family tax rebates were introduced in 1976 but were not adjusted according to the number of children and so were inadequate for large families. Targeted schemes to improve the financial status of families with young children were introduced in the 1980s, often clumsily. The first attempt at extending public assistance to families was Family Care, a wage supplement targeted to poor working families. This was a large-scale new development, a significant extension of the existing social security focus. It was means-tested and excluded middle class families and, more significantly, families already on a social security benefit. Strong protest brought a swift response that suggested that in the decade ahead rationalism and targeting would not always win out against public expectations and traditional social security patterns. Fougere (2001) has attributed rapid political response to public pressure to the highly centralised accountability of the New Zealand political system.

In 1986, on the recommendation of the Task Force on Income Maintenance, a new scheme of Family Support was established which included beneficiary families along with working families. As real incomes fell in the newly deregulated economy, the introduction of the Goods and Services tax (GST) in 1986 threatened family budgets further. GST meant that for the first time in New Zealand an indirect tax would be levied across the board on the sale of goods. This was acknowledged as a tough measure on poorer households where the whole income was channeled into essential expenditure. Family Support payments were raised to compensate (Kelsey, 1995; p 215-7).

The structural reforms of the 1980s and further political adjustments in the 1990s accentuated the divisions between rich and poor people in New Zealand society and children were over-represented among the poor. The 1991 census showed that a quarter of all New Zealand children lived in families where the parent or parents did not have paid work. The proportion of children living in sole-parent families had increased from 12% to 22% of all children between 1983 and 1991. Both these statistics suggested heightened health risks for children in the 1990s, over the previous decade. In 1971 Tudor Hart described the inverse care law, that

> "the availability of good medical care tends to vary inversely with the need for it in the population served" (Tudor Hart, 1971).

Salmond (1972) confirmed the operation of the inverse care law in New Zealand when he found that differential availability of health services was the best explanation for differences in the health behaviours of mothers of a cohort of 468 infants. Barnett (1978), Malcolm and Clayton (1988), St John (1994), and Sutton and Crampton (1997) continued to build the body of evidence in support of the inverse care law operating in New Zealand. Over the years these authors have documented the decline of real purchasing power of government assistance to families and increased reliance on this support because of increasing costs for education, health, and housing.

2.3.3. Children and health policy

In 1990, the New Zealand government produced its first policy statement specifically setting goals and targets to improve the health of New Zealand children (Department of Health, 1990). The statement was constructed around the principles of respect for individual dignity, equity of access, community involvement, disease prevention and health promotion, and effective resource use. Ten priority areas for child health were identified in the 1990 policy statement and specific, mainly measurable, objectives were listed. The 1990 child health public policy goals were established in an environment where politicians were starting to more systematically consider the purposes of significant public expenditure on health and were seeking to explain and rationalize this expenditure. The 1990 health goals were developed at the start of a time of considerable change in the health sector. Although subsequent governments restated their commitment to child health and child health has consistently been a "health gain priority area" throughout the 1990s, later health policy statements generally failed to refer to the 1990 goals or to present measures indicating progress toward the goals set in 1990. In 1990, no comparisons were made with other countries in an effort to set standards. Shortly after, this changed. From 1993 achievements of the New Zealand health system in meeting the health needs of children were explicitly compared with achievements of other countries, and this provided the only publicly acknowledged measure of the effectiveness of public policy relating to child health. Even so, the available statistics to date (up to 1997/98) show little progress on improvements in the child health areas established as important in the 1990 policy (Figure 2.2).[17]

2.4. *Summary*

This chapter provides two answers to the question: "why was a policy such as the Free Child Health Care Scheme thought to be needed?" The first answer was found in health statistics. The data on New Zealand children's health statistics presented in this chapter provide evidence to support the view that children's health status in New Zealand had been worsening in comparison with the rest of the world for some time. Statistics had deteriorated through the 1990s in almost every area of child health. Public health statistics relating to hospitalizations and deaths become available after a lapse in time of two to three years. When government policy was being considered in 1995 and 1996 for implementation in 1997, policymakers would have data on the years up to 1993 or 1994 (at the latest). These data would have presented a reasonably compelling case for renewed effort to improve the health of New Zealand children. This chapter has shown that there was a strong argument in support of some intervention to avert declining health status statistics of New Zealand children.

The second answer relates to the choice of a government regulation as an intervention to improve child health. Section 2.3 of this chapter showed that policies that impact on child health have long been part of the social environment in New Zealand. By the 1996 general election there was mounting evidence that existing government policy inadequately supported the health of New Zealand's children. Various statements and plans to improve child health had been without measurable positive impact and the statistics instead showed a picture of declining health status of New Zealand children,

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[17] The exception being SIDS – see Figure 2.2.

both in relationship to earlier years and in comparison with other countries (see Sections 2.2.2. and 2.2.3.). Despite child health policies being specifically developed since 1990 (Department of Health, 1990), and child health being a government health gain priority since 1993 (Ministry of Health, 1997b), after the 1996 election the mismatch of intention with action was still apparent. Moreover, the New Zealand government was a signatory to the United Nations Convention on the Rights of the Child. The Convention provided a yard-stick to measure and compare the actions of New Zealand and other signatory governments in protecting the rights of children to (among other things) "*the enjoyment of the highest attainable standard of health*" (Melton, 1999). A realistic expectation was that political action should be taken by government to demonstrate its commitment to the Convention. The Free Child Health Care Scheme was such an action.

General practitioners were key players in providing health care to children, but very little information was available to assess the quantity, quality, or outcome of general practice services. By the time of the 1996 election, the child health policy arena was ripe for innovation. Whether the Free Child Health Care Scheme was the right policy, directed at changing the right elements to best promote child health, has not been considered in this chapter. It was *a* policy, and arguments to justify it could be supported by health statistics. It also directly impacted on general practice, because it was general practice care, in particular, that was to be made "free" by the Scheme. The next chapter explores New Zealand general practice and in particular presents a rationale for the significance of the Free Child Health Care Scheme to New Zealand general practitioners.

Chapter Three

About general practice: why was the Free Child Health Care Scheme relevant?

3.1. *Introduction*

Chapter Three examines the importance of general practitioners' role in providing health services for children in order to address the question: "why should general practitioners care about the Free Child Health Care Scheme?" In making health care "free", the Free Child Health Care Scheme changed the payment system for the two main health services received by children that were, to that time, not free – general practice consultations and medicines. Hospital services as in- or out-patients of public hospitals were already free. Hospital care in private hospitals would continue to attract the same charges as previously. The Scheme was of special relevance to general practice because general practitioners provided more health services to New Zealand children than any other healthcare provider (Statistics New Zealand, 1997), and because care to young children constituted a significant amount of the work of many general practitioners. More than this straightforward answer, however, changing the responsibility for paying for general practice consultations from patients to the government would alter the professional basis underlying their provision. Making general practice services free by government edict had been tried and failed before, for reasons relating to both the history and the philosophy of medicine. Chapter Three investigates more subtle layers of meaning for general practitioners in the Free Child Health Care Scheme.

3.2. The Free Child Health Care Scheme is relevant to general practice for historical reasons

This chapter first relates the relevant history of medicine and of general practice to explain the importance of the political environment to clinical practice and the symbolic significance of fee-paying. Section 3.2 explains how both politics and payment make the Free Child Health Care Scheme relevant to general practice.

3.2.1. The Hippocratic Oath

First, the Free Child Health Care Scheme is relevant to general practice because it enlarges the role of the payer intermediary (government) in the provision of general practice care and thereby influences the most basic care component – the patient-doctor relationship. Western medical traditions generally trace their origins to ancient Greece. The Oath of Hippocrates of Cos (circa 500 BC) set norms for ethical patient-doctor relationships that were widely quoted by ancient Roman physicians and by a multitude of physicians in the Middle Ages (Celsus, 1971; Temkin, 1991; Robin and McCauley, 1995). The Hippocratic Oath is relevant to the current discussion because it sets ethical standards for the practice of modern medicine that are in some respects at odds with the ethical principles guiding governments. Specifically, there is an item in the Hippocratic Oath (and in most other oaths administered to medical graduates)[18] that requires doctors to consider first the wellbeing of the individual patient seeking their counsel (Orr et al., 1997). Despite all the changes in medicine in the twentieth century,

> "... it still follows the precepts of the Hippocratic Oath, that the prime consideration must be the welfare of the patient and that professional confidentiality must be maintained." (Wright-St Clair, 1989; p 27).

The Hippocratic Oath, setting the professional foundation of medicine, does not consider third parties in healing medical relationships. In the tension between medical and political ethics over health services rationing, philosophical debate has lately tended to favour moderation of the "Hippocratic" stance concentrating on individual patients, in support of wider social responsibility. Even so, New Zealand general practitioners had to adjust to the implicit expectation of increased accountability to

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[18] Many versions of the Hippocratic Oath are in current use by medical schools and in some schools, other oaths are used, including sometimes oaths written by the students themselves. Orr (1997) made a detailed analysis of these oaths.

government with the increased government payments resulting from the Free Child Health Care Scheme, while still making individual patients' needs their prime concern, in line with their professional obligations.

3.2.2. The birth of modern general practice

The New Zealand medical historian R. Wright-St Clair has made the most comprehensive investigations of the foundations of general practice in New Zealand so this section draws heavily on his writing. Wright-St Clair (1989) chose a starting point in the Middle Ages from which to trace the development of New Zealand general practice. In nominating this beginning also, this author acknowledges the exclusion of the tradition of Maori healing practices that are unique to New Zealand and have at least as long a tradition as western medicine. However, these healing arts still have almost no place in the current New Zealand general practice experience. The dominant formative influence on New Zealand general practice has been western - and specifically, British (Hay, 1989).

Distinct branches of medical practice have been institutionalised in separate professional groups only in the last three centuries or so (Wright-St Clair, 1989). In Britain the earliest distinction arose in the Middle Ages between physicians and surgeons. Physicians prescribed and sometimes administered healing remedies, mainly to the wealthy. Surgeons developed techniques to deal with all kinds of injuries and trauma, from gross battlefield wounds to the problems of toothache. They also delivered their services mainly to the wealthy or on behalf of the wealthy to their followers and staff. Apothecaries formed a third group of medieval health care providers. They first appeared in history as dispensers of medicines. They were also healers for the ordinary folk – those who were not of the aristocracy, or soldiers or sailors. Apothecaries often "*roamed the countryside*" (Wright-St Clair, 1989) and also provided medical advice to the poor. At this time, the term "apothecary" was used to describe a type of medical practitioner who was "*a cross between the pharmacist and the general practitioner of today*" (Wright-St Clair, 1989). The medical historian, Dr I. Loudon, dates the earliest use of the term "general practitioner" in its current sense to 1809 (Loudon, 1986) in the United Kingdom (UK). In fact, the term probably describes a type of medical practitioner that has always existed (Helliwell, 1999; White, 2000a).

From the Middle Ages in the UK the two Royal Colleges, of Physicians and of Surgeons, trained professional medical practitioners. The College of Surgeons provided doctors with training in surgical practice. This training was generally limited to the treatment of fractures, abscesses, ulcers, skin conditions, and venereal diseases. By the early nineteenth century, most who undertook surgical training also studied pharmacy for a qualification from Apothecaries Hall. The dual qualifications, Member of the Royal College of Surgeons (MRCS) and Licentiate of the Society of Apothecaries (LSA) were the most common qualifications for the general practitioners of the early nineteenth century.

By the beginning of the nineteenth century it was common for surgeon-apothecaries to both prescribe and dispense medicines although they were supposed only to dispense, following instructions from physicians. Their prescribing function was first acknowledged in law in 1830 when a surgeon-apothecary successfully sued to recover fees for providing health care (and not simply dispensing medicine). In the view of *The Lancet,* this judgement elevated the formal status of general practitioners both professionally and socially to the level of other medical practitioners (Wright-St Clair, 1989). There was some opposition to this verdict from the Royal College of Physicians who thought that physicians should do all the prescribing and that apothecaries should continue to only dispense medicines. This episode modeled a recurring issue: wrangles over fees for medical services appear from time to time through history, such that fees and charges, viewed from an historical perspective, appear less important for their monetary value than for what they represent as a symbol of political and professional independence. Early general practitioners persisted in encroaching on the professional domain of the physicians, to provide patients who came to them the health services and products they sought.

After this decision was reported in *The Lancet*, it still took more than a century of radical change in medical practice, education, and the structure of medical professional institutions before the Royal College of General Practitioners was founded in 1952. However, early attempts to establish their own college demonstrated the political solidarity of doctors working in general practice. They knew who they were, they recognised their distinct and different orientation from other medical professional groups and they were able to band together to form a political force to advocate for change. Often their political action appeared to be taken not primarily to defend the best interests of their patients, but to secure their own autonomy and livelihood. The altruism of doctors and their concern for their patients was in practice balanced by their concern for themselves, their working conditions, and their professional status. This balance is also a recurring feature of the development of general practice. From time to time it has produced negative stereotypes of "money hungry" general practitioners and in cases of disagreement with government it has allowed politicians to hold the moral high ground in their representations to the public (Wright-St Clair, 1989; p 25). Lovell-Smith (1966; p 1) attributed the periodic frustration that medical and political practitioners exhibit toward each other to:

> "... the [medical] profession's outlook on various social issues [being] frequently radical, judged by the standards of the time. This ambivalence has perplexed many governments, and charges of hypocrisy and self-seeking have often been leveled at medical men in matters of politics."

3.2.3. The development of general practice in New Zealand

Although the primary care function is basically the same in developed countries, the finer aspects of general practice organisation and practice differ from country to country. Understanding the national context is important because:

> "... the unique character of New Zealand, its overseas connections, and its people have given health care arrangements in this capitalist society a particular twist" (Hay, 1989).

New Zealand's earliest doctors were trained outside the country, usually in the UK. Medical practitioners among the original European settlers in this country were therefore exposed to the intense growth spurt in medical knowledge that European countries experienced in the mid-nineteenth century. Rather than as New Zealand doctors, they saw themselves as *"...British doctors practicing British medicine in a British colony..."* (Wright-St Clair, 1989). They came to live half a world away from where all these discoveries were being made but they knew of scientific advances and they understood their need to keep up to date. At this time every New Zealand medical practitioner was a general practitioner. However, in contrast with their counterparts in other countries, most New Zealand general practitioners had higher degrees. They also often practiced specialty medicine as well as general practice (Lovell-Smith, 1966; p 34).

3.2.3.1. The development of general practice education

In 1874 the first professor was appointed to the Medical School in Dunedin and in 1887 W.L. Christie was the first graduate of the school (Wright-St Clair, 1989; p 18). In that year also (1887) the first edition of the *New Zealand Medical Journal* was published and the previous year the New Zealand Medical Council was founded. These events signaled the establishment of the medical profession in New Zealand. Hay (1989; p 36) described the political and professional motives for developing an independent medical training programme in New Zealand:

> "... the overall success of the colony, its considerable population expansion, and the undoubted desires of local politicians and doctors to increase the domains of their power, and to raise the status of the colony all encouraged the founding of New Zealand's first medical school in Dunedin in 1874. ... The move towards medical associations and the establishment and growth of a medical school represented interesting steps in the institutionalization of the place and power of the medical profession in New Zealand society. In effect, the medical school and, to a lesser degree, the medical associations served to place the contemporaneously accepted position and responsibility of doctors within a formal framework which facilitated the transfer of that status from one generation to the next. ... The notion that scarce products attract high prices probably also underpinned medical school admission rates. Aside from the more apparent reasons for setting up a medical school in New Zealand there is an additional explanation. Under the pre-medical school and medical association conditions, doctors in New Zealand had neither control of the number of their colleagues who practiced here nor of their quality – an important factor amongst practitioners struggling to promote their professional status."

Thus establishing a base of medical education in New Zealand both reflected the needs of the local people and established doctors as a political entity because they could then regulate supply through the mechanism of controlling entry to (and hence, exit from) medical schools. Later, government would play a more active role in controlling the medical workforce by setting limits on the numbers of medical students whose education they would financially support. In the nineteenth century, however, the university and the Medical Association made these decisions.

3.2.3.2. The development of general practice professional organisation

Becoming established as a separate medical specialty was a major political milestone for New Zealand general practice because in doing so general practitioners claimed the right to set standards for the education of their successors and the right to regulate their own professional standards. Internationally, from the beginning of the twentieth century there was an increasing emphasis on the development of medical specialties such that, by the 1950s, some doubted whether general practice could or should continue to exist. In 1947, the United States of America (US) became the first country in the world to establish a separate general practice professional organization

(Fishbein, 1947; p 314). In 1952, the UK followed and established the College of General Practitioners.[19] Several New Zealand general practitioners were among the early members of the College. In 1953 a faculty of the College of General Practitioners was formed in Auckland, with responsibility for New Zealand College members (Wright-St Clair, 1989; p 35). Two further faculties (in Christchurch and Dunedin) were established in 1955. In December of that year at a meeting in Wellington, the Interim Council of the College of General Practitioners in New Zealand was founded.

The College in New Zealand was specifically described by its founders as a *"strictly non-political body"* (Wright-St Clair, 1989; p 47). Despite this, its work was:

> "... to lead, to stimulate, to reward, and to find ways and means to overcome, at least in part ... the isolation of the general practitioner" (Wright-St Clair, 1989; p 39)

This task had political possibilities that were soon realised. Responsibility for postgraduate education was claimed as an early obligation and College members were also active in undergraduate education. In the view of early College members, education and research defined the scope of activity of the College, yet as Wright-St Clair (1989; p50) commented:

> "Although it was an academic body eschewing medico-political matters, the College in New Zealand was certainly active in matters which were at the time exercising the minds of the medical profession and the health administrators"

Reasons for the College's reluctance to be identified as a political body are unclear but the stance is probably due at least in part to the social climate of the time that placed medical and political professions on different social scales. It may also be a reflection of the New Zealand psyche – the tendency to under- rather than over-state one's capabilities. Certainly the penultimate step in the progression of general practice to an equivalent status with other medical specialties seemed to come about almost by accident. In 1967 the New Zealand Medical Council made a resolution accepting membership or fellowship of the College as registrable additional qualifications.

> "In this single act the Medical Council have shown us the most extraordinary confidence – they have upgraded our College from something that was in the nature of a club to something of academic quality – or at least have thrown the ball fairly and squarely into our court to make it something of academic quality." (New Zealand Council, 1969)

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[19] In 1947 the Queen granted the College the privilege of using the title, The Royal College of General Practitioners.

Among the matters on which the Royal New Zealand College of General Practitioners (RNZCGP) advised the Medical Council and government was the establishment of departments of general practice in the New Zealand Medical Schools. Finally, with the establishment of full university departments under Chairs of General Practice in the medical schools of the universities of Otago (in 1983) and Auckland (in 1989) general practitioners had a solid academic as well as professional base (Wright-St Clair, 1989; p 111).

During the 1980s and 1990s the RNZCGP gradually changed its orientation away from the explicitly non-political stance its founders adopted in the 1960s to a proactively political attitude by the late 1990s. The 1999 College Chairperson no longer waited to be consulted on issues of importance to general practice, but instead defined the issues for incoming government and proposed solutions. The RNZCGP developed a briefing document for the incoming Labour government after the 1999 elections (Burton, et al., 1999). This document was an explicit expression of the "lobbying" function of the College – in essence a recommendation to government on the purpose, structure, and infrastructure support of the primary health care function in New Zealand. Dr R. Wiles, the College Chairperson, explained the political considerations that prompted the development and release of that particular document at that particular time (RNZCGP, 2000; p 1):

> "Our decision to embark on such a fundamental review at that particular time [late 1999] was quite deliberate. By issuing a document in advance of the government's we were implicitly inviting a comparison of that document to our own, rather than the opposite. And we quite explicitly demonstrated that General Practice has its own ideas on its future, and the capacity to analyse and encapsulate them."
>
> "Key state sector decision-makers have been provided with copies of the Taskforce report and many have received personal briefings."

3.2.3.3. The development of Independent Practitioner Associations (IPAs)

The establishment of IPAs was the major political and organisational change in New Zealand general practice in the 1990s. Continuing changes of subsidy eligibility, accompanied by periodic bouts of "restructuring" during the 1990s taught general practitioners new skills in both administration and politics as they learned how to interact with policymakers and those implementing policy (Fougere, 2001). They developed IPAs as new organisational structures to attend to the administrative and (increasingly) political functions that many general practitioners wanted to be spared in their pursuit of the freedom to practice their profession. Prior to the formation of

IPAs, general practitioners relied on their professional organisations – the General Practitioners Association (GPA), the RNZCGP, and the Medical Council, to represent their interests in different political domains.[20] These organisations retained their traditional roles, but IPAs emerged as the main brokers of health care financing, quality, and continuing professional education in general practice. Not all general practitioners were comfortable with the IPA concept. Some, particularly rural doctors, banded together in a similar grouping they declined to call an IPA (Smith, 1992), although the distinction is unclear.

Forming into IPAs afforded general practitioners both the comfort of sharing their concerns and ideas with others of like mind and gave them collective power to express their views in contract negotiations. Most general practitioners in New Zealand now belong to an IPA. By May 1999, there were 32 IPAs nationally, comprising 2092 general practitioners and providing healthcare for an estimated 3.1 million patients (Coster and Gribben, 1999). IPAs formally adopted a self-rationing mode of operating (termed "clinical governance" by Malcolm and Mays (1999)). The emphasis in clinical governance is on improving health care services to a population by reducing inter-practitioner variation, improving doctors' information systems and instituting professional (rather than personal or financial) incentives. The most significant difference between clinical governance by general practitioners in New Zealand and typical health service governance in other countries is the absence of financial risk in the presence of all the other governance responsibilities, especially the responsibility for managing tax-payer funds. Malcolm and Mays (1999) explain the rationale for this apparent disregard for a balance of rights with responsibilities:

> "... most associations continue to reject bearing full financial risk. This is understandable. Like the boards of public hospitals, they manage large sums of public money. Unlike such boards, they have no capital base against which to borrow to cover over-expenditure. They face political and professional risks, which make them cautious about taking on the full financial risk. Furthermore, they assert that their goals and incentives are primarily professional, not commercial. Consequently, nearly all associations reject direct personal gain, seeing it as both unprofessional and unethical. Although the associations consist of private providers, they see themselves as "quasi-public" bodies, managing additional public money to achieve public goals."

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[20] The GPA has primary responsibility for looking after doctors' financial and industrial interests while the College's responsibility is the educational, professional, and quality maintenance aspects of general practice.

Thus general practitioners in New Zealand have accommodated the responsibility their profession shares with government to promote, protect, and maintain the health of the people of New Zealand while at the same time protecting their status as private income-earners (rather than public employees). More comprehensively than physicians in similar situations in other countries, they have worked out with the New Zealand government an operating style that suits the needs of both.

A further influence of IPAs that is relevant to the current investigation is that they have encouraged the use of electronic medical records in general practice. Without this, the investigations reported in Chapters Five and Six (Dovey and Tilyard, 1998) would not have been possible. For more than a decade, New Zealand general practitioners have steadily increased their use of computers in their practices, a trend that accelerated when IPAs became established. In 1996, a computer was used for at least one task by 84% of general practitioners responding to a survey about levels of computerisation (Thakurdas et al., 1996) and by 2000 this proportion had increased to almost 100% (M. Tilyard: personal communication). There is little research evidence of a robust association between computerisation and quality in general practice (Bolton et al., 1999) although the use of electronic medical records can improve some surrogate outpatient care outcomes (Jerant and Hill, 2000)). The latter research suggests that some measures of quality are probably higher in computerised than non-computerised practices. For clinicians, the most important reason for using electronic medical records to establish a patient data set is to assist with patient care (Tilyard et al., 1998). There is as yet no evidence of positive societal health economic effects of using computerised patient records in primary care. Arias-Vimarlund et al (1996) have instead shown that in the first year after implementation of electronic medical records there was a significant societal cost, largely as a result of reduction in doctors' leisure time because of their need to acquire new skills in computer technology and information management.

3.2.4. Previous clashes over "free" general practice

The Free Child Health Care Scheme is relevant to New Zealand general practice because the profession has previously disagreed with government over the matter of providing free health care to patients. The principles established during the introduction of the welfare state into New Zealand provide an important guide to the reactions of general practitioners to the Free Child Health Care Scheme.

3.2.4.1. The Social Security Act, 1938

The medical profession (and in particular, general practitioners) was central in determining the structure of the New Zealand health system as part of the Welfare State created by the Social Security Act, 1938. Two general practitioners (one who acted on the side of government and the other acting for the medical profession) played key roles. One was Dr D.G. McMillan, who entered politics as a Labour member for Dunedin West in 1935. He had spent a year as a house surgeon in Christchurch Hospital after qualifying and had then worked as a locum tenens in Kurow. From there, he entered politics as the Labour Party member for Dunedin West. The other was Dr E.B. Jamieson, who was the spokesperson for the British Medical Association[21] (BMA) throughout the six years of negotiation surrounding the 1938 Social Security Act. Also a general practitioner, Jamieson came from Nelson, and was some twenty years older than McMillan. Writing of the period in the 1960s, Lovell-Smith, yet another general practitioner, found it difficult to disguise his partiality for Jamieson and the viewpoint of the medical profession. He characterised Jamieson as *"... an outstanding and highly respected practitioner, ... a man of considerable personality, a natural leader with a gift of eloquence..."* (Lovell-Smith, 1966; p26) whereas McMillan he represented as *"... persuasive on the platform, even if his arguments did not always stand up to close scrutiny"* and *"[not] in touch with medical opinion, except with those whose political views coincided with his own"* (Lovell-Smith, 1966; p 38).

At the Labour Party conference in 1934, McMillan articulated his vision for a New Zealand national health service. The party subsequently adopted this vision and with few alterations it became the system proposed in the 1938 Social Security Act. From about the same time, the local BMA had been working under Jamieson's guidance to propose its own health insurance scheme for New Zealand. Key aspects of the two proposals are shown in Table 3.1. Politicians and general practitioners were fiercely partisan in their support for these plans.

When the Labour government tried to enforce their plan through contracts with general practitioners, only 49 out of the country's 1,153 doctors (4.2%) accepted and signed the contract. Jamieson, representing the BMA, was adamant that general practitioners should be paid by the government on a fee-for-service basis and should retain the right to charge their patients. Ultimately, in November 1941, more than three years after social security legislation had been enacted a resolution between the

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[21] That is, the local New Zealand branch of the BMA.

Table 3.1: Labour Party and BMA proposals for a national health insurance scheme for New Zealand in the 1930s

Labour party scheme	BMA scheme
Based on general practice services primarily but it must provide all the facilities for the diagnosis and treatment of disease.	Based on general practice services, but with provision for consultant specialist services, physiotherapy, domiciliary nursing, pharmaceutical services, dental services, maternity services, and in-patient hospital care.
The government pays all costs	The government pays part of the costs, with patients responsible for the remainder.
Universal cover	Cover targeted to the low-paid, unemployed, and elderly, and their dependants.
Payment by a capitation agreement.	Payment as a fee for each service.
The health service must focus on disease prevention.[22]	The health service must focus on disease prevention.
The health service must insure against income loss because of illness[23].	
It must include adequate provision for health research.	It must include adequate provision for health research.

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[22] It was acknowledged that New Zealand's curative services were of a high standard and widely available, but both McMillan and Jamieson agreed that a health service that focused on maintaining only these services could not raise the health status of New Zealanders.

[23] This requirement became lost in revisions of the original plan.

medical profession and the government was reached. The most lasting disagreement between doctors and the government was over the amount and method of payment for general practice services. This is discussed in more detail in the following section, relating to the political symbolism of fees for medical services. In summary, the Labour government's plan was to have the entire population of New Zealand able to access general practitioner services at no cost. The government would make a single "capitation" payment to each general practitioner to cover their costs, on condition that no additional amount would be charged to patients. The amount the government proposed to pay was considered generous, but the BMA argued against this proposal on the grounds that insufficient data existed to justify any assumption of generosity, and in fact the proposed payments might turn out to be grossly inadequate.[24]

The government finally conceded ground on the type and method of payment, while the profession's major concession was in the scope of the agreement – they agreed to universal cover. In his history of the Royal New Zealand College of General Practitioners (RNZCGP), Wright-St Clair eulogises Jamieson for his "fight" with the government during this period (Wright-St Clair, 1989; p 25). Earlier, Lovell-Smith explained the concordance between government and public opinion at the time:

> "Throughout the negotiations the press and the public had generally been on the government's side and against the BMA. The press now believed that the extra two shillings and sixpence per visit (30 pence) had made the difference [in persuading the doctors to accept the government's plan] and trumpeted that the greedy doctors had sold their souls for 30 pieces of bronze." (Lovell-Smith, 1966; pp 25-6)

There are many similarities between the period surrounding the 1938 Social Security Act and the period surrounding the introduction of the Free Child Health Care Scheme. Both were times when the country was politically restive. Before both periods, a Conservative government had dealt with a significant economic recession in ways that appeared to be more concerned with the fiscal than with the human aspects of government. Although on both occasions a degree of economic success had been achieved, in the 1990s as in the 1930s this success was at the cost of alienation from the public (Bolger, 1998; pp 117-22). In 1936, W.B. Sutch wrote of the demise of the Coalition government words that could equally have been applied to the Bolger governments of 1990-1996:

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[24] Highlighting a difference between doctors and politicians. Doctors like to found their decisions on "hard" research data whereas public opinion and political values are a sufficient foundation for political decisions.

> "New Zealand emerged from the worst of the depression in a financially strong position, but with a substantial body of men on relief works and the people very much shaken by the rigorous and spartan experience to which they had been subjected".[25]

Disagreements between government and the medical profession over the Free Child Health Care Scheme were more swiftly resolved, but the same issue over payment arose (whether or not doctors should be allowed to charge in addition to claiming the subsidy government offered). It was addressed in much the same way (by compromise – government allowing doctors to charge and doctors agreeing not to, normally). Similar issues regarding the scope of the agreement were also heard and again, the government stand for universal cover held. At both times, the public heroes were politicians, rather than doctors.

The establishment of New Zealand's national health system modelled the way the health profession and politicians interact in this country in several respects:

1. Effective relationships between individual representatives of the profession and government were built up during intense debate over issues.
2. The same medical people followed the issues to resolution, but politicians changed portfolios and positions in government and so most did not have the same involvement in the issue throughout its lifecycle.
3. The direct concern of politicians was the welfare of the people of New Zealand, whereas the direct concern of the medical negotiators was the doctors' working environment, and thereby *indirectly* the welfare of New Zealanders. Onlookers (especially the media) usually saw only self-interest on the part of doctors.[26]

3.2.4.2. The Accident Compensation Corporation Act, 1974

The Accident Compensation Corporation Act 1974 replaced an expensive, arbitrary, and adversarial system of remedies for workplace accidents that had operated under the Workers Compensation Act 1956. In return for losing their right to sue, all New Zealand residents became entitled to a compensation package covering health care costs, lost earnings, and other non-economic loss arising from accidents outside the workplace as well as occupational injuries (Kelsey, 1995). The Accident Compensation Corporation (ACC) scheme was a form of "social insurance" with

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[25] Cited in Lovell-Smith (1966), p 31.

universal cover. Therefore *"... the benefits were far more redistributive and comprehensive than private insurance alone could possibly provide."* (St John, 1999). The Act provided free medical care to people for any injury they suffered. It is especially significant to the discussion in this thesis because it is the only legislation by which general practitioners were required to provide care that was fully paid for by the State, and not the patient (apart from Maternity care). ACC set the fee they would pay general practitioners for treatment of different injuries. This payment was expected to cover the full cost of care, but charging patients a co-payment was not prohibited, similar to the arrangement in place following the implementation of the Social Security Act. The political decision to adopt this arrangement was influenced by a principle in international law that employers should meet the costs of workplace injuries. The amount of co-payment has had to be carefully reviewed to ensure it did not reach a level where it would deter injured people from seeking needed care because this would make New Zealand in violation of international law. Employer levies, taxes on motor vehicles and petrol, and government all contributed to the Scheme's funding.

Despite some concerns about disruption to the patient-doctor relationship because of the lack of sole accountability of doctors to their patients, general practitioners provided care under the arrangement established by this Act. The founding chair of the ACC attributed the early success of the legislation to the flexibility allowed to doctors in their charging practices and the willingness of the ACC to debate disagreements in charges (Sandford, 1974). Hay (1989) attributed its success more to its limited cover. His further opinion was that:

> "If circumstances ever permit the elimination of the disease/accident dilemma created by the Accident Compensation Act – in such a way that free health care is to be provided to all – New Zealand's doctors may be philosophically unable to support a patient payment-for-service stand. The New Zealand medical profession appears to have relinquished its right to use the argument which proved most successful during the conflict with the post-Depression Labour government." (Hay, 1989; p 177-8)

Hay then noted that part of the reason for the medical profession's compliance in the 1970s with a similar government policy to that proposed and rejected outright in the 1930s might be a lack of medical political leadership in the latter period.

[26] However, for the most part doctors' livelihoods are not subject to their popularity with the public, as are politicians'. It is a matter of professional principle that doctors should be concerned for the welfare of people (in general). This concern is not inconsistent with concern for their financial well-being or their drive to maintain the professional status symbolized by the fee they publicly (but not necessarily privately) require for their services.

Until 1984, the ACC maintained its income above expenditure but by 1987 it was almost bankrupt. In response, drastic cuts to ACC eligibility and entitlement were made through the Accident Rehabilitation and Compensation Insurance Act 1992. Throughout the 1990s many further alterations to the Scheme were added in an effort to retain the original plan in a way that was fiscally sustainable. The proposed privatisation of the Scheme evoked particularly fierce debate (Duncan, 1993) and was implemented in only a limited form. In Kelsey's (1995) view each new change compounded the problems created by previous changes. A form of the original ACC remains in place to the current time and in the twenty-first century there are indications that it is finally regaining fiscal solvency. Although general practitioners had to deal with frequently changing ACC bureaucracies in order to recover their remuneration for providing healthcare to accident victims, they seem to have little impact on the negotiation of these payments and conditions of care.

3.3. The Free Child Health Care Scheme is relevant to general practice for philosophical reasons

The Free Child Health Care Scheme altered the basis for young children accessing primary care, so a discussion is relevant of the principles of primary care and how they are affected by the Scheme. Despite its adaptability, there are some recognizable enduring principles of general practice. This section discusses the principles of relevance to the Free Child Health Care Scheme. The concept of access is further discussed and the significance of payment for general practice services is explained.

3.3.1. The philosophies of general practice

Kuhn (1970) defined a "discipline" in general by the theories constructed by its members to solve their problems, by its epistemology, and by the worldview shared among its members. The current work is based in the discipline of general practice, so the theories, epistemology, and worldview of general practice influence the context of the research, the research questions, the methods used to address these questions, and the interpretation of research results. McWhinney (1989a) listed three ways in which new disciplines develop: (1) de novo, (2) by transformation from an older discipline, and (3) by fragmentation from a larger discipline. Most of the twentieth century medical specialties arose in the late nineteenth century and the early decades of the twentieth century by fragmentation from the base disciplines of physical medicine or surgery. General practice arose earlier from a different foundation and has tended not to fragment so easily. Marinker (1996) has proposed that general practice survives intact because the discipline itself is essentially dynamic. It wholly transforms itself rather than fragments. In Marinker's view, this is a key factor contributing to both its longevity to date and its survival into the future. He attributed the robustness of general practice to the breadth of its scope and to its lack of dependence on a particular technology (by contrast with radiology) or a particular way of looking at morbidity (he drew a contrast with psychiatry).

Behind today's general practitioners is a tradition of health care provision to a general, undifferentiated populace, an expectation of skills in social, medical, and surgical healing arts and sciences, and a broad technical and philosophical base. These features have already supported general practice relatively unchanged in its basic purpose through a much longer time period than many other medical specialties have existed. In the US there has been concern that the scope of family practice is being eroded to an extent that threatens the viability of the specialty and this situation has given rise to pointed consideration of the role of family practice in society. In this environment, Green was quoted reflecting on an axiomatic reality: (White, 2000a):

> "... the ability to receive any problem a person of any age and of either sex chooses to bring to the health care system and to definitively resolve it a large majority of the time and the rest of the time be able to organize it in a way so that positive progress can be made toward the solution of that problem – and doing this right the first time. That's the scope ... of what a family physician really is and is going to continue to be. As near as I can tell, all health care systems invent this person. It seems to be grounded in human need, and I don't believe there's much evidence that it will ever go away."

The role of "healers" in society has always been filled by a group of people who do what general practitioners do today. In modern society, skills in information technology, health promotion, and organizing health services are considered important to general practice but according to Dixon et al (1999)

> ' ... they are not the essence of general practice, which will always be about diagnosis, therapy, and healing."

General practice is the medical specialty responsible for providing primary healthcare in New Zealand and it therefore carries the sole responsibility for fulfilling the primary medical care function. In the US three specialties – family medicine, general internal medicine, and general paediatrics – are considered primary care providers. This confusion over specialty roles has helped to promote considerable philosophic debate concerning the function and range of primary medical care. The US debates inform the current thesis for their focus on primary care generally. The US Institute of Medicine (1978) listed accessibility, comprehensiveness, coordination, continuity, and accountability as key aspects of primary healthcare. In 1994 the Institute expanded on their earlier definition, defining primary care as:

> "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and the community" (Institute of Medicine, 1994).

McWhinney (1989b; p 3-11) developed a list of nine principles of family medicine[27] that have been repeatedly used to characterize general practice. Some, such as principle six, are presented as theoretical, rather than pragmatic ideals. These principles are shown in Table 3.2. The list has been consistently referred to in many countries because it provides a realistic framework for assessing primary medical care (see, for example: Hays, 1993; Parr GW, 1994; Memel D, 1996; Kelly L, 1997). In her widely accepted conceptualisation of primary care, Starfield (1994) built on the foundations of the Institute of Medicine's definition and McWhinney's principles to identify the attributes of primary health care that are unique and necessary. These include longitudinality, comprehensiveness, and co-ordination. Being the place of first contact with the health system is also an essential part of Starfield's conceptualisation. More recently, Shi (1999) proposed that the important defining characteristics of primary care are best understood in terms of measures of the different measurable domains of each characteristic, shown in Figure 3.1. Shi's discussion is especially relevant to the current research because it locates the focus of research about the Free Child Health Care Scheme - it is concerned about *access* to healthcare.[28] Access in turn measures the fundamental general practice attribute shown in the figure, that Shi calls "personal contact" between patients and doctors.

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[27] In North America, the status of general practitioners became diminished in the late nineteenth and early twentieth centuries as an emphasis on increasing specialisation was seen as the way to advance the scientific foundation of medicine. When need for a general medical discipline continued, however, the term "family practice" was coined to avoid connotations of inferior medicine implied by the alternative "general practice". McWhinney grappled with the distinction between family practice and general practice and decided that the terms were equivalent, the disciples the same. New Zealand, like Britain, had never lost the sense of the uniqueness of general practice as a medical discipline so here and in the UK, the term "general practice" was retained. We do, however, have a lasting reminder of our links with the US and our identification with the discipline there. New Zealand's only specialist general practice journal is called "the New Zealand *Family Physician*".

[28] Measures of "access" were described in Chapter 1.2

Table 3.2: **McWhinney's principles of family medicine**

1. A commitment to people rather than people's diseases.
2. An emphasis on understanding the context within which people experience both good and ill health.
3. A prevention and health education orientation.
4. An understanding of responsibility to and for a group (community) of people of more or less known proportions.
5. An involvement with other professionals providing social services to (for) the community above.
6. Living in the community for which they provide health services.
7. Providing health care at a variety of sites, including general practice clinics, patients' homes, and hospitals.
8. Having a heightened understanding of their own beliefs and values in order to interpret for their patients a positivist approach to health problems pursued by other health professionals.
9. General practitioners must manage resources to maximise health benefits for their community.

Figure 3.1: Measures of the essential attributes of primary healthcare (Source: Shi, 1999)

Attributes	Personal contact	Longitudinality	Comprehensiveness	Co-ordination
measures	Access	Continuity	Knowledge of patient	Referral
	Clinical interaction	Regular source of care	Preventive counseling	Integration of care
		Interpersonal treatment		
		Patient-doctor relationship		
		Trust		

Access and payment is discussed further below. Measures of the other important attributes of primary care shown in the figure were not within the scope of the current investigation.

Similar to Starfield's "co-ordination" principle, the "gatekeeper" role is a consistently recognised component of general practice internationally (Norton et al., 1985). The gatekeeper function requires general practitioners to be able to receive all who solicit their care, provide care where they can, and triage the remaining patients to receive additional care from other medical specialties where necessary (Helliwell, 1999). A gatekeeper also *"has an opportunity to control some of the costs of the health care system by ensuring that the best and most efficient use is made of the referral network."*(Norton et al., 1985).

The management of health care resources implies a role in moderating access to health services. Certainly, this function is now embedded in international understanding of what a general practitioner does. Gatekeeping refers to general practitioners' actions as interpreters of their patients' stories and guardians against the over-medicalisation of their problems (Sweeney, 1996). It is in this dimension that the interests of general practitioners and politicians overlap. Olesen et al (2000) explain:

> "Policy settings promote or limit the roles and activities of general practitioners, often in unexpected ways. Policy can be improved only if the role of general practitioners in the population is fully appreciated, and members of the specialty must therefore undertake health services research, elucidating their perspectives on healthcare organisation, management, and economics."

New Zealand general practitioners share with other primary care doctors in developed countries a commitment to caring for individual patients over extended periods and with respect for their wider social setting, and an acceptance of the gatekeeper function in co-ordinating care across a variety of providers. All these functions are imperfectly conducted, however. In general, McWhinney's item seven (Table 3.1) is more constrained in New Zealand than in the US. Although general practitioners care for their patients in a variety of settings in New Zealand, as elsewhere, they are less prominent in hospitals than are their US counterparts. This may be due to the British tradition of practice imparting a heightened sense of the gatekeeper function and the responsibility to refer. Even so, general practitioners' gatekeeper function of regulating patients' access to other parts of the health system has been frequently by-passed in New Zealand (Tilyard et al., 1991b). Recent health system changes are probably strengthening the gatekeeper role, but this impression, often stated, has not yet been formally tested.

3.3.2. Access and payment

Chapter One explained the importance of health care access as a responsibility of both government and general practice. Governments control access because they must manage the tension between improving access to promote and maintain the health of their constituents with limiting access to levels that public expenditure can afford. General practitioners, on the other hand, have a more straightforward professional responsibility to attend to the needs of individual patients (see Section 3.2.1., above). In the last decade the New Zealand government has favoured open (rather than implicit) health service rationing, although this has attracted considerable public suspicion. This policy approach has required general practitioners to consider more deeply than previously the needs of the wider community when advising individual patients. Sometimes conflicts arise between the needs of individuals and what New Zealand as a society can afford and in this event, general practitioners and other doctors are asked by government to prioritize the needs of society above the needs of individual patients. This seldom results in an outright choice of one over the other, but more often involves compromises and accommodations. An example of the implementation of this approach was rationing access to renal dialysis (Feek et al., 1998).

3.3.2.1. Charging for services

Charging a fee for general practice services is a political activity on two grounds:

1. On a societal level, fees limit access to health services. If they do so to the extent that payers attribute a decline in their health to limited access to health services, then a sizeable paying population may exert a political force. This did not matter so much in early times when the masses generally had little political clout. However since the early twentieth century throughout most developed nations (including New Zealand and the United Kingdom) all adults have had the right to vote for their politicians, regardless of their personal wealth. Governments have a vested interest in ensuring that health care access by the majority of the electorate is affordable to them.
2. On a professional level, fees for services distinguish between medical disciplines. They have been contentious since medieval times. When surgeon-apothecaries

> charged fees for supplying health advice and medicines, not only were they establishing their livelihoods, but they were also defining the commercial boundaries of their services. Physicians perceived this economic activity as a threat to their own livelihoods as the service was the same in character (prescribing and dispensing medicines) although the market was different (the lower and middle classes, rather than the upper classes and aristocracy). Apothecaries were neither servants nor people of independent means. They ranked in society alongside carpenters, tailors, and other tradesmen. Physicians and surgeons, on the other hand, were servants. However, the social order was such that despite being servants they held higher social positions than apothecaries because they served the aristocracy. These medical practitioners did not charge their patients for their services – they simply provided the services because their job was to do so. Their livelihood was taken care of by their sponsors. Through changing cultures over time, charging practices by all types of medical practitioners changed. By the early twentieth century fees for providing services were commonplace for every medical specialty, but the way these fees were collected differed. Physicians and Surgeons did not altogether leave the shelter of their wealthy sponsors. They maintained their higher social position than general practitioners but also charged for their services.

Fees also establish a line of accountability. With patients holding direct liability for paying the doctors who provide them with medical services, the primacy of the doctor's accountability to the patient is obvious. Where there is a third party payer (such as a public or private insurer) it can be easily overlooked that payment for medical services remains the direct responsibility of the patient, while the third party payer is responsible for its contractual obligations to the patient. In this situation, doctors remain directly responsible to patients although their responsibilities to the third party payer may be more acutely felt (Nixon, 2000). In a salaried service (even where the payer is the government) the conflict between doctors' obligation to their employer and to their patients is difficult to resolve (Davis et al., 1994). In essence the debate is whether the natural accountability to one's employer overrides the accountability to the patient sworn in the Hippocratic Oath, and also whether the professional foundations of medicine commit doctors to providing care for patients who do not pay (Iserson and Jarrell, 1992). Although it is unlikely that doctors explicitly recognise this problem very often, J.B. Dawson encapsulated the outcome in 1944 when he wrote:

> "Medical men [in New Zealand] have always been the servants of the public, but they have been reluctant to become the servants of the state" (Dawson, 1944).

Free health care was the basic tenet of the first Labour government. Although the entire health system structure was enacted in 1938, its implementation happened over the succeeding five years. Free care in mental hospitals was the first part to be successfully managed, and the least controversial component. A salaried medical service in hospitals followed. Previously, doctors holding honorary appointments had provided much of the hospital-based medical care. The change to a salaried service, despite its provision of tangible rewards where none had been received previously, was lamented by some because:

> "honorary service in a wider sense is the price of freedom and advance is rooted in freedom" (Lovell-Smith, 1966; p 110).

Repeatedly through its history, general practice in New Zealand has shown itself to be willing to provide free care to patients, but unwilling to be *required* not to charge patients in return for accepting payment from government. In the 1940s, general practitioners eventually accepted provision of maternity care under a single fee after initial resistance, but the stumbling block to full implementation of the Social Security Act was the proposal to introduce a capitation arrangement as full funding for all general practice services. Even in the early years after enactment of the Social Security Act, the government protected private medical practitioners in its initial tolerance and later support of doctors continuing to receive co-payments from patients. The Act mandated *"... an open-ended commitment to universal access to health care for all citizens."* (Blank, 1994) but mainly this was interpreted as applying to hospital care. Charging a co-payment for general practice services was illegal under the Act, but it was also common. Lovell-Smith (1966) estimated that almost 60% of the country's general practitioners still made some co-payment demands of their patients in the 1940s. General practitioners managed to successfully resist government's efforts to regulate their fees. It was widely known that most general practitioners informally assessed each patient's ability to pay and used whichever system of reimbursement they deemed appropriate. This situation became accepted in law when the Social Security Amendment Act 1949 included a fees schedule system that formally allowed and encouraged patients to make some payments for the health services they received. Hay (1989; p 127) commented:

> "Government-doctor-patient relations were transformed in ways which provided doctors with the potential to maximize incomes by use of taxpayers' money whilst

> simultaneously maintaining professional sovereignty and the social character of the doctor-patient relationship."

In providing much of the payment for general practice services, neither the first Labour government nor subsequent administrations made an open-ended commitment to fund general practice at whatever price doctors set. The public part of the price of general practice care remained relatively stable over the years between 1940 and the 1980s, while private payments changed in response to the general economic environment.

> "... the nature of government subsidy to general practitioner services was altered in such a way that State expenditure could be disconnected from inflation (although not from the possibility of conflict and other pressures to increase the subsidy). The Government contribution to general practice treatment could remain relatively stable while the token payment made by patients to doctors would be subject to general upward economic forces." (Hay, 1989; p 144)

The New Zealand way of financing primary medical care could therefore be characterized as the "Robin Hood" approach. That is, like the medieval hero, New Zealand's general practitioners take from the rich to provide the poor with health care at lower or no cost. They accept payment offered to them by government and they charge patients an amount they judge to be fair, based on what they know of the patient's circumstances. Sometimes this charge will be a full fee but often it is not. In 1989 (Dovey and Tilyard, 1991) and 1993 (Tilyard and Dovey, 1996) the amount general practitioners actually charged their patients for consultations was shown to be what they advertised as their fee for only about half of their consultations. At both times, in the remaining half of consultations general practitioners tended to charge less than their advertised fee, but sometimes they charged more. The decision on charging is an individual case-by-case decision made by the general practitioner providing care. A population-based approach to general practitioners' payments has never been implemented in New Zealand, despite many different discussions and decisions regarding patient fees. Discretionary charging has remained a characteristic of New Zealand general practice that has been relatively immune to political pressures.

The Free Child Health Care Scheme was initially a threat to this arrangement. As in the 1930s, the government wanted to make healthcare free for young children. This could have been interpreted as shifting accountability for children's health care from children's parents to the government. The final arrangement was an agreement that government could enable the provision of free consultations for young children, but it could not require free consultations to happen. The agreement - that general practitioners should continue to be able to charge for their services - preserved their primary accountability to their child patients even in situations where they do not actually charge but are fully reimbursed by government.

3.3.2.2. Universality and targeting

The principles the first Labour government adopted in designing the health system of the 1940s were first that the health service should be universal, and second that it should be free. Universality was to protect against a two tiered system. There was a prevailing view that under the insurance scheme then in operation in European countries, those receiving public health care were provided an inferior standard of care to that offered people who paid the same doctors on their own behalf. Universality was to protect against this happening in New Zealand. Additionally, free care was regarded as necessary to make health care consistent with other social policies, such as education, which was also provided free.

Historically, most government support for general practice has come through the General Medical Services (GMS) subsidy. Technically, this is a subsidy to patients that they are eligible to claim when they consult a doctor. Practically, it is seen as a subsidy to doctors because it is the doctor (and not the patient) who actually makes the claim to government, after a patient has visited and made any additional payment that the doctor might charge, after having taken into account the expected government subsidy payment. The amount of the subsidy has traditionally been established by regulation, with the details negotiated between the Medical Council and the Department of Health.

Changes in subsidy amounts were initially rare after the GMS was first introduced in the 1940s but became increasingly common during the 1980s and 1990s. Each year from 1989 new changes to the GMS subsidy reflected the government's more general attempt to target public expenditure to those most in need (McKendry and Muthumala, 1995). Implementation of a major new subsidy regime began in February 1992 and by 1993, subsidies for general practice consultations had been removed for a large section of the population – most employed adults – and different levels of subsidy applied for children and elderly people, depending mainly on family income. The population was initially divided into three categories of income earner, entitled to different levels of subsidy for doctors' visits, prescriptions, and hospital services.

Category one and two users would carry a Community Services Card (CSC) to prove their eligibility. These two levels were later condensed into one. The term "high income" applied to any family ineligible for the Family Support benefit, most of the elderly with any private income, and most single people earning over $17,500 a year. The subsidy regime was complicated and became more so with each new attempt to target. By the time of the election in 1996, there existed a dichotomous targeting regime for health care subsidies, based on CSC eligibility criteria.

The idea of targeting subsidies is to reduce government expenditure by focusing it on those who would otherwise face most hardship. The savings from cutting spending could then be used either elsewhere in the health system where greater benefit is expected, or to fund additional government expenditure elsewhere, or to reduce the fiscal deficit or taxes. In practice there are numerous challenges to implementing such policies. In Watt's (2001) view, policies that target social benefits to defined sub-groups of the population *"essentially provide micro solutions for a macro problem."* Following the principles formulated by epidemiologist G. Rose (1992), all problems in society belong to the whole society and not just those parts of society in whom the problem is expressed. A population approach, rather than a targeted approach, is therefore needed to address them.

The practical difficulties of creating an effective and efficient targeted health policy probably outweigh the theoretical advantages of targeting. The drawbacks to targeting are the administrative complexity it introduces, possible social stigma attached to claiming subsidies, and a resulting loss of social cohesion. Precise targeting to reach those in need tends to be complex because if the targeting approach is kept administratively simple, the focus usually becomes blurred. Apart from the practical difficulties, additional barriers to uptake may include ignorance of entitlement, language barriers, inability to work with the bureaucracy, and pride. In New Zealand, the CSC was the main targeting mechanism. The government altered CSC eligibility criteria to change "target" populations. Increasing use of increasingly narrowly targeted subsidies stimulated academic debate on the approach. In the health sector, Crampton and Gibson (1998) identified the following disadvantages to using the CSC as a targeting mechanism:

1. Use of the CSC had high transaction costs. Patients had to go to considerable effort to obtain one, including keeping up to date copies of their family income and health expenditure and attending in person at an office of the Social Welfare Department to defend their application. General practitioners had to maintain

accurate records of all family members' health care encounters, including those provided by other health care providers. The transaction costs were even higher for general practitioners operating under a capitated funding mechanism because tracking patient healthcare utilisation in capitated practices was often not done at an individual patient or family level yet this level of detail was necessary to build eligibility to the CSC for individual patients.

2. CSCs were poorly related to need measured by socio-economic status, as they were based solely on equivalised income, whereas education and occupation (in addition to income) determine socio-economic status. It has been shown in New Zealand that mortality and hospital admission rates correlate highly with socio-economic status and deprivation measured by the Elley Irving scale (Pearce et al., 1983), the British Registrar General classification (Kelsall, 1998), or NZDep91 (Salmond et al., 1998). There is no comparable evidence to validate the use of CSCs in the context of resource allocation.

3. Many people eligible to hold a CSC did not obtain one. According to Ministry of Health estimates, about 75% of eligible people actually held a CSC in 1996 (Ministry of Health, 1997a). Another estimate put the level at 77% (Gribben, 1996). Parks (1996) found that in the general practices she studied in 1995, 28% of non-CSC holders were eligible for a CSC but did not hold one.

4. There were logistic problems in getting a card that disadvantaged patients in low socio-economic areas. It was easier to go to different general practitioners and accumulate bills, or to go directly to the hospital for service. Another option was to use somebody else's card. CSCs did not have a photograph on them.

5. The principle of having one government department (Social Welfare) issue a card and another (Ministry of Health) paying for the public services the card provides, added systematic barriers. The issuing of CSC cards from Social Welfare appeared to be a low priority for that department as the card was not relevant to its functions, yet checking eligibility and issuing cards imposed an administrative load on staff.

6. The abrupt cut off for CSC eligibility created a gap in access at the low end of the non-eligible population. This may have affected a substantial proportion of families with young children.

In targeting healthcare subsidies for children living in households with different income levels, the operational objective was to bring a family's outlay on health care into a more equitable balance with the family's income, making allowance for the number of people supported by that income (McKendry and Muthumala, 1995).

3.4. Summary

This chapter has provided some answers to why the Free Child Health Care Scheme was important to general practice. First, the ethical foundations of medicine were discussed because these establish the primacy of the doctor/patient relationship above the doctor/government relationship. A review of the historical foundation of general practice showed how general practitioners have become increasingly defined by their political actions since the earliest definition of the medical profession in the Middle Ages.[29] Investigation of the development and maintenance of general practice through history suggests that general practice is a stable medical discipline, possibly because the need for primary medical care services has remained a fairly constant basic human need. The structure of general practice has however changed over time. IPAs are the latest general practice structure supporting general practice in New Zealand. IPAs were important to the work in this thesis because their attention to improved information systems enabled the investigations reported in Chapters Five and Six.

Political crisis points have occurred through history over fees for general practice services. Charging patients directly for their services has been an important feature of general practice, even before the profession became established in New Zealand, and even when the government has offered to pay more than doctors would normally charge patients. The issue concerns general practitioners' need to maintain independence from government management by asserting their first responsibility to their patients. Disputes over charging have been most notable in New Zealand surrounding policies expressing government's intention for health care to be free – first in 1938 with the Social Security Act, second in 1972 with the Accident Compensation Corporation Act, and most recently with the Free Child Health Care Scheme in 1997. On the first two occasions, general practice accommodated the government's policy by accepting public payments but retaining the right to charge patients. Following the Social Security Act, this claimed right was made legitimate in law only after it had been exercised for nearly a decade, illegally. Until the completion of research reported in this thesis, it was not known if general practitioners were charging patients covered by the Free Child Health Care Scheme. Experiences of similar policies in the 1940s and 1970s suggest that they sometimes will charge. Whether this expectation is met will be examined in Chapters Five, Six, and Seven.

This chapter also described the fundamental principles of general practice unique to New Zealand and principles shared with primary medical care providers in other countries in order to establish the context for the work presented in this thesis. Access is a key attribute of primary medical care (Starfield, 1994) and the Free Child Health Care Scheme altered a basic barrier to health care access for young children – the financial barrier. Other important characteristics of general practice in New Zealand include the widespread use of computers. This factor has made possible some of the investigations reported in later chapters.

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[29]. Given a definition of political action as "the exercise of power" (The Oxford Reference Dictionary, 1989).

Chapter Four

About the research design

4.1. *Introduction*

This thesis adopts a general practice research perspective to examine the impact of the Free Child Health Care Scheme. Reflecting the broad scope of the clinical discipline of general practice, general practice research may legitimately access a broad range of investigative tools (Stewart et al, 1992). The central thesis of this work[30] was developed while undertaking three original research projects granted funding by two government agencies (the Health Research Council (HRC) and the Transitional Health Authority (THA)). The stated purpose of these projects was to investigate the impact of the Free Child Health Care Scheme. Chapter Four describes the methods used in these investigations.

The three research projects are presented separately in Chapters Five, Six, and Seven. Chapter Five presents a general practice research project involving database analysis, Chapter Six, an evaluation from a general practice perspective, and Chapter Seven is an analysis of a household survey, interpreted in light of the concerns of general practice.

The characteristics that distinguish this project from similar research approaches are:

(1) the research question is motivated by organisational concerns held by general practitioners – workload, workforce, management, and payment;

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[30] The central thesis is that health policy affecting general practice cannot be adequately understood by analysis from a single academic approach but requires transdisciplinary research, integrating historical, economic, epidemiologic, and policy perspectives.

(2) it is focused on data produced by general practice, supported by other data sources;

(3) the research results are presented and interpreted in a form intended to make sense to general practitioners.

Table 4.1. shows the differences between key elements of the general practice research components of this thesis, an epidemiological world view, evaluation, and policy analysis.

4.2. *Literature review*

Before commencing this research, a body of literature was reviewed relating to the effect of changes in patient co-payment on use of health services. This review has since been formalized as a Cochrane Collaboration systematic review and the protocol has been published in the Cochrane Library (Dovey et al, 2001). Table 4.2 summarizes relevant aspects of the original research publications identified by this process. Study designs eligible for inclusion in a Cochrane review include randomised controlled trials (RCTs), controlled before-and-after studies (CBAs), and interrupted time series studies (ITSs) where at least two data points are reported before and at least two after the intervention (NHS Centre for Reviews and Dissemination, 1996). Greater weight is given to the results of well-conducted RCTs than to CBAs, and more weight is accorded CBAs than ITS studies, reflecting the ability of the different design strategies to produce unbiased results. Reports of studies in which the intervention was a change in out-of-pocket payment for health care were found in 38 papers reporting studies whose designs made them eligible for a Cochrane review (listed in Table 4.2).

Several studies had complex research approaches that allowed multiple questions to be addressed. The most notable of these for its strong design (an RCT), broad scope (all health services were included), prospective data collection, and meticulous analysis was the Rand Health Insurance Experiment (Brook et al, 1983; Liebowitz et al, 1985; Valdez et al, 1985; Keeler et al, 1985; O'Grady et al, 1985; Lohr et al, 1986; Shapiro et al, 1986; Manning et al, 1987; Lurie et al, 1989; Shekelle et al, 1996). The study was motivated by the increasing uptake of health insurance in the US in the 1960s and 1970s and aimed to test different health insurance methods for their impact on health service use and health status. Patients were randomly assigned to study

Table 4.1. Characteristics of different approaches to investigating the impact of the Free Child Health Care Scheme

	General practice	Epidemiology	Evaluation	Policy analysis
Research question(s)	How did the Free Child Health Care Scheme affect the way general practitioners worked and the health services they provided to children aged less than six years?	Did the Free Child Health Care Scheme cause New Zealand children to use more health services? Did this improve their health status?	How does the Free Child Health Care Scheme improve child health? Who uses it and why?	What are the public costs and benefits of the Free Child Health Care Scheme? Should it be altered to comply with mainstream New Zealand public policy?
Research methods	General practice patient records	Robust data, preferably gathered prospectively from a representative (random) sample of the New Zealand child population.	Any robust data.	Public data sets.
Research interpretation	Estimates of workload impact and changes in the health services they recommend for children.	Tests of statistical significance. Emphasis on internal study validity.	Tests of face validity from population statistics, national data sets, case studies and anecdotes.	Implications for government.

groups defined by different health care payment mechanisms – some involving prior payment and some involving co-payment at the time health services were received.

One group had "free" care, without either pre-payment or co-payment by patients. Many analyses compared outcomes of the "free" care group with outcomes from the other groups, producing reasonably clear evidence that when people are required to pay for some of their health care costs, they use fewer services. When the financial barrier to health service use was removed, people also achieved better vision (Brook et al, 1983; Lurie et al, 1989) and better blood pressure control (Brook et al, 1983), although many other measures of health status remained similar to the groups paying for their care. Valdez et al (1985) and Liebowitz et al (1985) limited their analyses to children in the study. Their findings suggested that health care for children was less affected by different prices than health care for the population, generally. Liebowitz et al (1985) found that when care was free for children, they made more office visits to doctors but the number of hospital admissions they needed was no different from children in the other payment groups. Valdez et al (1985) found no difference between the study groups in measures of children's health status.

A further set of publications was based on data from the Group Health Cooperative (GHC) of Puget Sound, a well-established Health Maintenance Organisation (HMO) (Manning et al, 1984; Ware et al, 1986; Cherkin et al, 1989; Valdez et al, 1989; Cherkin et al, 1990). GHC is a closed-panel staff model HMO in Washington State. It had automated enrollment, registration, and pharmacy information systems that allowed tracking of primary care and hospital use. Registration information allowed control groups to be defined for CBA analyses, and entrepreneurial management permitted some RCT analyses to be undertaken. GHC investigations produced similar results to the Rand Health Insurance Experiment. When co-payments were reduced or removed, health service use increased, and when they were increased or introduced, use decreased. For children, increased out-of-pocket payments were associated with fewer medical contacts and less preventive care but, as in the Rand Health Insurance Experiment, no differences in health status could be defined (Valdez et al, 1989).

Table 4.2. Published reports of original research examining the effect of changes in co-payment on use of health services

A. System-wide co-payment changes

Citation	Health service with changed co-payment	Study design	Direction of co-payment change Introduced Increased Decreased Removed	Effect of co-payment
Stewart and Enterline (1961)	Health services in the UK	ITS	Removed	Office visits increased
Scitovsky and Snyder (1972)	Health services for Stanford University employees	ITS	Introduced	All service use decreased
Brian and Gibbens (1974)	Health services for low-income people in California	CBA	Introduced	All service use decreased
Roemer et al (1975)	Health services for low-income people in California	ITS	Introduced	Office visits decreased Hospital admissions increased
Beck and Horne (1980)	Health services in Saskatchewan	CBA	Introduced	Office visits decreased
			Removed	Office visits increased
Brook et al (1983)	Health services in the Rand Insurance Experiment	RCT	Removed	Better vision Lower blood pressure
Lurie et al (1984)	Health services for low-income patients in UCLA's Medical Group Practice: Medi-Cal study	CBA	Introduced	Access decreased Satisfaction decreased Health status worsened
Manning et al (1984)	Health services in GHC – Puget Sound	RCT	Removed	Hospital services decreased No difference in office visits
Liebowitz (1985)	Health services for children in the Rand Insurance Experiment	RCT	Removed	Office visits increased No difference in hospital admissions
Valdez et al (1985)	Health services for children in the Rand Insurance Experiment	RCT	Increased	No difference in health status
Lohr et al (1986)	Health services in the Rand Insurance Experiment	RCT	Removed Increased	A wide range of health service utilization and health status variables
Lurie et al (1986)	Health services for low-income patients in California: Medi-Cal study	CBA	Introduced	Access decreased Satisfaction decreased Health status decreased

Citation	Health service with changed co-payment	Study design	Direction of co-payment change	Effect of co-payment
Ware et al (1986)	Health services in GHC – Puget Sound	RCT	Removed	No difference in health status
Manning et al (1987)	Health services in the Rand Insurance Experiment	RCT	Removed	Office visits increased Out-patient expenses increased Hospital admissions increased Hospital expenses increased
Cherkin et al (1989)	Health services in GHC – Puget Sound.	RCT	Introduced	Office visits decreased Specialty care visits decreased
Valdez et al (1989)	Health services for children in GHC – Puget Sound	RCT	Increased	Medical contacts decreased Preventive care decreased No difference in health status
Cherkin et al (1992)	Health services in GHC – Puget Sound	CBA	Introduced	Physical examinations decreased No difference in immunizations, cancer screening, or medications for cardiovascular disease
Osuga and Nordberg (1993)	Health services in rural Kenya	ITS	Introduced	Office visits decreased Medications decreased
Motheral and Henderson (1999)	Pharmaceutical services	CBA	Increased	No difference in pharmaceuticals
Epp et al (2000)	Health services in British Columbia	CBA	Increased	Office visits by females decreased

B. Service-wide co-payment changes

Citation	Health service with changed co-payment	Study design	Direction of co-payment change	Effect of co-payment
Hayami and Freebom (1981)	Alcoholism treatment programme	RCT	Removed	Treatment contacts increased Health status improved
Nelson et al (1984)	Pharmaceuticals for low-income patients	CBA	Introduced	Pharmaceutical use decreased
Keeler et al (1985)	Hypertension care in the Rand Insurance Experiment	RCT	Removed	Blood pressure reduced Physician contact increased
O'Grady et al (1985)	Emergency department use in the Rand Insurance Experiment	RCT	Removed	Emergency department use increased
Shapiro et al (1986)	Symptom care in the Rand Insurance Experiment	RCT	Removed	Medical care for minor symptoms increased
Foxman et al (1987)	Antibiotics in primary care	RCT	Removed	Antibiotic use increased
Lurie et al (1989)	Eye examination in the Rand Insurance Experiment	RCT	Removed	Vision improved
Kiefe et al (1994)	Screening mammography for low-income women	RCT	Removed	Screening mammography increased
Laidlaw (1994)	Ophthalmology services	ITS	Introduced	Referrals to Eye Hospital decreased Diagnoses of glaucoma decreased
Selby et al (1996)	Emergency department use	CBA	Introduced	Emergency department visits decreased No difference in emergency department visits for emergencies No difference in outpatient visits
Shekelle et al (1996)	Chiropractic services in the Rand Insurance Experiment	RCT	Removed	Chiropractic care increased
Wouters and Kouzis (1996)	Pharmaceuticals	CBA	Introduced	Total costs increased Access decreased
Nexoe et al (1997)	Influenza vaccination among the elderly	RCT	Removed	Vaccinations increased

Citation	Health service with changed co-payment	Study design	Direction of co-payment change	Effect of co-payment
Simon et al (1996)	Outpatient mental health service	CBA	Introduced	Mental health service use decreased No difference in mental health service use per user
			Increased	Mental health service use per user decreased
Satterthwaite (1997)	Influenza vaccination among the elderly	RCT	Removed	Vaccinations increased
Curry et al (1998)	Smoking cessation service	CBA	Increased	Smoking cessation service increased
Ahlamaa-Tuompo et al (1998)	Paediatric trauma services	ITS	Introduced	Paediatric trauma unit use increased
Ahlamaa-Tuompo et al (1999)	Paediatric trauma services	ITS	Introduced	Hospitalisation rate for childhood injury decreased Emergency department use decreased

Research about changes to Medicaid insurance management for low-income people in California provided further reports that introducing co-payments reduced primary care visits (Roemer et al, 1975; Lurie et al, 1986). These studies were based on claims data and had to use the weaker ITS and CBA designs. They also showed that when patients had to pay for health care where previously it was free, their visits to primary care offices decreased. Roemer (1975) produced the controversial additional observation that hospital admissions increased concurrently with decreased primary care visits. Lurie (1986) observed worsening measures of health status following the introduction of co-payments, as well as reduced satisfaction with care, poorer health care access, and fewer office visits.

Changes to out-of-pocket payments in whole countries or states were particularly relevant to the investigation of the impact of the Free Child Health Care Scheme – also a nationally implemented policy change. Seven papers reported systematic research to investigate the impact of such a change – in the United Kingdom (UK) (Logan, 1950; Titmuss, 1959; Stewart and Enterline, 1961), in a comprehensive health care plan in California (Scitovsky and Snyder, 1972), in Quebec (Enterline et al, 1973), in New Zealand (Davis et al., 1994), and in Taiwan (Cheng and Chiang, 1997). Only two of these studies met the design criteria for inclusion in a Cochrane review. Both Stewart and Enterline (1961) and Scitovsky and Snyder (1972) framed their research as an ITS study. Two earlier papers (Logan, 1950; Titmuss, 1959) had studied the introduction of the National Health Service (NHS) in the UK, but they provided insufficient data to make a judgement about a change in trend, as required for a Cochrane review ITS. Titmuss (1959) used as *"... a kind of control"* workers who were exempt from direct charges for physician services prior to the NHS. This control group was opportunistic and defined in only tentative terms, yet it suggested that it was valid to likewise propose "a kind of control" in the study of the Free Child Health Care Scheme. Practices that had removed charges for consultations before the Free Child Health Care Scheme were a comparable control group to Titmuss's workers.[31]

In 1970 a compulsory, universal health insurance plan was introduced in Quebec, Canada. A before-and-after household survey showed a significant shift in consultation patterns with lower income groups consulting more often and higher income groups less often, after the introduction of Medicare (Enterline et al., 1973). This investigation was particularly relevant to the proposed evaluation of the Free Child Health Care Scheme because it provided evidence of unexpected shifts in the consulting patterns of children. The numbers of consultations by children aged less than 17 years decreased by 6.8% after the introduction of "free" care. However, the results of this investigation may have been heavily influenced by other factors affecting utilisation as no control group was included in the analysis, for comparison.

In 1995, the Taiwanese government introduced universal health insurance to deal with the rising cost of health care in the country. Cheng and Chiang (1997) reported on the results of two surveys about health care use by adults, conducted before and after the policy was introduced. No information was provided on changes in out-of-pocket payments by patients. After universal health insurance, office visits by newly insured people increased to the level of visitation by previously insured people and

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[31] The proposed Control Group would be "a kind of control" because, like the Comparison Group, the Control group too would receive additional government funding as a result of the new legislation. The *practice management* situation would change for both groups, but the barrier to access for patients would remain the same across the years for the Control Group, whereas it would change for the Comparison practices.

there were smaller increases in emergency department use, outpatient visits, and hospital admissions.

In 1994, an entire edition of the journal "Health Policy" was devoted to New Zealand health policy reforms. Most of the papers in this edition were theoretical or descriptive, describing changes and drawing comparisons with other countries, rather than investigating the effects of these changes by empirical research. The exception was a paper by Davis et al (1994), reporting a before-and-after study of the impact of the new general practice subsidy regime introduced in February 1992. The WaiMedCa study, a year-long survey of a 1% sample of general practices in the Waikato, provided data for this investigation. The researchers concluded that six months after the introduction of a policy designed to improve access to general practice care for poorer people, no such improvement had occurred. There were three main methodological problems with this research:

(1) Justification of the statement that the sample represented the whole New Zealand population was fragile. The study results might well reflect the population from which the sample was drawn (that is, the other 99% of consultations of the contributing general practitioners). Following epidemiological principles, however, such a small sample is unlikely to provide a robust estimate of the experience of all New Zealanders.

(2) The study's design was unable to take into account the effects of seasonality on health care use (Hermoni et al, 1996; Moran et al, 2000) as the data extended over only one year in total.

(3) There was no control group, so other (unknown) effects may have had greater effect on the observed changes in utilization than the policy to which the changes were attributed.

The literature review suggested that the most suitable design for a study assessing the impact of the Free Child Health Care Scheme in New Zealand would be a CBA. Conducting an RCT was not an option because there had been insufficient notice of implementing the policy to plan and conduct such a trial, prospectively, before implementation would affect the study groups. However, it was possible to construct a control group from practices already providing free care to children before the start of the Scheme, so a weaker ITS study design could be abandoned in favour of a CBA. The literature review further assisted the project by providing examples of the analytic approach taken in previous studies. These were adapted and used in the there were smaller increases in emergency department use, outpatient visits, and hospital admissions.

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4.3. The processes of research in this thesis

A section considering the research processes in this thesis was considered necessary because the processes, especially for the analyses presented in Chapter Six and Seven, were unusual for health research. The processes were influenced first by the subject of the project being a health policy (rather than a clinical condition), and second by the particularly volatile political environment of New Zealand in 1997 and 1998.

4.3.1. The processes of the researcher-initiated research

By the beginning of 1997, negotiations to establish a coalition government were complete and the timing for introduction of free health care for children aged less than six years was known. With knowledge of the impending change, general practice researchers in the Dunedin Research Unit of the Royal New Zealand College of General Practitioners (RNZCGP Research Unit)[32] proposed an evaluation of the impact of the policy. Shortly thereafter, the HRC advertised requests for research proposals in areas that were government health priorities, including child health research. A group of researchers from the RNZCGP Research Unit and the Department of General Practice, Dunedin School of Medicine,[33] submitted a research outline in response to this invitation. Following this, the researchers were invited to submit a full project proposal in the grant funding round that would be assessed in November 1997. This application was made and was successful. The investigation was started in January 1998.

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[32] Mr Dean Eidler had worked on abstracting data from computerised general practices for several years and he knew that the data sets he had helped to construct had potential for generating new knowledge. I had helped to establish the processes for doing this since 1988 and had recently re-joined the Department of General Practice. We discussed the subject with other members of the Department (particularly staff of the RNZCGP Research Unit) and the process described in this Chapter was started.

[33] The research team and their positions at the time the applications were made were: Susan Dovey, MPH, HRC Training Fellow and Lecturer in the Department of General Practice; Dean Eidler, BSc, Computer Programmer in the RNZCGP Research Unit; Murray Tilyard, MB ChB, MD, Professor of General Practice and Director of the RNZCGP Research Unit; and Alister Penrose, BCom, Manager of the RNZCGP Research Unit.

Both the research proposal to the HRC and the response to the THA's requests for applications were prompted by general practice concerns about the Free Child Health Care Scheme. The particular concerns were that workload would increase substantially as access to general practice care for young children was improved and more children consulted more often for apparently trivial reasons. Potentially, this could have disadvantaged other general practice patients who would have less opportunity to consult, and it may have placed undue strain on the infrastructure of general practices, requiring them to employ additional clinical and administrative staff.

4.3.2. The processes of the evaluation

As evaluation, the research of Chapter Six was designed to meet the needs of those commissioning the research – that is, government health policy-makers and planners. This orientation contrasts with the research presented in Chapter Five, directed to answering questions of greatest relevance to general practitioners. The question addressed by the research in Chapters Six is: "does the Free Child Health Care Scheme work?" This question has many components.

The processes involved in preparing for, undertaking, and completing the evaluation reported in Chapter Six were different from the process that produced the project described in Chapter Five. For the researcher-initiated study, a research project was decided on, a protocol written, a successful funding application made, and the research independently conducted. In the THA-commissioned project, each step was undertaken only after negotiation and debate between the researchers and the THA.

In the years preceding the Free Child Health Care Scheme, it was not usual for the Ministry of Health to commission external review of its policies. However, from around the time the Scheme was introduced, the Ministry was charged with fostering independent evaluation of current and proposed health sector policy by external review that should ideally include analysis of a policy's implementation and impacts (Dominick, 1999). It is unusual for there to be time or money available for primary data collection in assessing the health impact of new policies (Lock, 2000). These constraints (on time and money) affected the evaluation reported in this Chapter.

The evaluation of the Free Child Health Care Scheme was commissioned in a two-part process managed by the Hamilton Office of the THA and advertised through national newspapers. The first stage involved developing an evaluation plan. The second stage required tendering to actually conduct the evaluation according to this plan. There was no guarantee that the successful responder to the initial contract would also be the successful bidder for the second, much larger contract that involved implementation of the evaluation plan laid out in the first part. Another research team, different from the four-person University of Otago research team that successfully created the first stage evaluation plan, was drawn together to bid for the second contract. Both teams were successful in their bids. The full research team is listed in Appendix Three.

The University of Otago had to negotiate with the THA to decide on a price for the work. The THA was reluctant to pay the University for project overhead costs at a rate of 85% of the total direct costs of the project, the standard University overheads charge. The author had to negotiate contract terms with the THA and advocate for the terms being accepted by the University of Otago. Both sides compromised on price and some components of the original proposal were altered to lower the price. Negotiations were drawn out and fraught. There were times when it appeared unlikely that the work would go ahead.[34] Subsequently, the Ministry of Health made a formal agreement with the University of Otago to pay indirect costs of all contracts at the rate of 85% of direct costs.

By the time of these contract negotiations in late 1997, the culture of the New Right had permeated all levels of society (Boston, 1992b). For this project, inter-agency contracts were required to govern and control transactions between the team of collaborators and the THA, and between the University of Otago and other institutions employing other team members. The project was complex and its details could not be adequately described in the contracts. Money was exchanged as contracted, but other deliverables (intellectual property and data) were shared between members of the research team as needed, without regard to contract terms, but in accordance with behaviours expected in an academic environment (Little, 1995). Negotiations were completed in January 1998 and it was agreed that the evaluation would be completed by December 31, 1998.[35]

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[34] The University of Otago employs personnel to manage contracts and while they were insistent on defining the terms of the contract, they were not prepared to negotiate it. This was left to the author, a poor choice for such an activity, as she was interested in the academic attractions of the project and not in the money. She had decided to continue with the project, almost regardless of funding. However, she had to represent the financial interests not only of the University of Otago, but also of other members of the research team, in the negotiations.

[35] The total price for the work finally agreed by the THA and the University of Otago was $184,602.

In the contract to evaluate the Free Child Health Care Scheme, the University of Otago research team agreed to work within the following constraints:

1. The researchers would obtain, analyse, and interpret existing data sets only.[36]
2. The researchers would concentrate on comparisons of data from the years immediately before and after 1 July 1997. This short study period did not permit conclusions about cause and effect.
3. This would not be an evaluation of the extent to which the policy had achieved intended health goals, but would focus on the degree to which it had been implemented and the extent of altered health service use that could be attributed to this implementation. Because of the political nature of the policy, there were no measurable health objectives to compare what was found against what was expected.

4.3.2.1. Political influences on evaluation planning

Contractual interactions with a government agency required a different approach from proposing a researcher-initiated project to the HRC. The first expression of this difference was in the expanded research team chosen for the THA funded investigation. The research team, their institutional base, and their roles are shown in Appendix Three. The team was chosen strategically, to meet political as well as practical goals. There were 17 team members, including three of New Zealand's four professors of General Practice. The fourth was invited but nominated a Senior Research Fellow from his department to participate in his place. There were also four economists, two statisticians, two general practitioners, a professor of Paediatrics, a data management expert, the Chief Executive Officer of an Independent Practitioner Association (IPA) and three health services researchers. The large team encompassed skills in research design, analysis, and interpretation from various perspectives (general practice, paediatrics, economics). It also included people who had access to data not normally available to either the original team of researchers from the University of Otago or to the THA. Professor Mitchell and his team in Auckland had formed a database from the Auckland Birthweight Collaboration (ABC) study. Mr Lamont from South Auckland had access to health service utilisation data from one of the country's most socially and economically disadvantaged communities. Finally, Mr O'Dea had access to two surveys of nationally representative samples - the

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[36] Problems were often encountered with the poor quality of these data sets or with commercial sensitivity.

Household Economic Survey (HES) and the Household Health Survey (HHS). The formation of the research team accommodated the political sensitivities of academia nationally by being inclusive of all four New Zealand medical schools, two additional universities, and an academic research unit. It acknowledged the THA's wish to have a sound economic perspective represented in the evaluation by having four health economists in the team – a large proportion of the total number of New Zealand health economists. It demonstrated that being based in a university did not prevent the inclusion of people who could contribute to the evaluation but did not hold university appointments.

The process of actually undertaking the evaluation turned out to be as eventful as the process of negotiating the agreement to undertake the work. In Chapter One (section 1.2.3.1.) an account is made of the apparent decision to abandon the Scheme at the time of the coalition government's collapse and how this decision was revised, apparently following information that this evaluation was in progress.

4.3.2.2. Framing the evaluation

The term "evaluation", routinely applied to this work while it was in progress, may lead the research to be misinterpreted. The Free Child Health Care Scheme was made in an exceptional manner for the time, so it provoked analytic interest from more than one academic perspective. The analyses of the Free Child Health Care Scheme brought together in this thesis form a hybrid of general practice research, policy analysis and mainstream applied health services research. This hybrid investigation fits well into neither the constructs of mainstream health science research nor mainstream policy analysis. It arose because government agencies wished to have the policy subject to external academic scrutiny and they commissioned an evaluation that they expected to meet this goal. In terms of the Free Child Health Care Scheme itself, the purpose of this evaluation was never completely clear to the evaluators. Simply having the project under commission to the University of Otago was probably in itself a political action on the part of those commissioning this investigation, making the researchers political agents also. Fitting it into an "evaluation" framework suggests that evaluation standards of utility, feasibility, propriety, and accuracy should apply (Patton, 1996; Pawson and Tilley, 1997). Chapter Six shows that the project failed on the first standard – it had no utility for those commissioning the work because the positions they held were disestablished before the work was complete. It had little utility for those filling comparable posts in the new Health

Funding Authority because it forced them to adapt their plans according to the new knowledge this work produced – knowledge they may have preferred not to have. However, the other evaluation standards were all met.

4.3.3. The processes of the household survey

In Chapter Seven, this thesis adopts a classical epidemiological approach to the analysis of a household survey conducted in 1998 by an independent market research firm (ACNielson (N.Z.) Ltd) for the THA. The question addressed by this survey was: "what do parents (or others caring for young children) think of the Free Child Health Care Scheme and has it altered the way their children use health services?" Although this survey started as part of the THA's own evaluation of the Scheme in early 1998, it is unlikely to have ever been used for that purpose. The THA took advice from the author, other staff of the Department of General Practice, Dunedin School of Medicine, and others in deciding on the content of this survey. Earlier, the THA had asked for advice on a household survey (generally) as an evaluation method and the evaluation researchers had advised against it. Their concerns at this method were both scientific and financial. The survey consumed a large proportion of the budget the THA had available to assess the impact of the Free Child Health Care Scheme. Additionally the researchers expressed the view that household surveys based on structured telephone interviews were not their first choice of research method because of the method's inherent bias toward households with telephones and because non-response may be very high, limiting the ability to generalise from the findings (Crombie and Davies, 1997; p 93). However, telephone surveys are widely used in other social sciences and where the sample size is large enough they can provide useful insights into the attitudes and perceptions of a general population (if their biases and weaknesses are adequately accounted for in the interpretation of their results).

The THA wanted to understand the views of the Free Child Health Care Scheme held by parents and others caring for young children and proceeded with commissioning the survey from ACNielson (N.Z.) Limited. Data collection was completed and the data were delivered to the THA immediately prior to the "transformation" of that agency into the HFA (Health Funding Authority, 1998). These data may have been analysed by THA staff their in their final assessments of the Scheme, but it is just as likely that these (or similar) results from analysis of the survey data have never been formally provided or considered by any government health agency. In the days before the disestablishment of the THA, Authority employees appeared to be more concerned about securing ongoing employment than attending to the final tasks of their current jobs (Mackay, 1999). After contact had been established with the new HFA staff following the THA's demise, the author sought permission from the HFA to access the results of the survey. HFA staff, all newly appointed, was not aware of the survey. Following the author's request the HFA wrote to ACNielson, giving their permission for copies of their report to the THA and their data file to be released to the University of Otago.[37] The University of Otago now holds the only copy of the data file, as ACNielson (according to the terms of their contract with the THA (Smith and Stockwell, 1998)) destroyed their copies of these data in 2000. The full analysis of data collected in the household survey is presented in Chapter Seven.

4.4. Other design issues

4.4.1. Study groups

It was important to have a control group so that the effects of background changes could be accounted for in measuring the effects of the Scheme. Crombie and Davies (1997) state the purposes of control groups in epidemiologic research:

> "Comparison groups provide a yardstick against which [treatments or health care] interventions can be assessed. ... When making comparisons the two groups must be similar, so that any differences seen between them can be ascribed to the treatments each received."

In general, studies without controls provide a description without any means of assessing causality. Studies with historical controls (ITS studies, such as the investigation by Davis et al, 1994) may imply causality but are regarded as "*basically unreliable*" (Crombie and Davies, 1997; p 127). They cannot account for unknown changes in the environment between the time data were collected from controls and when data were collected from the intervention group. The particular effect of concern in utilization studies over a single year is that healthcare utilization is known to change with seasons (Hermoni et al, 1996; Moran et al, 2000), and in the course of a year each season, with its different relationship to utilization, occurs only once. Different seasons of a year are therefore not comparable.

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[37] ACNielson had already completed a descriptive analysis in their report to the THA. Their analysis was univariate, describing the distribution of each variable in the survey, but not assessing any relationships between variables.

Studies using concurrent controls that are not randomly chosen from the group also randomly providing the intervention subjects may also falsely imply that an intervention is causally related to an outcome, because selection into the study groups is inevitably biased, in known and unknown ways. Studies using participants randomly allocated to control and intervention groups can best account for known and unknown biases and provide results that can be relied upon. However, practices could not be randomized to control or intervention groups and changes in health service use measured prospectively as the Free Child Health Care Scheme applied to all practices in New Zealand from 1 July, 1997. Typical concurrent controls were also unavailable for the same reason. Historical controls were therefore the only available choice.

Local After-Hours services seemed the most likely groups to continue to charge young children after the Free Child Health Care Scheme started, and they were not prohibited from doing so. However, because these practices provided conceptually different services from mainstream general practices[38] they were explicitly excluded from the investigations presented in this thesis.

Of the three separate projects that were components of this research, two adopted a controlled before-and-after research design and one was a household survey. The initial plan was to conduct one investigation - an ITS study comparing historical utilization data from the year before the introduction of the Free Child Health Care Scheme with utilisation data from the year after, in the same practices. This approach would deal with the issues related to seasonality. However it was known (from interactions with general practitioners in the course of other work) that some practices systematically offered free consultations to children before the Free Child Health Care Scheme started. Sometimes these practices had decided to offer free care to children in their practices months or years previously, but many had simply anticipated the Scheme. It was therefore possible to construct "a kind of control" group (following Titmuss, 1959) from practices offering free consultations to young children in the year before the Free Child Health Care Scheme started. The overall design framework of the research reported in Chapters Five and Six was therefore of a CBA study.

The planning took into account the likelihood that some practices not meeting either control or intervention group definition would volunteer to participate in the investigation. These may be practices whose "no-charging" policies in Study Year 1

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[38] The most notable difference is that After Hours clinics do not aim to provide continuity of care, a core attribute of general practice (see Chapter Three).

extended to children aged less than five years, but not to five-year-olds. They could also be practices introducing no-charging policies during Study Year 1, and those with no-charging policies in the year prior for certain groups of pre-school children only (usually children from families with Community Service Cards (CSCs). These practices were treated as intermediary between control and comparison group data and used for dose-response testing in some analyses.

For the results reported in Chapter Six, several different control groups had to be used because the evaluation was limited to existing data sources and different sources had different groups of records that were (in theory) unaffected by the Free Child Health Care Scheme from one year to the next. These control groups are shown in Table 4.3.

4.4.1.1. Sampling frame for the household survey

The household survey reported in Chapter Seven aimed to involve a nationally representative study group of parents (or care-givers) of children under six years old. Before starting the survey the contractor, ACNielson, could not obtain from Statistics New Zealand the population distribution of parents with children aged less than six years. They therefore used general population statistics to draw a sample that was representative of urban and rural New Zealanders and later weighted response data according to the revised distributions later obtained from Statistics New Zealand. The THA requested an ethnically representative survey but specifically excluded over-sampling of minority ethnic groups to ensure adequate representation. ACNielson considered oversampling desirable because their previous telephone surveys had had difficulty achieving representative samples of Maori and Pacific Islands people. The surveyors attributed this situation to lower incidence of telephones in lower income households, larger household composition (especially in Pacific Islanders' homes), language barriers, and the cultural inappropriateness of the telephone survey as a method to gain participation by people from non-European cultures. The company had devised strategies to help overcome these problems, including careful design of the survey questions, employing interviewers from diverse ethnic backgrounds, and revealing interviewers' ethnicity to respondents.

Table 4.3. Control groups from different data sources.

Data source	Control Group
ABC study	Infants who were not covered by the Free Child Health Care Scheme at all in the first year of life
Emergency Departments	Children aged 6-14
Health Benefits Limited data	"J" category children[39]
Health Funding Authority survey	Not applicable
Health Research Council survey	Not applicable
Independent Practice Association data	Children aged 6-16
NZHIS hospital admissions data	Children aged 6-16
RNZCGP Research Unit data	1. Patients of practices that did not charge in Year 1. 2. Children aged 6-16

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[39] "J" category children were school aged children five years of age and older before the Free child Health Care Scheme started and six years of age and over after the Free Child Health Care Scheme started. The "J" is the GMS benefit category assigned by the Benefits Payment Office.

4.4.2. Power calculations

The power of a study is its ability to demonstrate an association between an intervention and an outcome, given that the association exists (Elwood, 1988; p 143). Several factors affect the power of a study, including the strength of the true association, the frequency of the outcome, and the level chosen for statistical significance. If the sample size is too small, a study may be unable to identify a significant result even when one exists (commonly called a "Type II" or "beta" error). If the sample size is too large, a study may show a statistically significant result simply because the statistical effects of a small variation are magnified by the numbers (a "Type I" error) (Hennekens and Buring, 1987; p 258-60).

Power calculations for the study reported in Chapter Five were based on data already held in the RNZCGP Research Unit from 28 general practices. One stage cluster sampling was assumed. Because the science of evaluating policy level interventions is much less developed than the science of evaluating the impact of interventions for individual patients, clustering is an important design consideration that has tended to be overlooked in the evaluation of health policy (Ukoumunne et al., 1999). When individual observations are used to evaluate "clustered" interventions (such as policies affecting general practice), standard formulae for sample size are not appropriate because they assume that the responses of individuals within clusters are independent (Donner et al., 1981; Donner, 1992; Donner and Klar, 1994). Standard sample size calculations underestimate the number of participants required because they allow for variation within but not between clusters. In general practice, data about individual patients are "clustered" in practices. Analyses of patient level data must take into account the practice effect.

In the 28 practices whose data were used for sample size calculations, the mean consultation rate per child under six years old was 5.2 consultations in the 1996 calendar year. Taking into account the effect of the practice and assuming that 20 practices routinely charged for consultations by children aged under six years old throughout Study Year 1, a study of 40 practices (20 Intervention and 20 Control) would have a power of 80% to detect a mean difference between study Years of 1.2 consultations per year for each child aged under 6 years. Under the same assumption, the study would have a power of 90% to detect a mean difference of 1.4 consultations per year. In either case, the difference would be clinically as well as statistically significant. It would mean that, on average, each practice would have had to provide two additional consultations every day to children under six years old following the introduction of the Free Child Health Care Scheme.[40] An additional assumption was made that there were an approximately equal number of practices in New Zealand generally meeting the definitions of control and intervention groups. Most general practitioners practice in relative isolation and they tend to think that their colleagues mainly do the same things as themselves. It was thus difficult to obtain a robust estimate of the potential balance in charging policies prior to the Free Child Health Care Scheme start. Whether they charged children or not, the general practitioners consulted informally while planning the study thought that most other general practitioners did as they did.

Post hoc power calculations were made on ABC study data, to assess whether the study was large enough to show a statistically significant difference in the number of children seen in general practice, by different lengths of time infants were covered by the Free Child Health Care Scheme. This was important because the study was established to investigate long-term health outcomes for infants who were born small for gestational age (SGA) and was used opportunistically in the evaluation reported in Chapter Six, to examine the effects of the Free Child Health Care Scheme. Power calculations determined the number of infants required in each group to find a statistically significant difference between the group with no cover by the Scheme in their first year and the group that had 6-12 months of cover by the Scheme. Assuming a 5% level of significance and a power of 80%, 296 infants were needed in each study group to show a difference in proportions visiting a general practitioner. To show a difference in proportions visiting an emergency department, 863 infants were needed in each study group and to show a difference in hospital admissions, 446 infants were needed in each group. The ABC study actually had 451 infants who had no cover by the Scheme in their first year of life and 184 infants with 6-12 months of cover. It was therefore under-powered for this investigation and if statistically significant differences could not be demonstrated, this did not mean that such differences did not exist.

4.4.3. Implications of the Treaty of Waitangi

The Treaty of Waitangi was signed in 1840 between representatives of the British Crown and New Zealand's Maori chiefs. It has three articles: Article One cedes

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[40] Sample size calculations were conducted by the consultant statistician to the study, Darryl Mckenzie, Centre for Applied Statistics and Mathematics, University of Otago.

sovereignty to the Crown, Article Two guarantees Maori rights of ownership and governance over traditional food sources, lands, and other taonga (treasures), and Article Three guarantees Maori the same rights of citizenship as other British subjects. The New Zealand government has acknowledged that Article Three of the Treaty constitutes a guarantee to Maori of access to health services equal to that of other citizens of New Zealand (Department of Health, 1992b). Many Maori also take the view that Article Two, in recognising Maori traditional rights to manage their own affairs, also signifies the right of Maori to establish separate health systems (Barrett, 1997). There is abundant evidence that Maori do not enjoy the level of health achieved by other New Zealanders (Statistics New Zealand and Ministry of Health, 1994). To the extent that access to health services use is associated with health status, understanding the association of outcomes of the research with patients' ethnicity was therefore an important consideration in this project.

The projects reported in Chapters Five and Six were mainly based on the analysis of items of electronic data collected by general practitioners for their clinical use and claims used for processing payments. That these same data might be used for research was a distant consideration at the time the records were made. Most general practitioners in New Zealand in 1996 not only did not make a record of their patients' ethnicity, they did not see the point of doing so as they maintained that a patient's race or ethnicity did not influence their clinical decisions (Kljakovic, 1993). It was a limitation of these projects that they were unable to provide information about the effects of the Free Child Health Care Scheme on access to health services by Maori children.

4.4.4. Ethics committee review

Independent review of a proposed study's rationale and processes is an essential component of almost all medical research involving people. Review to ensure ethically sound research is considered necessary because researchers may fail to appreciate the impact of their research on the lives of their research participants. Independent review can provide a check to ensure that research is undertaken only when it is needed and when potential benefits to society outweigh potential risks to individuals. Secondary review of anonymous data (such as publications of hospital discharges, and re-analysis of already published data) is usually excluded from requirements for ethics committee review. In the UK, research using unidentifiable data from routinely constructed databases (such as the RNZCGP Research Unit data) is also exempt from the requirement that proposals should be reviewed before implementation and ethical review procedures when using identifiable data are under debate (Al-Shahi and Warlow, 2000). In this project, the research funded by the HRC and reported in Chapter Five and the overall evaluation proposal reported in Chapter Six were reviewed and approved by the Dunedin Ethics Committee of the HFA. The ABC study and the analysis of emergency department data (components of the evaluation reported in Chapter Six) were reviewed and approved by the HFA (Auckland) Ethics Committee.

These standards, now universally applied in academic settings, are not so widely appreciated in other settings. The household survey reported in Chapter Seven is the type of research that would in an academic setting routinely be reviewed and approved by an ethics committee before being undertaken. Neither ACNielson nor the THA operated in an academic environment, however. They did not ask for the survey to be reviewed by an ethics committee before it was conducted and reported. Despite this, ACNielson did adhere to the ethical standards of research established by the Market Research Society's Code of Practice (Smith and Stockwell, 1998). These standards govern the collection, use and disclosure of personal information as defined in the Privacy Act. This survey represents research at the interface between market and medical research, where the standards of market research were favoured above those of medical research (the more familiar domain of general practice).

4.5. Summary

This Chapter has presented a general outline of the methods taken in the research for this thesis. It has explained that while the methodological approaches adopted in Chapters Five, Six, and Seven are quite different, they are all at some level defined as general practice research. This definition applies because of the interpretative foundation of the researchers and their tendency to interpret their research from a general practice perspective, even when it has been commissioned to assist policy-makers and planners.

A review of the literature (Section 4.2) showed a respectable array of studies and research approaches taken to address questions relating to the effect of out-of-pocket payments on the use of health services and on health. Many of the published papers are now quite dated, but the strong design of studies such as the Rand Health Insurance Experiment (Lohr et al, 1986) lends some assurance about the transferability of their results into the future. Only one of the papers eligible for inclusion in a Cochrane review was conducted in New Zealand (Satterthwaite, 1997) – a study of the effect of making influenza vaccines free. Overall, the literature review showed remarkable consistency in pointing to an increase in health service use when patient fees were removed, but gave no clear indication of the effect on fee changes on health outcomes. The results of studies involving children (Liebowitz, 1985; Valdez et al, 1985; Valdez et al, 1989; Ahlamaa-Tuompo et al, 1998; Ahlamaa-Tuompo et al 1999) were less clear-cut than the results from studies of adult populations. The literature review provided information on design and analysis of research into the effect of fee changes and confirmed that the CBA framework adopted for the research in Chapters Five and Six was an acceptable approach.

The Chapter then described the different approaches taken to conduct the research reported in the following Chapters. The research of Chapter Five is a typical researcher-initiated project, with slight modification as it was developed in response to a "Request For Applications" by the HRC. It was planned and executed according to a tightly defined protocol that had been developed, reviewed, reassessed, and finally accepted for funding over a period of about eight months in 1997.

The research of Chapter Six was conducted under processes that were new to both the research team and those who commissioned the project. Through a tendering process competitive elements beyond the proposal itself came into play. Of particular importance in this regard was the composition of the research team. The project's funding was the subject of intense negotiation, with the negotiator having little authority to make funding decisions that would expedite the contract's closure.

The research of Chapter Seven would probably never have been completed but for the insider knowledge of the author. The data were collected at a tumultuous time in the life of government health policy agencies and were not used to inform policy because policy-makers did not know of their existence when they were making decisions about the Free Child Health Care Scheme.

Finally, the chapter reviewed some of the fundamental design aspects of the research. Power calculations and their underlying assumptions were presented. Study groups were explained and defined. The shortfalls of the project with regard to satisfying researcher obligations under the Treaty of Waitangi were discussed.

The following three Chapters present research undertaken to evaluate the Free Child Health Care Scheme.

Chapter Five

Researcher-initiated research

5.1. *Introduction*

Even after the Free Child Health Care Scheme was introduced, there was no guarantee that general practitioners would cease charging for consultations with young children. Despite the policy having been developed by government, setting patient charges remained a responsibility of the medical profession. In the months leading up to the introduction of the Scheme, there was considerable controversy over the policy and general practitioner political organisations were unwilling to make a firm commitment not to charge on every occasion, for reasons discussed in the previous chapters.

The turmoil generated by the prospect of being perceived as having to provide free care for young children, balanced by the professional concerns that children should have the best access to their care possible, made the Free Child Health Care Scheme a policy of great interest to general practitioners. This interest in turn generated research interest in general practice academia and funding to investigate the impact of the Scheme was sought by the author and awarded. This chapter reports a project funded by the Health Research Council of New Zealand (HRC). Its methods and initial findings were reported in 1999 at the Annual conferences of the Royal New Zealand College of General Practitioners (RNZCGP) (Dovey, 1999c) and the Association of Health Services Research (Dovey et al, 1999d).

5.2. *The purpose of the study*

The goal of the research reported in this Chapter was to assess whether, in its first year, the Free Child Health Care Scheme first, was implemented, and second, made a measurable difference to the access of children aged less than six years to general practice care. The aim of this research was to assess the impact of the Free Child Health Care Scheme in a way that would make sense to general practitioners. This Chapter will explain the research objectives, the specific design (by contrast with the general design discussed in Chapter Four) and methods, and present the study's results.

The purpose of a quantitative research project is typically expressed in its aims, objectives, and (sometimes) hypotheses. The project reported in Chapter Five had the following objectives:

1. To determine whether free general practice care was offered to children aged less than six years, where previously a charge had been made for consultations.
2. To determine whether changes to general practice access for children aged less than six years occurred.[41]
3. Following this, the research objectives were to assess whether changes to access for children aged less than six years increased total practice workload and/or decreased utilisation by other groups of patients.

The project also specifically aimed to investigate changes in the number and type of medicines prescribed for children under six years old, following 1 July 1997. The emphasis in this analysis was to see whether children received more antibiotics and more anti-asthma medications, for reasons discussed in Chapter Two. Measures of change in the control group of practices were interpreted as the natural response to other external factors affecting change. Differences between changes in the control group and changes in the intervention group were interpreted as measures of the effect of the Free Child Health Care Scheme.

This project also aimed to test specific hypotheses. Hypotheses are unambiguous statements that make testable predictions (Crombie and Davies, 1997; p29). In epidemiology studies are usually either primarily *hypothesis-testing* or primarily *hypothesis-generating*. Hypothesis generating studies use study data to test a variety

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[41] Access to general practice care was measured through its proxy, utilisation (see Section 1.2.3. for a discussion of the relationship between access and utilisation).

of associations that were not specified prior to starting the study. Because the study was not planned to address these questions,

> "... the validity of particular results from the study will be uncertain until confirmatory evidence is available from further work." (Elwood, 1988; p 157).

The following hypotheses were proposed:

1. That, in the year following 1 July 1997, compared with control group practices, more general practice consultations were provided to children aged less than six years in comparison practices than were provided in the previous year.
2. That, in the year following 1 July 1997, compared with control group practices, a greater proportion of general practice consultations were provided to children aged less than six years in comparison practices than were provided in the previous year. The corollary of this would be a corresponding decline in the proportion of consultations by people in other age groups.
3. That, in the year following 1 July 1997, compared with control group practices, more prescriptions were provided to children aged less than six years in comparison practices than were provided in the previous year.

5.3. *The study plan*

A controlled before-and-after (CBA) study using data from general practices contributing to the RNZCGP Computer Research Group was planned. The design of this project is shown in Figure 5.1.

5.3.1. Definitions

Table 5.1 lists the time and study group definitions used in the study. Study year 1 included the entire 12 months before increased subsidies started to be paid under the Free Child Health Care Scheme in 1 July 1997. Study year 2 included the entire 12 months following this date. These definitions applied to both the analysis reported in Chapter Five and to the research reported in Chapter Six.

Three groups of practices were defined. The third, intermediate, group comprised practices not meeting the definition of either control or comparison practices. There were a variety of reasons for practices deviating from Control and Comparison

Figure 5.1. Project design

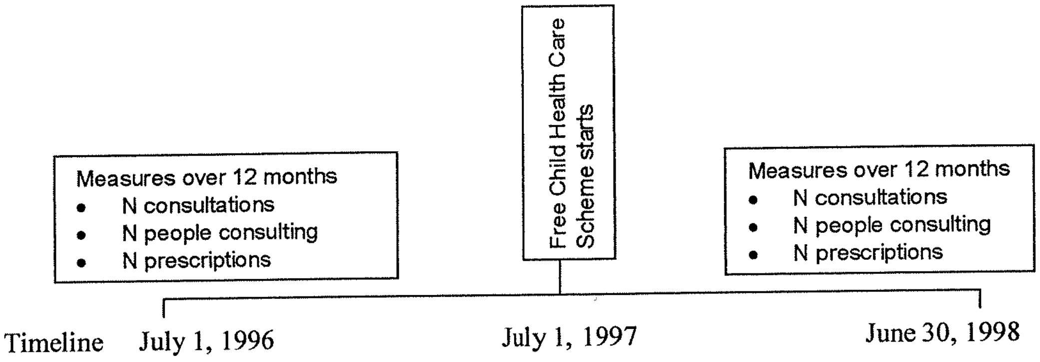

Table 5.1 Study definitions

Term	Definition
Study Year 1	The year from 1 July 1996 to 30 June 1997
Study Year 2	The year from 1 July 1997 to 30 June 1998
Control Group	Practices having a practice policy of providing free consultations for children aged less than six years throughout the year preceding the start of the Free Child Health Care Scheme on 1 July 1997.
Intermediate Group	Practices with policies of charging some children aged less than six years in Year 1 and providing free care to others.
Comparison Group	Practices that had no practice policy such as the Control Group's. That is, in general they would charge for consultations with children less than six years before the Free Child Health Care Scheme started but did not charge in Study Year 2.

definitions and the study would become unwieldy if each variation defined a separate group.

5.3.2. The data

5.3.2.1. The survey data

Before the main analysis could be started, a postal survey of practices was undertaken to establish the patterns of charging for consultations with children aged less than six years. This information was needed to define the study groups and to meet the first study objective to determine whether general practitioners were in fact providing free care to young children, as promised by politicians.

Although data were collected routinely from RNZCGP Computer Research Group practices, they could not be used in studies without the specific approval of contributing practices (Dovey and Tilyard, 1996). All 180 practices contributing to the Network in 1998 (when the study started) therefore received a letter seeking their permission to use data from their practices in the evaluation of the Free Child Health Care Scheme. Along with this request, the mailing included a one-page survey asking for charging information that would determine the classification of the practice into one of the three study groups (comparison, control, or intermediary group). The data collected in this survey included:

1. the number of doctors and nurses working in the practice (total and full-time equivalent (FTE) doctor and nurse positions),
2. whether nurses routinely triaged patients,
3. whether nurses routinely provided immunisations with or without concurrent doctor checks,
4. whether the practice was affiliated with an Independent Practitioner Association (IPA) or other practice organisation (and if so, which one), and their urban or rural location.

These additional data were used to define and check the equivalency of the study groups. The practice survey form was sent to practices contributing to the RNZCGP Computer Research Group in a staggered schedule. Rather than making an additional mailing, the form was included in the cycles of routine biannual contact already established by the RNZCGP Research Unit to update data. To be eligible for inclusion in the second part of the study, contributing practices had to make available to the research team all their computerised patient records for the two years from 1 July 1996 to 30 June 1998. Many practices completed the form because they were willing to participate but could not meet this inclusion criterion. Full clinical records computerisation was still not widespread among New Zealand general practices in 1996 (Thakurdas et al., 1996).

Most survey questions were answered in full. The number of survey forms failing to complete individual questions ranged from 0 (for questions relating to urban or rural practice site, regional location, IPA membership, FTE general practitioners and nurses in the practice, and charging policies before the Free Child Health Care Scheme started) to 7 for the question relating to nurses' role in the practice in triaging patients.

5.3.2.2. The utilisation data.

The analysis used routine data collections from the national database of 84 general practices contributing to the RNZCGP Computer Research group (Dovey and Tilyard, 1996). Similar to the databases of Group Health Co-operative (GHC) in Puget Sound (Manning et al, 1984; Ware et al, 1986; Cherkin et al, 1989; Valdez et al, 1989), the general practice data sets held by the RNZCGP Research Unit are among the most comprehensive primary care data sets in the world. Their advantages lie in the fact that they contain all of the recorded information about all of the patients seen by all of the contributing general practitioners, during all of the time period for which data are held. Most general practice clinical studies produce estimates derived from samples of patients or consultations during samples of a doctor's consulting day (see, for example, (Davis et al, 1994)). Whereas GHC data are administrative data and other data sets are unique collections for research purposes, RNZCGP Research Unit databases are copies of actual clinical records. They therefore contain more clinical content than other types of data set. The comprehensiveness of the RNZCGP Research Unit data sets streamlined the research design, removing the layers of complexity associated with making estimates from samples and adding to the power and precision of results.

A detracting characteristic of the RNZCGP data sets is that they are held as raw data in large flat text files. As with all large data sets, and especially those being continually updated, there are many steps to preparing raw data for analysis by researchers. This process is sometimes referred to as "data cleaning" or "data verification" (Crombie and Davies, 1997). It is considerably more complex than the process of preparing a primary data collection for analysis, where researchers usually build their files for analysis during a process of data collection, cleaning and verifying as they go. Preparation of the RNZCGP Research Unit's data involves cutting selected blocks of data from the files held for separate practices and modifying each file so that all have the same structure and format. These files are then joined and split to produce a small set of usually very large files specific to the purpose of each investigation. The skills needed in this process include not only the analytic skills to deal with the final data files, but a detailed understanding of the derivation of each of the original files,[42] competence in forming and managing relational databases, and an ability to concurrently use database, spreadsheet, and statistical software packages.

As each survey form was received, a check was made of utilisation data from the practice that was held in the RNZCGP Research Unit. The practice was included in the utilisation analysis if computer records for two years were available. Each year's data was divided into two, reflecting the six-monthly update cycle. For a few practices, one six-month data period was missing. These practices were included in the analysis only if the equivalent six months of data were available from both years. On examining the data, six practices had only a small number of contacts in their files for Year 1 compared to Year 2. These practices were contacted and in each case they confirmed that they were not fully using their computer system in the first year, but with increasing familiarity, they did record more (or most or all) contacts in the second year. These practices were excluded from the utilisation analysis as their data were not comparable across study years.

Although complete identifying data were available in the practices, the process of data extraction from practice computers removed patients' names, addresses, and telephone numbers, leaving records that were tagged to individual patients who were not identifiable, except by a unique numeric code assigned by the software. The data extraction process provided raw data in ascii files on diskette or tape. In the RNZCGP Research Unit these raw data were converted into files of the same specified formats for all practices and stored.

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[42] Some files may represent only some of a doctor's consultation data if, for instance, the doctor or the practice generated prescriptions by hand, but kept patients' consultation notes on computer. The way practices handle laboratory reports tends to be idiosyncratic. Even although the software packages used by different practices may be the same, differences in the way computers are used from practice to practice must be understood and accommodated in the analysis from the outset.

Constructing the data files for this investigation involved three stages. In the first stage relevant variables were abstracted from the "Patient Details", "Consultations", and "Prescriptions" files of each eligible practice to a single practice file containing all the data needed for each study year. The unique numeric identifier for each patient linked the files and the file formats for each year were identical. In this final stage 1 file, each record represented an individual patient's care provided by the practice during the year. As well as patient and practice numeric identifiers, it had variables containing data regarding the age, sex, and subsidy eligibility of the patient, the number of consultations they had had during the year, the number of prescriptions (in total), and the number of prescriptions for antibiotics and anti-asthma medication. These last two variables were created by searching the "prescription" files for a record of the medicines listed in Appendix Four.

The second stage of preparing the data for analysis involved creating a summary record for each practice. These records were ultimately combined in a single file containing all the study data. The Year 1 variables in the file are described in Table 5.2. Equivalent variables contained corresponding data for Year 2. The value for each of these variables was obtained by querying the patient-level records in the practice files constructed in stage 1. Finally, this practice level file was linked to the file containing survey results, using the "practice" identifier as the link field.

The software *Microsoft Access* was used for data management to create these files and they were imported into the *Statistical Package for the Social Sciences* (SPSS-X) (Norusis, 1990) for analysis. A total of nearly 2 million records were processed in this manner. Until the construction of the final, summary, practice-level file, processing had to be done in batches because the computer used for the analysis could not handle files larger than the combined data of more than five or six practices.

Table 5.2. List of variables in the final practice file

Variable name	Variable description
PRACTICE	Numeric code assigned by the RNZCGP Research Unit to identify records from each practice.
Meds Year 1	Total number of medicines prescribed in the practice in Year 1
Meds <6, year 1	Total number of medicines prescribed to children aged under six years in the practice in Year 1
Meds 6-16, year 1	Total number of medicines prescribed to children aged 6 to 16 years in the practice in Year 1
Meds adult, year 1	Total number of medicines prescribed to adults aged over 16 years in the practice in Year 1
Total antibiotics, year 1	Total number of antibiotics prescribed in the practice in Year 1
Year 1 antibiotics, <6	Total number of antibiotics prescribed to children aged under six years in the practice in Year 1
Year 1 antibiotics, 6 to 16	Total number of antibiotics prescribed to children aged 6 to 16 in the practice in Year 1
Year 1 antibiotics, adult	Total number of antibiotics prescribed to adults aged over 16 years in the practice in Year 1
Total anti-asthmatics, year 1	Total number of anti-asthma medicines prescribed in the practice in Year 1.
Year 1 anti-asthmatics, <6	Total number of anti-asthma medicines prescribed to children aged under six in the practice in Year 1
Year 1 anti-asthmatics, 6 to 16	Total number of anti-asthma medicines prescribed to children aged 6 to 16 years in the practice in Year 1
Year 1 anti-asthmatics, adult	Total number of anti-asthma medicines prescribed to adults aged over 16 years in the practice in Year 1.
Total cons Year 1	Total number of consultations in the practice in Year 1.
Year 1 under 6	Total number of people aged under six consulting in the practice in Year 1
Age <1	Total number of people aged under one year old consulting in the practice in Year 1.

Age 1	Total number of people aged one year old consulting in the practice in Year 1.
Age 2	Total number of people aged two years old consulting in the practice in Year 1.
Age 3	Total number of people aged three years old consulting in the practice in Year 1.
Age 4	Total number of people aged four years old consulting in the practice in Year 1.
Age 5	Total number of people aged five years old consulting in the practice in Year 1.
Age 6-16	Total number of people aged 6 to 16 years old consulting in the practice in Year 1.
Cons 0	Total number of consultations by children aged under one year old in Year 1.
Cons 1	Total number of consultations by children aged one year old in Year 1.
Cons 2	Total number of consultations by children aged two years old in Year 1.
Cons 3	Total number of consultations by children aged three years old in Year 1.
Cons 4	Total number of consultations by children aged four years old in Year 1.
Cons 5	Total number of consultations by children aged five years old in Year 1.
Cons 6-16	Total number of consultations by children aged 6 to 16 years old in Year 1.

"Age" variables were calculated as the age at the midpoint of each study year (that is, 1 January, 1997 and 1 January, 1998). The "date of birth" variable was subtracted from each of these dates, to give "age". This approach (rather than the subtraction of "date of birth" from "consultation date") was chosen to ensure that individuals were counted in only one age group for each study period. The age group for all people was defined by the 1 January 1996 and 1 January 1997 dates, rather than by their birth dates, so the error in estimates of birth dates assumed a normal distribution. Similarly, eligibility for government health care subsidies was attributed for the whole of each study year by eligibility recorded on the nearest consultation date to 1 January 1996 and 1 January, 1997.

Included in the utilisation analysis were almost all records of 54 general practices for two years. Records were excluded only if "date of birth" and "subsidy eligibility" data were missing. Missing birth dates prevented calculation of the age of patients receiving medicines for 9,679 prescription records (2.5% of total Year 1 prescriptions). Crucial data were missing from 3.1% of Year 2 prescription records. (0.08% of records had a missing "date of birth" and 1.2% were missing "subsidy eligibility" data). The same low level of missing data was found in the utilisation records as has been reported in other analyses of data from the RNZCGP Computer Research Group (Tilyard et al, 1998) (0.01% with missing "date of birth" and 1.5% with missing "subsidy eligibility").

5.3.3. Statistical analyses

Statistical analysis of the study data reflected the study's purpose and the data source. For the survey data, descriptive statistics (proportions, means and standard deviations) were first calculated for each variable. To discern the differences between practices responding to the survey and practices eligible for inclusion in the full utilisation analysis (apart from the differences in their utilisation data) Pearson's chi-square test for differences in proportions was used. The level of significance was established at $P = 0.05$. Armitage and Berry (1994) recommend use of the exact test for any table with an expected value less than 5. Fisher's exact test was used to compare the characteristics of control, intermediate, and intervention practices.

Analysis of utilisation data emphasised a repeated cross-sectional study design because this approach reflected the practice level focus of interest of the study. It was also more likely to give results that represented the clusters (that is, the practices) at the later measurement occasions. In making this choice, it was acknowledged that the alternative cohort analysis was potentially more powerful with respect to conclusions about individual patients (Ukoumunne et al., 1999).

Because of the project's emphasis on providing information for general practitioners, results were interpreted wherever possible, in terms of changes to a general practice's workload.

5.4. *The project's results*

5.4.1. The practice survey

In the next section the descriptive analysis of responses from all 120 responding practices is shown. Organisational structures and charging behaviour of practices in different regions are also explored. The following section presents an analysis comparing practices that met all eligibility criteria for the study with the practices that agreed to participate but could not be included in the utilisation analysis because the records set they offered was not able to be compared for the two study years.

5.4.1.1. Fee charging patterns in 120 general practices

Table 5.3 shows the characteristics of the 120 practices returning a survey form. There were 296.6 FTE general practitioners working in these practices and 224.7 FTE practice nurses. In 75 (62.5%) practices, nurses routinely triaged patients and in 112 (93.3%) they routinely gave immunisations. Most practices (114: 95.0%) had made no personnel changes since the Free Child Health Care Scheme started, but four (3.3%) had employed more staff. These practices represented 21 IPAs and a further 21 practices did not belong to any IPA. Three IPAs (SouthLink Health, Pinnacle, and ProCare) had 10 or more of their practices responding and these are shown separately in tables 5.3 and 5.4.

The 120 practices responding to the charging survey were screened for eligibility to be included in the utilisation study and 66 (55.0%) were excluded from the full investigation because they could not contribute comparable utilisation data for the two study years, leaving 54 practices contributing to the full analysis. Table 5.3 shows the characteristics of both groups of practices – those contributing to and those excluded from further analyses. The only statistically significant difference between included and excluded practices was in their regional distribution. Practices in the Southern region were more likely to be included and practices in the Midlands and Central regions were more likely to be excluded ($\chi^2 = 3.523$; $P = 0.004$).

The analysis of charging behaviour before and after the introduction of the Free Child Health Care Scheme was based on data from the surveys returned by 120 practices. This larger sample provided a more complete picture of variations in charging than the smaller sample of eligible practices (54 practices). Neither sample, however, provided "generalizeable" data because neither was drawn at random from the population of all New Zealand general practices.

The concept of having a regular fee-for-service is widely accepted in New Zealand general practice, but followed irregularly (Dovey and Tilyard, 1991; Tilyard and Dovey, 1996). In common with previous studies, the practices in this survey reported a wide range of charging policies. Before the Free Child Health Care Scheme started on 1 July 1997, 13 practices (10.8%) had already ceased charging children under six years old for consultations; 5 practices (4.2%) did not charge any school-aged children, and 36 practices (30.0%) provided free care to pre-school-aged children (aged less than five years). Twelve practices (10.0%) systematically waived charges for children of low-income families – those holding Community Services Cards (CSCs) – or holders of High Use Health Cards (HUHCs). Two practices (1.7%) operated school clinics where the medical care they provided was free and one practice (0.8%) indicated that within the practice, different doctors followed different charging policies – some charged for consultations with children and others did not.

When practices either providing free consultations to children of any age (30 practices; 25.0%), or charging for consultations with children before the Free Child Health Care Scheme were grouped together, chi-square tests showed significant variation by region but not by any of the other characteristics shown in Table 5.3. Practices in the Northern and Southern regions were more likely to provide free care for children before the government policy was introduced than practices in the Midlands and Central regions ($\chi^2 = 7.952$; $P = 0.047$). In the Northern region 10 practices (45.5%) provided free care; in the Southern region, 11 practices (25.6%); in Midlands, 7 practices (20.6%); and in Central, 2 practices (9.5%).

Table 5.3. Characteristics of the 120 practices contributing to the RNZCGP Computer Research Group databases in 1998. (Percent).

	Eligible practices N = 54	Excluded practices N = 66	All practices N = 120
Location			
Urban	32 (59.3)	46 (69.7)	78 (65.0)
Minor urban	9 (16.7)	12 (18.2)	21 (17.5)
Rural	13 (24.1)	8 (12.1)	21 (17.5)
Northern region[43]	9 (16.7)	13 (19.7)	22 (18.3)
Midlands region	13 (24.1)	21 (31.8)	34 (28.3)
Central region	04 (7.4)	17 (25.8)	21 (17.5)
Southern region	28 (51.9)	15 (22.7)	43 (35.8)
Organisational affiliations			
Not in an IPA	7 (13.0)	14 (21.2)	21 (17.5)
SouthLink Health	18 (33.3)	12 (18.2)	30 (25.0)
Pinnacle	6 (11.1)	10 (15.2)	16 (13.3)
ProCare	3 (5.6)	7 (10.6)	10 (8.3)
Other IPAs	20 (37.0)	23 (34.8)	43 (35.8)
IPA membership status:			
Full member	43/45 (95.6)	49/50 (98.0)	92/95 (96.8)
Affiliate	2/45 (4.4)	1/50 (2.0)	3/95 (3.2)
Practice size (FTE doctors)			
Solo	14 (25.9)	24 (36.4)	38 (31.7)
1 – 2.9	19 (35.2)	26 (39.4)	45 (37.5)
3 – 4.9	13 (24.1)	12 (18.2)	25 (20.8)
>=5	8 (14.8)	4 (6.1)	12 (10.0)

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[43] In 1998 when these data were collected, the New Zealand health service was configured in these four geographic regions, with separate regional management structures.

Overall, 102 practices (85.0%) did not systematically provide free care to children aged less than six years, before 1 July 1997. Following the introduction of the Free Child Health Care Scheme almost the inverse situation applied: 86 practices (71.7%) always provided free health care to children aged less than six years. Only one practice (0.8%) continued to always charge a fee for consultations with young children. This was an urban practice from the Northern region. It was not part of an IPA. Practices continuing to charge on some occasions indicated they only did so when the consultation took place after hours (24 practices; 20.0%), or for home visits, extra materials used in the consultation, or for long consultations (8 practices; 6.7%).

The key finding from the analysis of charging behaviour was that, following the introduction of the Free Child Health Care Scheme, almost all surveyed practices ceased charging for consultations with children aged less than six years. Practices continuing to charge almost always did so only in exceptional circumstances – for home visits or after hours care.

5.4.1.2. Fee charging patterns in 54 eligible practices.

Table 5.4 shows the characteristics of the 54 general practices contributing two years of consultation data to the analysis funded by the HRC. There were 154.8 FTE general practitioners working in these practices (52.2% of total general practitioners in the 120 practices responding) and 119.8 FTE practice nurses (52.9% of total). In 32 (65.3%) the practices, nurses routinely triaged patients and in 49 (96.1%) they routinely gave immunisations. Most practices (51: 96.2%) had made no personnel changes since the Free Child Health Care Scheme started, but two (3.8%) had employed more staff. The survey could not establish whether the Free Child Health Care Scheme caused these personnel changes, but given the small number of practices employing additional staff, this seems unlikely.

Contributing practices represented 15 IPAs and a further 7 practices did not belong to any IPA. Although 12 SouthLink Health practices were excluded from this part of the analysis, SouthLink Health was the only remaining IPA contributing more than 10 practices to the analysis. Ten of 16 Pinnacle practices (62.5%) and 7 of 10 ProCare practices (70.0%) were excluded. Because of small remaining numbers in each IPA category, the IPA comparison in this section was made between the three categories: (1) not in an IPA, (2) a SouthLink Health practice, and (3) belong to another IPA.

Table 5.4. Characteristics of the 54 practices contributing to the researcher-initiated investigation of the impact of the Free Child Health Care Scheme. (Percent)

	Comparison practices N = 37	Intermediary practices N = 9	Control practices N = 8	All practices N = 54
Location				
Urban	29 (78.4)	7 (77.8)	5 (62.5)	41 (75.9)
Rural	8 (21.6)	2 (22.2)	3 (37.5)	13 (24.1)
Northern region	8 (21.6)	1 (11.1)		9 (16.7)
Midlands region	9 (24.3)	2 (22.2)	2 (25.0)	13 (24.1)
Central region	4 (10.8)			4 (7.4)
Southern region	16 (43.2)	6 (66.7)	6 (75.0)	28 (51.9)
Organisational affiliations				
Not in an IPA	5 (13.5)	2 (22.2)	-	7 (13.0)
SouthLink Health	12 (32.4)	2 (22.2)	4 (50.0)	18 (33.3)
Other IPAs	20 (54.1)	5 (55.5)	4 (50.0)	29 (53.7)
IPA membership status:				
Full member	31 (96.9)	5 (71.4)	7 (87.5)	43 (91.5)
Affiliate	1 (3.1)	2 (28.6)	1 (12.5)	4 (8.5)
Practice size (FTE doctors)				
Solo	8 (21.6)	4 (44.4)	2 (25.0)	14 (25.9)
1 – 2.9	15 (40.5)	2 (22.2)	2 (25.0)	19 (35.2)
3 – 4.9	9 (24.3)	1 (11.1)	3 (37.5)	13 (24.1)
>=5	5 (13.5)	2 (22.2)	1 (12.5)	8 (14.8)
Consultation numbers				
Total Year 1	635,612 (66.7)	179,733 (18.9)	138,029 (14.5)	953,374 (100.0)
Total Year 2	670,685 (66.6)	185,481 (18.4)	150,868 (15.0)	1,007,034 (100.0)

There were no statistically significant differences in the proportions of Comparison, Intermediary, and Control practices in each of these IPA membership categories. However, all practices remaining in the Control group had an IPA affiliation. Analysis by Fisher's exact test showed that there were no significant differences between the three study groups in terms of urban/rural location, organisational affiliation, or practice size. Similar proportions of total consultations from each study group also contributed to the analysis for each year.

5.4.2. The CBA results

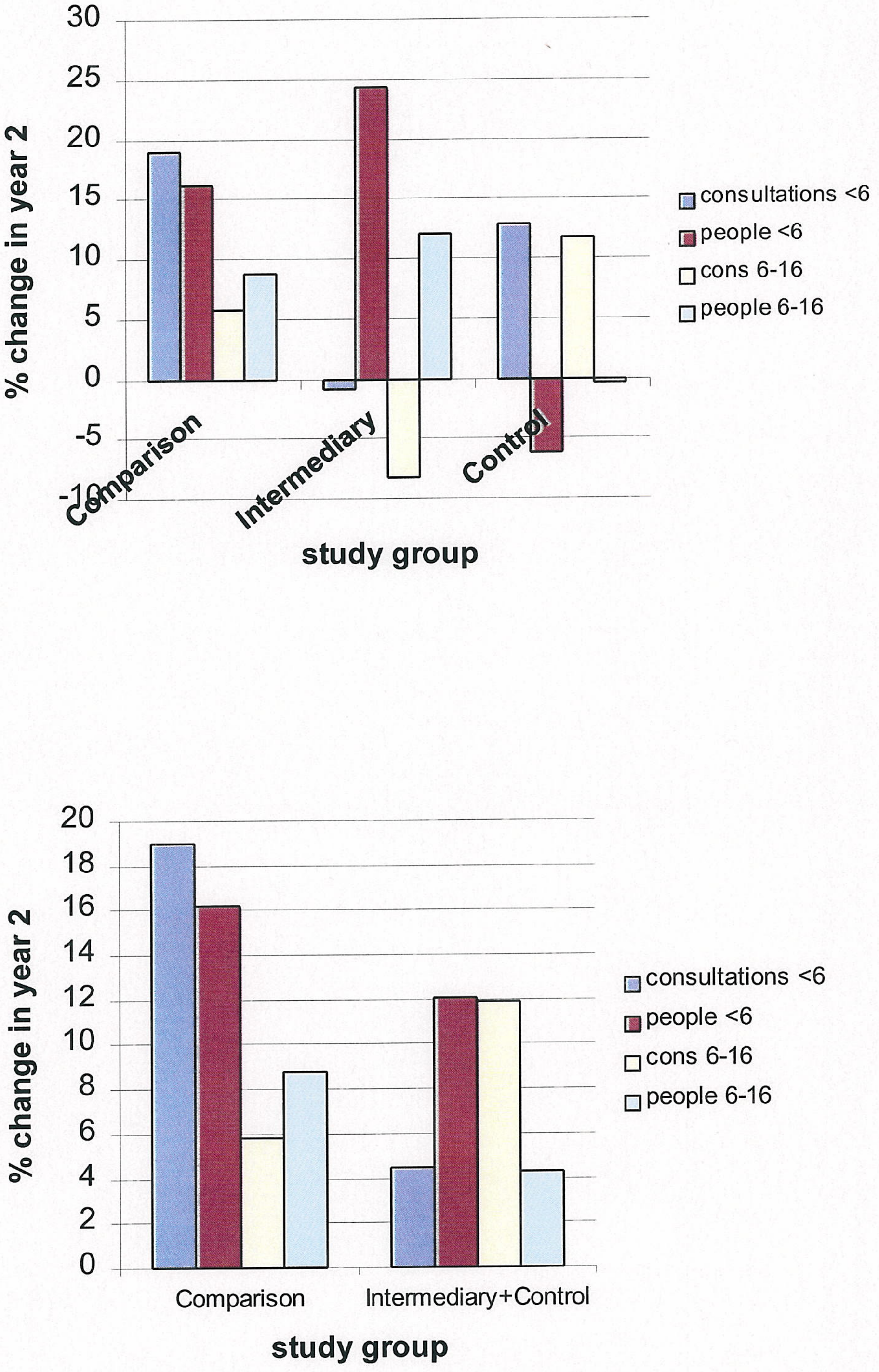
Section 5.4.2. presents the results of the analysis of data from the 54 practices contributing utilisation data from both 1996/97 and 1997/98. The analysis is structured using the specific objectives and hypotheses listed in the HRC application. In each case, the goal is to determine whether the Free Child Health Care Scheme made a greater-than-expected difference to observed changes. Expected differences were assessed by comparing results from Comparison and Intermediary study group practices with results from Control group practices.

Hypothesis 1: **There was no change in the number of consultations provided to children aged under six years, following the Free Child Health Care Scheme start.**

In 1996/97, the year preceding the introduction of the Free Child Health Care Scheme, there were a total of 123,949 consultations made by 26,670 children aged less than six years old (for a consultation rate of 4.65 per person). In the following year, 30,608 children made 140,623 consultations (for a consultation rate of 4.59 per person). Thus overall, the number of children receiving care in these 54 practices increased 14.8% from Year 1 to Year 2, and the number of consultations they received increased 13.5%. These figures translated into a marginally lower overall contact rate per child (5 consultations less in Year 2 for every 100 children).

Figure 5.2 shows changes in utilisation in the Comparison group relative to changes in the Intermediary and Control groups, first, and then relative to Intermediary and Control groups combined. The upper graph shows that for the Comparison group practices (charging fees for child consultations in Year 1 but not charging in Year 2) there were in Year 2 increases in the number of consultations provided to both children aged less than six years and aged 6-16 years. The number of children consulting in both age groups also rose in these practices. In the 37 Comparison

Figure 5.2. Percent change in general practice consultations from Year 1 to Year 2, by study group.



practices, 17,194 children aged less than six years made 79,847 consultations in Year 1 (for a consultation rate of 4.64 consultations per year). In Year 2, 19,988 children made 91,422 consultations (for a consultation rate of 4.57). Thus in these practices the number of children consulting rose by 16.2% above the number consulting in Year 1 and the number of consultations rose by 14.5%, but for each 100 consulting children there were 7 fewer consultations provided in Year 2. On average each of these 37 practices saw 76 children more in the year following the introduction of the Free Child Health Care Scheme, and they provided 313 more consultations each. These results are below the level of significance specified in advance (section 4.4.2.) for a difference between the study years.

Estimates are less robust for changes in the same parameters for Intermediary group practices (which charged for part of the first year or for some children) and for Control group practices (which did not charge in either year). The lack of a clear picture from these two groups of practices probably arises because of the small number of practices in each group (9 in the Intermediary group and 8 in the Control group). The lower graph shows more meaningful (and more conservative) results from analysis of utilisation in the 17 practices of the Intermediary and Control groups, combined. The combined results from these two study groups showed that in Year 2 there was an increase of 12.1% in the number of children aged less than six years who consulted (from 9,476 to 10,620). There was also an increase of 4.5% in the number of consultations provided to children aged less than six years (from 47,102 to 49,201). Thus the average consultation rate for children aged less than six years decreased from 5.00 to 4.63 from Year 1 to Year 2. These numbers equate to each of the 17 practices on average providing 123 extra consultations in Year 2 to 67 more children.

To statistically test for differences between the Comparison group and the Intermediary and Control groups combined, computed variables were used. These variables represented the percent change from Year 1 to Year 2 in (1) the number of children consulting, and (2) in the number of consultations provided to children aged less than six years, in each practice. The distributions of these variables approximated a normal distribution, so standard t-tests were used. There were no statistically significant differences between study groups in either the change in consultations ($P = 0.180$) or in the change in the number of children consulting ($P = 0.333$).

Statistical tests are of less relevance to general practitioners than the experienced change in their workloads. If changes in consulting among the Intermediary and

Control group practices are assumed to reflect a natural growth in utilisation and the greater changes in Comparison practices are attributed to the impact of the Free Child Health Care Scheme, then 9 more children aged less than six years were seen per practice in Year 2 than would have been seen without the Scheme. This represents an average increase of only 1.8% of a practice's population of children aged less than six years, based on the consulting population in Year 1. At the same time, 190 more consultations per practice can be attributed directly to the Free Child Health Care Scheme. This represents an average increase of 8.3% in the number of consultations provided by each practice to young children. Together, these results provide evidence to suggest that the Free Child Health Care Scheme did result in more consultations being provided to children aged less than six years. However, when translated to a practice level, the increase in the number of young children seen is likely to have been barely noticeable. General practitioners are more likely to have noticed the increased number of consultations sought by children affected by the Scheme.

Hypothesis 2: There was no change in the proportion of consultations provided to children aged under six years, following the Free Child Health Care Scheme start.

Given that the number of hours in a day did not change and that doctors changed neither the number of hours they worked nor the length of their consultations, a lower workload among other demographic groups of the practices' patients should balance a higher consulting workload for young children. Utilisation rates of two population groups (children aged 6-16 years and adults aged over 16 years old) were examined to establish whether they had diminished over the study period.

Utilisation by children aged 6-16 years old did not diminish. The number of children aged 6-16 years old consulting in all 54 practices increased 7.4% in Study Year 2, from 28,030 to 30,103, and the number of consultations they made increased 7.7%, from 84,436 to 90,972. Overall, the annual consultation rate per child aged 6-16 years old increased slightly from 3.01 to 3.02, translating to 1 consultation more in Study Year 2 for every 100 children aged 6-16 years. These changes occurred in the context of total consultation numbers for all patients increasing 5.6%.

For children aged 6-16 in Comparison practices, the number of consultations increased from Year 1 to Year 2 by 5.8% (from 57,345 to 60,651) and the number of children aged 6-16 consulting increased by 8.8% (from 19,143 to 20,832). The consulting rate per child remained stable at 3.0 in Study Year 1 and 2.9 in Study Year

2. Each of the 37 practices on average provided 89 more consultations to 45 more children in Study Year 2.

The number of children aged 6-16 years old consulting in Intermediary and Control practices increased from 8,897 to 9,271 (4.3%) and the number of consultations increased from 27,091 to 30,321 (11.9%). The consultation rate for these children therefore increased from 3.04 to 3.27. On average, 22 more children consulted in each of the Intermediary or Control practices in Study Year 2 than in Study Year 1 and 190 more consultations were provided.

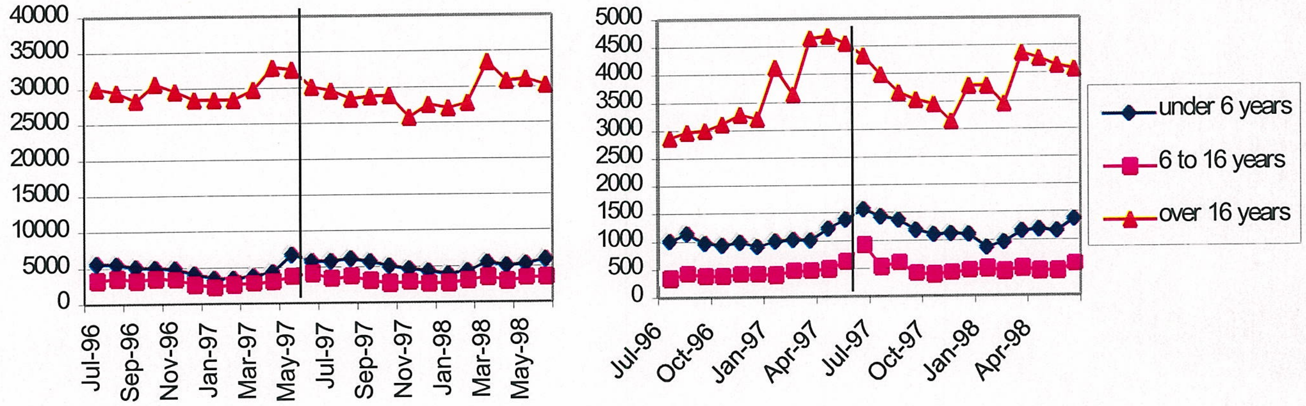
The number of adults' consultations in all practices changed 3.7% from Year 1 to Year 2, a difference of 27,479 consultations. In Comparison practices, where removal of out-of-pocket payments for children aged less than six years was associated with a rise of 14.5% in the number of consultations to children aged less than six years, the number of consultations with adults in Year 2 rose 3.4% above the number provided in Study Year 1. In Intermediary and Control groups, where consultations were free for children aged less than six years old for all or part of Study Year 1 and for all of Study Year 2, consultations for children aged less than six years old rose by 4.5% and consultations for adults by 5.4% (from 243,567 to 256,827).

Figure 5.3 shows the number of consultations by month for children aged less than six years, 6 to 16 years, and for people aged over 16 years. Changes in consultation numbers for Comparison and Control group practices were averaged across all practices, to give each practice equal weight in the analysis, regardless of size. Although there was considerable variation between months, there was no difference between Comparison and Control group practices. These results are shown in Table 5.5.

Hypothesis 3: There were more antibiotic and anti-asthma prescriptions provided to children aged less than six years following the Free Child Health Care Scheme start.

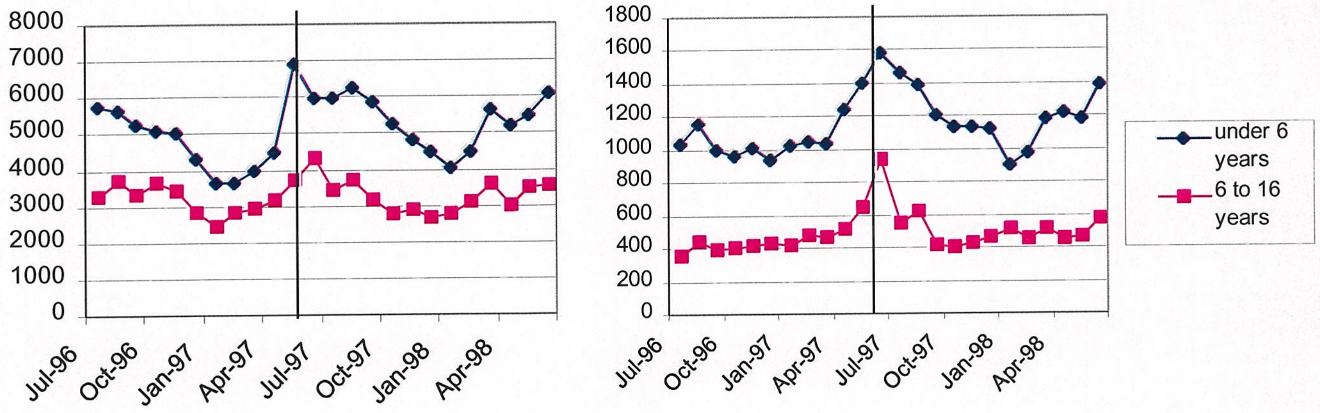
In the 32 practices providing full prescribing records for the two study years (29 Comparison practices and 3 Control practices), a total of 866,323 prescription items were analysed. Of these, 391,600 (45.2%) were prescribed in Study Year 1. In Year 1, 11.5% of all medicines were prescribed to children aged less than six years, 7.3% to children aged 6 – 16 years, and 78.7% were prescribed for people aged over 18 years.

Figure 5.3. **Consultations by month, age, and study group** (Vertical line marks the beginning of the Free Child Health Care Scheme)



a. Comparison Group, all ages

b. Control Groups, all ages



c. Comparison Group, children

d. Control Group, children

Table 5.5. Percent change from Year 1 to Year 2 in consultation numbers by month, age, and study group – average across all practices in each study group.

	Comparison practices			Control practices		
	Children aged <6	Children aged 6 to 16	Adults	Children aged <6	Children aged 6 to 16	Adults
July	16.3	26.2	14.2	15.1	42.4	30.0
August	15.5	2.7	2.1	-6.0	26.2	17.7
September	19.3	1.3	5.6	5.9	15.7	21.0
October	17.4	-26.4	-0.3	10.1	16.6	10.3
November	10.3	-0.3	-7.8	-8.2	7.6	-7.8
December	20.2	5.0	-1.4	17.2	11.0	14.6
January	119.3	72.4	11.6	-20.7	10.7	-13.0
February	175.3	67.6	11.5	-15.7	-12.1	-3.7
March	241.8	62.9	36.0	11.8	5.9	-1.7
April	128.7	18.7	6.4	-19.0	-24.6	-11.2
May	70.2	12.1	10.7	-21.8	-35.0	-10.1
June	139.4	8.2	16.8	-32.0	-44.7	-6.8

In Study Year 2, 12.1% of all medicines were prescribed to children aged less than six years, 6.9% to children aged 6 – 16 years, and 78.0% to adults.

The three Control practices contributing data to the prescription analysis had more young children in their patient populations than other practices, and in Study Year 1 they prescribed 26.2% of all their medications to children aged less than six years. By contrast, Comparison practices prescribed only 10.0% of their total medications to children aged less than six years. In both Comparison and Control practices, the proportion of total medications that was prescribed to children less than six years old increased slightly in Study Year 2 (by 0.3% for Comparison practices and by 1.8% in Control practices). At the same time, the proportion prescribed to children aged 6 – 16 years, decreased slightly (by 0.4% for Comparison practices and by 1.1% in Control practices). Although not statistically significant, the greater increase observed in Control Practices than in Comparison practices may be attributable to the fact that with respect to medicines, patients of practices in both groups were charged payment in Study Year 1 and not charged in Study Year 2. Since these Control group practices had more young children as patients, they experienced more effect from the Free Child Health Care Scheme (in this respect, although not in consulting), than Comparison group practices.

Of special importance to the medication of young children are the two classes of medicines – antibiotics and anti-asthmatic drugs. As discussed in Chapter Two, infections, especially respiratory tract infections, are common causes of illness among young children. Antibacterial medicines are usually used to treat infections that may be caused by bacterial pathogens. Also, although asthma is very difficult to diagnose among young children, doctors may opt for trial of anti-asthmatic therapy to treat some respiratory presentations of young children, especially if no charge is made to families for these medicines. Thus, the a priori expectation was that prescriptions in both these classes would increase following the introduction of the Free Child Health Care Scheme. Prescription data files were searched electronically for any of the terms listed in Appendix Four to identify prescribed antibiotics and anti-asthma drugs.

In Study Year 1, 16.8% of all medications prescribed in the study practices were antibiotics (N = 65,952) and 8.7% were anti-asthma medications (N = 34,061). In Study Year 2, 21.2% more medicines were prescribed in total, and although 9,539 more antibiotics were prescribed (an increase of 14.5% over the previous year), this represented a non-significantly smaller proportion of all prescriptions (15.9%). Also in Study Year 2, 4227 more anti-asthma medications were prescribed. Although this represents an increase of 12.4% in the number of anti-asthma prescriptions, as a proportion of total prescriptions, anti-asthma medication numbers fell from 8.7% in Study Year 1 to 8.1% in Year 2. Figure 5.4 shows that for both antibiotics and anti-asthma medications, the percentage change from Study Year 1 to Year 2 was greater among children aged less than six years than for patients in other age groups.

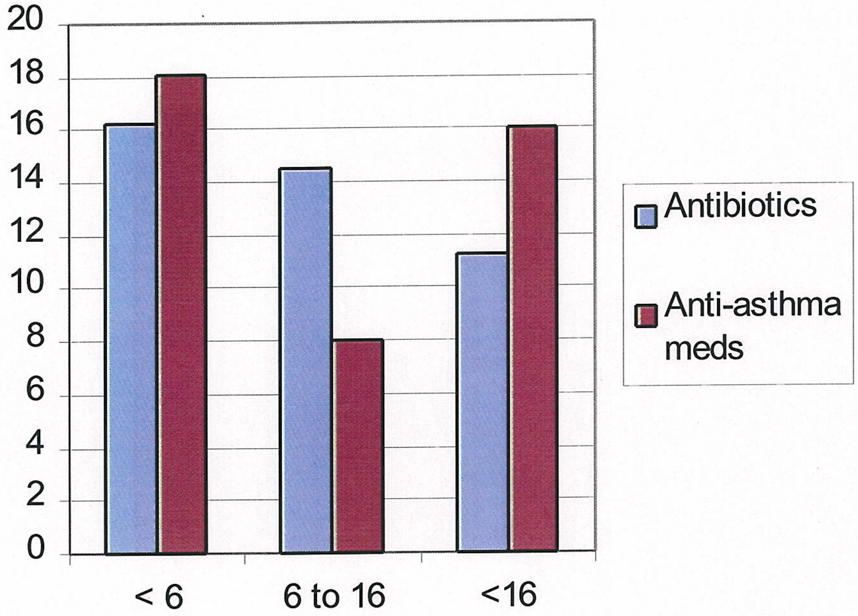
Despite this result, in Study Year 1 antibiotics comprised 41.9% of all medications prescribed to children aged less than six years and in Study Year 2 they comprised 38.4%. In Study Year 1, anti-asthma medications comprised 9.2% of all medications for young children and in Study Year 2 they comprised 8.6%. These results show that although there was an increase in prescription of these medications for young children, in the context of more medications in total being prescribed, the Study Year 2 prescription numbers of antibiotics and anti-asthma medications were modest.

5.5. Summary

This controlled before-and-after study had sufficient power to demonstrate a clinically meaningful statistical difference if one existed, and none was seen. Before the introduction of the Free Child Health Care Scheme Comparison practices charged families for the health care they provided young children, and after its introduction they ceased charging. Examination of total numbers of events (consultations and prescriptions) showed that more children aged under six years consulted in the year following the introduction of the Free Child Health Care Scheme than before and that more medicines were prescribed. To attribute these changes solely or even mainly to the Free Child Health Care Scheme however, is to overstate the case. First, there were no statistically significant differences between Comparison and Control groups after controlling for practice size. Second, when translated into the actual effect on practices, the number of additional children seen was probably too small to have been noticed.

Although the number of consultations provided to young children may have been noticeably higher overall, increases in June, July, and August, (the months surrounding the introduction of the Free Child Health Care Scheme) were relatively modest, as higher general practice utilisation is expected in winter months. The sustained higher utilisation rate through the summer months was less usual but since consulting, overall, was lower in these months general practitioners are unlikely to

Figure 5.4 **Percentage change in the number of antibiotics and anti-asthma medications prescribed, by age group.**



have noticed being swamped by their young child patients. Third, there were other factors external to this investigation that may have had a stronger influence on utilisation than the Free Child Health Care Scheme. For instance, 1997 was an epidemic year for measles in New Zealand and on this basis alone the number of consultations for young children is likely to have been increased.

The main weakness of this study was that only having two years of data limited the ability of the study to tease out natural variations in consultation rates over time, from specific effects of the Free Child Health Care Scheme. Review of utilisation over a decade would be more useful for this purpose. As it is, these data suggested that the months surrounding the introduction of the Free Child Health Care Scheme (and particularly the month *before* its start) were times of higher than expected use of general practice services by children aged less than six years. The self-selection of practices into the study means that great care must be taken over generalisations from these data. Supporting an argument that similar results might apply to New Zealand general practitioners, generally, is the fact that practices were drawn from urban and rural settings throughout New Zealand. Tilyard et al (1995) showed that data indicating morbidity and other consulting data from the RNZCGP Computer Research Network practices were similar to data from practices that were not in the RNZCGP Computer Group. Although this analysis was undertaken several years before the introduction of the Free Child Health Care Scheme and did not include any comparison of charging practices, it does provide some ground to suppose that similar results might have been provided by another (randomly selected) sample of New Zealand general practices.

The central question in this investigation was: "what is the impact of the Free Child Health Care Scheme on general practice, the workload of general practitioners and access to general practice services for children aged less than six years?" The proxy measure of access – utilisation – did not show a statistically (or clinically) significant change from the year before the introduction of the Scheme to the year after but despite this, access itself (rather than its proxy, uitlisation) to general practice care was undoubtedly improved by the Scheme. Although the Scheme could not be expected to have an impact on the geographical, cultural, and social dimensions of access, in most study practices it removed the financial barrier to care for children aged less than six years, thereby improving access. That it would do this was not guaranteed prior to its introduction. It was a policy developed by government, to be implemented by general practitioners. General practitioners have not always elected to implement government policy, but in the case of the Free Child Health Care Scheme, this study suggests that they overwhelmingly did so. Furthermore, quality of care, the care provided to young children after the Free Child Health Care Scheme may well have improved, if quality is interpreted as withholding treatments of unlikely beneficial effect. The free medications component of the Scheme added incentives to prescribe antibiotic and anti-asthma medications (see Section 2.2.3.1.), yet relatively fewer of these drugs were prescribed in study Year 2. This result may also suggest that parents consulted for reasons other than their child having an illness that required drug treatment.

Opportunities to conduct evaluations of policy affecting whole nations using empirical data are rare, and when they occur they are often not recognised. Unfortunately, there was no opportunity to establish an evaluation mechanism prior to the introduction of the Free Child Health Care Scheme. The investigation reported here was the response of a general practice perspective to the policy. The next chapter reports an evaluation of the Free Child Health Care Scheme commissioned by New Zealand political agencies.

Chapter Six

Government commissioned research

6.1. *Introduction*

This chapter reports a second evaluation of the Free Child Health Care Scheme that was undertaken because the Transitional Health Authority (THA) wished to have the policy subject to external academic scrutiny. The term "evaluation" was used consistently in referring to the research presented in Chapter Six, yet its motivation was not to understand *how* the policy might work, as Pawson and Tilley (1997) maintain the goal of an evaluation should be. In intense prior negotiation with the THA and re-negotiation with the Health Funding Authority (HFA), some goals were articulated (see section 6.2, below) but the THA were more concerned with process than with outcome and the HFA with reasoned advice than an evidence-based product explaining how the Scheme worked. The evaluators (and not the agency commissioning the evaluation) made a decision that the evaluation should be conducted to assess whether (and not how) the Free Child Health Care Scheme policy had had a measurable impact on young children and other general practice patients. Chapter Four provided details on how the evaluation goals and orientation changed with a change in health service management, more than half way through the contract period. The study started with the specification that the evaluation team would examine all relevant data from available data sources. The THA placed the unusual constraint on evaluators of prohibiting the collection of primary data to help meet the study's goals.

An Evergreen Document forms part of the HFA's funding agreement with the Minister of Health. It specified the full range of services that the HFA agreed to purchase in 1997/98 and identified the Free Child Health Care Scheme as one of 12 specific policy initiatives for priority attention in that year. Although the HFA did not expect to inherit the evaluation reported here, it was consistent with its mission. This chapter describes the all goals and objectives the evaluation team worked to through 1998, while the data were gathered and analysed. It defines the data, analytic methods, results of the analyses, and the interpretation of the results provided to the HFA on completion.

6.2. *The purpose of the evaluation*

The evaluation report states that the goal of the evaluation was:

> "to develop an informed opinion on whether the universality of the Free Child Health care Scheme is justified" (Dovey and Tilyard, 1998).

This was not the original goal, but one that had been constructed after discussion with HFA staff in October and November 1998 – towards the end of the project. The evaluation team had tried to compare achievements with the intentions of the Scheme from the outset, but without success. All documentation archived in the Ministry of Health relating to the Scheme was reviewed in an attempt to identify a stated purpose of the Scheme. None was defined. However, the issue of universality was of great interest to the new HFA. In an environment where most government benefits were targeted, the universal application of the Free Child Health Care Scheme was an anomaly. The HFA were interested to find out whether its universality could be supported by evidence so they requested an adaptation of the evaluation to accommodate this interest.

The objectives of the evaluation were:

1. To estimate the extent to which free health care for children aged less than six years had been achieved a year after its introduction.
2. To estimate the effect of the Free Child Health Care Scheme on the use of publicly funded health services, and the extent to which it had improved access for children aged less than six years. This objective explicitly linked access with utilisation, implicitly acknowledging the use of measures of utilisation as proxy measures of access, as discussed in Chapter Three.

3. To estimate the practical and economic effects of the Free Child Health Care Scheme on the formal health sector. This objective recognised (by their specific exclusion) that much of the health care young children received was provided outside the formal health sector, by parents, carers, and others.
4. To estimate the financial impacts of the policy, and of alternatives, on families with children aged less than six years.

6.3. *The evaluation plan*

Given the requirement to work only with pre-existing data, the first task of the evaluation team was to locate and obtain relevant data. The team comprised people who had access to a variety of data sets, through their regular employment. This characteristic of the evaluators was a strength of the initial proposal to the THA and a possible reason for the University of Otago tender having succeeded above others in competing for the evaluation contract. A controlled before-and-after (CBA) study was the general analytic design for this evaluation, consistent with the approach taken to analyse data for the researcher-initiated study of the Free Child Health Care Scheme reported in the previous chapter. Wherever possible, the analysis was of data covering at least one year before the introduction of the Free Child Health Care Scheme (Study Year 1) and one year following its introduction (Study Year 2). Different control groups were used, as shown in Chapter Four.

6.3.1. Definitions

Study years were defined as in the previous chapter, Table 5.1.

Community Services Card (CSC) Group was used as a proxy measure of family income in most data sets. CSCs were introduced in 1991 as a mechanism for targeting government health care. Eligibility was for one year at a time and was assessed by estimates of family income taken from the previous financial year (Boston and St John, 1999). In 1996, 1997, and 1998 there were two categories of CSC – Group 1, granting reduced-cost health care to people from (proven) low-income families, and Group 3, withholding these benefits for all other people. Patients in Group 1 are referred to in this thesis as "CSC-holders" because patients in Group 3 do not actually hold a CSC card.

Section 3.3.2.2. described the General Medical Services (GMS) subsidy. In this evaluation the only indicator of age in many of the data sets was a variable reporting GMS subsidy eligibility. During the year prior to implementation of the Free Child Health Care Scheme the codes used to indicate different levels of subsidy eligibility were "Y" for children aged less than five years, "J" for children attending school (conservatively, aged 5 to 16 years), "A" for adults (people no longer at school but not retired), and "P" for people older than 60 years of age or for younger people with disabilities. Because of the Free Child Health Care Scheme, the "Y" and "J" GMS categories changed in the year after the Scheme's start to reflect the eligibility of five year old children to the same subsidy level as younger children. Patient and consultation data from 44 general practices in the RNZCGP Research Unit's databases was used to estimate that five year old children accounted for 13.3% of patients aged less than six years, in Study Year 1. They also accounted for 11.0% of patients aged 5-16 years in Year 1. Five-year-olds had 11.6% of the consultations by all children aged less than six years and 13.2% of the consultations of children aged 6-16 years. Adjustments to "Y" and "J" category claims from HBL and IPA data so that they were comparable across study years were based on this information.

Subsidy eligibility generally represented different levels of payment that the government would make for health services. GMS categories were modified by the CSC categories, with Group 1 CSC holders being given higher subsidy payments. This effect of the CSC on GMS payments remained through both the study years of this investigation, for all GMS categories, except for young children affected by the Free Child Health Care Scheme. Before the Scheme started, the subsidy for Group 1 "Y" children was $25 and for Group 3 "Y" children it was $15. After the Scheme's implementation, however, there was no difference in the subsidy provided to Group 1 and Group 3 "Y" category children. This lack of distinction in benefits made it unnecessary for health care providers to ensure the accurate recording of GMS/CSC subsidy eligibility. The "default" value was Group 3.

6.3.2. The data

Data used in this evaluation came from diverse sources and each set of data had different characteristics. This section describes each data set. The listed data sets were supplemented as necessary by additional analysis of the household survey conducted separately by the THA before its dissolution (fully analysed in Chapter Seven), to assess the impact of the Free Child Health Care Scheme on families, from parents' perspective.

6.3.2.1. The Auckland Birthweight Collaborative Study (ABC study)

The ABC study consisted of a sample of 1716 infants born in Auckland between 16 October 1995 and 30 November 1997. Approximately half these infants were born "small for gestational age" (SGA: below the 10th percentile in weight for gestation) and half were a representative sample of babies born weighing above the 10th percentile for gestational age in Auckland and Waitemata Crown Health Enterprise (CHE) areas. All babies in the study were followed up at one year of age. Their parents or guardians responded to a postal questionnaire about the infants' general practice attendance for reasons other than immunisation and well child checks, visits to emergency departments and admissions to hospital. Information relating to socioeconomic status and income was collected at an initial interview soon after birth. At the time of the evaluation analysis, data were available for 948 infants who had reached one year of age. Whereas most other data sets used in this evaluation were analysed using a CBA approach, a cohort study analysis was used for ABC study data. Three analytic categories were defined:

1. Infants born before 1 July 1996 who were not covered by the Free Child Health Care Scheme during the first year of their lives.
2. Infants born between 1 July 1996 and 1 January 1997 who were covered by the Free Child Health Care Scheme for 1 day to 6 months of their first year of life. These infants were covered by the Free Child Health Care Scheme between the ages of 6 months and one year.
3. Infants born between 1 January 1997 and 1 July 1997 who were covered by the Free Child Health Care Scheme for 6 months to 1 year of their first year of life.

In some respects ABC study data were stronger than other data contributing to this evaluation. They had been subject to systematic checks for accuracy and they contained a level of detail that reflected their collection specifically for research purposes. The data set also allowed comparison between groups with differing lengths of coverage by the Free Child Health Care Scheme and included a control group of infants who were not covered at all. This data set was the only one in this evaluation to include a measure of socioeconomic status. Limitations of the ABC study data for this evaluation were that participants reflected the purpose of the parent study and were not representative of any other infant population because they included a higher than usual proportion of SGA infants. In the analyses for this evaluation data from the original study groups of SGA and non-SGA infants were combined in study groups defined by Free Child Health Care Scheme cover. As well, small sample sizes resulted in a lack of power in statistical analyses. The study data may be affected by recall bias because health service utilisation was measured on unverified recollection of parents.

6.3.2.2. Emergency Departments

Utilisation information was gathered from six emergency departments from around the country. Others were approached but could not be included. Data from Dunedin Hospital were not included because of the introduction of a private After Hours Medical Centre during the study period (this was thought to have affected attendance at the public hospital's emergency department), nor from Hawkes Bay, because the emergency department was restructured during the study period. Data were provided from the emergency departments of Auckland Starship Children's Hospital, Waikato Crown Health Enterprise (CHE), East Bay CHE, Taranaki Base Hospital, Palmerston North hospital, and Christchurch Public hospital.

These data provided the most comprehensive set we could obtain on New Zealand emergency department use. It included 186,545 visits to emergency departments by children aged less than 15 years. This was the only part of this evaluation analysing more than one year of data from before the introduction of the Free Child Health Care Scheme. It spanned a variety of time periods, the longest being four years five months (East Bay data). However, the data were limited by inconsistent definitions of variables between hospitals and over time. This problem produced difficulties in normalising widely varying data from different emergency departments. External factors such as changing information management systems created gaps in data for some hospitals, over some periods. The final data set included emergency department data from:

Auckland:	93,649 attendance records from June 1994 – July 1998, excluding December 1995 and March to June 1996.
Waikato:	11,790 attendance records from July 1996 to June 1998
EastBay:	14,741 attendance records from January 1994 to June 1998.
Taranaki:	16,135 attendance records from July 1996 to June 1998.
Midhealth:	15,499 attendance records from July 1995 to July 1998.

Christchurch:	34,731 attendance records from July 1995 to July 1998, excluding October 1996 to December 1996 and November 1997 to December 1997.

6.3.2.3. Health Benefits Limited (HBL)

The HBL database contained details of all claims made by general practitioners for the GMS subsidy, excluding general practitioners in the northern region and some IPAs' practices in other parts of the country. Prescription Benefit claims were also included. For families without a CSC, many prescriptions did not attract a subsidy before July 1997, and therefore did not appear in HBL's claims data. However, all general practice child consultations were included. From July 1997, all prescriptions dispensed for children aged less than six years, as well as all consultations, were fully subsidised and therefore in the claims database. Prescribing for indicator drug usage could therefore be examined comprehensively for Study Year 2 but could be compared between years only for children living in families with a CSC.

HBL data sets included claims for GMS subsidies for general practitioner consultations, immunisations, prescriptions and laboratory use according to GMS subsidy group. At the time of the evaluation, the data set included more routine primary care utilisation claims than any other in the country. The month the claim was made was included in the data set and this allowed seasonal changes to be examined. HBL data did not have an age field however, so GMS category was used as a proxy for age. Adjustments were made (as explained in section 6.3.1.) to ensure comparability of data for the two years. CSC data from HBL for children in the year following the introduction of the Free Child Health Care Scheme was unreliable because the untargeted strategy did not require claimants to distinguish between CSC groups (as above).

6.3.2.4. Health Research Council (HRC) survey

The researcher-initiated study reported in Chapter Five had not been completed in time to be included in this evaluation but, in the spirit of including all relevant data the researchers could identify, an interim analysis of available responses was conducted. The charging policies of 228 general practitioner FTE (rather than the full 296.6 FTE general practitioners reported in Chapter Five) were considered in this evaluation, representing the subset of responses that had been received in the RNZCGP Research Unit by October 1998. Although this survey was unique for its description of charging behaviours in practices for which the researchers also held utilisation data, it was not designed to cover a representative sample of New Zealand general practitioners and results from the analysis could not therefore be generalized to the whole country.

6.3.2.5. The Household Economic Survey (HES)

The HES is an annual survey conducted by Statistics New Zealand. It covers a nationally representative sample of around 3,000 households and around 7,500 people in those households. Approximately 800 children aged less than six years are included in the survey. For three years in succession, 1994/95, 1995/96, and 1996/97, the survey included health questions as well as questions about household expenditure and income. The questions relevant to this evaluation were whether or not the household had a CSC and the reported number of general practice consultations in the previous 12 months for each household member. The survey did not cover any period following the introduction of the Free Child Health Care Scheme, so its main use in this evaluation was to examine the theoretical cost of the policy across the range of incomes of households supporting children aged less than six years.

The HES is a carefully designed survey, tested over many years, and it has informed a variety of government policies. To collect data, interviewers visit the surveyed households and make personal contact. Sampling probabilities are known precisely and it has a good response rate, of 80% or better. Detailed information is collected on household structure and relationships and on the details of income from various sources. However, the number of children aged less than six years in the sample is small, at about 800 children each year. Sampling errors (assumed proportional to square root of sample size) could be expected to be about 58% higher on average than sampling errors arising from the HFA survey reported in the next chapter. This weakness was overcome to some extent by examining results for more than one year to see if they were consistent over time. As well, non-response rates differed for different household types, and were higher in certain low income household types (single parent and pensioner households) in which young children disproportionately lived (Statistics New Zealand, 1999).

6.3.2.6. The 1996/97 Household Health Survey (HHS)

Statistics New Zealand conducted the HHS for the Ministry of Health and the Regional Health Authorities. The HHS unit of analysis is a 'household' rather than an individual or 'family'. Most households with children were in fact 'families'. The survey was conducted specifically to obtain information on health service use and health status. It had the same high standards of design and data collection as the HES and the limitations were similar. That is, the sample of children aged less than six years was small and adjustment for non-response was unclear. Gross income data were collected, without the detail available from the HES. Additionally, Statistics New Zealand was reluctant to make analyses available from the data base at the level of detail necessary for the evaluation. They have a legislated requirement to protect the confidentiality of individual respondents so they customarily do not make available tabulations in which some cells have very small numbers. These cells also have high sampling errors.

6.3.2.7. Independent Practitioner Associations (IPAs)

Twelve IPAs were invited to participate in the evaluation by contributing the health care utilisation data they held for planning and coordinating their organisation's activities. Some IPAs approached did not send their subsidy claims to HBL. Mostly, IPA data turned out to be unavailable or too crude or incomplete to analyse for the evaluation. Data from five IPAs were included. One IPA in the Northern region was a willing collaborator but experienced months of delay in recovering data it had delivered to the Northern office of the HFA, where it was held in trust for them.

IPA data were potentially important because they could theoretically fill gaps in other data sources, particularly HBL. One IPA had excellent ethnicity data, unavailable from other sources. One IPA had excellent data by age, also generally unavailable from other sources. The IPAs holding data centrally were able to provide it with little difficulty. However, it became clear during the evaluation process that many IPAs did not hold central records and their practices often did not individually have accessible record keeping systems in place.

6.3.2.8. New Zealand Health Information Service (NZHIS) hospital data

Data obtained from NZHIS were public hospital utilisation data, by two age groups (0-5 years; and 6-16 years). The data were provided in tabulated form, according to the type of admission (acute or non-acute). Tables were also provided of hospital encounters by discharge diagnosis Diagnosis Related Group (DRG) code.

These data covered all New Zealand public hospital admissions and DRG codes provided a good estimate of reasons for admission. However, no indication of income (such as CSC status) or socioeconomic status was available. Some DRG coding definitions appeared to have changed between study years. Codes were not applied by clinicians and there was the possibility of "DRG creep" – that is, conditions being coded according to the needs of managers, rather than according to patients' clinical presentation and doctors' diagnosis.

6.3.2.9. RNZCGP Research Unit data

The RNZCGP Research Unit in Dunedin routinely collects anonymous consultation, prescribing, referral, and investigation data from computerised general practices throughout New Zealand (Dovey and Tilyard, 1996). Two years of data from 27 practices were included in the analysis. These were a subset of the practices contributing data to the analysis reported in Chapter Five - the only data from the RNZCGP Research Unit that had been secured and processed in time to be included in this evaluation. Four practices did not charge for consultations with children aged less than six years, throughout the year preceding the introduction of the Free Child Health Care Scheme (Study Year 1). Twenty three practices had some sort of charging policy for children aged less than six. The patients of these practices therefore experienced the impact of the policy more than patients in other (Control group) practices.

RNZCGP Research Unit data sets contained full details of all consultations in the contributing practices - that is, patient age, sex, CSC and High Use Health Card (HUHC) status, consultation notes and consultation outputs (prescriptions, referrals, investigations). Contributing practices came from throughout New Zealand and included some practices not included in HBL claims data sets. However, contributing practices were self selected and may have been systematically different from other practices because of their comprehensive use of computers for practice management and clinical notes recording (that is, data from these practices may have been biased) (Tilyard et al, 1995). There were very few records in these data sets with information about patients' ethnicity (Tilyard et al., 1998) and there was no indication of socio-economic status. CSC status was used instead as a proxy for household income.

6.3.3. Statistical analysis

The heterogeneity of the different data sets (above) precluded the possibility of combining data from different sources for analysis. Instead, each of the above data sets was considered separately for the contribution it could make toward addressing the objectives of the evaluation.

For every data set used to calculate utilisation rates, the denominator was formed by a count of total people consulting. It was not possible to calculate rates for total population (including non-consulters) since no information was available about this group. Where statistical tests were made, the level of statistical significance was set at $P = 0.05$.

Descriptive statistics (percents) were first calculated for the variables of interest in all data sets. The chi-square test for differences in proportions was used to compare charging behaviours of practices in different regions and urban or rural locations, and utilisation variables by age and CSC-holding status.

Randomisation procedures were used to assess the significance of the change in the RNZCGP Research Unit data sets in the number of children aged less than six years consulting, their consultation rate, and the change in proportions of total general practice workload from one year to another. Randomisation procedures are computer intensive and produce statistical models that do not require many of the usual assumptions for statistical testing, such as normal data distributions. Randomisation tests are widely used in modeling ecological data. They are more powerful than tests such as t-tests for data such as the RNZCGP datasets, where the study groups are self-selected and practices are the sampling units, rather than individual patients within the practices. Randomisation tests operate under the assumption that the observed data are just one random realisation of infinitely many possible realisations. By creating many random realisations and comparing the observed test statistics to the statistics generated from the random realisations, an assessment was made of the probability of the change observed being attributable to an intervention (that we assumed was the Free Child Health Care Scheme) rather than to a change that occurred by chance.

Poisson regression was used to compare changes in levels and rates of attendance at emergency departments for children aged less than six years, and for children aged 6-14 years before and after the Free Child Health Care Scheme started. Data for all time periods available for all six emergency departments were used in the model. The hospital and month were included as categorical variables to allow for seasonal variation and to accommodate differing numbers of attendances at each hospital (ranging from 93,649 attendance records at Auckland hospital to 11,790 at Waikato hospital). Hospital admissions per complete calendar month were used as the outcome variable. A model was fitted that allowed the regression lines for the two age groups to have different slopes and for these slopes to be different before and after 1 July 1997, when the Free Child Health Care Scheme started. A second model was then fitted in which the slopes of the regression lines for each age group before and after 1 July 1997 were held constant, but the intercepts were allowed to vary.

6.4. *The evaluation results*

Objective 1: To estimate the extent to which free health care had been achieved for children aged less than six years.

The HRC survey (section 6.3.2.4.) was used to address this objective, supported by reports from the five contributing IPAs (section 6.3.2.7.) explaining the behaviour of their doctors.

Responses to the HRC survey suggested that the Free Child Health Care Scheme was widely implemented during the first year after its introduction. Of 94 practices, 93 (99%) reported never charging for routine consultations with children aged under six years although 26 practices (27.7%) continued to charge a copayment for extraordinary consultations, such as home visits, after hours, or long consultations.

Most IPAs' administrative offices stated that they did not exert any influence over the prices their practices set. However, several IPAs had adopted policies of providing additional subsidies for children before the Free Child Health Care Scheme was introduced. One "topped up" GMS payments for children aged less than two years old to $35 from the start of 1996, and for children aged less than five years from the start of 1997, thereby encouraging doctors to waive the patient co-payment for these consultations. Another reported its general practitioners exercised wide discretion in charging co-payments for CSC holders.

After the Free Child Health Care Scheme was introduced there was little variation in charging for general practice consultations with children aged less than six years among respondents to the HRC survey. No regional variation was found.[44] However, urban practices were significantly less likely than rural practices to charge following the introduction of the Free Child Health Care Scheme (78% of urban practices never charged, versus 47.4% of rural practices: *P*= 0.007).

Taking these results together, the report advised the HFA that it was likely that the Free Child Health Care Scheme was being implemented as intended. Indications were that most general practitioners provided free health care to children aged less than six years (at least during normal working hours) in the year after the Scheme's introduction.

Objective 2: To estimate the effect of the Free Child Health Care Scheme on the use of publicly funded health services. Had it improved access for children aged less than six?

The ABC study (section 6.3.2.1.), HBL data (section 6.3.2.3), IPA data (section 6.3.2.7.), and RNZCGP Research Unit data (section 6.3.2.9.) were used to address this objective.

6.4.2.1. General practice consultations

Despite observed higher rates of general practice attendance as the length of time infants were covered by the Free Child Health Care Scheme in their first year of life increased, chi-square analysis of ABC data showed no statistically significant difference between study groups ($\chi^2 = 3.072$; $P = 0.215$). Of the 451 infants who had had no cover, 85.1% had visited a general practitioner, compared with 245 of the 278 (88.1%) children with 6-12 months of cover by the Scheme, and 166 of the 184 (90.2%) infants who had had 6 –12 months of cover. Further analyses of ABC study data by socioeconomic status and family income also showed no statistically significant differences in consultation numbers by any group of infants. The ABC study lacked the power to show such changes (if they existed) because it was not designed for this purpose. There were increases in general practice consultations with increasing time spent with Free Child Health Care Scheme coverage, across all socio-economic groups. The increase was most marked for infants in the lowest socioeconomic group, as shown in Table 6.1. There was also an increase in the

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[44] Where the regions were defined as the four Regional Health Authority districts: Northern, Midlands, Central, and Southern. These administrative regions no longer obtained under the reformed health system that established the HFA, but their meaning was still widely understood.

proportion of infants consulting general practitioners, in different family income groups. This increase was greater in the low-income group. These data would not normally attract attention in an epidemiological investigation. They are listed here because the commission specifically required the evaluation team to report on the analysis of all available data.

After adjusting for the addition of 5 year-olds into the "Y" category claims from 1 July 1997, the number of GMS claims in the HBL data sets for "Y" category patients increased from 1,181,615 in Year 1 to 1,237,359 in Year 2 (4.7%). CSC Group was used as a proxy measure of family income in HBL data. Its recording was unreliable because there was no reason for general practitioners to distinguish between CSC holders and non-holders in the year following the introduction of the Free Child Health Care Scheme (the general practice subsidy was set at the same level for both groups). With this caveat, the number of GMS claims for "Y" category children from families holding CSCs increased only marginally from 601,849 in Year 1 to 605,312 in Year 2 (0.6% increase), whereas GMS claims for "Y" children from families without CSCs increased from 444,416 to 632,047 (42.2% increase).

By combining the data available from five IPAs and adjusting for the inclusion of five-year-olds in Year 2, a total of 112,065 "Y" category children consulted in Study Year 1, compared with 113,399 children in Year 2 (a 1.2% increase in Year 2). Consultation rates increased slightly, from 3.6 consultations per child to 3.7. This equates to one additional consultation in Study Year 2, for every 10 children. Only one IPA contributed consultation data by age. For this IPA, in all age groups under six years, both the number of people consulting and the number of consultations increased following the Free Child Health Care Scheme. The effect was particularly marked for children aged two years. Correspondingly, fewer children aged 6-16 consulted and although they had fewer consultations, their consultation rate still increased slightly. Overall, the increase represented one additional consultation per year for every 5 children aged under one year old, for every 11 children aged one year old, for every 4 children aged two years old, for every 7 children aged three years old, and for every 6 children aged four and five years. IPA data showed that in both CSC groups, more children had more consultations in the year after the Free Child Health Care Scheme was introduced than the year before. However, consultation rates decreased from 3.9 to 3.8 for CSC holders while they increased from 3.4 to 3.7 for other children. The differences were small, interpreted as workload. They equated to one consultation less in a year for every 8 children from CSC-holding families and one consultation per year more for every 3 other children.

The interim analysis of the RNZCGP Research Unit databases showed that more children had more consultations in Study Year 2, than in Study Year 1. Consultation rates for children aged less than six years increased from 5.1 to 5.4. This represents one additional consultation in Year 2 for every 3 children. Interim analysis of the RNZCGP Research Unit databases showed that consultation rates for CSC children aged less than six years increased from 5.4 to 5.9 and for other children from 4.7 to 5.0. This represented an increase of one additional consultation per year for every 2 children from CSC holding families and for every 4 children from other families. These results are inconclusive and suggest that no real changes might have been made. For the 23 practices that charged for consultations with children aged less than six years before the Free Child Health Care Scheme but did not charge after it commenced, there was a statistically significant increase in Study Year 2 in the total number of consultations ($P = 0.014$) and the total number of consultations by patients without CSCs ($P = 0.002$). These practices also had increases in the total number of consultations per year by children aged less than six years ($P = 0.020$), and in the proportion of all consultations that were made by children less than six years without CSCs ($P = 0.005$). No statistically significant changes were observed among CSC patients, including children aged less than six years. In the Control practices, there were no significant differences between study years in either the number of people consulting (either aged less than six years or older) or in the numbers of consultations they had.

Under the general objective of assessing whether the Free Child Health Care Scheme had resulted in altered utilisation of health services, a separate analysis was made to examine whether there was a changed pattern in the reasons for children consulting, after the Scheme was introduced. Theoretically, having free access to health services might improve children's health by allowing them timely use of health services, when needed. The corollary of this situation was that children might also use services when they were not needed (Howlett and Ramesh, 1995).[45] The purpose of this analysis was to determine if there was evidence of either effect.

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[45] According to the premises of Public Choice Theory (see Section 3.3.4.), where services are free to those receiving them they will tend to be over-used by people and supplied when unnecessary by providers.

The analysis included a sample of 3,919 consultations by children aged less than six years. The sampling frame was consultations by children aged less than six years in the RNZCGP Research Unit databases of nine practices. These practices were selected for their heterogeneity. They represented a range of locations (five were rural or small town; four were from cities, six were from the South Island and three were from the North Island). As well, they had a range of charging practices. Five practices (contributing 2,153 consultations) charged for consultations with young children before the Scheme started but did not after it was implemented. The remaining practices (contributing 1,766 consultations) provided free care for young children throughout the two study years. Of the 3,919 consultations, 833 were not able to be coded and were therefore excluded from further analysis. The main reason for exclusion was that the consultation record did not report a face-to-face consultation, but correspondence with another provider or laboratory test results. Every 10th record was selected for coding. Up to four "reason for encounter" codes were attributed to each consultation. Appendix Five contains an explanation of these codes. Figure 6.1 shows the distribution of reasons for children aged less than six years consulting a general practitioner before and after the Free Child Health Care Scheme, by the general systems codes of the International Classification of Primary Care (ICPC) (Lamberts and Wood, 1987). There were no statistically significant differences between the study years in the proportion of all consultations that were coded in each system code, for either the five Intervention practices or the four Control practices. There were also no significant differences in the proportions of consultations for coded in each ICPC chapter between children from CSC holding families, and others.

In addition to the general codes (above) the occurrence of "indicator conditions" in each study year was also examined. Indicator conditions were conditions for which early treatment might be made possible through the Free Child Health Care Scheme and early treatment might avert the need for prolonged therapy and/or treatment in emergency departments or other hospital settings. The conditions selected were asthma, other respiratory tract infections (including upper respiratory tract infections, cough, laryngitis, tracheitis, croup, bronchitis, bronchiolitis, pneumonia, tonsillitis, and sinusitis), ear problems, and "fever of unknown origin". Overall, no differences were found between study years in the proportion of consultations involving care for these indicator conditions. These results are shown in Table 6.2.

Although there were no differences in the proportions of consultations involving the above conditions overall, there were twice as many consultations for 'fever of unknown origin' in Year 2 among practices not charging for consultations in the year preceding the Free Child Health Care Scheme (control practices). The numbers of consultations were small (10 in Year 1 and 22 in Year 2), but the difference was statistically significant ($p < 0.05$). This result is unlikely to be related to the Free Child Health Care Scheme because access to health care for children in these practices had been changed very little by the Scheme. The result is more likely to be due to an altered burden of illness in the community for other reasons, including the 1997 measles outbreak in New Zealand.

6.4.2.2. Pharmaceutical use

As well as raising the GMS subsidy for general practice consultations, the Free Child Health Care Scheme made most medicines prescribed for children free unless a dispensing fee (of usually $2) was charged by pharmacists. HBL data showed that, after adjustment for the changed definition of "Y" category the number of prescription claims made for "Y" category children increased from 1,976,213 in Year 1 to 2,739,803 in Year 2 (an increase of 38.6%). At the same time, the number of prescription items dispensed for "J" category children increased from 1,794,487 in Year 1 to 1,871,665 in Year 2 (an increase of 4.3%). This result suggests that the use of all medications by children aged less than six years did increase following the Free Child Health Care Scheme. Most of this increase may be attributable to the Scheme, as prescriptions for older children (whose payment liability did not change) increased only slightly.

6.4.2.3. Hospital services

Analyses of data from the ABC study, emergency departments and the NZHIS data on hospital admissions all suggested that use of hospital services by children aged less than six years may have decreased in the year following the introduction of the Free Child Health Care Scheme.

The proportion of infants in the ABC study who visited emergency departments and the proportion of infants who were admitted to hospital during their first year of life decreased with increasing cover by the Free Child Health Care Scheme. The relationship was not statistically significant in either case. Of 447 infants with no cover by the Scheme in their first year of life, 34.5% had visited an emergency department and 13.6% had had a hospital admission. Of 278 infants with up to six months of cover, 33.5% had visited an emergency department and 10.9% had been admitted to hospital. Of 183 infants with 6-12 months of cover, 29.5% had visited an

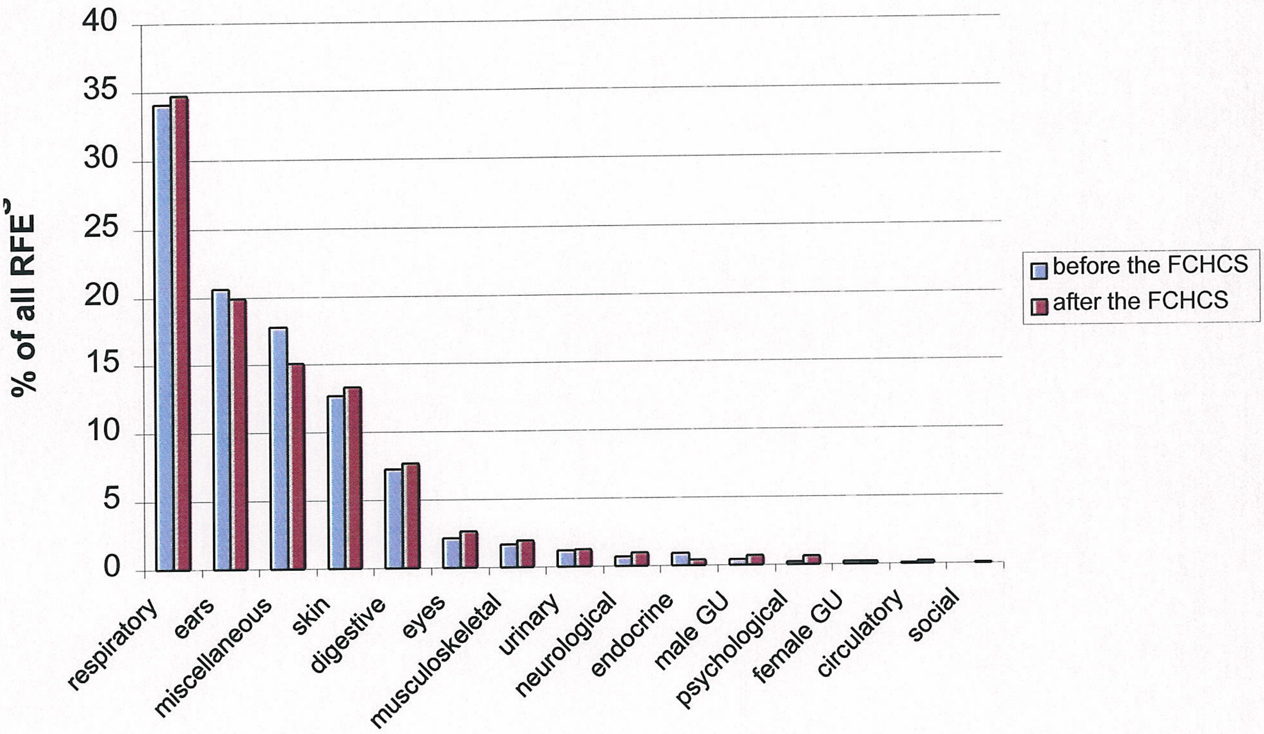
Table 6.1. Proportion of infants reported to have visited general practitioners, by socioeconomic status in first year of life by Free Child Health Care Scheme cover

	Socioeconomic status		
Cover by the Free Child Health Care Scheme	Low	Middle	High
No cover	83.0% (n=47)	84.6% (n=149)	86.8% (n=242)
<6 months	80.0% (n=30)	84.4% (n=90)	91.8% (n=158)
>=6 but <12 months	90.0% (n=20)	89.6% (n=48)	90.5% (n=116)
Change from no cover to >6 month cover group	7.0% increase	5.0% increase	3.7% increase

Table 6.2: Changes in proportion of consultations including indicator conditions as reason for encounter

Reason	**Year 1** (N=1507) N *(%)*	**Year 2** (N=1579) N *(%)*	**Difference in proportion of consultations**	**95% CI**
Asthma	79 *(5.25)*	90 *(5.7)*	-.005	-.021 to +.012
Ears	358 *(23.8)*	373 *(23.6)*	.001	-.029 to +.031
Respiratory tract infections	455 *(30.2)*	515 *(32.6)*	-.024	-.057 to +.009
Fever of unknown origin	24 *(1.59)*	40 *(2.53)*	-.009	-.019 to -.000

Figure 6.1: **Distribution of reasons for children aged less than six years consulting a general practitioner in the years before and after the Free Child Health Care Scheme.**



emergency room and 8.7% had been admitted to hospital. There was also a decrease (not statistically significant) in use of emergency departments in all socioeconomic groups but most noticeably in the lowest socioeconomic group where 37.8% of 45 infants with no cover and 25.0% of infants with 6-12 months of cover by the Scheme had an emergency department visit. Analysis of emergency department use and hospital admissions of infants in the ABC study by income group showed a decrease in use by both income groups, similar to that shown by socio-economic status.

Analysis of emergency department data showed no change in either the number of emergency department contacts following the Free Child Health Care Scheme or the outcome of those contacts, in terms of hospital admissions. There was no difference in the slopes of the regression lines for children aged less than six years and for children aged 6-14 years, before and after the Scheme's start ($\chi^2 = 0.45$; $P = 0.50$). These results should be cautiously interpreted because data to assess emergency department use after the Scheme started were limited and there was considerable heterogeneity among the six emergency departments contributing data. Furthermore, the departments themselves were selected on the basis of their ability to provide data and not because of any regard for their representation of the New Zealand population, generally.

NZHIS data sets of all public hospital admissions in New Zealand included 51,995 admissions for children aged less than six years in Study Year 1 and 55,661 admissions in Study Year 2 (an increase of 7.1%). Despite this result, there were some decreases in acute hospital admissions for conditions that might have been treated successfully in general practice at an early stage. The most notable decrease was in admissions for bronchitis. There were 3,154 hospital admissions of children aged less than six years for bronchitis in Year 1 and 2,680 admissions for bronchitis the following year (a decrease of 15.0%). At the same time, bronchitis admissions for children aged 6-16 years decreased from 1,530 to 1,514 (1.0%). This happened in the context of increasing medications in the "respiratory" BNF category, but no apparent increase in the proportion of general practice consultations for respiratory conditions (as reported in section 6.4.2.1.). As well, there were also increases in acute admissions for other conditions, which likewise might be avoided by early primary care treatment. The most notable increase was in admissions for viral illness from 2,046 in Year 1 to 2,471 in Year 2 (an increase of 20.8%). This result may have been due to increasing community concern about meningococcal disease, in the year following the Free Child Health Care Scheme start. Table 6.3. shows increases and decreases in hospital admissions by condition and age of child.

Objective 3: To estimate the practical and economic effects of the Free Child Health Care Scheme on the formal health sector

Health care service providers may have altered the way they provided health care following the implementation of the Free Child Health Care Scheme if it was (for example) administratively difficult to manage or if children aged less than six years started to over-use the limited supply of New Zealand health services. Downstream adaptations could have been made, such as employment of more staff or providing fewer services to patients in other age groups. Research to meet objective 3 described the nature and extent of these changes.

The analyses reported to meet objective 2 provided a general indication for increasing use of health care services among all patient groups. Theoretically, if the Free Child Health Care Scheme had resulted in additional increase in services by children aged less than six years, this may have been at the expense of increased use by other groups of patients. However, utilisation by older children also increased in Study Year 2 in most of the analyses reported above, although to a lesser degree than the increase for younger children. The time period of the evaluation was limited to only one year either side of the introduction of the Free Child Health Care Scheme so no comment could be made about trends, but only about changes observed between the two years. The larger increase in use by younger children does however suggest that this was due, at least in part, to the effect of the Free Child Health Care Scheme in removing some financial barriers to health care.

By the time the evaluation report to the HFA was finalised, 98 practices had responded to the HRC survey (reported in full in Chapter Five) and none had made any changes in their practice's personnel directly as a consequence of the Free Child Health Care Scheme.

Table 6.3: Changes in acute hospital admissions by age

A. Conditions with fewer admissions in year after the Free Child Health Care Scheme.

		Age in years							
Condition	Year	0	1	2	3	4	5	0-5	6-16
Bronchitis and asthma without complications	96/97	409	830	684	488	384	359	3154	1530
	97/98	356	670	569	477	321	287	2680	1514
		-13.0	-19.3	-16.8	-2.3	-16.4	-20.1	-15.0	-1.0
Gastroenteritis	96/97	646	592	265	130	74	59	1766	153
	97/98	620	519	229	119	65	53	1605	135
		-4.0	-12.3	-13.5	-8.5	-12.2	-10.1	-9.1	-11.8
Other digestive system diagnoses	96/97	155	32	32	18	14	24	275	24
	97/98	125	23	21	12	9	10	200	26
		-19.4	-28.1	-34.4	-33.3	-35.7	-58.3	-27.3	+8.3
Abdominal pain, mesenteric adenitis, no complications	96/97	55	18	31	33	43	56	236	1140
	97/98	44	15	18	27	27	47	178	992
		-20.0	-16.7	-41.9	-18.2	-37.2	-16.1	-24.6	-13.0
Whooping cough and acute bronchiolitis	96/97	1405	144	18	8	2	1	1578	10
	97/98	1402	147	13	4	0	2	1568	4
		-0.2	+2.1	-27.8	-50.0	NA	+100	-0.6	-60.0

B. Conditions with more admissions in year after the Free Child Health Care Scheme.

		Age in years							
Condition	Year	0	1	2	3	4	5	0-5	6-16
Viral illness	96/97	1021	477	196	146	101	105	2046	587
	97/98	1155	584	273	175	137	147	2471	663
		+13.1	-22.4	+39.3	+19.9	+35.6	+40.0	+20.8	+12.9
Upper respiratory tract infections	96/97	1646	1674	798	450	273	238	5079	453
	97/98	1765	1855	848	459	264	271	5462	521
		+7.2	+10.8	+6.3	+2.0	-3.3	+13.9	+7.5	+15.0
Laryngotracheitis	96/97	176	241	143	73	56	50	739	85
	97/98	186	324	210	110	69	54	953	113
		+5.7	+34.4	+86.4	+50.7	+23.2	+8.0	+29.0	+32.9
Other infectious and parasitic diseases	96/97	372	215	119	100	81	91	978	634
	97/98	484	225	136	124	89	97	1155	763
		+30.1	+4.7	+14.3	+24.0	+9.9	+6.6	+18.1	+20.3
Respiratory infections without complications	96/97	428	441	237	175	102	130	1513	490
	97/98	505	532	276	153	114	109	1689	348
		+18.0	+20.6	+16.5	-12.6	+11.8	-16.2	+11.6	-29.0
Miscellaneous skin disorders	96/97	346	216	142	72	63	57	896	229
	97/98	389	226	148	81	66	53	963	233
		+12.4	+4.6	+4.2	+12.5	+4.8	-7.0	+7.5	+1.7
Kidney and urinary tract infections	96/97	118	43	24	20	24	27	256	164
	97/98	127	73	42	25	21	19	307	166
		+7.6	+69.8	+75.0	+25.0	-12.5	-29.6	+19.9	+1.2

Objective 4: To estimate the financial impacts of the policy on families with children aged less than six years

Under objective 4 the report considered the economic impact of the Free Child Health Care Scheme on both families with young children, and on New Zealand society, through costs borne by government.

The economic effect of the Free Child Health Care Scheme on families with young children was examined using HHS data. These data showed that in 1996, CSC coverage was weighted towards the lower end of the income scale, particularly deciles 1 to 4. However some families in the lower income range did not have a CSC and there were some high-income families with a CSC. There were at least two reasons for this. First, some eligible families did not claim a CSC. Second, a family's income may be variable over time so eligibility at one time may be carried over into a time when the family's income would make it no longer eligible. However, there was justification for concern about health care access for children of families just above the 1996/97 CSC eligibility limit. In particular, it was likely that there were some families in the fourth income decile who were not eligible for a CSC.

The HES showed that families with young children were distributed right across the income range, although with some concentration at the lowest and in the middle income deciles. Lower income households tended to have more children on average, as did households with a CSC. 'Equivalencing' also scaled down the income of families with more children (Perry, B, 1995).[46] Overall in 1996 there were an estimated 225,000 New Zealand households that included children aged less than six years, and an estimated 327,000 children in this age group in these households. About 31.0% of these households had two children aged less than six years and about 6.0% had three or more young children. Children aged less than six years were particularly concentrated in decile 1 (this includes many 'beneficiary' households) and deciles 3 to 5. Overall, approximately 45.9% of households with children aged less than six years were covered by a CSC in 1996 and 47.8% of children in this aged group. It is in deciles 4 and 5 particularly, that issues of hardship would have arisen for families not eligible for a CSC.

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[46] Equivalencing is the process of calculating Equivalent Disposable Income. "Disposable" means that income is measured after tax. "Equivalent" means that the family/household income is adjusted for the number of adults and children in the household. This is done on a scale with a fixed point of unity for a 2-adult, no children household. Larger households will be scaled down more by the equivalence scale. The equivalence scale used here is that commonly used in New Zealand, the "Revised Jensen scale". This has, however, been criticised for inadequately accounting for the extra cost of children (see (Perry, 1995; Easton, 1997a; Stephens et al., 1997)).

The government's expenditure on the Free Child Health Care Scheme was distributed right across the income range; although with a particular concentration in the lowest decile, and in the middle income range, deciles 3 to 7. Estimates of the cost of the Free Child Health Care Scheme released in 1997 by the Ministry of Health were $53 million for GMS, and $16 million for pharmaceutical subsidies - a total of $69 million. HBL data allowed the researchers to estimate that the total GMS cost of the Free Child Health Care Scheme for primary care rose by an estimated $32.7 million. Increases in consultations by children aged less than six years ("Y" GMS category) resulted in an estimated 12.6% ($4.1 million) to 20.8% ($6.8 million) of the total cost increase. This equates to an increase of between 126,000 and 209,000 consultations. The increased level of GMS payments for children aged less than five years accounted for an estimated 70.4% ($23 million) of the total cost increase. The change in age groups for "Y" GMS accounted for between 8.1% ($2.6 million) and 12.0% ($3.9 million) of the total cost increase. Even assuming the true costs were underestimated by as much as 10%, the researchers concluded that the Free Child Health Care Scheme resulted in additional GMS payments of only $36 million in the first year, rather than the Ministry of Health's estimate of $53 million.

At the same time as this evaluation was being conducted, the government's pharmaceuticals management agency Pharmac estimated that additional pharmaceutical subsidies directly resulting from the Free Child Health Care Scheme cost the government an additional $13.721 million. Taking a conservative approach and assuming this estimate was too low by 10%, extra pharmaceutical subsidies directly related to the Scheme could contribute as much as $15.2 million to the government's total expenditure attributable to the Scheme in its first year.

Taking all the cost estimates into account, the researchers reached the conclusion that the total extra cost of the Free Child Health Care Scheme was between $46.4 million and $51.2 million. They also cautioned that there may have been other factors, both positive and negative, apart from the Free Child Health Care Scheme contributing to the increase in government payments for health care for young children in the year following the introduction of the Scheme. For instance, raised levels of measles infections in the community and concern over meningitis outbreaks at the time may have contributed to greater use of general practice services than usual. On the other hand, innovations in health service delivery, particularly some Maori health initiatives, may have mitigated against increasing general practice use by providing acceptable alternative care.

6.4.5. Comments on universality

On finding out about the evaluation in October 1998 (see Chapter Four, section 3.2), the HFA asked the evaluation team to consider the universality of the Scheme. For the HFA the question was: should an untargeted policy continue to be supported by government, at a time when political opinion favoured targeting public resources to people who were most in need of them in an effort to increase efficiency?

The researchers concluded from their analysis of the HHS and HES surveys that existing CSC groupings were inadequate as a targeting mechanism, because they failed to account for the health care needs of many children who live in households of low to moderate income. These may have been the most disadvantaged children before the Free Child Health Care Scheme was implemented, because many general practitioners already waived charges for CSC holding children, but not for other children. The report to the HFA (Dovey and Tilyard, 1998) suggested that children in families with household incomes at least up to the fifth decile on the equivalenced household income range, should be considered as candidates for extra support in accessing health care.

The discussion about universality and targeting options first recommended that a targeting strategy should depend on both a family's use of publicly funded health services, and on family income. In this context, utilisation measures should take into account both the number of children in a family and the use of health care services by each child. Before the Free Child Health Care Scheme, the High-Use card provided an increased subsidy for patients recording 12 or more general practice consultations in a 12 month period. The Prescription Subsidy Card reduced prescription costs after a family had been given 20 prescriptions since the start of the year. These examples provided evidence of how such an approach had been used before. Family income should be adjusted to take account of the number of adults and children supported by the income (equivalised). Even with family health service use and income being taken into account, the highest expense would result for families with several children, with income a little above the CSC limit, and with above-average utilisation per child but not sufficient to claim a high-use card. This was situation for many children aged less than six years, before the Free Child Health Care Scheme started.

The researchers suggested that there were three targeting strategies that could be adopted:

1. Targeting based on health service utilisation:

   An arrangement similar to the prescription card could be introduced. That is, after families have in a given time period had a certain number of general practice consultations for their children they would no longer face any charge, or only a nominal one. This strategy would help larger families and families with children with above-average utilisation. Modelling work could be undertaken to estimate the impact of alternative numbers of consultations and thereby make estimates of the cost of this approach. This approach did not necessarily have to be restricted to the health services use of children aged less than six years. Another option would be to retain free care for all children at certain ages other than under six years, such as under one year old or under three years old. Utilisation is expected to be relatively high in the first three years of life. It is also a period when health status may change rapidly and when early intervention for chronic problems may be most usefully instigated. For these reasons, an argument could be supported that it is important for parents of infants not be deterred from seeking healthcare by its cost.

2. Targeting based on family income[47].

   Some of the problems of health care access before the Free Child Health Care Scheme may have been with the CSC not identifying families in need precisely enough. A Yes/No dichotomy is unlikely ever to be satisfactory for targeting purposes. The abrupt cut off for CSC eligibility created a "gap" in access at the low end of the non-eligible population and this may have affected a substantial proportion of families with young children.

   Disadvantages in using CSC as a targeting mechanism (Crampton and Gibson, 1998) are discussed in Chapter Three. In summary, awarding and obtaining CSCs involved high transaction costs. The processes of providing an eligible person with a card were administratively complex and practically difficult for potential beneficiaries to negotiate. Eligibility was restricted and did not reflect need, but because of the practical difficulties in getting a CSC, many eligible people did not

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[47] Gross Income (or Total Income) is household income from all sources, including benefits, pre-tax. Gross income is a fairly crude measure of family well-being. It does not take into account the number of people - children and adults - in the household. A family's standard of living depends on the number of people supported by the family income.

hold one. These complexities may have compounded to make health care least available to people with most need of it.

3. Targeting based on location

   The research team considered the evaluation's results supported the notion that both families and general practitioners in rural areas have higher costs for health services than their urban counterparts. Rural families faced additional health care access barriers, such as distances from their doctors, which were unrecognised by existing health care funding arrangements. A review of the rural bonus scheme to determine whether it was addressing needs of rural communities was suggested.

6.5. *Summary*

Chapter Six has reported the results of an evaluation of the Free Child Health Care Scheme that was commissioned and conducted under unusual circumstances that ensured it would not meet the "evaluation" criteria of other evaluators such as Guba and Lincoln (1989), Patton (1996), or Pawson and Tilly (1997). These circumstances were described in Chapters One and Four. Following the principles of evaluation (utility, feasibility, propriety, and accuracy (Patton, 1996)) the researchers aimed to make this evaluation as useful and as accurate as possible. The feasibility of coming to the best conclusion about the impact of the policy on children and their families was limited by the constraint imposed by the THA at the outset to constrain the investigation to analysis of existing data. Within this constraint, a report was created in which the research was conducted and reported with "propriety". That is, independent ethical review and approval was obtained for the components of the evaluation that required this review – the ABC study and the survey of general practices regarding their charging behaviour. No identifiable patient data were reviewed and where analyses involved data that had identifiers of doctors or their practices, this information was withheld from publication.

To advance the utility of the evaluation's report to policy-makers, it avoided using technical terms, to the extent that the report's accuracy was not compromised. Despite meeting all these standards, the utility of the evaluation to the HFA may not have been great. The evaluation was commissioned by the THA for purposes that remained hidden from the research team. Successors to the THA, the HFA, did not know about the evaluation until told by the researchers. For them, the evaluation itself may have had dis-utility, as knowledge of the undertaking was a political barrier to early suggested changes (or dissolution) of the Free Child Health Care Scheme. After discovering the commission, the HFA gave the evaluation team pointed guidance on the direction the report should take. For the HFA (and not for the original THA project), recommendations were made on targeting options. This was an uncomfortable topic for some within the evaluation team whose personal philosophies favoured universality.

The report presented the analyses shown in this chapter and offered the comment that these data could not definitively show that the Free Child Health Care Scheme had caused children aged less than six years to use more health services or achieve better health. On the other hand, they probably had used (slightly) more health services than they might have without the Scheme, and it was possible that this had averted some hospital events. The report drew attention to the inadequacy of routinely collected data in New Zealand for policy evaluation.

Chapter Seven

The household survey

7.1. Introduction

Chapters Five and Six presented the two main evaluations of the Free Child Health Care Scheme – one funded by the Health research Council (HRC) and the other commissioned by the Transitional Health Authority (THA) and reported to the Health Funding Authority (HFA). Other research was conducted aimed at assessing the effect of the Free Child Health Care Scheme. The only other published research was a survey of 76 parents attending general practitioners with their child aged less than six years (Newton-Howes et al, 1998). This investigation was conducted by a group of general practice trainee interns who concluded that the Free Child Health Care Scheme should continue, because the literature showed that cost was a barrier to healthcare access. Their own survey data were inconclusive.

This chapter complements the previous two chapters by presenting the results of a household survey undertaken to obtain the views of the care-givers of young children in New Zealand – the main intended beneficiaries of the Free Child Health Care Scheme. The question addressed by this survey was: "what do parents (or others caring for young children) think of the Free Child Health Care Scheme and has it altered the way their children use health services?"

7.2. *Purpose of the household survey*

At the time the survey was planned, its overall objective was to evaluate the impact of the Free Child Health Care Scheme from the perspective of families.[48] Specifically, the survey aimed to produce measures of:

1. Barriers to accessing general practice care for children aged less than six years.
2. Use of general practice care, medical consultant contact, public hospital use, private accident and emergency care contact, and prescribed medicines.
3. Awareness of the Free Child Health Care Scheme's existence and effect.
4. Attitudes to the policy change.
5. Perceived impact of the Free Child Health Care Scheme on the current health status of their children and anticipated impact in the future.

Subsequently, after the demise of the THA, when the HFA considered re-framing the Free Child Health Care Scheme as a targeted policy, this survey became the most robust source of data available for assessing the impact of fees for service at different levels of household income. The researchers explained this strength of the survey to the HFA in verbal briefings on the presentation of their report. Whether THA or HFA staff actually re-analysed the survey data for this purpose is unknown. An analysis aiming to assess the impact of the scheme on the children of households with different income levels is included here.

7.3. *The household survey plan*

7.3.1. The telephone survey

The THA commissioned a national telephone survey of adults who were responsible for caring for children aged less than six years. Only two months were allowed for completion of the survey so a telephone survey was considered more appropriate than the other main approach to household surveys – personal interviews conducted by visiting interviewers (Sarantakos, 1998). ACNielson used computer-assisted telephone interviewing (CATI) for the survey. Their CATI system consisted of booths equipped with a telephone and computer. Questions were read directly from the

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[48] The ACNielson report refers to "users" – a term that was coined in the 1990s to reflect the changing position of patients in the healthcare system.

computer screen and responses entered directly into the data management software on the computer. Question routing logic was built into the software so that interviewees were asked only questions that were relevant, given their previous responses. Interviewers were trained and their work audited to ensure the responses they entered into the data file were correct and consistent. They were also subject to random monitoring by a supervisor, while interviewing.

Telephone numbers for the sample were randomly selected from a database purchased from New Zealand Telecom. The sampling frame gave all telephone numbers equal chance of being selected by a computer-generated random number program that included both listed and unlisted numbers. Randomly selected numbers were then checked against known business telephone and fax numbers and these were eliminated from the sample when they appeared. The computer program provided a telephone number when the interviewer requested one and stored the number for later calling if no response was obtained on the initial call. The first call to one third of the telephone numbers was made during the day and the remainder of first calls were made in the evenings and weekends. A minimum of five calls back to unanswered telephone numbers were made at different times of the day and week, in an effort to obtain the highest response rate. The expected response rate was 50-60% (Smith and Stockwell, 1998). The final response was from 22.6% of eligible contacts.

The survey questions were designed collaboratively between ACNielson, the THA (Dr Janet Sceats), and the Dunedin School of Medicine, Department of General Practice (with the author convening feedback from the Department). After defining the demographic characteristics of all children in the respondents' households, questions relating specifically to the Free Child Health Care Scheme were focused on the experience of one named child in the household who was aged less than six years old. The draft questionnaire was tested in 27 pilot interviews that established interview length (12 minutes), time to achieve one completed interview (approximately one per hour), and acceptability of vocabulary of the questions and introduction to the survey (these were modified following the pilot tests). All pilot interviews were discarded. Data were collected between 18 May – 20 June 1998, 10.5 to 11.5 months after the introduction of the Free Child Health Care Scheme.

7.3.2. The data

The final survey database held records of 2,004 interviews that were conducted with parents or caregivers of children aged less than six years (subsequently in this document the term “parent” will be used to refer to both parents and other caregivers responding to the survey). To achieve these interviews 39,448 telephone numbers were used. Of these, 20,323 households were not eligible for the survey because they did not include children aged less than six years. There were 4097 calls that were unanswered after 5 calls back, 1061 were business numbers or faxes, and for 212 numbers communication difficulties (language barriers or deafness) rendered the contact unusable. There were 2,551 refusals to participate in the survey. There were a total of 4,320 children aged less than 16 years in the surveyed households. All households represented in the survey included at least one child who was aged under six years old at the time of the interview. For households with more than one child aged less than six years, respondents were asked the name of the child who had the last birthday and subsequent questions were asked of the experiences of this child only. Thus only one child’s (the “index” child) experiences were reported in each questionnaire.

The survey form is shown in Appendix Six. It first collected demographic information on the index child and the child’s family (including entitlement to government health care subsidies). General information was then collected regarding the health care contacts of the index child in the last 12 months and then detailed information was collected regarding the child’s last contact with a general practitioner, medical consultant, nurse, or any other provider. This included information on the reason for the visit, the time of the visit, whether it was initiated by the parent or a health professional, who paid for the visit and how much it cost. Finally, a set of questions focused on the Free Child Health Care Scheme – was the respondent aware of the Scheme, what was their experience of its effects (if any), how did they feel about the policy, and did they think it had affected, or would affect, their child’s health.

Responses to the survey were stored as ascii files. These were delivered on diskette to the author and uploaded into an SPSS-X systems file for analysis. Most variables in the ascii file were binomial and these were transformed into categorical variables for the descriptive analysis. Later the binomial variables were used, if necessary, in multi-variable analyses.

7.3.3. Statistical analysis

A standard approach to survey analysis was taken. That is, a descriptive analysis of the sample was first made, producing proportions, means and standard deviations for each variable. Subsequently, bi-variable analyses tested associations between variables related to each study objective, using Pearson's χ^2 test. The level of statistical significance was set at $P = 0.05$.

Logistic regression was then used to describe the relationship between variables representing the five major objectives and measures of demography, access, and health care use. Variables significantly related to the main outcome variables for each objective in bi-variable analysis were considered for inclusion in these multivariate models. A generous level of significance is suggested when screening variables for inclusion in logistic regression equations so that important variables are not omitted (Hosmer and Lemeshow, 1989). For this reason variables were entered into models if they had shown a strong (but not necessarily statistically significant) relationship with the outcome variables in bi-variable analysis, or if there was a strong logic for their inclusion. The modelling process aimed to produce the most parsimonious model. All variables were checked for collinearity and variables were removed from the model where this occurred. These analyses produced Odds Ratios (ORs) that provide a measure of the extent to which independent variables affect the probability of the outcome under investigation.

The main outcome variables for the first objective were binomial variables that indicated whether the index child had had contact with a general practice in the last 12 months (or not) and whether a charge had been made for the last general practice visit. To assess utilisation, the main outcome variables measured whether the child had, in the past 12 months, visited a general practitioner, nurse, pharmacist, hospital-based medical consultant, public or private emergency department, outpatient department, or had spent time as a hospital inpatient. A binomial variable in the questionnaire indicated awareness of the Free Child Health Care Scheme and this was used as the outcome variable for objective three. A categorical variable in the survey measured attitude to the Free Child Health Care Scheme on a five-point scale from 1 = "very favourably" to 5 = "not at all favourably". For the logistic regression analysis, this variable was transformed into a binomial variable with values 1 = "very favourably" (85.0% of responses) and 0 = "all other responses". Similar three-point categorical variables measured the perceived impact of the Scheme on the child's health, both in the past year and in the future. For the multivariate analyses these were also transformed into binomial variables measuring the perceived impact of the Scheme in the past year as 1 = "child's health improved" (20.3% of responses) and 0

= "other". The expected impact of the Scheme similarly was redefined as 1 = "expect child's health to improve" (79.3% of responses) and 0 = "other".

Independent variables were entered into the models in three steps. The first step included demographic variables. These were: North or South Island and urban or rural location, Pakeha race (or not), family income (less than $30,000 per annum or above or equal to $30,000 per annum), family size, and child's age. The second step included other factors that were difficult to modify – insurance status and government subsidy eligibility (to a CSC, HUHC, and a Prescription benefit, as separate variables). The third step included utilisation, charging, and opinion variables.

7.4. The household survey results

Figure 7.1 shows the age distribution of all children in the surveyed households. Ages of children whose experiences the survey describes are shown in Table 7.1, along with other demographic and family characteristics.

Almost all children (1,888; 94.2%) were cared for on a regular basis by someone other than the parent responding to the survey but only 984 parents (47.3%) responding had paid or unpaid employment outside the home: 293 (14.6%) working in full-time employment. A small proportion of the index children had held a High Use Health card (HUHC) during the past 12 months (144; 7.2%) and 1002 (50.4%) of families held a Community Services Card (CSC). A prescription subsidy card was held by 12.6% of families. The variable indicating whether the child held a prescription card appeared to be a sensitive indicator of chronic health problems requiring consultant medical attention. Children with a prescription subsidy card were significantly more likely to have visited a hospital outpatient department in the past year than other children (15.9% versus 11.4%; χ^2 = 4.328; P = 0.037). They were also more likely to have seen a medical consultant (12.7% versus 8.3%; χ^2 = 19.034; P = 0.002).

7.4.1. Barriers to access

Most respondents (1,599; 79.8%) reported that general practitioners in their community provided care free to children aged less than six years. If a charge was normally made (N = 224; 22.3%), the charge was $5 or less for 32.6% of parents charged, $6-$10 for 32.1%, $11-$15 for 19.2%, $15-$20 for 12.1%, and above $20 for 4.0%. About one third of children were covered by health or medical insurance (715; 35.7%). Insurance cover was strongly related to family income ($\chi^2 = 342.671$; df = 8; $P < 0.001$) and ranged from 8.5% of children in families with an annual income of less than $15,000 to 71.8% of children in families with incomes of over $100,000. Insurance cover may therefore be another expression of a family's level of financial support.

For the last general practitioner visit, no charge was made in 90.2% of reports. The Accident Compensation Corporation (ACC) paid for 99 (4.9%) visits. Children aged three years old were more likely to have their visit covered by ACC than children of other ages ($\chi^2 = 27.5$, $P = 0.025$: 7.0% of three-year-olds' visits, versus 2.6%, 3.3%, 5.7%, 5.8%, and 4.6% of visits by infants, one-, two-, four-, and five-year olds, respectively). Where a charge was levied at the last visit, for 30 children (1.5%), the charge was less than $5, 64 children (3.2%) paid between $5 and $10, 46 (2.3%) paid between $10 and $15, 21 (1.0%) paid between $15 and $20, and 15 (0.8%) paid over $20. Charges made for consultations with infants under one year old were all under $10 and 97% of infant visits were free.

The last visit was significantly more likely to have attracted a charge if it was made out of normal weekday working hours (18.6% of out-of-hours consultations were charged versus 7.7% of weekday consultations; $\chi^2 = 15.002$, $P < 0.001$). There was also more likelihood of a charge if the child was covered by any health or medical insurance scheme (11.9% versus 7.3% for children not covered by insurance; $\chi^2 = 11.29$, $P = 0.001$). Finally, children of parents in paid employment were more likely to have been charged (10.8% of children of employed parents were charged versus 7.5% of children of unemployed parents; $\chi^2 = 6.455$, $P = 0.011$). Figure 7.2 shows the percentage of reports of the last visit for a child under 6 years old having been charged, by family income. The likelihood of the last visit attracting a charge was not related to the amount of time parents spent in paid employment or the total number of general practice consultations made by the child in the last year. It was also not related to whether parents reported failing to take a child to the doctor or pick up a prescription item because of the cost or eligibility of the child or family for a High Use Health Card or prescription subsidy.

Figure 7.1. Ages of all children in households responding to the survey

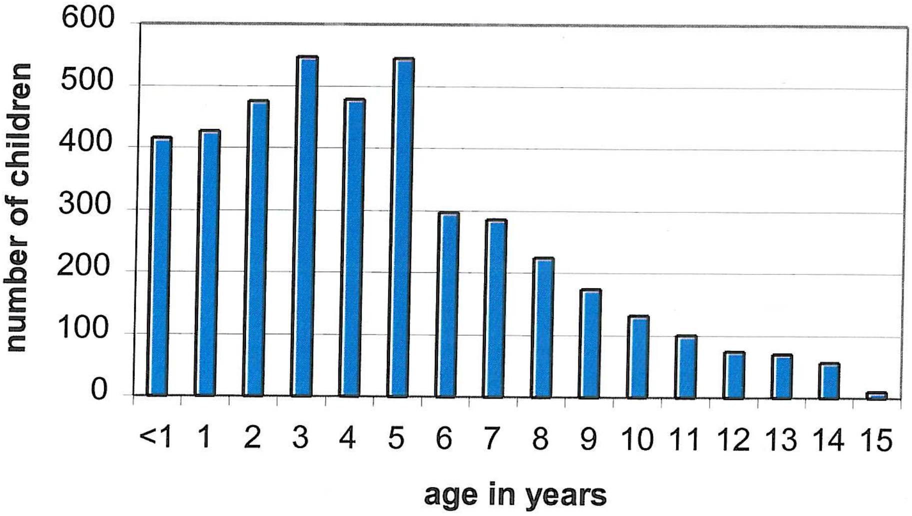
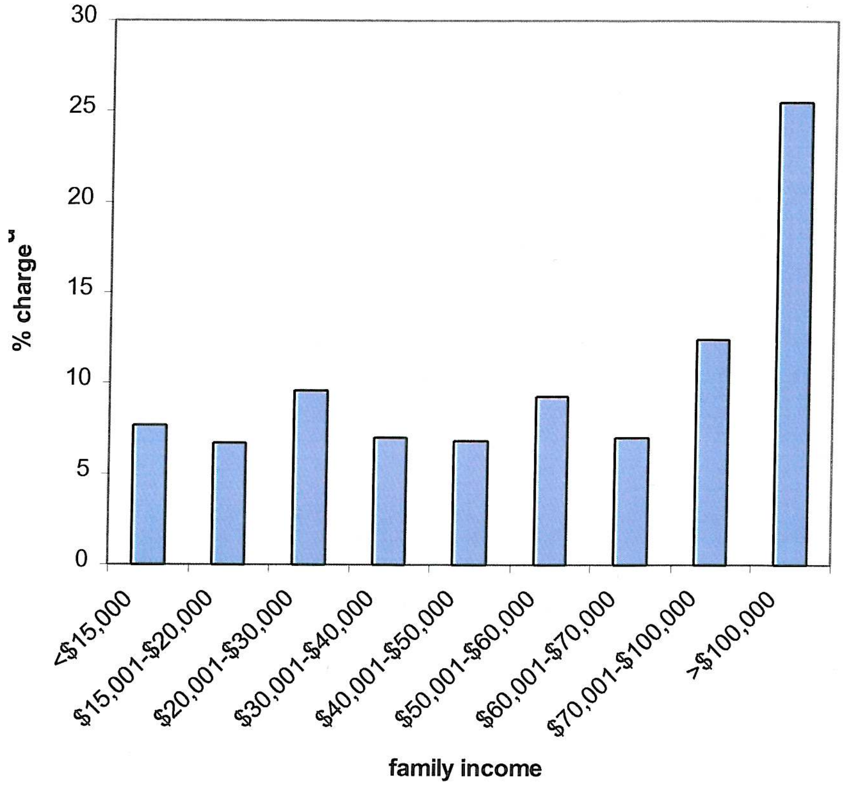


Table 7.1 **Characteristics of surveyed children and their households (N = 2004)**

Characteristic of the child		N	%
Sex:	Male	996	49.7
	Female	1008	50.3
Age:	Less than 1 year old	223	11.6
	1 year old	335	16.7
	2 years old	318	15.9
	3 years old	271	18.5
	4 years old	366	18.3
	5 years old	367	18.3
Ethnicity:	European/Pakeha	1385	69.1
	New Zealand Maori	290	14.5
	Pacific Island	101	5.0
	Other	213	10.6
Characteristics of the household			
Location:	Urban	1,343	67.0
	Rural	661	33.0
	Northern region	730	36.4
	Midlands region	530	26.4
	Central region	319	15.9
	Southern region	425	21.2
	North Island	1,553	77.5
	South Island	451	22.5
N Children in household	One	568	28.3
	Two	816	40.7
	Three	427	21.3
	Four	145	7.2
	>= Five	48	2.3
Household income	<= $15,000	240	12.0
	$15,001 - $20,000	138	6.9
	$20,001 - $30,000	117	5.8
	$30,001 - $40,000	188	9.4
	$40,001 - $50,000	348	17.4
	$50,001 - $60,000	243	12.1
	$60,001 - $70,000	310	15.5
	$70,001 - $100,000	193	9.6
	> $100,000	104	5.2

Figure 7.2 **Percent of reports of the last consultation with a general practitioner having attracted a charge, by family income**



In the last year, 64 (3.2%) parents reported at least one occasion when their child needed to see a doctor, but did not. For 34 (1.7%), this had happened on more than one occasion, and for nine respondents (0.4%), the last time this happened the reason the child did not see a doctor was because the visit cost too much. Specifically, the cost of prescriptions (7; 0.3%), the cost of the visit (4; 0.2%), and transport costs (2; 0.1%) were financial deterrents. For 113 children (5.7%) there had been at least once during the past 12 months when some, but not all, medicines prescribed for a child were collected from the pharmacy. Other reasons for not taking the child to the doctor when parents had felt it necessary included not being able to get an appointment soon enough or the need occurring after office hours (24; 1.2%). Some could not contact the doctor (6; 0.3%) and others had too far to travel (6; 0.3%) or were without transport (5; 0.2%). The parent not being able to spare the time to take the child to the doctor (2; 0.1%), and not wanting to bother the doctor (1; 0.0%) were other reasons for deciding against taking a child to the doctor. Children's age was not associated with reporting not having seen a doctor when a visit was considered necessary.

Table 7.2(A) shows the results of a multivariate analysis of factors associated with having access to a general practitioner who provides free consultations for children aged under six years. Respondents from the North Island (OR = 0.5 (0.3, 0.8)), five-year-old children (OR = 0.6 (0.4, 0.8)), and children whose healthcare was covered by insurance (OR = 0.6 (0.4, 0.8)) were significantly less likely than other children in the survey to have access to a general practitioner who provided free care. Family income, ethnicity, and urban or rural location were not significantly implicated.

7.4.2. Health services use

Most of the index children aged less than six years in the surveyed households (1,852; 92.4%) had visited a doctor in the past year and of these, most (83.8%) had visited more than once: 210 children (10.5%) had had more than 12 visits in the past year. Within each one-year age group, over 90% of children had seen a general practitioner. Five-year-olds and infants in their first year were more likely than children of other ages to have not seen a general practitioner at all. The proportion of children in each age group who did not visit a general practitioner was 9.8% of five-year-olds and 9.0% of infants, but only 4.8% of one-year-olds, 4.4% of two- year-olds, 8.9% of three-year-olds, and 7.4% of four-year-olds. Children making 12 or

Table 7.2 Results of logistic regression analyses: variables significantly associated with access and health service use

Dependent variable	Variable	Odds Ratio	95% Confidence Interval	P-value
(A) Access to free general practice care locally	North Island	0.5	0.3, 0.8	0.002
	Pakeha	1.3	0.9, 1.9	0.123
	Urban	0.8	0.5, 1.1	0.109
	Aged 5 years	0.6	0.4, 0.8	<0.001
	Insured	0.6	0.4, 0.8	0.003
	Family income <$30,000 p.a.	0.7	0.5, 1.0	0.053
(B) Visited a general practitioner in the last year	2 children in family	0.7	0.4, 1.0	0.065
	Pakeha	0.7	0.4, 1.1	0.144
	Urban	0.7	0.5, 1.1	0.172
	Insured	0.5	0.3, 0.9	0.012
	Family income <$30,000 p.a.	1.4	0.8, 2.3	0.227
	Child has HUHC	0.2	0.0, 1.2	0.081
	Family has Community Services Card	0.7	0.4, 1.2	0.231
	Family has Prescription card	0.3	0.1, 0.9	0.031
	Access to free general practice care locally	0.4	0.2, 0.6	<0.001
(C.) Visited a Practice or Plunket Nurse	2 children in family	0.8	0.6, 1.0	0.065
	Urban	1.3	1.0, 1.6	0.040
	Aged 5 years	0.7	0.5, 0.9	0.012
	Insured	0.8	0.7, 1.1	0.139
	Access to free general practice care locally	1.2	0.8, 1.7	0.301

(D) Visited a pharmacist for health advice	Pakeha	1.5	1.1, 2.0	0.006
	North Island	1.1	0.9, 1.5	0.308
	Family has Prescription card	1.0	0.7, 1.3	0.757
	Child has HUHC	1.3	0.9, 2.0	0.205
	Access to free general practice care locally	0.9	0.7, 1.3	0.726
	Visited a Practice or Plunket Nurse	2.0	1.6, 2.5	<0.001
	Doctor wrote a prescription at last visit	1.3	1.1, 1.7	0.011
(E) Used a hospital emergency department	Last general practice visit was free	1.6	1.0, 2.5	0.032
	Aged <1 year old	0.6	0.4, 1.1	0.085
	Aged 2 years old	1.5	1.1, 2.2	0.025
	3 children in family	0.6	0.4, 0.9	0.014
	4 children in family	0.5	0.2, 1.0	0.043
(F) Used a hospital outpatient department	Visited a general practitioner in the last year	3.8	1.5, 9.5	0.004
	Aged 2 years old	1.4	1.0, 2.0	0.039
	Family income <$30,000 p.a.	1.3	0.9, 1.8	0.111
	Insured	0.8	0.6, 1.0	0.082
(G) Used a private accident and emergency clinic	Visited a general practitioner in the last year	0.0	0.0, 0.1	<0.001
	Aged <1 year old	1.7	1.2, 2.3	0.003
	Aged 2 years old	0.8	0.6, 1.0	0.053
	Family income <$30,000 p.a.	1.3	1.0, 1.6	0.036
	Urban	0.5	0.4, 0.6	<0.001
	4 children in family	1.6	1.1, 2.5	0.022
	Last general practice visit was free	0.7	0.5, 1.0	0.053

more doctor visits in the last year were more likely to be aged one- or two- years than other ages. In multivariate analysis, children covered by insurance (OR = 0.5 (0.3, 0.9)) and children whose families had held a prescription benefit card in the past year (OR = 0.3 (0.1, 0.9)) were significantly less likely to be in the group of 92.4% of the surveyed children who had visited a general practitioner. After accounting for the effects of demography, location, and insurance and benefit eligibility status, children of respondents whose own general practice provided free care were significantly less likely to have visited a general practitioner in the last year (OR = 0.4 (0.2, 0.6)). These results are shown in Table 7.2 (B).

Index children had also seen other healthcare providers in the past 12 months. Plunket,[49] district or other public health nurses had seen 933 (46.6%) children, 674 (33.6%) had seen a pharmacist for health advice, 534 (26.6%) had seen a Practice Nurse without also seeing the doctor, and 36 (1.8%) had seen a Maori or Pacific Island health worker. Children aged less than two years were more likely than older children to have seen a Practice Nurse without having seen the doctor (43.3% versus 20.1%; (χ^2 = 121.1, P <0.001)). Infants in their first two years were more likely to have visited a Plunket or public health nurse (χ^2 = 27.5, P = 0.025), and more likely to have had health advice from a pharmacist (χ^2 = 27.5, P = 0.025). Maori and Pacific Islands health workers saw children of all ages. After accounting for a variety of demographic variables, children living in urban areas were more likely than rural children to have seen a Practice Nurse or Plunket Nurse in the last year (OR = 1.3 (1.0, 1.6)). As well, five-year-olds were less likely than younger children to have consulted a nurse (OR = 0.7 (0.5, 0.9)) (Table 7.2 (C)). In further multivariate analysis, parents were significantly more likely to have consulted a pharmacist for health advice for their child if they were Pakeha (OR = 1.5 (1.1, 2.5)) and if they had been seen by a Practice Nurse (OR = 2.0 (1.6, 2.5)) or Plunket Nurse (OR = 1.4 (1.2, 1.8)). As well, pharmacist contacts were more likely, as expected, if their doctor had prescribed medication (OR = 1.3 (1.1, 1.7)).

Most often, a short-term illness had prompted the last doctor visit (66.2% of visits). Other reasons for consulting included well child checks (10.8% of visits), chronic conditions (8.2%), immunisations (9.7%), and injuries (4.9%). A well child check was included in 343 (17.1%) last doctor visits, even if the need for such a check did not prompt the visit.

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[49] Plunket is a registered charitable organization that receives significant public funding. Plunket Nurses provide mainly well-child checks to pre-school-aged children.

Infants in their first year were more likely than children of other ages to have had an immunisation at their last visit (36.5% of visits by infants, versus 17.6% of visits by one-year-olds, 7.5% of visits by two-year-olds, 3.8% of visits by three-year-olds, 0.8% of visits by four-year-olds, and 2.5% of visits by five-year-olds). At the last visit, the doctor wrote a prescription for the child in 1,193 (60.0%) cases. Younger children were significantly less likely than older children to have received a prescription ($\chi^2 = 92.8$; $P < 0.001$). Prescriptions were written for 39.5% of children aged less than one year, 57.6% of one-year olds, 64.2% of both two- and three-year olds, 65.7% of four-year olds, and 61.9% of five-year olds.

In the last 12 months, 215 children aged less than six years (10.8%) had used a hospital accident and emergency department. By age, emergency department use varied from 146 (30.5%) of five-year-olds to 33 (9.1%) of four-year-olds. In multivariate analysis, children were more likely to have used a hospital emergency department in the last year if they were aged two years old (OR = 1.5 (1.1, 2.2)) and if their last general practice visit was free (OR = 1.6 (1.0, 2.5)). Children in families of three and four children were less likely to have used an emergency department (see Table 7.2 (E)). Other demographic and regional location variables were not significantly related to emergency department use.

Hospital outpatient department attendance was reported for 239 (12.0%) of all children aged under six years with two-year olds attending most often (51; 16.0%) and four-year olds least (33; 9.1%). Two-year olds were significantly more likely than children of other ages to have visited an outpatient department (OR = 1.4 (1.0, 2.0)). As general practitioners normally refer patients for hospital care, children who had seen their general practitioner in the last year were also significantly more likely to have had an outpatient department visit (OR = 3.8 (1.5, 9.5)).

Hospital inpatient stays were reported for 168 (8.5%) children aged less than six years, with the highest proportions of one-year-olds being hospitalised (40; 11.9%) and the lowest proportion of five-year-olds (18; 4.9%). Hospital day treatment (without an overnight stay) was reported for 168 children (8.5%), most frequently for two-year-olds (23; 7.2%) and least often for infants under one year old (5; 2.1%). As for outpatient departments, children who had seen a general practitioner in the last year were more likely to have also spent time as a patient in hospital ($\chi^2 = 5.704$; $P = 0.017$). No other variables were significantly associated with inpatient experience or day care treatment.

In the past 12 months, more than a third of children (696; 35.0%) had used a private accident and emergency clinic or doctors' after-hours clinic. Children were significantly less likely to have used a private accident and emergency clinic if they had seen a general practitioner in the last year (OR = 0.0 (0.0, 0.1)), and if they lived in urban areas (OR = 0.5 (0.4, 0.6)). Children were more likely to have used a private accident and emergency clinic if they were infants (OR = 1.7 (1.2, 2.3)), if they lived in a family with an income below $30,000 per annum (OR = 1.3 (1.0, 1.6)), and if their family had four children (OR = 1.6 (1.1, 2.5)).

7.4.3. Awareness of the Free Child Health Care Scheme

Most adults responding to the survey (1,875; 93.6%) were aware that the Free Child Health Care Scheme was in operation and that it made general practice consultations by children aged less than six years available without charges. Fewer respondents (1,405; 70.1%) knew that the Free Child Health Care Scheme also reduced the cost of prescription items to little or no cost. There was no difference in levels of awareness of the Free Child Health Care Scheme by urban or rural location, region, or North or South Island. Policy awareness was also not related to the age of the child included in the survey.

Respondents from families with two children aged less than 15 years were significantly more likely than families of other sizes to be aware of the change in cost for general practice consultations ($\chi^2 = 8.275$, $P = 0.004$) and medicines ($\chi^2 = 19.015$, $P < 0.001$). Awareness of the policy was also significantly related to family income, with 10.9% of respondents from families with incomes less than $30,000 per year being unaware of the policy versus 3.9% of respondents from higher income families ($\chi^2 = 33.146$, $P < 0.001$). Over one third (33.9%) of low income families were also unaware of the policy's effect on the cost of medicines and this number rose to nearly half (44.7%) of respondents from families with an annual income of less than $10,000.

Only 163 (8.2%) reported that in their experience the policy had not actually delivered free health care services to their children. Most (95.8%) families whose children had actually received free care from general practitioners were aware of the policy whereas only 79.6% of families who had not received free care were aware. This difference was statistically significant ($\chi^2 = 76.311$; $P < 0.001$). The policy's impact on the cost of medicines was less widely known. Only 72.7% of those who had received any free care and 56.9% of those who had not, were aware of this part of the Free Child Health Care Scheme ($\chi^2 = 18.639$; $P < 0.001$).

Parents were more likely to be aware of the free general practice visit component of the Scheme if their child was covered by health insurance (96.1% versus 92.3%; $\chi^2 = 11.031$; $P = 0.001$). Greater awareness was also indicated if the index child had visited a general practitioner more than five times in the past year (94.7% versus 87.6%; $\chi^2 = 13.350$, $P < 0.001$) or was of Pakeha ethnicity (95.5% versus 89.7% for Maori and 83.2% for Pacific Island children; $\chi^2 = 36.501$, $P < 0.001$). These same factors were not significantly associated with greater awareness of the medicines component of the Scheme.

After adjusting for the number of children in the family and whether the child was covered by health insurance, greater awareness of the provision of free doctor visits was significantly related to whether the child had access to a general practitioner who provided free care (OR = 7.3; CI (4.5, 11.9)). Pakeha ethnicity was also importantly related to awareness (OR = 2.4 (1.4, 3.9)). Respondents with a family income below $30,000 per annum were significantly less likely to be aware of the Scheme's provision of free doctor visits (OR = 0.3 (0.2, 0.6)). Repeating the same analysis with "awareness of little or no cost for medicines" as the dependent variable showed that only having two children in the family (OR = 1.5 (1.2, 1.8)) and having actually received free care (OR = 1.7 (1.2, 2.5)) were significantly associated with increased awareness. These results are shown in Table 7.3.

7.4.4. Attitudes towards the Free Child Health Care Scheme

Most respondents (1,704; 85.0%) regarded the Free Child Health Care Scheme very favourably. Lower ratings on the five-point scale were: 195 (9.7%) quite favourably, 73 (3.6%) somewhat favourably, and 20 (1.0%) were not in favour of the policy. Respondents whose attitude toward the Scheme was very favourable were more likely to have a general practitioner who provided free care to children aged less than six years ($\chi^2 = 15.676$, $P < 0.001$) and to have actually experienced free care under the Scheme ($\chi^2 = 27.753$, $P < 0.001$). Pakeha respondents were also more likely to respond very favourably to the Scheme ($\chi^2 = 11.144$, $P = 0.001$) and those who carried health insurance were less likely to report a very favourable response ($\chi^2 = 4.571$, $P = 0.033$). None of the location, family size, or child's age variables were significantly related to favouring the Scheme. In multivariate analysis, Pakeha

Table 7.3 **Results of logistic regression analyses: variables significantly associated with awareness of the Free Child Health Care Scheme**

Dependent variable	**Variable**	**Odds Ratio**	**95% Confidence Interval**	**P-value**
(A) Aware that the Scheme made visits to general practitioners free	Pakeha	2.4	1.4, 3.9	0.001
	2 children in family	1.4	0.9, 2.3	0.175
	Family income <$30,000 p.a.	0.3	0.2, 0.6	<0.001
	Insured	1.2	0.7, 2.2	0.473
	Access to free general practice care locally	7.3	4.5, 11.9	<0.001
(B) Aware that the Scheme reduced the cost of prescribed medicines	Pakeha	1.3	1.0, 1.7	0.045
	Aged 1 year old	1.4	1.0, 1.8	0.048
	2 children in family Urban	1.6	1.3, 2.1	<0.001
	Family income <$30,000 p.a.	0.8	0.6, 1.1	0.131
	Access to free general practice care locally	1.6	1.2, 2.2	0.002
	Child visited a general practitioner in the last year	0.6	0.4, 0.9	0.022

from low-income families were significantly less likely to be as optimistic (OR = 0.6 (0.5, 0.9)).

7.5. Summary

This chapter has reported the results of a telephone survey commissioned by the THA and conducted by ACNielsen Ltd in 1998. Parents or caregivers answered questions for 2,004 children aged less than six years. This survey allowed parents directly impacted by the Free Child Health Care Scheme to express their views about it. A commercial company with experience in market research conducted the survey, using state-of-the-art telephone interviewing techniques. Yet despite this, and despite making at least five calls to selected households, the company had more refusals to respond to the survey than they had completed interviews. For this reason, results must be cautiously interpreted, as they may over-represent those with the strongest views about the Scheme. A further caution related to interpretation of these results is that the method failed to include households without telephones. Most such households will be found in the lower income deciles and children aged less than six years are over-represented in these households (see Chapter Six, Objective 4).

With the above caveats in mind, the survey nevertheless provided a strong indication that in the first year of its operation, free care was being provided to young children throughout the country under the Free Child Health Care Scheme and that it was received with widespread favour by parents. The survey confirmed that general practitioners were the main providers of health care to young children, although a wide variety of medical, nursing, public and private health services were used by children aged less than six years. General practitioners provided a range of preventive and curative services. Even when children did not consult for a well-child check, parents reported that they received one – nearly two thirds of visits involved such a check. General practitioners also appeared to conservatively offer treatments: although acute illness was the reason for visiting a general practitioner in 66.2% of responses, on 60.0% resulted in a prescription.

A surprising result was that children with local access to free general practice care were less likely to have visited a general practice in the last year, after having taken into account a variety of other factors. The raw responses showed that 5.9% of children did not visit a general practice in the last year when their own general

Table 7.4. Results of logistic regression analyses: variables significantly associated with attitude toward the Free Child Health Care Scheme and expectations of it

Dependent variable	Variable	Odds Ratio	95% Confidence Interval	P-value
(A) Feel very favourable toward the Scheme	Pakeha	1.7	1.2, 2.4	0.003
	Family income <$30,000 p.a.	0.7	0.5, 0.9	0.022
	Insured	0.6	0.5, 0.9	0.006
	Access to free general practice care locally	1.5	0.4, 1.1	0.091
	Have experienced free health care under the Scheme	2.0	1.2, 3.2	0.006
(B) Expect child's health to be better in the future because of the Scheme	North Island	0.8	0.6, 1.1	0.174
	Family income <$30,000 p.a.	0.6	0.5, 0.9	0.003
	Insured	1.3	1.0, 1.7	0.105
	View the Scheme very favourably	3.6	2.6, 4.9	<0.001
	Have experienced free health care under the Scheme	2.3	1.5, 3.4	<0.001

from low-income families were significantly less likely to be as optimistic (OR = 0.6 (0.5, 0.9)).

7.5. Summary

This chapter has reported the results of a telephone survey commissioned by the THA and conducted by ACNielsen Ltd in 1998. Parents or caregivers answered questions for 2,004 children aged less than six years. This survey allowed parents directly impacted by the Free Child Health Care Scheme to express their views about it. A commercial company with experience in market research conducted the survey, using state-of-the-art telephone interviewing techniques. Yet despite this, and despite making at least five calls to selected households, the company had more refusals to respond to the survey than they had completed interviews. For this reason, results must be cautiously interpreted, as they may over-represent those with the strongest views about the Scheme. A further caution related to interpretation of these results is that the method failed to include households without telephones. Most such households will be found in the lower income deciles and children aged less than six years are over-represented in these households (see Chapter Six, Objective 4).

With the above caveats in mind, the survey nevertheless provided a strong indication that in the first year of its operation, free care was being provided to young children throughout the country under the Free Child Health Care Scheme and that it was received with widespread favour by parents. The survey confirmed that general practitioners were the main providers of health care to young children, although a wide variety of medical, nursing, public and private health services were used by children aged less than six years. General practitioners provided a range of preventive and curative services. Even when children did not consult for a well-child check, parents reported that they received one – nearly two thirds of visits involved such a check. General practitioners also appeared to conservatively offer treatments: although acute illness was the reason for visiting a general practitioner in 66.2% of responses, on 60.0% resulted in a prescription.

A surprising result was that children with local access to free general practice care were less likely to have visited a general practice in the last year, after having taken into account a variety of other factors. The raw responses showed that 5.9% of children did not visit a general practice in the last year when their own general practice provided free care and the non-visitation rate was 12.1% among children whose general practice still levied charges. The multivariate analysis needs careful interpretation. Nine variables made a significant contribution to the model although only insurance status, prescription subsidy eligibility, and access to free general practice care locally had statistical significance in the model of factors explaining general practice use. This model suggested that even when children had lower general practice use due to having insurance cover (perhaps reflecting higher socioeconomic status and better health), due to being eligible for a prescription subsidy (perhaps reflecting chronic health problems), and for other reasons of demography, they were more likely to have seen a general practitioner in the last year if their local general practice care was not free. In the face of access to free care locally by most children represented in the survey (79.8%), this result suggests the continued operation of the "inverse care law" (Tudor Hart, 1971). These results may also suggest that free health care for children aged less than six years is associated with less healthcare provided by medical providers and more provided by others in the primary healthcare team.

The "inverse care law" theory is supported by the consistent significance of low family income as a factor limiting health care access, even after other factors were taken into account such as family size, location, and having a local general practice who provided free care. Children in families with incomes of below $30,000 per annum were less likely to have visited a general practitioner in the last year, more likely to have used a private accident and emergency clinic and less likely to be aware of the benefits offered under the Scheme. Perhaps therefore, respondents from low-income families were also less likely to respond favourably towards the Scheme or to expect that their children's health would become better because of it. Conversely, children who had visited a general practitioner in the last year were significantly less likely to have used a private accident and emergency clinic. The gatekeeper function of general practice was expressed in the result that children who had visited a general practitioner in the last year were more likely to have also had hospital contacts.

Together with the historical context laid out in Chapters Two and Three, the analyses reported in Chapters, Five Six, and Seven provide evidence of the impact of the Free Child Health Care Scheme on New Zealand general practice. The following Chapter discusses these results.

Chapter Eight

The impact of the Free Child Health Care Scheme on New Zealand general practice

8.1. *Introduction*

This thesis has adopted a general practice research strategy to assess the impact of the Free Child Health Care Scheme on general practice in New Zealand. This Chapter comprises three parts. In the first part, the previous chapters will be reviewed in an attempt to distinguish the new knowledge that this project contributes to New Zealand general practice from what was already known. In the second part of this chapter, the strengths and weaknesses of the project will be discussed with reference to the various disciplinary approaches different parts of the project have emulated. This discussion is necessary because at various stages during the development of this document, the project has been interpreted as historical research, epidemiology, policy analysis, evaluation, and market research. It was more than all these, and it was none of these completely. It was general practice research (Dovey, 1994). Finally in this Chapter, the future will be contemplated – the future of the Free Child Health Care Scheme and the future of exercises such as this in understanding the implication of health policy on the health workforce, workplace, and patients.

8.2. New knowledge

The research reported in Chapters Five, Six, and Seven of this thesis provided new knowledge about the Free Child Health Care Scheme and its impact on children, families, and general practitioners. The historical accounts included in this thesis are equally important for bringing together in one place the factors that led to the development of the policy. The history is most important for what it suggests of the future. The Free Child Health Care Scheme was a relatively minor adjustment in the history of a constantly changing health system. Its special significance lies in the three particular regards listed below.

8.2.1. New knowledge about the impact of the Free Child Health Care Scheme on children

When the Free Child Health Care Scheme was proposed in 1996, there was growing concern that New Zealand children were most seriously adversely affected by the economic reforms of the previous decade. Philp (1999), inquiring into the growing incidence of "third world" diseases in South Auckland, reported that parents would sometimes choose between two prescribed medicines and share the medicine they can afford among other sick family members:

> "... as a result, often what for the average New Zealander might be a mild cold or flu, becomes a dragged out, chronic thing"

Chapter Two summarized available statistics on child health in New Zealand. These statistics showed that policitians were rightly concerned about child health in 1996. Recognising the problems of worsening New Zealand child health status, politicians naturally proposed a political "fix" - the Free Child Health Care Scheme. Prime Minister Jenny Shipley may have expressed some of the frustration felt by politicians at the perceived lack of effect of the Scheme when she "*blamed mums and dads who [don't] care enough about the health status of their kids to take them to the doctor*" (Philp, 1999). The results of this investigation show that the Free Child Health Care Scheme was effective in reducing most of the financial barriers to healthcare use faced by young children, but it did not address other important barriers to care. The effects of poverty may be so overwhelming that concerns about health care become relatively unimportant:

> "If you're poor, if you don't have money to feed your kids, or to have the power on, just surviving may become more important than whether your kids have school sores" (Philp, 1999).

The Free Child Health Care Scheme was the first major health policy in more than a decade to affect a group of the population without regard to their income. Its untargeted nature meant that its benefits were felt by many more families than the 50.4% who had previously held a Community Services Card (CSC). This analysis suggested that most New Zealand practices did apply a charge before the Free Child Health Care Scheme, and following its introduction most practices stopped charging for consultations with children aged less than six years. The policy was widely implemented by general practitioners.

In assessing the effects of the Free Child Health Care Scheme on general practices and their patients, other than young children, the evaluation found that older children may have had relatively less health care use than expected. Partly, this result could have been due to making incorrect adjustments for the loss of five-year-olds from the category of older children in the year following the Free Child Health Care Scheme. Increases in medicine use overall were implicitly accounted for in the analysis comparing the proportions of all medicines prescribed for children, that were prescribed for children aged less than six years. Older children received relatively less medication following the Free Child Health Care Scheme, and this was a statistically significant result. Whether this result meant that young children were in the later period prescribed more medicine than they really needed, or older children are were prescribed less, could not be ascertained. Assumptions about "need" could not be made without further investigation.

It was unlikely that different health concerns brought young children to visit their general practitioner, before and after the Free Child Health Care Scheme. An interesting result was the possible increase in consultations for the primary care sensitive condition "fever of unknown origin". In the Chapter Six evaluation, a statistically significant increase in consultations for "fever of unknown origin" occurred only in practices where, before the introduction of the Free Child Health Care Scheme, parents could already bring their children to visit the doctor at no charge. The expected change, if any, was in practices that charged before the Free Child Health Care Scheme. This one aberrant result, among the many variables tested, may well be a chance finding. Alternatively, it could be a true effect attributable to increased concern in the community about meningococcal disease in Study Year 2.

8.2.2. New knowledge about the impact of the Free Child Health Care Scheme on general practice

The research investigations reported in this thesis suggest that the practical implications of the Free Child Health Care Scheme for New Zealand general practitioners were minimal. The original Ministry of Health estimates of the cost of the Free Child Health Care Scheme assumed an increase in general practice visits and prescriptions of about 15%, for all children in the age group. The researchers also embarked on the evaluation assuming they would find increased utilisation of about this order and were puzzled by their repeated failure to find evidence in support of this premise. It was difficult to establish exactly how much utilisation has changed but this research leads to the conclusion that utilisation increases were almost certainly less than 15% overall. However, it is likely that general practitioners did see more children aged less than six years in the 12 months following the Free Child Health Care Scheme than they had before. It is also likely that they provided more consultations to young children in the year after the Scheme's start.

Although general practice has always been the setting for most medical care provided to children, that tradition is likely to have been strengthened by political changes in the last decade (other than the Free Child Health Care Scheme). These changes have included less public support for other major providers of health care to young children, such as Plunket nurses. The household survey reconfirmed the importance of general practitioners as the main providers of health care to young children and showed the much smaller exposure of young children to care by nurses.

The Free Child Health Care Scheme's intention to provide free care to patients revisited the same issues previous generations of doctors and politicians faced when the Social Security Act was proposed and then legislated in 1938 and when the Accident Compensation Corporation Act was passed in 1974. Arguably, it bore more similarity to the former, because the latter affected people with defined medical conditions only. In a limited way (limited to a single age group), the Free Child Health Care Scheme proposed universal cover. The disjunction in the views of doctors and politicians is in essence about professional accountability. Are doctors primarily responsible to their patients (following the precepts of the Hippocratic Oath), or to the government, the payer? The medical profession (and general practitioners in particular) in New Zealand has a history of at least passive resistance to government edicts on paying. Even after they were told that the government was paying for all health care in 1938, general practitioners continued to charge some of their patients. Ultimately it was the government who capitulated and made this situation legal. However, compromise is also a feature of general practitioners' interactions with government. By and large, they will behave in the way governments wish them to, especially if this behaviour is in the interests of their patients and while it remains reasonable.

This last condition is important and attracts comment on another feature of the New Zealand health system – the split between primary and secondary care (Fougere, 2001). The distinction between these two sectors of a single health sector has been exaggerated in New Zealand by successive governments' funding decisions. Primary care funding has been characterised by "injections" of investment (such as the Free Child Health Care Scheme) from time to time when needs appear to become particularly acute. At the time of the injection, funding seems at least adequate and often more than adequate. This does not last however. Failure to make continuous needed adjustments to the General Medical Services (GMS) benefit resulted in its diminishing effectiveness over time in removing financial barriers to health care. Likewise, the set subsidy payments under the Free Child Health Care Scheme, although entirely realistic in 1997, are now, nearly five years later, barely adequate recompense for many general practitioners. The New Zealand Medical Association now supports general practitioners who have returned to charging for consultations with children aged less than six years (TV3 News, Thursday 21 June, 2001).

This project has presented different interpretations of the actions and reactions of general practitioners. In the past when governments threatened with actions general practitioners did not agree with, they could present an unshakeable obstacle to government policy, and did so over, for example, the birth of the welfare system. Non-medical academics tend to view this type of action as simply an expression of political power (Hay, 1989). Medical writers, on the other hand, (Lovell-Smith, 1966; Wright-St Clair, 1989) wrote as if such actions were the expression of protection of some natural entitlement. The truth probably lies somewhere between these poles of opinion. In protecting their professional status, doctors are probably motivated *both* by the same concerns that would prompt any other person to protect their livelihood, and *also* by an altruistic commitment to the wellbeing of the community, as required by their basic professional principles.

Despite evidence of political action by general practitioners displayed throughout history, the common wisdom among general practitioners is that lack of engagement in political issues is a traditional universal feature of general practice. In the general practice library of the Dunedin School of Medicine, only one quarter page of comments on political activity was found among the many thousands of pages of words in textbooks about how to be a general practitioner (McWhinney, 1988b). In this paragraph from an American textbook, the absence of general practitioners from politics was attributed to *"time restraints in practice"*. Lovell-Smith (1966) recognized the same phenomenon, but attributed it to a wider range of factors:

> Doctors are the least politically minded of professional men. There are many reasons for this. As their work is engrossing and often arduous, it is not surprising that the average medical man has little time or surplus energy to cultivate many interests outside that of medicine. That does not mean that as a race doctors are uncultured or lacking in social responsibility, but the nature of their work brings them into contact with people rather than ideas, excepting concepts of a scientific nature. Both in his training and in his vocation, a medical man is traditionally preoccupied with the individual. He learns to distrust generalities and theories and his basic attitudes are empiric and pragmatic with a leaven of idealism. Admittedly this idealism becomes overlaid with an encrustation of worldly wisdom and cynicism, but it is never lost. Perhaps because of this, the profession, roused on a matter of principle, at many times and in many countries has proved a formidable body to challenge. (Lovell-Smith, 1966; p 1)

This thesis has highlighted the importance of the political dimension of general practice recognised by Lovell-Smith many years ago. The political dimension may be an aspect of practice that deserves greater understanding, as it has the potential to have profound effects on health care of many New Zealanders.

8.2.3. New knowledge about the policy environment of the Free Child Health Care Scheme

The Free Child Health Care Scheme marked a departure from the "New Right" philosophies that had been adopted by the New Zealand government with increasing rigour since the 1980s. It was significant that this departure occurred at the intersection of electoral and health system reform. Change in either sector without change in the other is unlikely to have allowed the Scheme's introduction. Chapter One provided a picture of the tumultuous times surrounding the introduction of the Free Child Health Care Scheme at a time of change of electoral systems from First-Past-the-Post (FPP) to Mixed Member Proportional (MMP). The strengths, weaknesses, and most effective means of working under different electoral systems have been well debated in the literature but they were still poorly understood by both politicians and the New Zealand public at the time of the first election under a Mixed

Member proportional (MMP) system, in 1996. Unclear expectations of coalition partners and politicians sitting in parliament without being elected, may have contributed to an unstable government and changing health policies during the 1996-1999 government. Investigating the threats and supports, implementation and impact, of an isolated health policy during such change is a new matter for general practice research but important from a professional perspective. If the New Zealand political scene continues to be as volatile as it has been in the last decade, general practitioners may need to acquire even more adaptability than they have to date.

Chapter One described the development, implementation, and maintenance of the Free Child Health Care Scheme. It is not generally known that the policy was almost abandoned in favour of a return to the earlier subsidised co-payment system, almost before it started. The role of researchers in influencing the Minister of Health's decision to retain the Scheme, unchanged, was explained in Chapter One. In summary, the threats to the Scheme were:

1. It may never have been introduced. Under an FPP electoral system, one of the major political parties (National or Labour) would probably have won the election and governed alone, as previously. Strategies to improve health service access for young children were not in the manifestos of either party. If other parties than New Zealand First had negotiated a coalition deal with either National or Labour parties, the Free Child Health Care Scheme or a similar proposal may not have appeared in the negotiations. The Alliance party was an obvious candidate to form a coalition in place of New Zealand First. If Alliance had done this, free health care for children may not have been initiated.
2. It might have been abandoned if independent research to investigate the impact of the policy (the evaluation reported in Chapter Six) had not been commissioned by government.
3. It might have been abandoned when the 1996 coalition government collapsed. The National party Minister of Health, W. English, had had an acrimonious relationship with the New Zealand First politician championing the Scheme, Kirton, and when the coalition disintegrated, English spoke publicly of his wish to alter or remove the policy. The coinciding of the coalition collapse with the acute stage of a new round of health system restructuring magnified the threat to the Scheme as it removed government advisors with knowledge of the commissioned research. Informal information networks were used to advise the

Minister of the government's evaluation commission and the need to delay a decision.

4. It might have been abandoned at the end of 1998, when a political decision on the Scheme's future was promised. The tone of the evaluation report informing this decision was supportive of retaining the Scheme and the political decision followed the report's recommendation.

An additional important factor contributing to the Scheme's survival was its populist design. It was designed to please the electorate. It is likely that this policy alone attracted some votes for the New Zealand First party that they would not otherwise have gained. Moreover, by the time the coalition government collapsed, the Free Child Health Care Scheme had been implemented. Parents of young children were already enjoying the benefits of a policy that allowed them widespread access to health services for their youngsters, without incurring a charge. To withdraw this benefit from voters only a year away from another general election may not have been a politically astute move for the National party, already in a fragile governing position after the dissolution of the Coalition Agreement.

8.2.3.1. New knowledge of economic effects

The value for money provided by the Free Child Health Care Scheme is subject to debate. One of the political advantages of the Scheme was that its cost (although not its benefits) can be measured fairly accurately. In 1998, $69 million was budgeted for free doctors' visits and prescription medicine for children aged less than six years. This was 1.2% of the total health budget of $5.5 billion. This research considered a variety of data sources and concluded that at most the Scheme had cost the country at most $51.2 million, and the true cost may have been as little as $46.4 million.

Most of the policy's cost to government was attributable to the increased subsidy payment, rather than to increasing health care use. That is, after the Scheme was introduced, the government was paying for what was previously paid for privately. The evaluation report produced by the research presented in Chapter Six introduced a discussion suggesting that the increased subsidy payment of the Free Child Health Care Scheme was appropriate if the care of children was considered primarily a social responsibility, rather than a private one. There has been an unexpected "elasticity" previously demonstrated in paying for health care for children. That is, when there were competing demands for money, parents sacrificed the health care needs of their children before they made other sacrifices (O'Dea and Szeto, 1993). The Free Child

Health Care Scheme was an appropriate response of a society that values its young children.

8.2.3.2. New knowledge about the influence of political theory

In Chapter One, the main political theories influencing policies in the 1980s and 1990s were summarized. These theories are relevant to the topic of this thesis less for the light they shed on the political environment than for the way they help to demonstrate the way New Zealand general practitioners react to policy initiatives.

A comparison of general practice reactions to "New Right " policy initiatives in the United Kingdom (UK) and New Zealand showed that whereas British general practitioners responded to their government's managerial initiatives with distrust, resistance, and ultimately capitulation, in New Zealand general practitioners did not resist similar pressures from government.[50] Instead, they adapted. They formed powerful contracting entities (Independent Practitioner Associations: IPAs) that handled government regulations and advocated for general practitioners, separating most doctors from direct involvement in contract negotiations with government. In both countries, the restructuring of general practice failed to deliver the health outcomes their governments expected.

Medical research has produced a powerful critique of the mechanisms employed by government to ensure population health services in the 1990s, particularly criticising the inconsistency of government approaches (Glendinning et al., 1994; Calnan and Williams, 1995; Roland, 1996). On the one hand managerial strategies were intended to bring about professional accountability and subordination of general practitioners to managers. On the other hand, commitment by government to "New Right" concepts of market forces implied minimal government intervention and state acquiescence to general practice entrepreneurialism (George and Miller, 1994).

The transportation of techniques and values of the market into domains that serve non-commercial ends has attracted criticism for two reasons. First, the implicit assumption of managerialism that the products of public services such as health and education can have a cost assigned to them has been criticised because many of the products of these sectors, although tangible, cannot be measured in a sensate way.

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[50] That is, they did not resist en masse. Resistance to change instigated by government is a reasonably constant characteristic of doctors. In the case of the health reforms of the 1990s, block professional resistance was mitigated by the acquiescence of some medical leaders who, in general practice, became instrumental in the establishment of IPAs.

Second, it has been argued that managerialism undermines the morality of the health and education professions because it both excuses and encourages departures of doctors from their central functions, when they are co-opted to management roles.

> "The freedom of knowledge workers to practice their professions, to teach, to do research, and to reflect should be increased rather than diminished progressively by institutional demands for more and more commitment to the minutiae of management." (Little, 1995)

Transaction-cost economics is another political theory similar to managerialism but dealing mainly with *"optimal governance structures for various kinds of transactions, in particular the best way of organising the production and exchange of goods and services"* (Boston et al., 1996; p 21). This orientation towards the exchange of physical goods is different from the emphasis in agency theory on defining a relationship between individuals. Like agency theory, transaction-cost economics also assumes that people will behave opportunistically to advance their own interests and consequently contracts risk being subverted because of failure to disclose relevant information, on the part of both parties. Transaction-cost theory makes clear that contracts are sometimes not the best instrument to regulate behaviour. Other, non-market arrangements including *"hierarchical or rule-governed organisations, such as public bureaucracy"* (Boston et al., 1996; p 23) may best suit these situations. Of relevance to this theory was the behaviour of Kirton in instigating the Free Child Health Care Scheme as a policy he intended to "subvert" to obtain extra data from general practitioners (see Chapter One, section 1.2.3.2.).

Public choice theory was a third theory guiding the development of health policy in New Zealand through the 1990s. This theory borrows the basic assumptions of neoclassical economics about the nature of human rationality and applies them to politics, to explain and predict behaviour. In particular, it is assumed that individual political actors are guided by self-interest. That is, the theory suggests that voters will vote for parties and candidates whose policies serve their individual interests best and that politicians wish to get elected in order to increase their personal income, power, and prestige (Howlett and Ramesh, 1995; p 20). The theory proposes that an agreement to change policy is an agreement to favour some constituencies over others. Politicians favour constituents who are the intended beneficiaries of the bargain in order to win votes (Kelsey, 1995). The theory was proposed as a rigorous, axiomatic theory of government. An attractive feature of public choice theory is its strong assumption of rational behaviour: this permits *"extensive deductive reasoning from the theory's basic postulates"* (Simon, 1995) which in turn averts the need for much empiric research. Public choice theory provides three main principles for the management of public health services: (1) providers should compete, (2) organizations should be compelled to produce information on their efficiency and effectiveness; and (3) large organizations should be disaggregated into smaller units. Efficiency, responsiveness to public need, and equity were the goals enhanced by application of the theory. It explained most political behaviour as motivated mainly or solely by individual material self-interest (Boston et al., 1996; p 17). Free-riding is a term used in the theory to describe the actions of individuals who freely exploit a collective or public good at the expense of others (Reddy, 2000). "Free riding" was an obvious risk with a policy such as the Free Child Health Care Scheme. The empirical research in this thesis suggests it did not happen to a measurable degree. Children consulted their general practitioners for much the same complaints in the year after the start of the Free Child Health Care Scheme as in the year before (Chapter Six, section 6.4.2.)

Empirical research has identified public choice's emphasis on rationality as a significant weakness of the theory. Simon (1995) concluded that:

> "human rationality is much more complex than it is portrayed to be in neoclassical and public choice theories, and much less can be derived by deductive means from the assumptions of rationality than has been supposed by the exponents of those theories".

Altruistic motives are also largely overlooked in public choice theory and the essentially social nature of human behaviour is unacknowledged as the theory emphasises individual motives and actions (Howlett and Ramesh, 1995; van Winden, 1999). This flaw in the theory is especially relevant to its application to health care. Providing health services is often a "*thankless, smelly, repugnant, and dangerous task that a rational human being simply would not engage in*" (Light, 2001). People do engage in health service provision for reasons that include altruism.

A further weakness is the theory's assumption of the separation of public and private activities. Recently, Freeman (2000) has drawn on both public choice theory and critical legal studies to propose that there is neither a purely private realm nor a purely public one. She uses health care delivery as a prime example of an arena where private interests frequently serve the public good. General practice more than any other medical specialty characterises this contradiction because general practitioners, not being salaried by the State, are independent, private business people, serving the public interest in the protection of their individual patients' health.

Agency theory has been used to explore the implications of alternative approaches to health sector management. A fundamental problem with agency theory is that negotiation, monitoring, and enforcement of contracts can involve transaction costs that are often higher than the costs of other forms of economic co-operation. This is especially the case when the services to be provided are complex, not easily definable in entirety, or have beneficial aspects that are not clearly measurable in monetary terms (Dalziel and St John, 1999), as is the case with health services. General practice services may be even more difficult to contract for than other medical specialist services because of the breadth of scope of professional activities in general practice. In the rise of popularity of agency theory through western countries, general practitioners tended to attract criticism for opposing governments' attempts to tie their payments more specifically to contract terms (Lewis, 1998). From the perspective of agency theory, this action of general practitioners demonstrated their insistence on preserving their professional freedom and autonomy as independent contractors, yet they failed to agree to be as accountable as independent contractors. The theory is unable to accommodate the reality that general practitioners have always defended their status as primarily accountable to their patients and not to government, despite a substantial percentage of their income deriving from public sources. The complex contract negotiations prior to undertaking the research reported in Chapter Six provided an example of the way applied agency theory can inhibit production. Many people were involved over a period of months in constructing a contract that was subsequently ignored by all except the accountants in the two parties to the contract (the University of Otago and the THA). The work would have been completed by the academic team regardless of the contractual agreement and the contract was unable to describe all the work that was done.

There is a lack of fit between the practice of medicine and the agency theory of public management in the high-trust relationships that lie at the heart of professional forms of organisation and the low-trust expectations guarded against by actions following agency theory (Hunter, 1996). Low trust that agents will perform as expected is the rationale behind contracting and specific accountability, yet this low trust is not deserved when dealing with doctors. For professional reasons, including their public promises to provide services (see section 3.2.1., regarding the Hippocratic Oath) doctors are bound to provide health services when needed. History has provided evidence that general practitioners continue to care for their patients, regardless of the policy environment. In 1939 when the medical profession failed to accept the contract to provide services "free" as legislated in the 1938 Social Welfare Act, the government accused doctors of being on strike. They did not have a contract with government to provide public health services, but

> "It was swiftly pointed out on all sides that doctors were not on strike, they were carrying on their work in their usual efficient and conscientious way, work was proceeding in every hospital in the country, honorary staffs were in attendance at the customary hours, general practitioners were responding to calls at all hours of the day and night, and in fact the whole of the medical service of the Dominion was functioning for the full twenty-four hours of the day" (Lovell-Smith, 1966; p 97).

In response to the "New Right" ideologies permeating the public sector, general practitioners in New Zealand adapted. The organisation-environment literature suggests that sometimes organisations not only adapt to their environment but may also actively seek to change it. Barnett et al. (1998) proposed that the rise of IPAs in New Zealand is an example of such adaptation. By this explanation, IPAs arose not so much as a response to health sector changes but as a pre-emptive strategy *"designed to prevent the introduction of the kind of managerialism imposed on the secondary [health care] sector where some loss of autonomy has been sustained by health care professionals."* (Barnett et al, 1998)

8.3. Strengths and weaknesses of this research

The three research projects reported in this thesis comprise a "triangulation" of approaches that together produce a view of the impact of the Free Child Health Care Scheme, from several perspectives. Each perspective either focused on the impact of the Scheme on general practice (as in Chapter Five), or included information of the impact on general practice, peripherally (Chapters Six and Seven). Overall, these projects combined to impart a robust impression of the impact of the Scheme. This section reviews the strengths and weaknesses of the research.

It was a strength of the project reported in Chapter Five that it was funded by the Health Research Council (HRC) in a competitive granting round. The critiques involved in the funding review process produced alterations to the original protocol that strengthened the study (for instance, by adding an Intermediary Group) and provided assurance that the study had the best design possible. This project also received ongoing monitoring as a consequence of its being funded by the HRC and therefore on their agenda.

A weakness of the Chapter Five project was its reliance on the RNZCGP Research Unit data sets. This data constraint mean that it was not so much a project to examine the impact of the Free Child Health Care Scheme, generally, but a project to determine what light the data sets could shed on the impact of the Scheme. The data sets, although large, were not statistically tested for their representation of any wider set of data and might therefore be regarded as idiosyncratic. Typically, epidemiologists hold such concerns rather than general practice or other health services researchers. Data such as these have been used for research for many years in other countries and are valued for what they can say, rather than for what they cannot. The data sets of the Group Health Cooperative are probably most comparable with the RNZCGP Research Unit's data sets internationally and they have been used for similar investigations (Manning et al, 1984; Ware et al, 1986; Cherkin et al, 1989; Valdez et al, 1989; Cherkin et al, 1990). A further concern was that many of the practices showing willingness to contribute to the study were systematically excluded for their lack of adequate computerisation early in 1996. The Chapter Five analysis provided only one, incomplete strategy to define the impact of the Free Child Health Care Scheme.

Chapter Six's research was undertaken specifically to inform the policy development process and might therefore be viewed as primarily "policy analysis". However, in commissioning the research, the THA asked for an "evaluation" proposal and the term "evaluation" was consistently used in referring to this work. Contandriopoulos et al (2000) define the subject of an evaluation as

> "any organized system of action (a structure, actors and their practices, processes of action, one or many finalities and an environment) aiming to, in a given environment, during a given time period, modify the foreseeable course of a phenomenon to correct a problematic situation. An intervention can be a technique, a medication, a treatment, an organisation, a program, a policy or even a complex system like the health care system."

To evaluators of public programmes evaluation is a distinct, although relatively new, research discipline. Evaluation of (mainly government) social intervention programs first became widely recognised as a distinct scientific approach[51] in the United States (US). During the 1960s "... *massive federal expenditure on an awesome assortment of programs*" (Patton, 1996; p 10) had been made with little accountability. By the

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[51] That is, distinct from epidemiology, sociology, political science, anthropology, education, and other social sciences, yet incorporating aspects of the analytic approaches of a wide range of these separate academic disciplines.

1970s, funders were starting to look for an effect of this spending. Through the following decades evaluation techniques became more developed as countries outside the US, including New Zealand and Australia (Sharp and Lindsay, 1992) also started to question the impact of their governments' expenditures. Contandriopoulos et al (2000) have emphasised that there is really nothing "new" about the process, however:

> "The practice of evaluation has existed in one form or another for as long as one can remember and is central to all processes of learning. Today, evaluation is a popular concept grouping together multiple and diverse realities."

One major contribution of the professionalisation of evaluation has been articulating standards. Unlike the traditionally aloof stance of basic researchers, evaluators are challenged to take responsibility for the use of their findings. In 1981, a Joint Committee on Standards of Evaluation released a statement on the criteria for evaluations of acceptable scientific standards. These were:

> "... *utility, feasibility, propriety,* and *accuracy.* ... the Joint Committee decided on that particular order. Their rationale is that an evaluation should not be done at all if there is no prospect for its being useful to some audience. Second, it should not be done if it is not feasible to conduct it in political terms, or practicality terms, or cost-effectiveness terms. Third, they do not think it should be done if we cannot demonstrate that it will be conducted fairly and ethically. Finally, if we can demonstrate that an evaluation will have utility, will be feasible, and will be proper in conduct, then they said we could turn to the difficult matters of technical adequacy of the evaluation." (Patton, 1996; p 16)

To general practice, the research techniques of evaluation offer relief from the emphasis of epidemiology on populations (rather than individuals), objective measurement and internal validity that sometimes seems contrived and irrelevant to everyday practice (McWhinney, 1989a). Evaluation is a pragmatic research discipline that seeks to establish the usefulness of (usually publicly funded) programmes, across a wide range of social settings. Because of the research hierarchy introduced in Chapter One (and developed more fully in Chapter Four), "evaluation" in this thesis is not the evaluation of the textbooks (Pawson and Tilley, 1997; Patton, 1996; Guba and Lincoln, 1989). Rather, it is a general practice version of evaluation that adopted what was useful and discarded what was not.

Evaluation in this thesis was applied to the study of a health policy and the generic purpose of evaluation studies in political science is to *"...assess specific policies in terms of the extent to which their outcomes have achieved the objectives of the* *policy*" (Hogwood and Gunn, 1984). This role of analysis was an immediate challenge for the current evaluation because no health objectives for the Free Child Health Care Scheme were ever specified. Fortunately, Hogwood and Gunn (1984) further perceived the role of evaluation as "*... improving our understanding of the factors which shape policy, as well as providing information which can be used in future policy-making.*" They listed a nine step framework for how policy should be analysed, ranging from analysis of whether a policy should even be considered to determining when a policy should be terminated. These steps and the relevant considerations from this particular policy are shown in Table 8.1. Important to note is that the list proposed a theoretical process that in reality was expected to be seldom worked through from beginning to end in consecutive order, with all steps included. In policy analysis the techniques used are a secondary consideration to the processes outlined in Table 8.1. This contrasts with the role of analysis in medicine, where the interest is primarily in aetiology, impact or effectiveness and the primary concern is with study design and the use of appropriate analytic techniques (Elwood, 1988). Figure 8.1 shows the different types of analytic activity at various stages of the policy cycle. From this model, the evaluation of the Free Child Health Care Scheme fits in the overlap between policy studies and policy analysis.

The evaluators for the study reported in Chapter Six were faced with inadequate specification and quantification of goals, methodological uncertainties, and incomplete guidelines against which to evaluate the program. In theory, removing the financial barrier to health care might be expected to result in an increase in health service use but it was difficult to judge the extent to which this happened due to the evaluation contract constraint that limited the evaluation to the use of existing data sets. These data were often incomplete and incompatible, seldom represented a national picture, and often used changing definitions. The New Zealand situation with respect to reliable health data was worse for 1996, 1997, and 1998 than it had been previously. The government agency, Health Benefits Limited (HBL), used to process government subsidies claimed by all health care providers but health service restructuring had resulted in an uneven national coverage of their activities by 1996. In particular, HBL managed very little data from the Northern region, and the evaluation team had had little success in obtaining data to include in the evaluation from Auckland and northern centres. Data from IPAs were difficult to retrieve. Some IPAs could not assist with the evaluation as they held no utilisation data centrally; and for some, the data they did hold (and contributed) was at a level of aggregation that made it difficult to analyse. Data from one Auckland IPA had been managed by the

Table 8.1. A framework for policy analysis, applied to the Free Child Health Care Scheme

Stages of analysis	Application to the Free Child Health Care Scheme
1. deciding to decide (issue search or agenda setting):	The New Zealand First party may have conducted a formal needs assessment to determine that improving health care access for children was an important political issue. No evidence that this was actually done has been found.
2. Deciding how to decide (issue infiltration)	Decisions on the actual form of the Free Child Health Care Scheme were negotiated between the National and New Zealand First parties in forming a coalition government.
3. Issue definition	Diminishing disposable incomes of families with young children and rising patient costs for seeing a doctor were supposed to have prevented parents from consulting a general practice when their child was sick. As shown in Chapter four, there was evidence that child health status in New Zealand was falling relative to other developed countries.
4. Forecasting.	Analysts in the Ministry of Health predicted the cost of the scheme to be $67 million – an amount deemed affordable for the nation by politicians.
5. Setting objectives and priorities.	No specific objectives were stated relating to child health outcomes.[52]
6. Options analysis.	Alternatives debated by National and New Zealand First politicians were free health care for all school-aged children, for children aged less than 12 years, and for children aged less than six years.
7. Policy implementation, monitoring and control.	Implementation was negotiated between politicians, government agencies, and general practice organizations. Monitoring was restricted to analysis of subsidy claims according to the processes already in place for other subsidy claims.
8. Evaluation and review	The subject of this thesis, evaluation and review processes were not explicitly considered during formation of the policy, and commissioned using a poorly conceived conceptual framework.
9. Policy maintenance, succession, or termination.	Not explicitly considered during formation of the policy.

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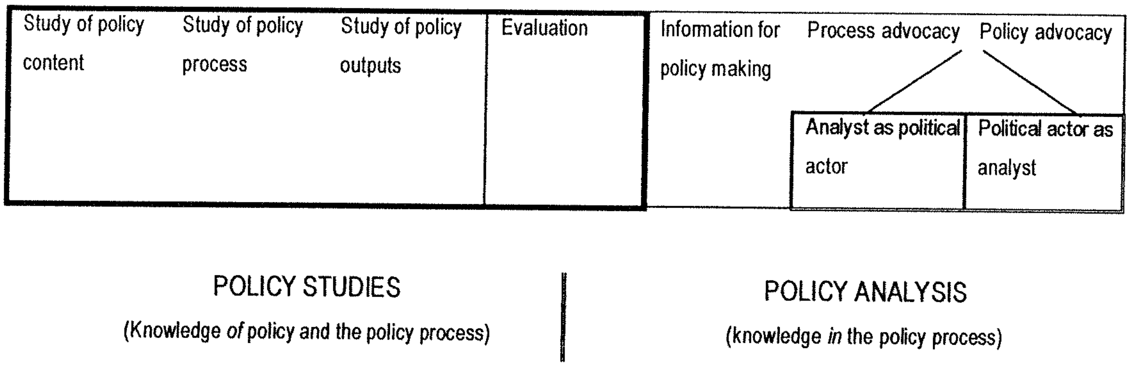
[52] The explicit setting of objectives is often avoided in policy-making (Hogwood and Gunn, 1984).

Figure 8.1 Types of public policy-making



Source: (Hogwood and Gunn, 1984; p 29)

Northern HFA Office and in the latest restructuring, key personnel managing these data were made redundant. This made it extremely difficult to obtain the data, not because of IPA unwillingness to collaborate, but because of poor change management strategies in the HFA. In the report, the researchers expressed concern at the difficulty they experienced in obtaining data pertaining to government funded health service use (Dovey and Tilyard, 1998).

Another data related challenge was the re-definition of "Y" category children from one year to the next. The adjustments made to accommodate this definition change meant that the results presented were estimates made with varying levels of confidence.

The projects in Chapters Five and Six reviewed only two years of data from most sources. This was insufficient time to assess whether changes in utilisation trends occurred, and whether these changes might be attributable to the Free Child Health Care Scheme. In the context of increasing health service use, even an increase in utilisation might signal a reduction in a trend. This possible effect may be particularly relevant to hospital use. It was reasonable to suppose that increased general practice access might be associated with reduced use of secondary care. In looking for this effect, the evaluation project found only inconclusive suggestions that it may have occurred (particularly with reference to respiratory conditions). The evaluation's general approach – to analyse data for one year before and one year after the introduction of the Free Child Health Care Scheme – also meant that associations between health care use and health outcomes could not be examined. It may be a decade or more before such assessments can be made with any confidence, as the benefits of interventions in early childhood may not be seen for many years.

The general analytic approach included assessment of changes in health service use for other age groups of patients, wherever possible. Often the comparison group was older children, aged 6-16 years. The number of children in this age group is growing at a rate of 1-1.5% per annum more than the group of children aged less than six years (Statistics New Zealand, 1999). Although this difference is small, it should influence interpretation of data using older children for comparison. Where the change in health service use was less for older than for younger children, this result can be accepted with greater confidence that it was a real effect than in situations where utilisation was higher.

The research in Chapters Five and Six referred only to children who used health care services. Data sets seldom identified individual children consulting, so it was not possible to estimate of the size of the population of children who did not access services. The household survey results suggest that this was a relatively small group, but they are potentially children with a high level of health care need. On the other hand, they may simply have been healthy and not needed health care. Conversely, some of those who did used health services might not have needed to. The extent to which both these circumstances exist is a subject requiring further research.

The evaluation was interpreted from a general practice perspective that may have oriented the final report to the HFA towards promoting the benefits of the Scheme and minimising its costs. This interpretation was inevitable, given the composition of the team, and was an expression of the political dimension of general practice that should have been expected. As Lock (2000) has observed:

> "Health impact assessment aims to influence the decision-making process in an open, structured way. To do this it has to acknowledge that assessing and ranking evidence is not a wholly objective process and involves a series of value judgements. Political imperatives are likely to affect the outcome."

The survey reported in Chapter Seven involved a large sample of households but must be cautiously interpreted because of the design problems of the survey approach. Efforts were made to interview a nationally representative sample of households that include young children. Households without telephones were not represented in the survey. The Household Economic Survey (HES) provided estimates that about 4% of households do not have a telephone. Given the preponderance of households with young children in the lower income deciles of New Zealand households it is likely that such households are also over-represented among the households excluded from participation in this survey. As well, the survey was cross-sectional and relied on respondents' memories of health care use over the previous year. Parents may be less likely to remember health care use they did not pay for. The survey did not allow for validation of reported use from other sources. There were no comparative data with similar survey data collected before the Free Child Health Care Scheme was introduced so change attributable to the Free Child Health Care Scheme could not be estimated from this survey.

8.4. *Recommendations for the future*

1. General Practice should explicitly acknowledge its political power

The term "politics" refers to the actions or activities that people use to achieve power in a country, society, or organisation or which ensure that power is used in a particular way (Collins Cobuild English Language Dictionary, 1987). In particular, "politics" is generally used with reference to the art or science of government, or affairs of State (Collins Dictionary and Thesaurus, 1988a). General practitioners have a history of political activity that has seldom been recognised as an attribute of the profession. Health system reforms in the 1990s raised the political profile of New Zealand general practitioners. It is likely that this profile will continue to grow and that the political dimension of general practice will receive more focused exploration in the future.

2. Health policy should be based on researched evidence

Health policy is best understood as actions aimed at improving the health of people and undertaken by governments and other actors in society. The general and long-standing objectives of health policy in most western countries are to enable universal access to necessary health services, to provide comprehensive and uniform benefits, to support a national health service that is fairly funded, provides value for money, is publicly accountable and in which consumers and providers have freedom of choice, to monitor and regulate public and private service agencies, and to safeguard and promote the "public health" (Lovell-Smith, 1966; Daniels et al., 1996). In light of these general objectives, health policy should address health determinants and diseases that have a substantial and proven contribution to the health status of the population and should attempt to learn from the experiences of other countries. It should also take into account the perspectives of other, non-government, stakeholders in the health sector. Explicit attempts to adopt a public health approach to health policy started in New Zealand in 1989 when Minister of Health, Helen Clark, redirected health policy to influence broader determinants of health than health services, especially tobacco smoking. However, health sector policy is still seldom made either by the deliberate adoption of the policies of other countries or by taking the viewpoint of health sector stakeholders (Dominick, 1999).

Trailing the evidence-based medicine paradigm in clinical practice, evidence-based health policy is now starting to be recognized as a valid and important concept (Niessen et al., 2000). Lee and Mills (2000) comment that:

> "Research should have an important role in the policy process, providing the evidence for identifying issues and prioritising them, laying out the options for addressing policy problems, and feeding back the appropriateness of those decisions. Health research is thus a central component of effective health governance."

In general practice, the implementation of evidence-based clinical practice has been hampered by an inadequate supply of relevant evidence and this problem has been even more accentuated in the realm of health policy. Where to spend public funds to best effect remains an unresolved issue that individual countries are tackling in separate ways, guided by diverse fundamental strategies. No country yet has managed to model a "best practice" way of producing health policy that other countries might adopt. Although many countries, including New Zealand, are supporting agencies to define and promote evidence-based health care (Hailey and Menon, 1999), insufficient availability of relevant evidence is apparent when many health policy questions are under debate (Raine, 1998). In practice, health policy decisions are more often the outcome of complicated political processes among parties with different interests, than they are the product of prior research (Stronks et al., 1997). In the absence of research evidence, public opinion becomes the strongest catalyst for policy development.

General practitioners, already strongly influenced by the evidence-based clinical practice paradigm, are likely to become increasingly skeptical of health policy that is ideologically, rather than evidence driven. As in clinical practice, there are substantial problems to evidence-based policy that have yet to be adequately addressed. Important obstacles include lack of congruence in the time frames of politicians and researchers, mixed or absent understandings of policy objectives, and the lack of availability of relevant measures of impact (Niessen et al., 2000). The evidence-based paradigm applied to health policy requires the policy to be based on research that necessarily precedes the introduction of the policy. This can be done only if politicians are prepared to advertise their intentions in advance and are willing to change their plans, should research evidence fail to support them. Such behaviours, although rational, are unusual in the political domain, where promises on future policy are mistrusted and indecision is viewed as weakness. Further limiting the use of evidence-based approaches to policy-making is the individual orientation of most research evidence, when what is needed by policy-makers is evidence at a much more macro level (Davey Smith et al., 2001; Macintyre et al., 2001).

4. **Funding for New Zealand general practice should be incorporated into planning for New Zealand health care generally**

In the future, the injection approach to public funding for primary care in New Zealand (exemplified by the Free Child Health Care Scheme) will have to be altered if the country is to move from a "no system" system for primary health care to a "primary care led" system for the entire public health sector. Periodic cash injections into primary care, balanced by the Robin Hood approach by general practitioners to charging contrast with the continuous support from public finances given to hospitals. Even during the heyday of "health reforms" in the 1990s, hospitals could not function under limited budgets for one year at a time and continuously upward adjustments were made to their funding. The funding basis for primary and secondary services in New Zealand must be rationalised. In the meantime the pressure will remain on general practitioners to argue their need to retain the right to charge patient while payments offered by government are not indexed to some measure of inflation.

Very little of New Zealand's public health research funding has yet been spent on research to address questions of direct relevance to the way health policy and health services (in this case, particularly general practice) influence the health of New Zealand people. In applying for and receiving funding for this project, important (and usually covert) issues relating to the politics of health research funding became identified, including a shortage of knowledgeable health service researchers, and under-representation of general practice in organisations making decisions on health research funding. This situation is likely to change in the coming years as it becomes increasingly obvious that the advances in medical sciences fail to become translated into better health for people because of inadequate attention to the health delivery system (The Committee on the Quality of Health Care in America, 2001).

8.5. Summary

Chapter Eight has briefly summarised the major findings of the research reported in earlier chapters. Although all three projects contributing to the original research component of this thesis had significant design flaws, together they provide reasonably robust evidence that the effect of the Free Child Health Care Scheme on the workload of New Zealand general practitioners was minimal. Concurrently, they provide strong evidence that the Scheme made a real difference to the amount families paid for health care for young children, as it was widely implemented. The household survey provided a reminder that there was a small group of children, possible the most needy because of socioeconomic factors, who remained relatively untouched by the Scheme.

Threats to the continuation of the Scheme were reviewed. These threats included both those that the Scheme has so far survived and the "injection" type funding that will eventually make copayments essential for young children's health care. The role of the evaluation reported in Chapter Six was considered along with other environmental features that combined to support the early introduction and maintenance of the Free Child Health Care Scheme. The policies of the "New Right" and their fit with the realities of health care delivery was summarised.

Finally, future possibilities were considered. These include a future where exercises in policy analysis from a general practice perspective are much more common and the techniques for doing this are more developed. This future will be formed by general practitioners who are more politically aware and engaged than they have considered themselves in the past. It may be a future that finds a way to create a more rationally funded health care system than New Zealand currently has – a primary-care led system.

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Appendix One

Electoral reform

Since the first settlement by Europeans, New Zealand has been governed under a system of parliamentary democracy. There are many different forms of democratic government, each with different strengths, weaknesses, and appropriateness to different cultures. Lijphart (1994) explains the basis of the two broad-based approaches to democracy:

> "If democracy is defined as, in Abraham Lincoln's formulation, government by the people and for the people, how do democracies operate when 'the people' are divided and have divergent interests? One answer is to define 'the people' as the majority of the people. The alternative answer is to include as many people as possible in democratic decision-making. The first answer leads to the majoritarian type of democracy, which concentrates political power in the hands of the majority. The second answer leads to consensus democracy, which tries to arrive at as much consensus as possible by *restraining* majority rule and by sharing, dispersing, and limiting political power"

Electoral reform in New Zealand followed a decade of majoritarian governments making changes to the social fabric of New Zealand society, largely without having the mandate of support from a majority of the electorate. In each of the 1978 and 1981 elections the Labour Party failed to gain office despite winning more popular votes than the National Party. The report of a Royal Commission on the Electoral System (1986) recommended the country adopt one of the alternative forms of proportional representation, and a referendum in 1993 indicated widespread popular support for electoral reform.

Rae (1971) provided the first classic study of the political consequences of various ways of choosing politicians. While electoral law alters the basis of government, he cautioned evaluators against attributing all changes in systems of government to changing electoral law:

> "... party systems are influenced by many variables – social, economic, legal, and political. Electoral law ... is to be counted only one of the many determining forces. And it is, secondly, impossible to sort out all the contributing factors, or to assign even approximate weights to them. Worse yet, electoral laws are themselves shaped by party systems".

The Royal Commission adopted 10 criteria to compare electoral system alternatives and concluded that an MMP system offered the most satisfactory overall balance. These criteria are shown in Table A1. In majoritarian democracies the requirement for winning is the majority of votes, and in proportional systems, the requirement for gaining a seat is obtaining a minimum proportion of total votes (Lijphart, 1997). Proportional representation (PR) is now regarded as an important principle in most modern democracies but the conventional wisdom is that there is a trade-off between PR forms of government and majoritarian systems:

> "PR and consensus democracy provide more accurate representation and better minority representation, but majoritarianism provides more effective government" (Lijphart, 1994).

There are three major types of proportional representation: (1) proportional voting systems based on party lists, (2) mixed member proportional systems that combine party lists with single-member constituencies, and (3) the single transferable vote system (STV) (Boston et al., 1999). Boston et al. (1999) explain the key features of the MMP system that was eventually chosen for New Zealand:

> "the MMP system produces national proportional results while including seats elected by plurality elections in single-member constituencies. A party's proportional entitlement to seats can be based either on its total vote in the constituency contests or on a separate party vote. Once that entitlement has been determined, the number of constituency seats that party has won is subtracted from this number. The party is then given sufficient other seats to bring it up to its proportional entitlement. Those elected to these seats may be taken from a party's list, or from among its unsuccessful constituency candidates. Entitlement to any list seats may be subject to a threshold (e.g. 5%) of the vote on which the allocation is based."

The MMP system would involve an increase in the number of seats in the house and the Royal Commission recommended that there should be a minimum of 120 seats - 60 to be elected by the traditional method and 60 to be elected through nationwide party lists. Seats in government may be allocated by means of a number of different formulae. Rae (1971) proposed that formulae differ in their success in supporting true proportional representation and Lijphart (1990) further refined Rae's observations. He provided evidence in support of the conclusion that:

> "(1) pure Sainte-Lague and LR-Hare are likely to be the most proportional; (2) modified Sainte-Lague, LR-Droop, LR-Imperiali, and STV-Droop should be less proportional;

Table A1 **Criteria for judging voting systems.** Source: Boston et al., 1999

Criterion	**Explanation**
Fairness between political parties	The number of seats in government that are gained by a political party should be proportional to the number of voters who voted for that party
Effective representation of minority and special interest groups	Membership of the House should not only be proportional to the level of party support but should also reflect other significant characteristics of the electorate such as sex, ethnicity, socioeconomic class, locality, and age.
Effective Maori representation	Maori people and Maori perspectives should be fairly and effectively represented in Parliament, as required by the Treaty of Waitangi.
Political integration	The electoral system should encourage all groups to respect other points of view and to take into account the good of the whole community.
Effective representation of constituents	The voting system should encourage close links and accountability between individual MPs and their constituents.
Effective voter participation	The voting system should have readily understandable mechanisms and procedures. The power to make and unmake governments should be in the hands of the people at an election and the votes of all electors should be of equal weight in determining election results.
Effective government	Governments should be able to act decisively and there should be reasonable continuity and stability both within and between governments.
Effective Parliament	The voting system should provide a House capable of effectively providing a forum for the promotion of alternative governments and policies, enacting legislation, authorising taxes and expenditure of public money, scrutinising the actions and policies of the executive, and supplying a focus for individual and group aspirations and grievances.
Effective parties	The voting system should recognise and facilitate the essential role political parties play in modern representative democracies.
Legitimacy	The community should endorse the voting system and its procedures as fair and reasonable and accept its decisions, even when they themselves prefer other alternatives

> and (3) d'Hondt is likely to be the least proportional of the PR formulas"[53]

As in the Federal Republic of Germany, a modified form of the d'Hondt formula was recommended for New Zealand by the Royal Commission to ensure that small parties gaining less than 4% of the electoral vote would not gain a seat in the house. This rule was however to be waived for small parties representing Maori, and consideration was recommended for waiving the rule to assist representation of other special constituencies.

By the mid 1990s, it was apparent that New Zealand society was "powerfully influenced by the business ethos of the corporate world" (Campbell, 1997c), a reference made to the negative effects of the philosophically driven public sector reforms of the 1980s and 1990s. The political science literature uses the term "corporatism" in a contrasting sense, related to consensual forms of government. In this sense, Lijphart and Crepaz (1988) placed New Zealand low on scales of corporatism, consensus democracy and economic openness among 18 western democracies. The new MMP electoral system was expected to move the country away from this position, as it was supposed to necessitate much more co-operative decision-making than was needed under FPP and single-party government. This proposition did not sit well with the culture of New Zealand government immediately prior to MMP introduction and it took some time to adjust.

A year after the first coalition government was formed, Listener journalist G. Campbell assessed the new MMP electoral system favourably because it had created a government that was "more fair, open, representative, and transparent" than the previous FFP system. However, he noted that *"residues of FPP thinking endure"* (Campbell, 1997c). The coalition government was more fair in that policy could no longer be "rammed through the system" by a majority government with an open mandate to rule. It was more open in that *"shenanigens"* (Campbell, 1997c) by the political parties were more likely to be exposed (by other parties). It was more representative in that:

> "There are now 15 Maori among the 120 MPs [Members of Parliament]– pretty similar to the population as a whole – compared to six in 1993. Back then, we had 21

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[53] The formulae broadly base decisions on the award of seats on either "highest averages" or "largest remainders" (LR) referring to the number of votes cast in an electoral region. The highest averages formulae are d'Hondt, which systematically favours larger parties and Sainte-Laguë (or modified Sainte-Laguë), which treats large and small parties evenly. The Hare quota is an LR system in which the total number of valid votes are divided by the number of seats available (m). This system is impartial to party size. The Droop quota divides valid votes by m + 1, and the Imperiali quota uses m + 2. Both these latter systems therefore favour larger parties (Lijphart, 1990).

> women MPs – now there are 36 women MPs, plus more Pacific Island MPs and the first ethnic Chinese MP." (Campbell, 1997c).

During the first MMP coalition government, the role of a minority partner in the coalition was not well understood by either politicians or an electorate still using FPP as their reference (Easton, 1997c; Campbell, 1998). In Campbell's (1997b) opinion the minority party needed to maintain its distinct politics, while still working with the major partner to make government work. Criticism was levelled at MPs who "... *have not really come to terms with the new circumstances (of MMP and coalition government) and by seniority have excessive influence*" (Easton, 1997c). In Easton's view, the role of the minority party in a coalition government was to "... moderate the extremism of the dominant party" and force issues to be publicly debated and justified before being passed into law. By becoming ideologically integrated with National and following the same agenda, the opportunity to provide the country with an effective coalition government was more or less waived in favour of maintaining a government style that closely replicated governments generated by the FPP electoral system. The effectiveness of New Zealand First in the coalition government was compromised because it was identified too closely with the National party.

Appendix Two

Child health related legislation

The political environment of the health sector is formalised in the health legislative environment, which consists of a hierarchy of statutes (Acts of Parliament) and subordinate or delegated legislation such as regulations and bylaws. In this section legislation relating to child health is reviewed. Apart from those listed below, other public health Acts administered by the Ministry of Health include the Smoke-free Environments Act 1990, the Food Act 1981, the Toxic Substances Act 1979, the Plumbers, Gasfitters and Drainlayers Act 1976, the Misuse of Drugs Act 1975, the Radiation Protection Act 1965, and the Tuberculosis Act 1948. Some other Acts, such as the Burial and Cremation Act 1964 also have some relevance to health and are administered by the Ministry of Health. Legislation in other sectors such as local government, housing (e.g. the Building Act 1991), environment (e.g. the Resource Management Act 1991), agriculture (e.g. the Dairy Industry Act 1952), and social welfare (e.g. the Immigration Act 1977) also impact on public health (Ministry of Health, 1998b). The sections below describe the main formal legislative Acts that govern the professional and social behaviours of people interacting with New Zealand children. Only Acts affecting children's health are included.

1. Code of Health and Disability Services Consumers' Rights, 1996

The Code of Health and Disability Services Consumers' Rights is a law because it is contained in statutory regulations under the Health and Disability Commissioner Act 1994 and applies to all health and disability support services in New Zealand. Children are entitled to all rights under this code, including the right to information and the right to receive health services only after informed consent has been given. For infants and young children affected by the Free Child Health Care Scheme, rights under this Code will most often be delegated to their parents or guardians, although this is not specifically defined under the Code. General practitioners, who most often provide health care to young children are the health professional group most often required to provide this information and obtain consent. Doctors are freed from the obligation to obtain consent in the case of emergency medical care.

2. Health (Immunisation) Regulations, 1995

Although this regulation does not compel children to be immunised, it does require all children born after 1 January 1995 to have an immunisation certificate, indicating immunisations they have received. Either a doctor or a nurse may endorse the certificate and when a child starts at an early childhood centre, kohanga reo, or primary school, information on the certificate is entered onto a register. Medical Officers of Health can check the register if there is a threat of vaccine-preventable disease in the area and they may require un-immunised children to stay at home until the threat is over. This regulation specifically does not link the right of a child to receive early childhood education or primary schooling to their immunisation status.

3. Privacy Act, 1993 and the Health Information Privacy Code, 1994

The Privacy Act provides a set of principles for dealing with personal information and these are modified according to the special situation of the health sector in the Health Information Privacy Code. Relevant to this discussion is the right clinicians have under the code to refuse to disclose information to parents or guardians of young children in certain circumstances, particularly where they suspect child abuse. General practitioners are accorded by government a responsibility to protect the health of young children that, for children general practitioners judge to be particularly vulnerable, overrides parental rights to make decisions concerning their children.

4. Health and Disability Services Act, 1993

Section 2 of the Health and Disability Services Act refers to 'public health' as the health of all the people of New Zealand; or a community or section of such people. Public health services are provided for the specific purpose of improving, promoting or protecting the health and well being of an entire population or community. This contrasts with personal health services, which are provided to an individual for the primary purpose of improving or protecting the health of that individual. Although there is not always a clear demarcation between public health services and personal health services in practice, the conceptual distinction is clear. Statutes such as the Medicines Act 1981, the Health and Disability Commissioner Act 1994, and the Medical Practitioners Act 1995, although they indirectly protect the well being of the public, are primarily aimed at protecting the health of individuals rather than the population as a whole (1998b). The Health and Disability Services Act 1993 also acknowledges the importance of culturally appropriate services and policies to Maori health. Government health policy since the passing of this Act has recognised Maori culture and society as strategies for improving Maori health. Durie commented:

> "In nominating Maori health as one of four health-gain priority areas, there is active encouragement for more Maori health providers and tribal and community health programmes are rapidly increasing. In addition mainstream providers in hospitals are asked to indicate how their services will contribute towards health outcomes which are relevant to Maori" (Durie, 1997).

5. Mental Health Act, 1992

The Mental Health Act, 1992 similarly recognises the importance of Maori culture (Durie, 1994; p 92-3). It has otherwise little relevance to health care provided to children aged less than six years.

6. Health and Disability Act, 1992

The Health and Disability Act, 1992 led to the establishment of four Regional Health Authorities, charged with purchasing health services. Its enactment was based on the political assumption that health services would be delivered more efficiently if the functions of health service funding and provision were separate and a competitive market was allowed to develop.

7. New Zealand Bill of Rights, 1990

The New Zealand Bill of Rights applies to anyone discharging any public function, power or duty by law and includes a section protecting the right to participate in any minority cultural practices and to observe any religion. Under this Act, the Court of Appeal has ruled that parents are not accorded the right to do anything to harm their child or to deny a child needed medical care, even for religious reasons (Ministry of Health, 1996a).

8. The Children, Young Persons and Their Families Act, 1989

The Children, Young Persons and Their Families Act, 1989 protects people reporting child abuse or neglect from civil, criminal or disciplinary proceeding unless the information was supplied maliciously (Ministry of Health, 1998a). Section 6 makes the welfare and interests of children dominant over concerns of their parents or family in matters relating to their health and welfare. The Act requires social workers to respect Maori culture (Metge, 1995; p 26).

9 Guardianship Act, 1968

The Guardianship Act, 1968 transfers guardianship of children from (usually) parents to (usually) doctors when parents disagree with medical recommendations as to the best interests of their child. The Ministry of Health (1998a) cited the following example:

> "In a very recent case, 'Baby L', a successful application was made to the High Court to have the Court made guardian when parents were not willing to consent to termination of treatment, in this case life support assistance without which the child was unable to survive. The Court balanced the baby's right to life with her right to be free from discomfort and pain, and took into account her parents' 'deeply felt wish' for her life to be prolonged as long as possible. The judges said the child's welfare was the first and paramount consideration. The Court made *the child's specialist* [emphasis added] its agent and life support was discontinued after the child returned home."

10. Crimes Act, 1961

The Crimes Act, 1961 affirms the professional roles of doctors, accepted under their Hippocratic Oath, by making a legal obligation of their duty to supply a sick child with "the necessaries of life". Doctors may be criminally responsible for omitting to provide this care, even in the face of a parent's refusal to consent to treatment. The doctor is obliged to seek a court order to treat the child if reasonable efforts to obtain parent's understanding and support fail.

11. Health Act, 1956

The Health Act, 1956 is the main New Zealand public health statute. This Act establishes public health management arrangements mainly related to communicable disease and some environmental risks (particularly those related to water and waste disposal). It allows doctors to examine (but not treat) children in early childhood centres and schools, without parental consent.

Appendix Three

Research team involved in the commissioned evaluation of the Free Child Health Care Scheme

Researcher name	Researcher's institution	Role in the evaluation
Susan Dovey, MPH	Department of General Practice, Dunedin School of Medicine	Principal Investigator
Murray Tilyard, MB ChB, FRNZCGP, MD	Department of General Practice, Dunedin School of Medicine	Co-Investigator with responsibility to the University of Otago for the overall project.
Ed Mitchell, BSc, MB E DCH, FRACP, DSc	Paediatrics Department, Auckland Medical School	Co-Investigator responsible for contributions to the project from: • the ABC study • emergency departments
John Thompson, PhD	Paediatrics Department, Auckland Medical School	Co-Investigator responsible for statistical analysis of data from: • the ABC study • emergency departments
E Robinson, BSc	Paediatrics Department, Auckland Medical School	Co-Investigator responsible for analysis of data from emergency departments
Des O'Dea, BSc (Hons), BA	Independent economic research contractor	Co-investigator responsible for economic analysis of HES* and HHS* data.
Alister Penrose, BCom	RNZCGP Research Unit, Department of General Practice, Dunedin School of Medicine	Co-Investigator responsible for HBL* data acquisition and analysis.
Darryl Mackenzie, BSc	RNZCGP Research Unit, Department of General Practice, Dunedin School of Medicine	Co-Investigator responsible for statistical advice to the project.

Dean Eidler, BSc	RNZCGP Research Unit, Department of General Practice, Dunedin School of Medicine	Co-Investigator responsible for data management the project.
Peter Crampton, MB ChB, Dip Obst, MPH, MRNZCGP, FAFPHM;	Department of General Practice, Wellington School of Medicine	Advisor to the project
Jackie Cumming MA (Hons), Dip Health Econ;	Health Services Research Centre, Victoria University and Otago School of Medicine	Advisor to the project
Anthony Dowell MB ChB, MRCGP, FRCGP;	Department of General Practice, Wellington School of Medicine	Advisor to the project
Terri Green PhD (Economics)	Department of Management, University of Canterbury	Advisor to the project
Barry Gribben BHB, BA, MB ChB, MMedSci;	Department of General Practice, Auckland School of Medicine	Advisor to the project
Michael Lamont MPP, Dip Phty, Dip Occ Health, MNZSP, FSMNZ, MCSP,	Mangere Health Resources Trust, Auckland	Advisor to the project
Pauline Norris PhD	Health Services Research Centre, Victoria University and Otago School of Medicine	Advisor to the project
Les Toop MB ChB, MRCGP, FRNZCGP, MD	Department of General Practice, Christchurch School of Medicine	Advisor to the project

* HES = Household Economic Survey
* HHS = Household Health Survey
* HBL = Health Benefits Limited

Appendix Four

Text words used to identify antibiotic and anti-asthma medicines

Antibiotics

AMOXIL
AMOXIL PAEDIATRIC
AMOXIL SYRUP
AMOXYCILLIN
AMOXYCILLIN/CLAVULANIC
AUGMENTIN
AUGMENTIN SYRUP
CECLOR
CEFACLOR
CEFACLOR SUSPENSION
CLARITHROMYCIN
COMPOCILLIN
CO-TRIMOXAZOLE
CO-TRIMOXAZOLE SUSPENSION
DICLOXACILLIN
DOXYCYCLINE
DOXYCYCLINE HYCLATE
ERYTHROMYCIN
ERYTHROMICIN ETHYL SUCCINATE
ERYTHROMYCIN STEARATE
FLUCLOXACILLIN
FLUCLOXACILLIN SODIUM
PHENOXYMETHYLPENICILLIN
ROXITHROMYCIN
RULIDE
TETRACYCLINE
TETRACYCLINE EYE

Anti-asthma medications

BECLOMETHASONE
BECLOMETHASONE NASAL
BECODISK
BECONASE
BECOTIDE
BEROTEC INHALER
BETAMETHASONE
BETAMETHASONE VALERATE
BETAMETHASONE/NAPHAZOLIN
BETNESOL
BETNESOL NASAL
BETNOVATE
BRICANYL
BRONDECON
BUDESONIDE
BUDESONIDE FORTE AQ NASAL
BUDESONIDE NASAL
DUOVENT INHALER
FLIXONASE AQUEOUS SPRAY
FLIXOTIDE
IPRATROPIUM
IPRATROPIUM BROMIDE
IPRATROPIUM BROMIDE AQ
PIMAFUCORT
PULMICORT
RESPOCORT
RESPOLIN
RHINOCORT
SALBUTAMOL
SALBUTAMOL AUTOHALER
SALBUTAMOL/IPRATROPIUM
SEREVENT
TERBUTALINE
TERBUTALINE TURBUHALER
THEOPHYLLINE
THEOPHYLLINE-SR
VENTODISK
VENTOLIN

Appendix Five

International Classification of Primary Care codes used in the analysis of reasons for encounter

General and Unspecified Conditions

A01	Pain: generalised/unspecified
A03	Fever (exclusively coded for cases where there were no identifiable cause of fever on examination, for example where symptoms of meningism are noted as present/not present but not confirmed).
A12	Allergy/allergic reaction
A13	concern about drug reaction
A16	Irritable/fidgety infant (used where caregiver is concerned about child - problems with sleeping, crying etc... but no identifiable problem found)
A71	Measles
A72	Chickenpox

Digestive System

D01	Generalised stomach pains/cramp
D10	Vomiting
D11	Diarrhoea
D12	Constipation
D13	Jaundice
D17	Incontinence of bowel
D18	Changes in faeces/bowel movements
D19	Symptom/complaint teeth, gums
D20	Symptom complaint mouth, tongue, lips
D22	Worms

Eye

F01	Eye pain
F29	other symptom/complaint eye
F70	conjunctivitis

Ear

H01	Earache (presenting with a sore ear, on examination there was found to be nil treatable. This code is included with H30 ear checks, in the sample)
H04	discharge from ear
H29	other complaint/symptom of ear
H30	Ear check initiated by the family with no abnormalities found. Includes consultations where caregiver has a concern regarding hearing.
H63	a follow-up visit where initial problem has resolved
H70	Otitis externa
H71	Acute otitis media/myringitis (also 'bulging drum', 'inflamed', 'florid')
H72	Serous otitis media, glue ear ('gluey', 'dull', 'retracted', 'fluid behind drum')
H81	Excessive wax
H—C	a follow up visit where initial problem has not resolved.

Musculoskeletal

L01	Neck symptoms/complaints
L08	Shoulder symptoms/complaints
L09	Arm symptoms/complaints
L10	Elbow symptoms/complaints (elbow dislocations coded here)
L11	Wrist symptoms/complaints
L12	Hand and finger symptoms/complaints
L13	Hip symptoms/complaints
L14	Leg/thigh symptoms complaints
L15	Knee symptoms/complaints
L16	Ankle symptoms/complaints
L17	Foot and toe symptoms/complaints
L72	Fracture: radius/ulna
L73	Fracture: tibia/fibula
L81	Other injury musculoskeletal system

Many injuries for which had a skin component eg bruising, laceration were coded under the appropriate skin code. Therefore, musculoskeletal RFEs may be low.

Circulatory

K34	Blood test
K81	Heart murmur

Neurological

N01	Headache
N79	Concussion
N80	Other head injury without skull fracture
N88	Epilepsy

Psychological

P06	Disturbances of sleep
P12	Bedwetting
P21	Overactive child/hyperkinetic

P22	Other concern with behaviour of child

Respiratory

R05	Cough (not recorded if cough is related to asthma)
R06	Nosebleed/epistaxis
R21	Symptom/complaint of throat (only recorded if specific diagnosis for throat pain not documented)
R74	Head cold/URI (also snuffly, runny nose, congested, URTI, nasal discharge, rhinitis, pharyngitis)
R76	Tonsillitis acute (where tonsillitis is written as a specific diagnosis, otherwise enlarged glands coded as R74)
R77	Acute laryngitis/tracheitis/croup (where stated as croup, 'croupy cough' coded as 'cough')
R78	Acute bronchitis/bronchiolitis
R81	Pneumonia
R87	Foreign body in nose
R96	Asthma

Skin

S03	Warts
S04	Localised swelling
S05	Generalised multiple swelling
S06	Localised redness/erythema/rash of skin
S07	Generalised redness/erythema/rash of skin
S11	Other skin infection
S12	Insect bite
S13	Animal/human bite
S14	Burns/scalds
S15	Foreign body in skin
S16	Bruise/contusion/crushing with intact skin surface
S17	Abrasion/scratch/blister
S18	Laceration/cut
S19	Symptoms/complaints nails
S20	Other symptom/complaint skin
S54	Repair/fixation – suture/cast/ prosthetic device (apply/remove)
S56	Dressing/pressure/compression/ tamponade
S70	Herpes Zoster
S72	Scabies
S82	Nevus Mole
S84	Impetigo
S85	Pilonidal cyst
S87	Atopic dermatitis/eczema
S89	Nappy Rash
S95	Mollusca Contagiosa

Endocrine, metabolic and nutritional

T01	Excessive thirst
T04	Feeding problem of infant/child

Urology

U01	Painful urination
U02	Frequent urination
U04	Incontinence, urine
U07	Other symptoms complaints urine
U72	Urethritis

Pregnancy, childbearing, family planning

W92	Umbilicus complications

Female genital system

X14	Vaginal discharge
X15	Other symptom/complaint vagina
X16	Symptom/complaint vulva

Male genital system

Y04	Other symptom/complaint penis
Y05	Symptom/complaint scrotum and testis
Y75	Balanitis
Y81	Phimosis

Appendix Six

Interview schedule for the household survey

Introduction

Good morning/afternoon/evening. My name is .... From ACNielson. We are conducting some research about health services for children aged under six.

S1. Firstly, are there any children living in this household aged under six years?

Yes .... Continue

No .... Close: Thank you for your time.

If necessary: By living in this household we mean children who sleep at least one night per week at this household.

For this research I need to speak to the person in this family who is mainly responsible for making decisions about children's health and wellbeing. May I speak to that person please?

IF NOT AVAILABLE ARRANGE CONVENIENT CALL BACK

IF NECESSARY RE-INTRODUCE

This research is being conducted on behalf of the Health Funding Authority, that is the people who plan health and disability services. Therefore it is important for both you and your family to take part in this research.

IF NECESSARY

You and your family will not be personally identified in the research; your answers will be combined with other people's answers.

The interview will take about 12 minutes, is now a convenient time?

IF NECESSARY ARRANGE CALLBACK

Firstly, some questions about the number and ages of children in your family.

Q1. How many children aged under 15 are there in your family?

If more than one child ask Q2a

Q2a. And what are the ages of each child at their last birthday?

If only one child ask Q2b

Q2b. And what is the age of this child at their last birthday?

If more than one child under six ask:

Q3. Of your .... Children aged under six, which child had the last birthday?

Multiple births, i.e. twins, triplets, rotate first born, second born, etc.

For most of this interview we will be asking questions to do with this child. What is the first name of this child?

IF NECESSARY

We need the child's name for the purpose of asking the questions. We do not record this information. It is just to remind us who we are asking the questions about.

Q4. Is {name} male? Female?

Q5. In what month and year was {name} born?

If necessary read out

We need this information to ensure we speak to a range of people with children of different ages.

Q6. And which ethnic group does {name} belong to?

If necessary read out

We need this information to ensure we speak to a wide range of people.

Q7. And what is your relationship to {name}?

Q45. Do you have any paid or unpaid employment outside the home on a regular weekly basis or ongoing?

If YES at Q45 ask Q46

Q46. Apart from times at kindergarten or school, who is mainly responsible for caring for the child during that time you are outside the home?

Q47. About how many hours a week would that be?

The following questions are about health services {name} may or may not have used over the past twelve months.

Q8. In the past 12 months, has {name} seen a doctor or been visited by a doctor? By "doctor" I mean GP or family doctor, but not a specialist or hospital doctor.

If asked: This includes doctors in after hours clinics and private accident and medical clinics but not hospital based doctors or hospital based accident and emergency departments or clinics.

Q9. How many times has {name} seen a doctor or been visited by a doctor?

Q10. The last time {name} saw a GP or family doctor, was it...
Within the last 4 weeks
Within the last 3 months
Within the last 6 months
Within the last 12 months

Q11i The last time {name} saw a GP or family doctor, was it for ...
A disability, long-term illness or chronic condition
An injury or poisoning
Immunisation or vaccination
A short-term illness or temporary condition
Any other routine check-up or health advice

Q11ii the last time {name} saw a GP or family doctor, did {name} have a well child check? Did a nurse or doctor check your child's growth or development?

Q12. Who suggested this visit to a GP or family doctor was necessary?

Q13. Was that visit covered by ACC?

Q14. What did the doctor charge for that visit?

Q15. This last visit to a GP or family doctor, was it during...
Normal weekday hours?
After hours in the weekday?
After hours in the weekend?

Q16. Did the doctor write {name} a prescription at that visit?

Q17. In the last 12 months, has there been any time when {name} needed to see a GP or family doctor but didn't get to see any doctor at all?

Q18. How many times have you needed to see a GP or family doctor but didn't get to see any doctor at all?

Q19i The last time that happened, what was the reason?

Probe: What else? What else? Repeat probe until no other reason

Q19ii Could you be more specific about what cost too much or why you couldn't afford it?

Probe: What else? What else? Repeat probe until no other reason

Q20. In the last 12 months has {name} seen a medical specialist? By medical specialist I mean the kind of doctor people go to for a particular condition, problem or service, not a GP.

Q21. The last time {name} saw a specialist, was it...
Within the last 4 weeks
Within the last 3 months
Within the last 6 months
Within the last 12 months

Q22. The last time name} saw a specialist, was it at a...
Public hospital?
Private hospital?

Q23. In the last 12 months has {name} seen any of the following people for health care or advice:
GP's practice nurse, without also seeing the doctor?
Plunket, district, public health or other nurse?
Chemist or pharmacist, for health advice or getting medication only?
Maori or Pacific Island health worker?
None of the above?

Q24. In the last 12 months has {name} used a service at, or been admitted to, a public hospital?

Q25. Who suggested this visit to a public hospital was necessary?

Q26. In the last 12 months at a public hospital ...
Did {name} use the accident and emergency department?
Did {name} use an outpatients department, that is, a ward or clinic or specialist where he/she went as an outpatient?

Was {name} admitted as an inpatient, that is, stayed as a patient overnight?
None of the above?

Q27. In the last 12 months, has {name} used a private accident and medical clinic, or doctor's after hours clinic?

Q28. Who suggested this visit to a private accident and medical clinic, or doctor's after hours clinic was necessary?

Q29. In the last 12 months, has {name} had any prescription items from the chemist, including any prescriptions that you might have already told me about?

Q30. In the past 12 months, has there been any time that {name} got a prescription but one or more items weren't collected from the chemist?

Q31. The last time this happened, what was the reason the items weren't collected?

Probe: What else? What else? Repeat probe until no other reason.

Q32. Is {name} covered by any health or medical insurance scheme?

Q33. In the last 12 months, has {name} held a High Use Health Card?

Q34a. In the last 12 months have you or your family held a Community Services Card?

If YES to Q34a

Q34b And is that a current card?

Q34c. In the last 12 months have you or your family held a Prescription Subsidy Card, so you didn't have to pay any more charges on prescription items?

If YES to Q34c

Q34d. And is that a current card?

Q35a. Over the last year has your ability to access a GP or family doctor for {name} got easier / got harder / stayed the same?

Q35b And for what reasons has it got easier / harder

Probe fully

Q36i. On average, how much do GPs or family doctors in your community currently charge to see children aged under six years?

Q36ii. Before I mentioned it, were you aware that last July the Government introduced a policy to ...
Make it free to take children under six to a GP or family doctor?
Reduce the cost of prescription items to little or no cost?

Q37 last year the government introduced a policy to provide free health care services to children aged under six. Thinking about this policy change, how favourable or unfavourable do you feel towards it, are you ...
Very favourable?
Quite favourable?
Somewhat favourable?
Not very favourable?
Not at all favourable?

Q38. In your experience has this policy actually delivered free health care services to children aged under six years?

Q39. Thinking now about your child {name}, over the last year has {name's} overall health got better, worse, or stayed the same as a result of changes to the cost of seeing your GP or family doctor?

Q40. And in the future, do you think the health of New Zealand's children currently aged under six will get better, worse, or stay the same as a result of changes to the cost of seeing a GP or family doctor?

Finally – some questions about you. We collect this information to make sure we interview a cross section of the public. You will not be individually identified. These details will be grouped with those of other people.

Q41. What would be the total income that your family got from all sources, before tax or anything was taken out of it, in the last 12 months?

Q42. What is the employment status of the person who contributes the most income to this household?

Q43. How many people are there all together usually living in this household, including yourself, partner, any boarders and any children?

Q44. Thinking about education, which of these best describes your highest education level …
No secondary schooling
Some secondary schooling but no school certificate passes.
Secondary school certificate passes.
Sixth form certificate/UE/Bursary/equivalent qualifications
Technical/trade certificate/nursing diploma
University degree/diploma/trained teacher's certificate/equivalent qualification

Thank you for your help with this research. Should you have any queries regarding this interview my name is ………… From ACNeilson who are based in Wellington and Auckland.

Thank you for your time.